

# KIC 009958053

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009958053-01	OBS	7263.01	2.733960	133.772200	60.1	1.800	26.6	27.3	2.59	10452	2.31	25380.73
009958053-02	OBS	No	2.733982	134.170197	41.7	1.779	17.5	19.5	2.59	10452	1.92	25380.45
009958053-03	OBS	No	0.911295	132.006934	13.5	2.952	13.9	10.2	2.59	10452	1.09	109820.04
009958053-04	OBS	No	0.910122	132.268885	0.1	5.106	10.7	0.1	2.59	10452	0.10	110008.76
009958053-05	OBS	No	167.394272	200.336363	171.2	6.173	11.2	8.8	2.59	10452	3.55	105.17
009958053-06	OBS	No	46.345964	171.507242	79.5	6.369	10.1	6.6	2.59	10452	2.39	582.83
009958053-07	OBS	No	0.911332	131.698494	150.1	1.500	10.3	-1.0	2.59	10452	3.27	109814.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009958053-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_FEW_DIFFS
009958053-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009958053-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009958053-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV
009958053-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES
009958053-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009958053-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

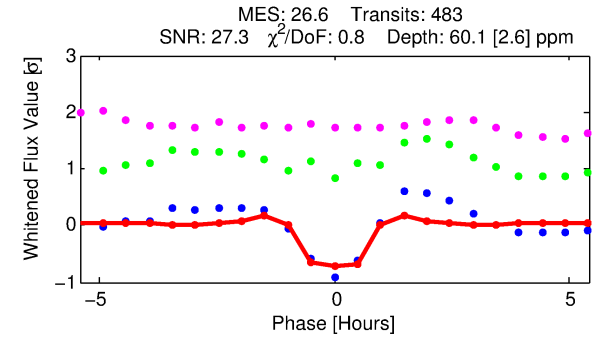
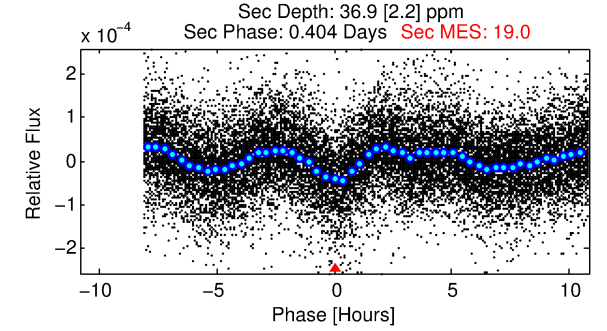
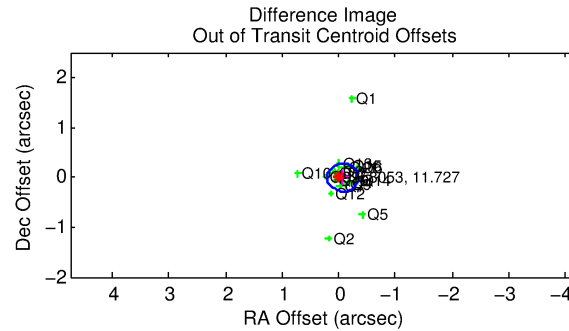
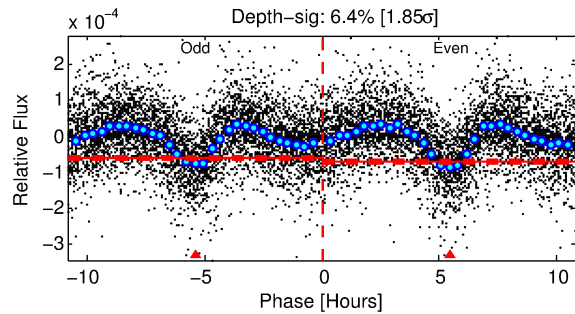
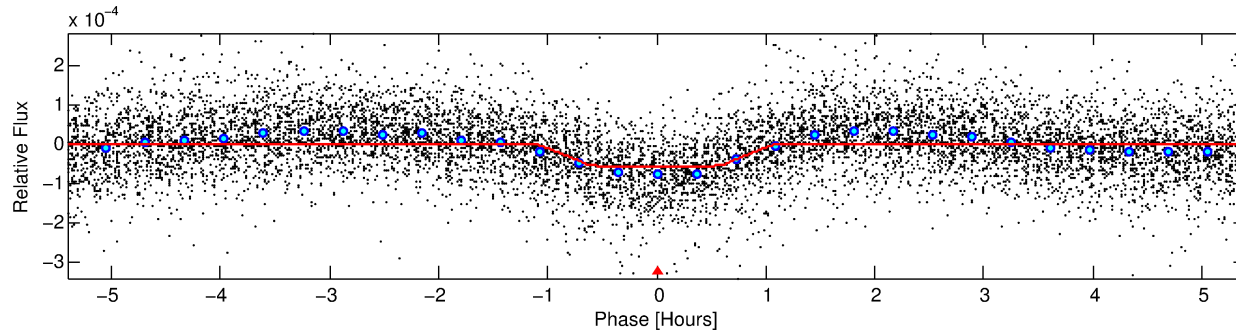
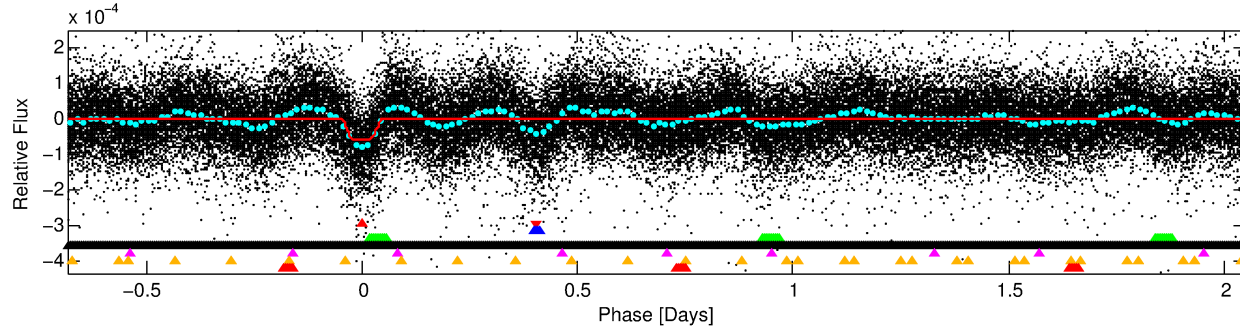
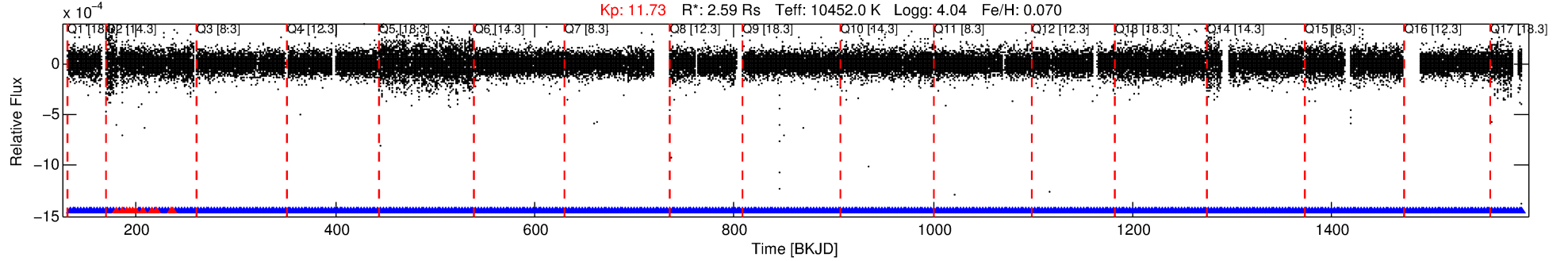
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## Ephemeris Match Information For 009958053-01

No Significant Match Found

# DV One-Page Summary

KIC: 9958053 Candidate: 1 of 7 Period: 2.734 d  
KOI: K07263 Corr: No Ephemeris Match



## DV Fit Results:

Period = 2.73396 [0.00000] d  
Epoch = 133.7722 [0.0009] BKJD  
Rp/R\* = 0.0082 [0.0007]  
a/R\* = 5.30 [3.61]  
b = 0.90 [0.15]  
Seff = 25380.73 [11325.44]  
Teq = 3218 [359] K  
Rp = 2.31 [0.77] Re  
a = 0.0532 [0.0149] AU  
Ag = 10.79 [4.91] [2.00 $\sigma$ ]  
Teffp = 9019 [560] K [8.72 $\sigma$ ]

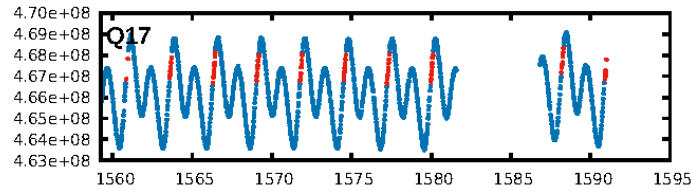
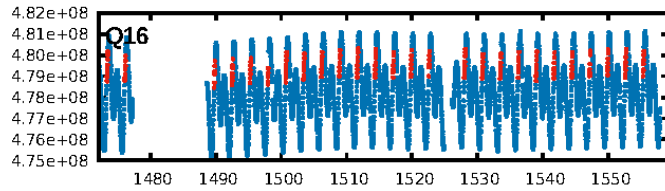
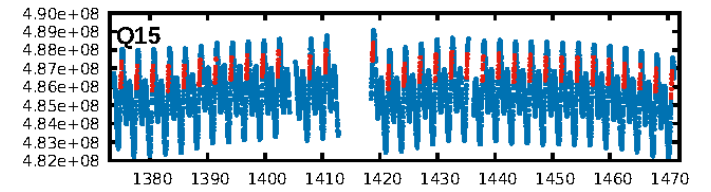
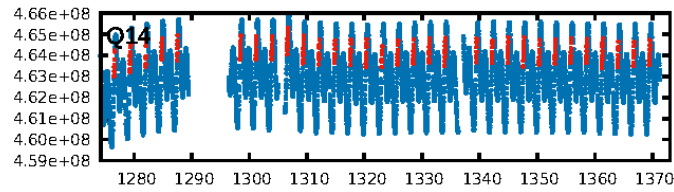
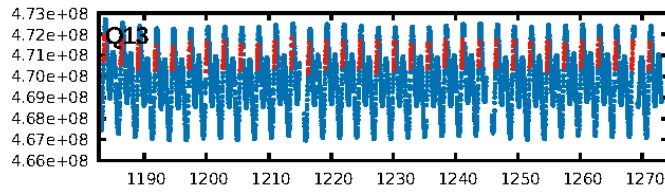
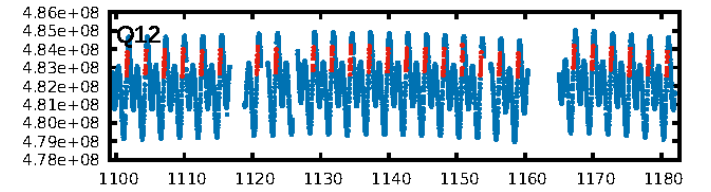
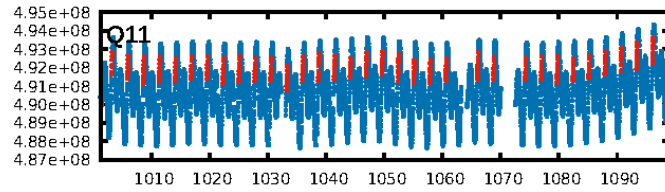
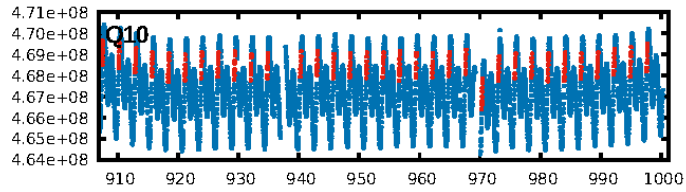
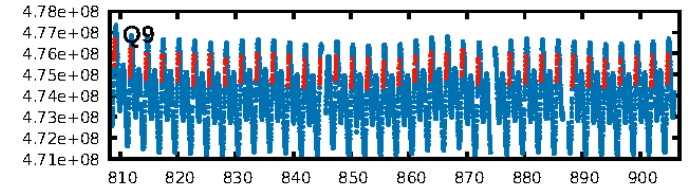
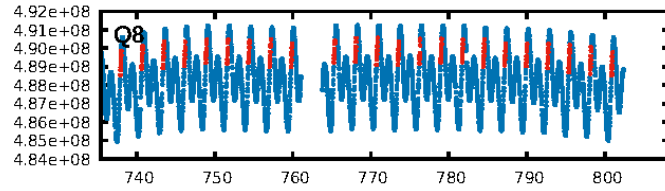
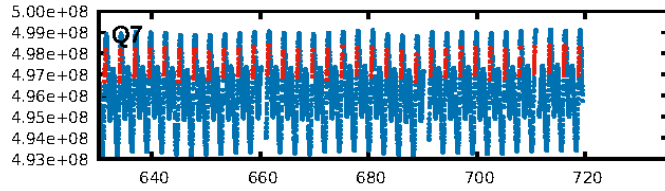
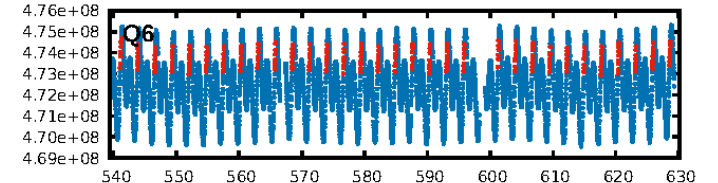
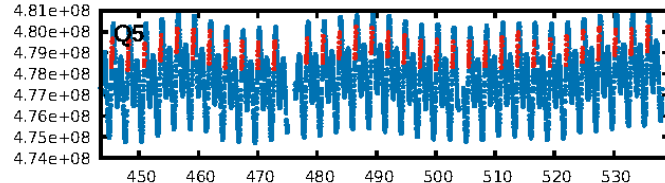
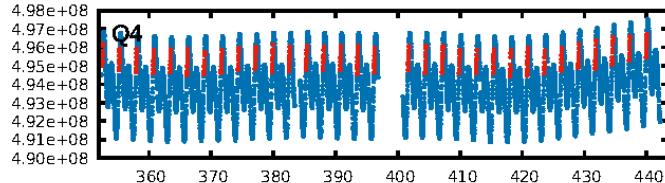
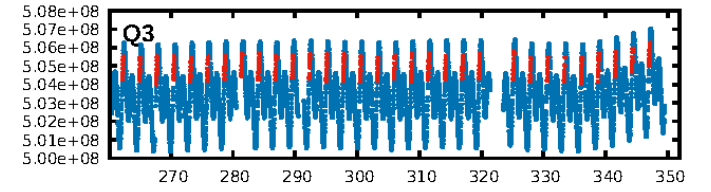
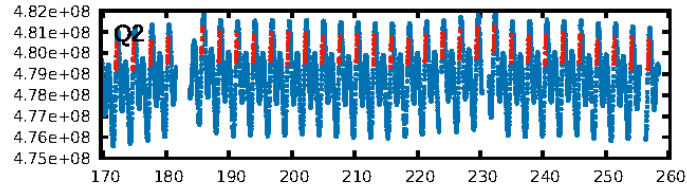
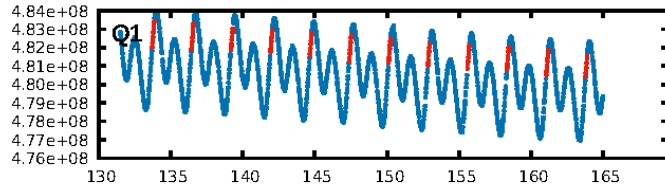
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.67 $\sigma$ ]  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.98 [451/462]  
GhostDiagnostic-chr: 9.556  
Centroid-sig: 0.0%  
Centroid-so: 1.758 arcsec [3.54 $\sigma$ ]  
OotOffset-rm: 0.074 arcsec [0.80 $\sigma$ ]  
KicOffset-rm: 0.033 arcsec [0.31 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.00 [0/17]

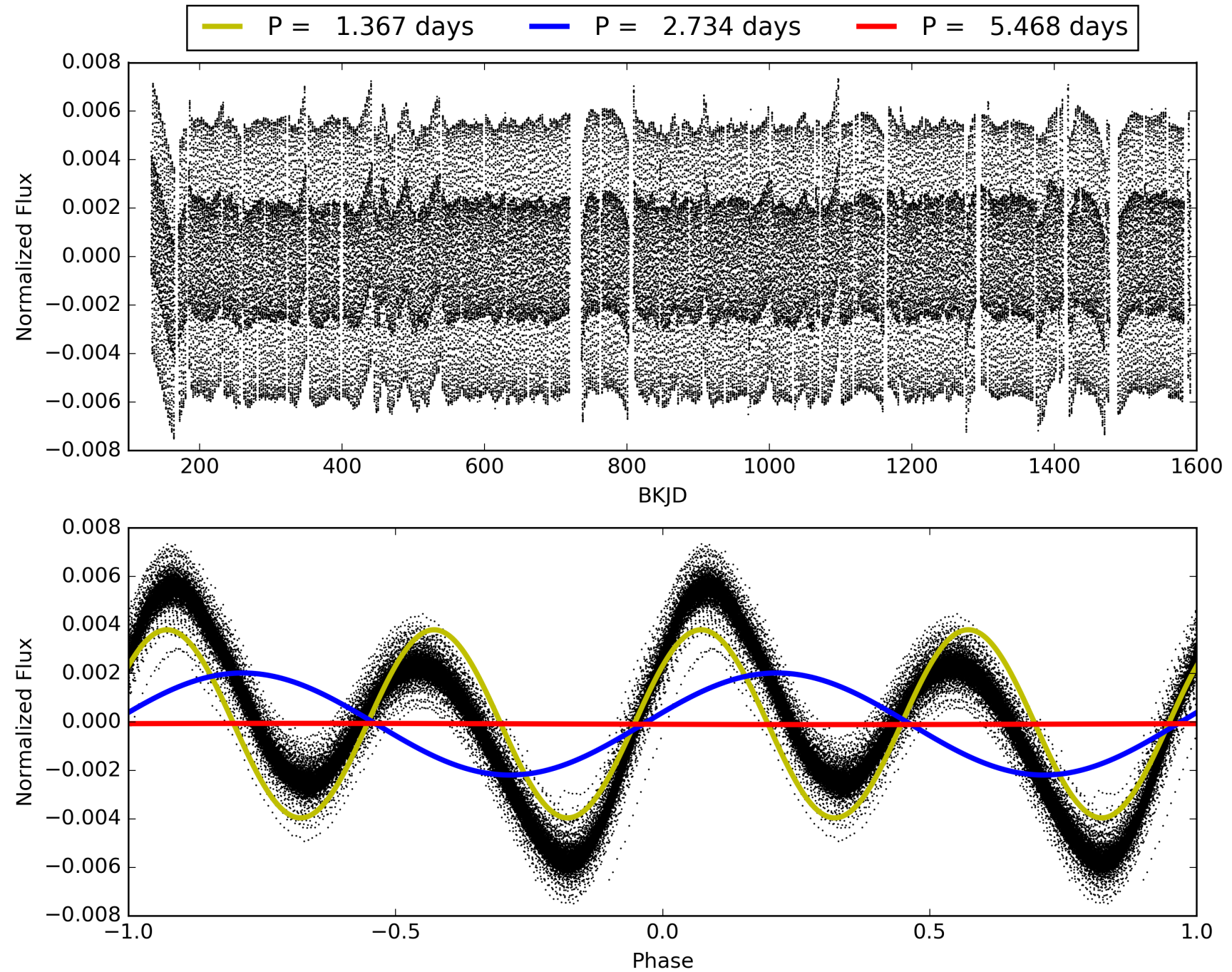
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:01:34 Z

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

# TCE 009958053-01, PDC Light Curves



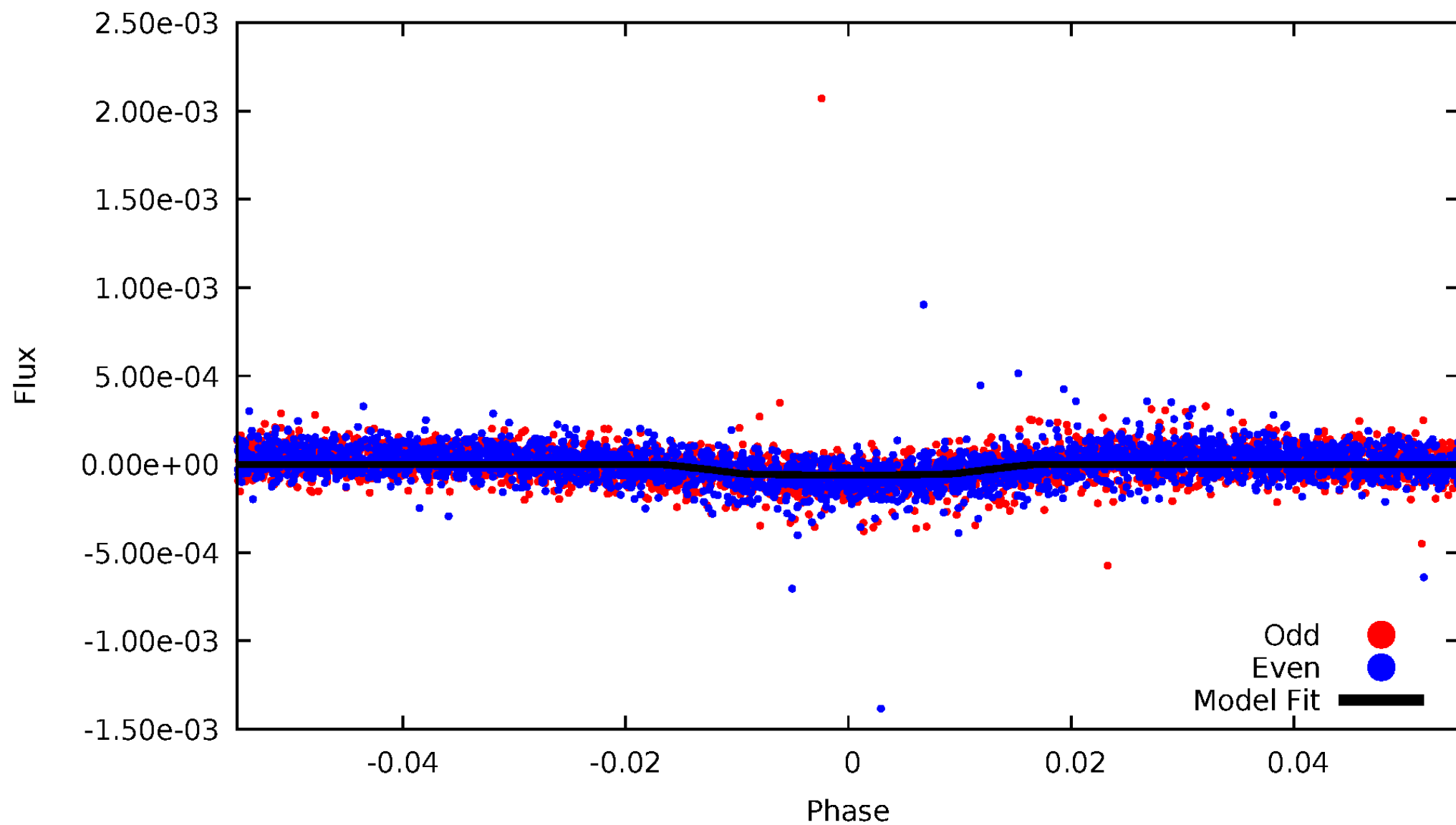
TCE 009958053-01





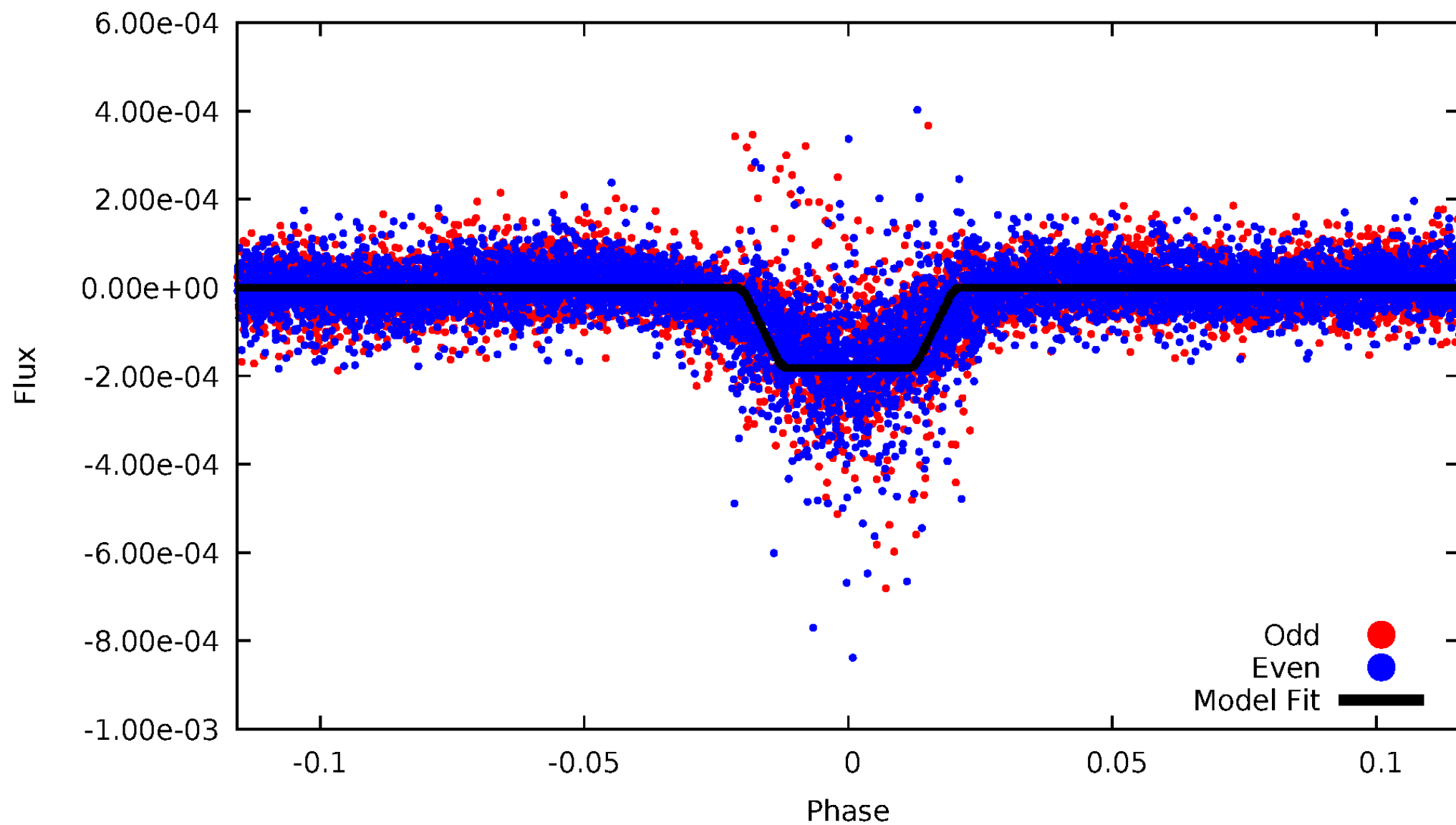
# DV Odd/Even

TCE 009958053-01

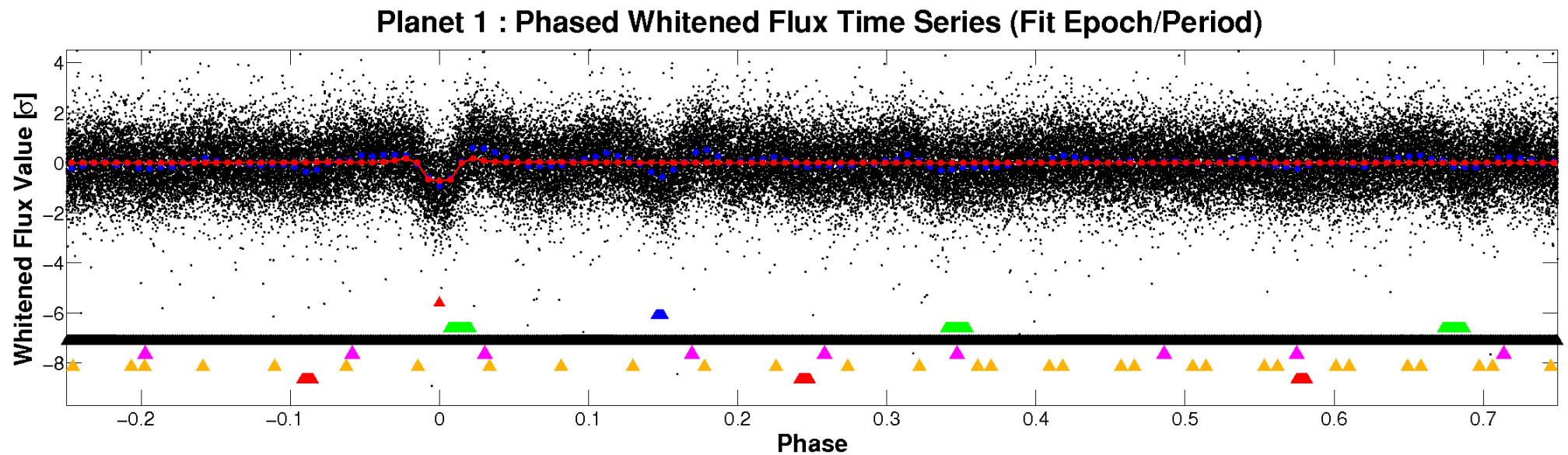
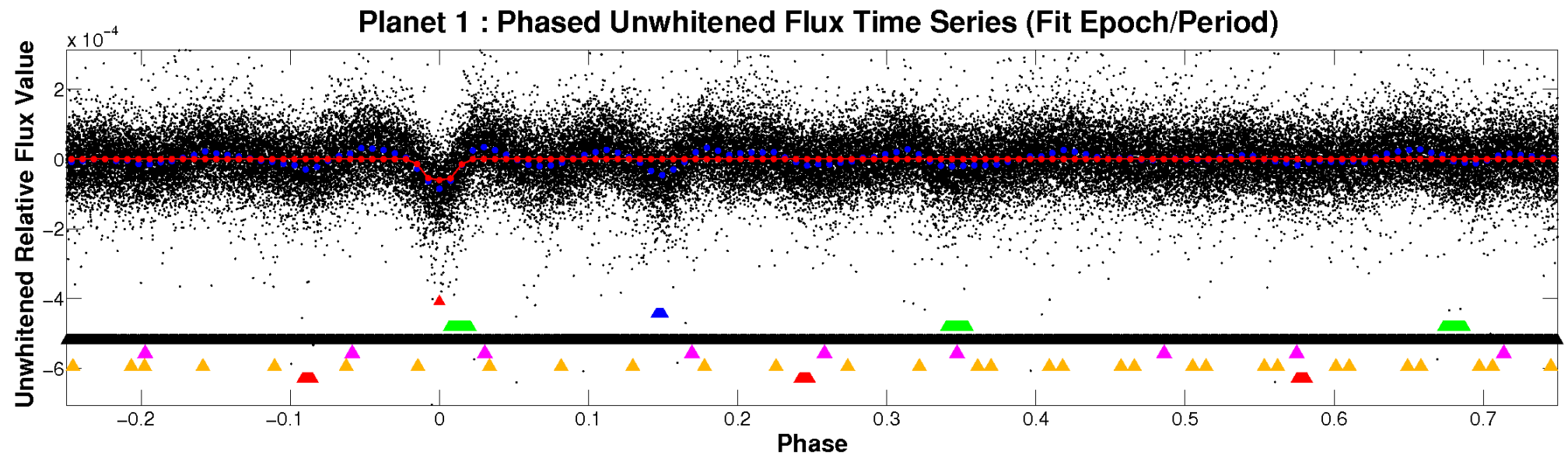


# ALT Odd/Even

TCE 009958053-01

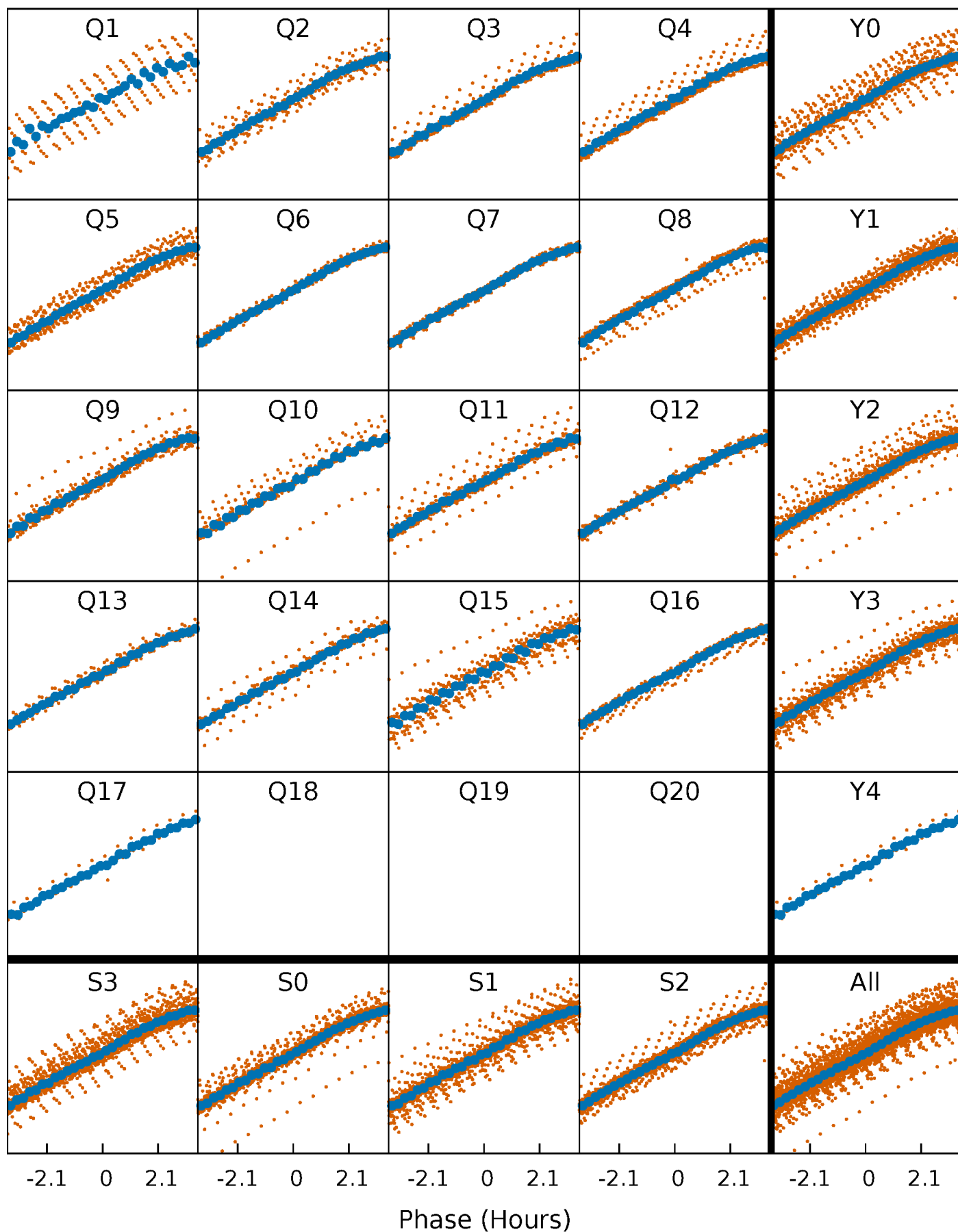


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

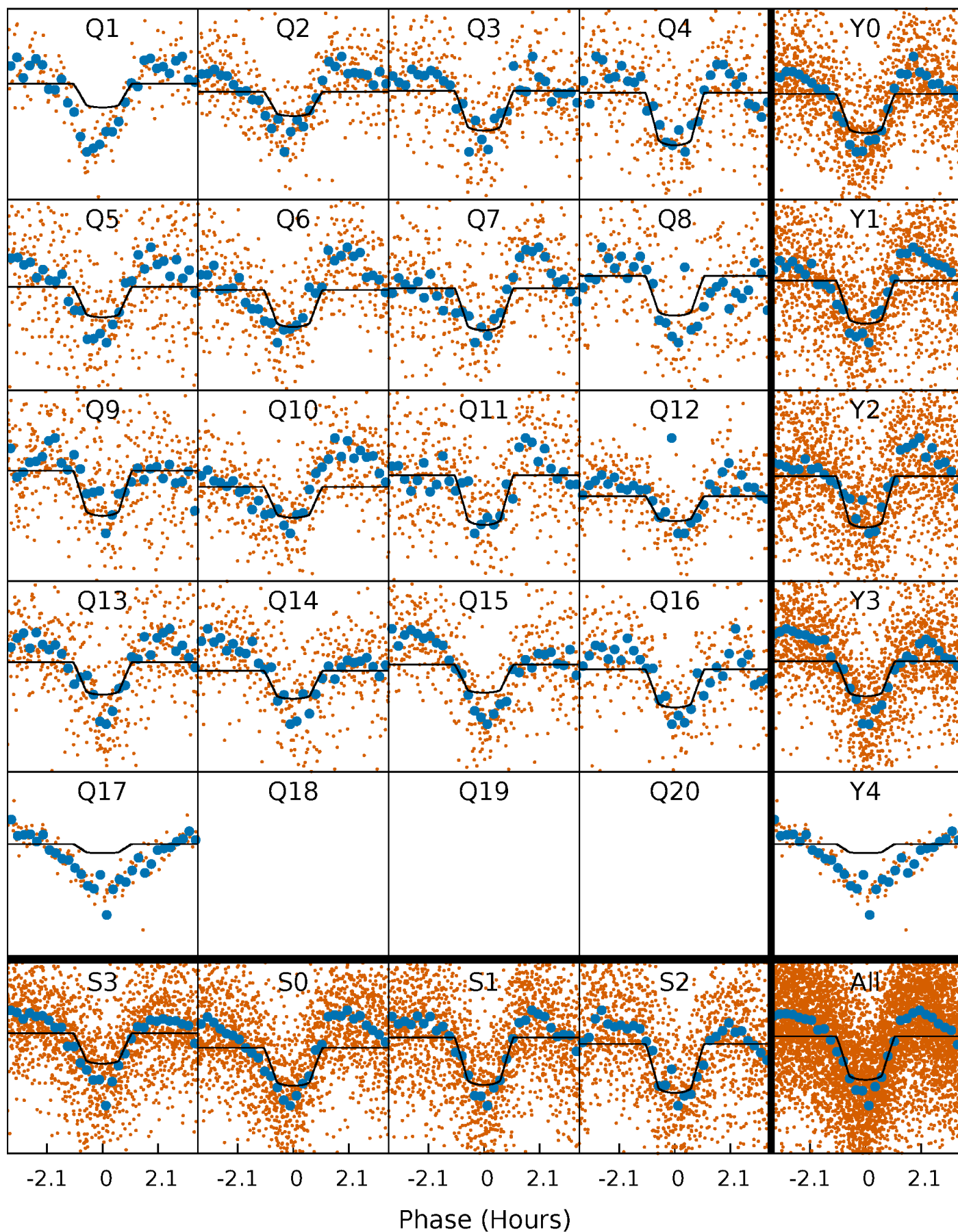
TCE 009958053-01 P= 2.733960 Days  $T_0=133.772200$  (BKJD)





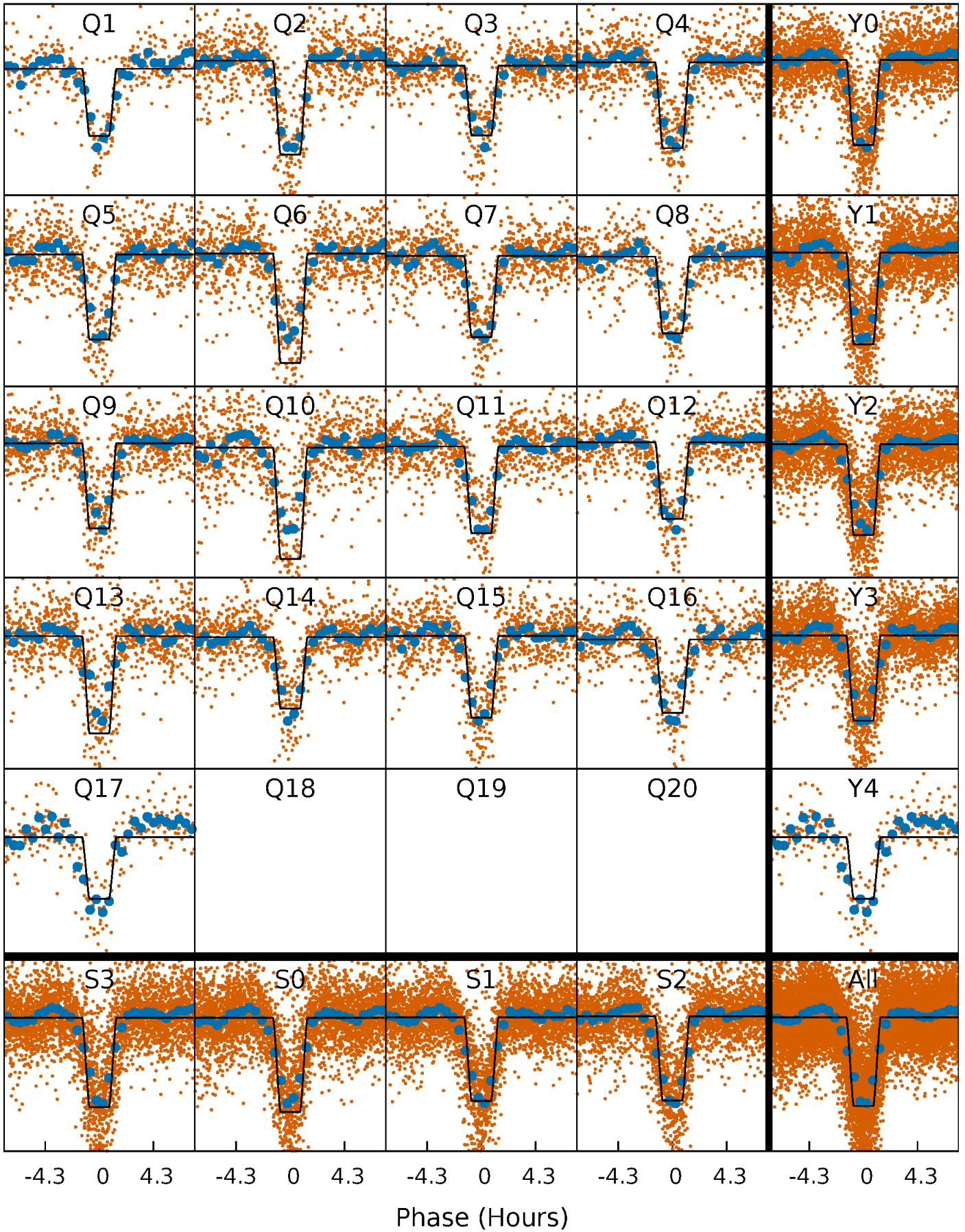
# DV Quarter-Phased Transit Curves

TCE 009958053-01 P= 2.733960 Days  $T_0=133.772200$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

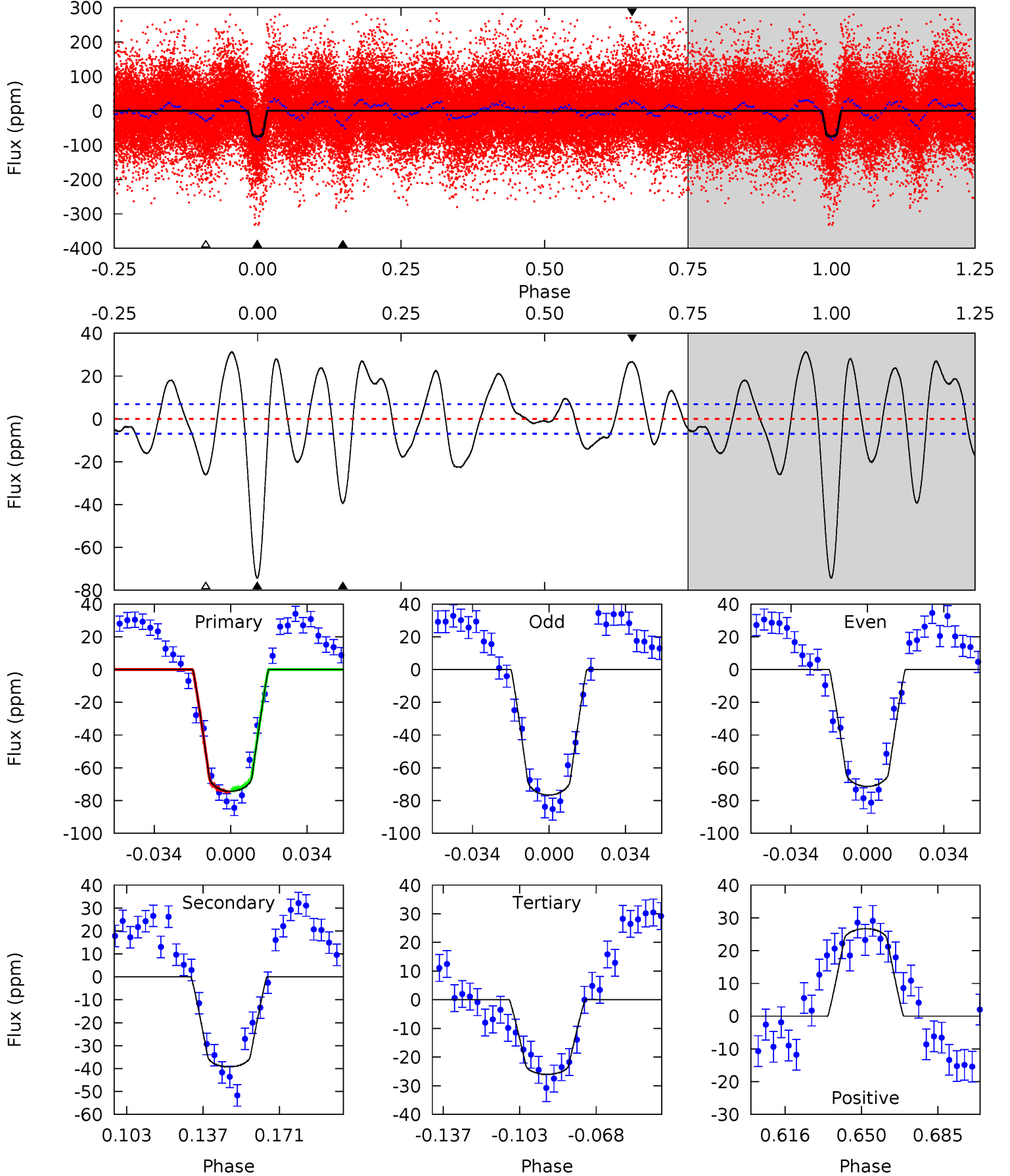
TCE 009958053-01 P= 2.734000 Days  $T_0=133.758436$  (BKJD)



# DV Model-Shift Uniqueness Test

009958053-01, P = 2.733960 Days, E = 131.038240 Days

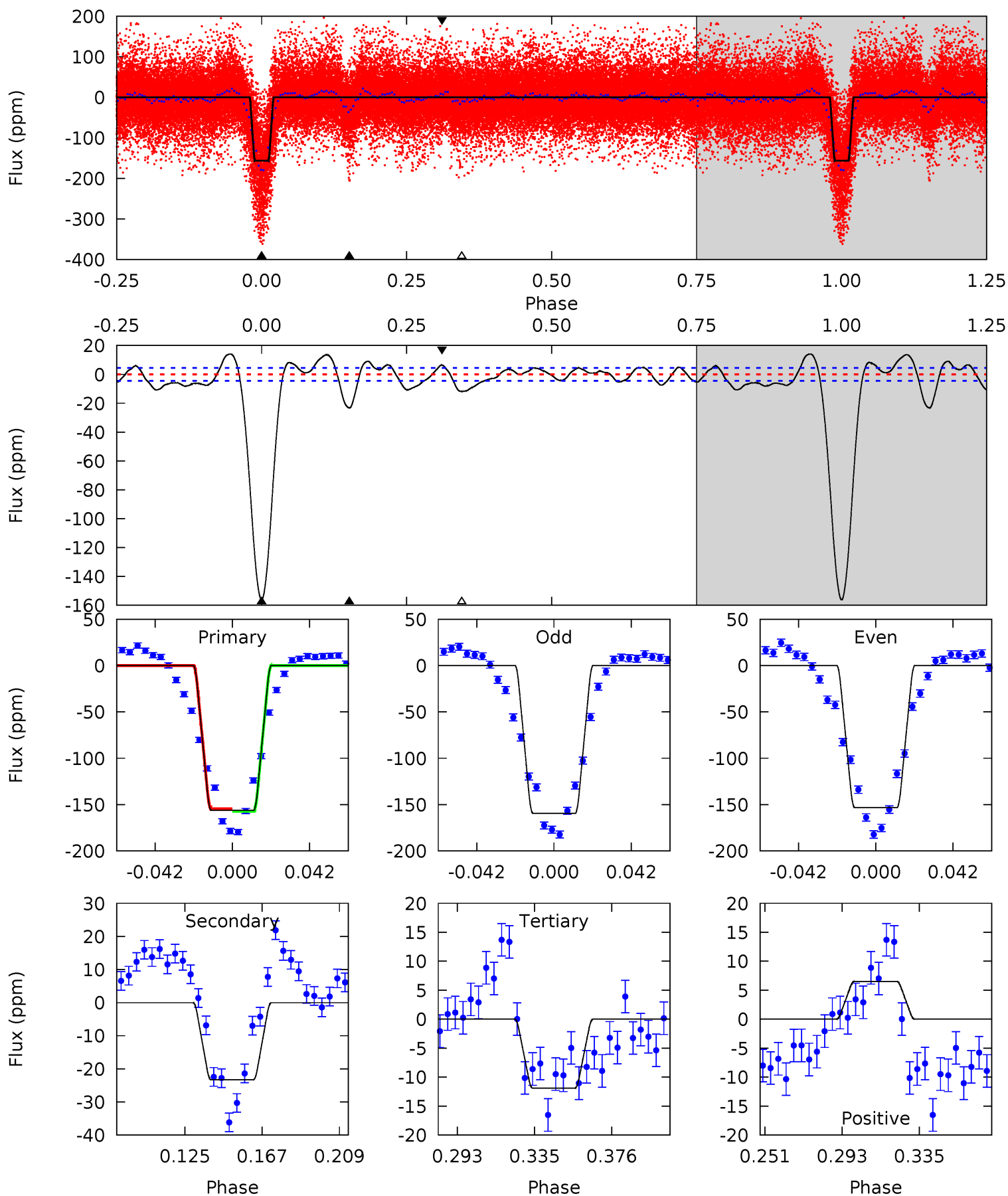
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.5	27.2	18.0	18.5	4.78	2.12	9.58	33.5	33.0	9.20	8.73	1.82	1.12	0.30	0.49



# Alt Model-Shift Uniqueness Test

009958053-01, P = 2.734000 Days, E = 131.024436 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
165.9	24.7	12.6	6.91	4.74	2.04	5.99	153.3	159.0	12.1	17.8	3.32	1.03	0.08	1.31





### Stellar Parameters For KIC 009958053

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10452^{+286}_{-429}$	$4.040^{+0.231}_{-0.189}$	$0.070^{+0.150}_{-0.550}$	$2.593^{+0.838}_{-0.838}$	$2.691^{+0.354}_{-0.658}$	$0.217^{+0.372}_{-0.104}$
	+3%/-4%	+6%/-5%	+214%/-786%	+32%/-32%	+13%/-24%	+171%/-48%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009958053-01 / KOI 7263.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-39 \pm 1$	$2.25^{+0.48}_{-0.43}$	$4453^{+374}_{-365}$	$8574^{+637}_{-529}$	$12^{+5}_{-4}$
Alt.	$-23 \pm 1$	$3.78^{+0.71}_{-0.69}$	$4468^{+388}_{-369}$	$5497^{+227}_{-202}$	$2.514^{+1.024}_{-0.709}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature  
 $T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )  
 $A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

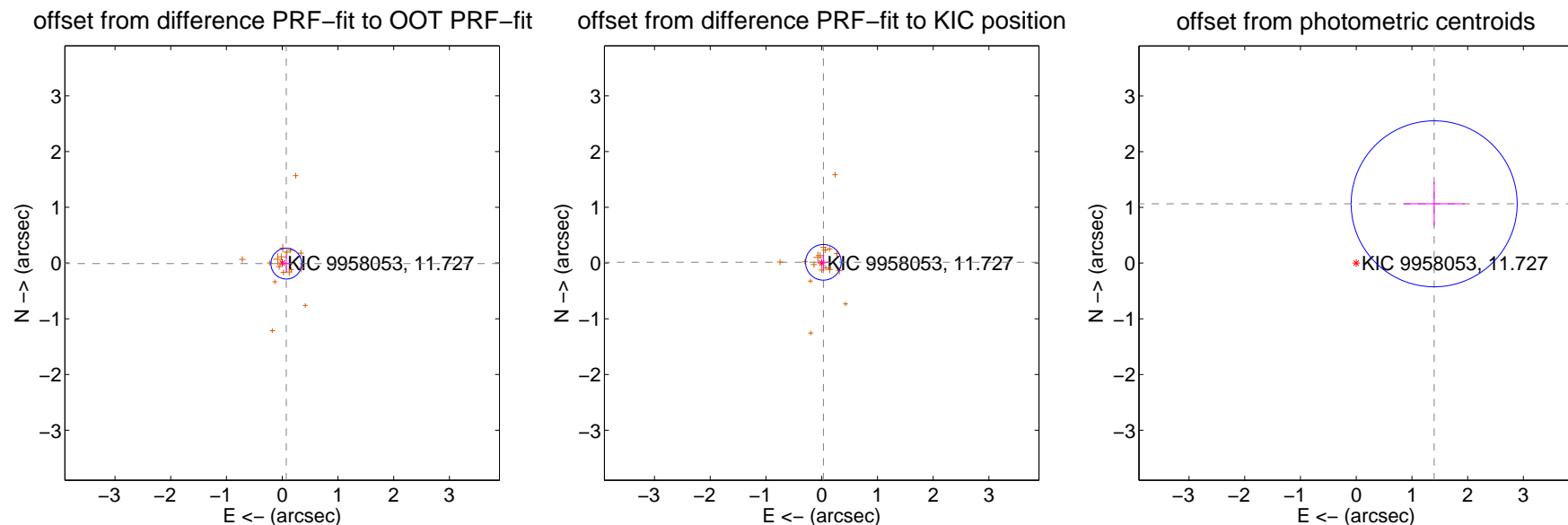
## DV Centroid Data

Supplemental centroid analysis for 009958053-01. **Kepler magnitude: 11.73.** Transit SNR 27.32

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

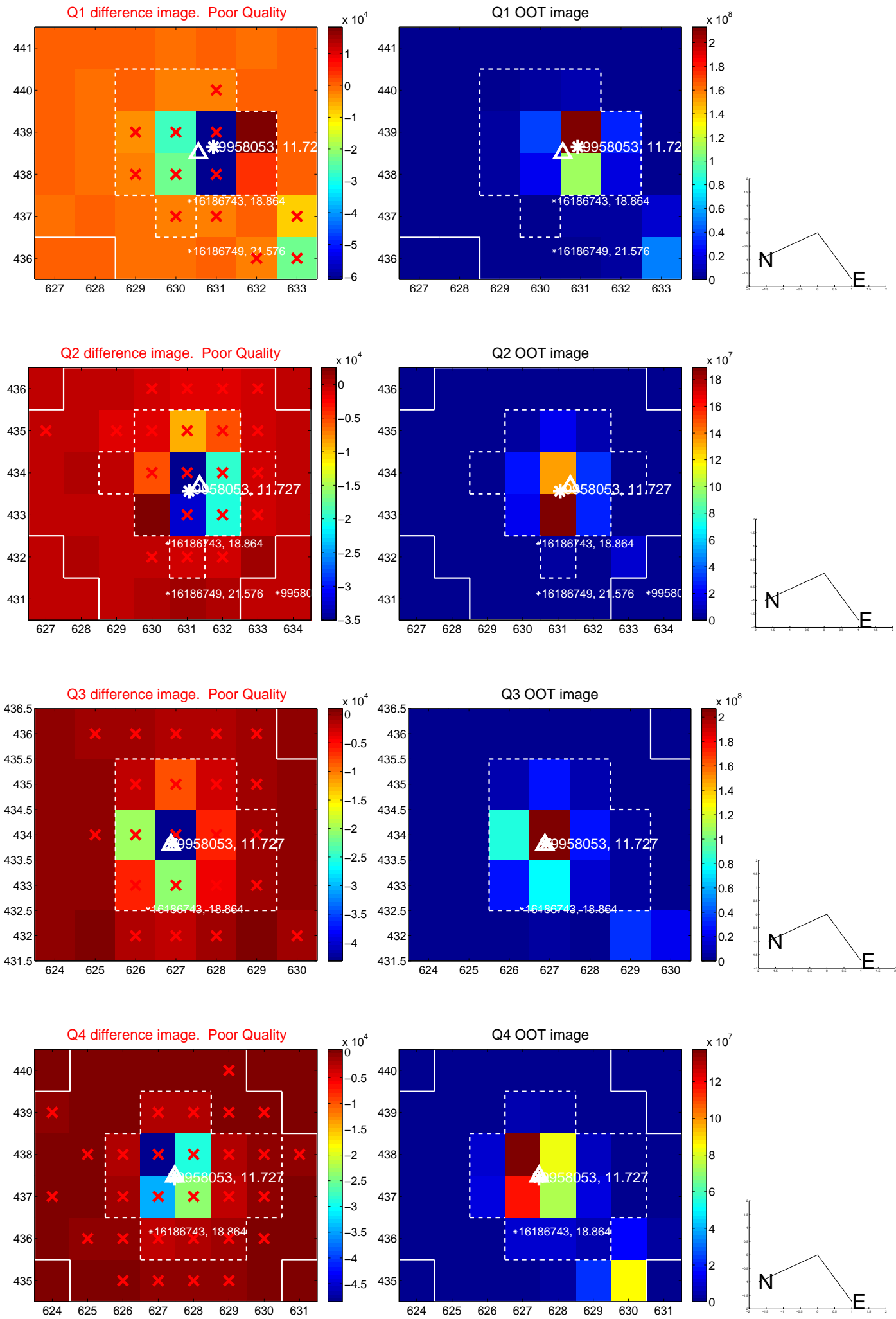
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.074 \pm 0.092$	0.80	$-0.073 \pm 0.093$	$-0.010 \pm 0.146$
PRF-fit source offset from KIC position	$0.033 \pm 0.107$	0.31	$-0.030 \pm 0.092$	$0.013 \pm 0.144$
photometric centroid source offset	$1.76 \pm 0.50$	<b>3.54</b>	$-1.40 \pm 0.55$	$1.06 \pm 0.39$

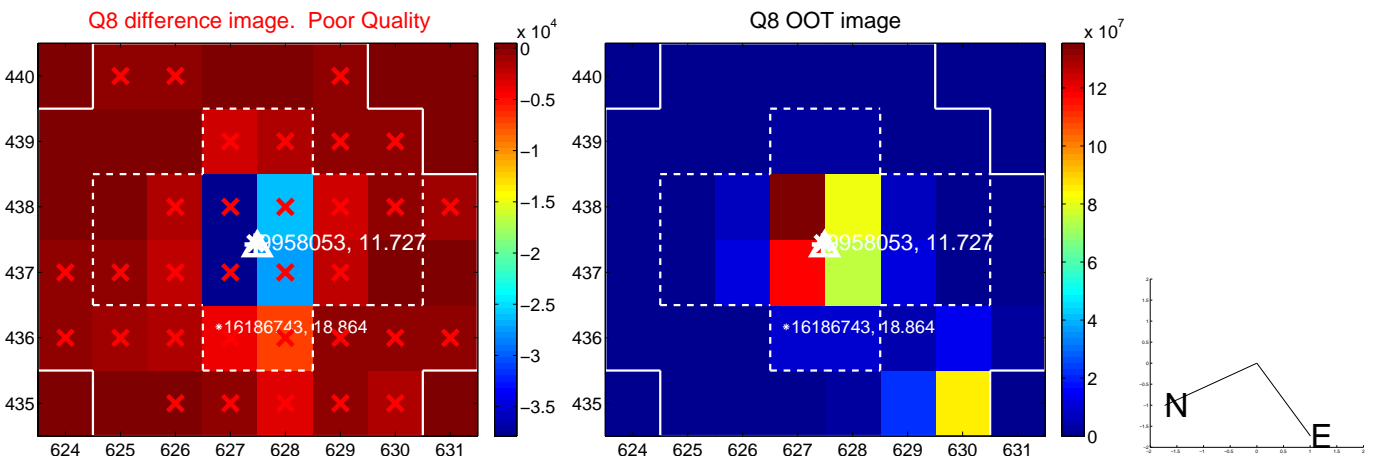
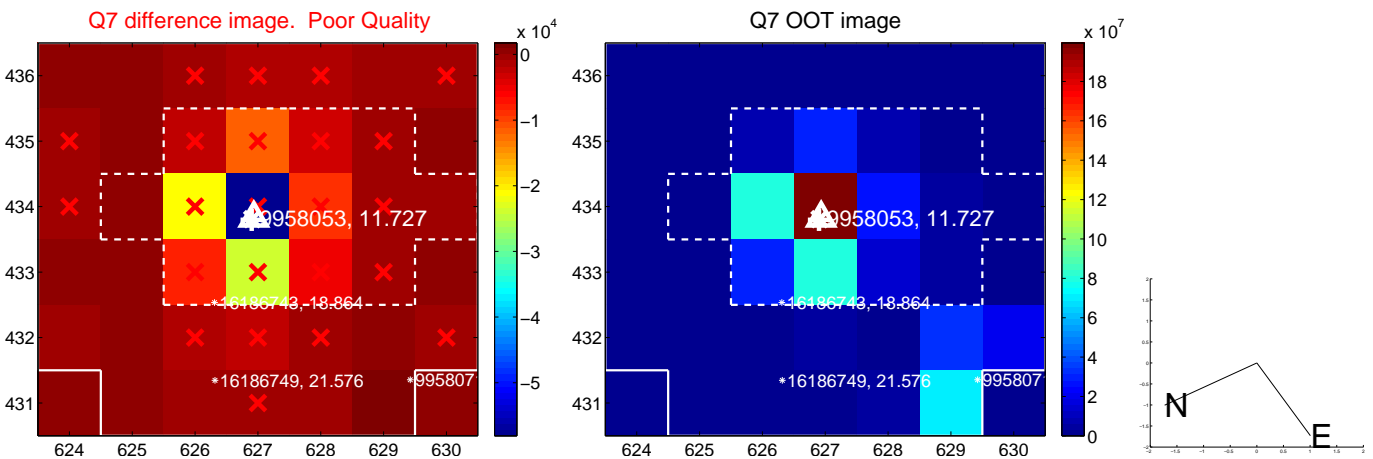
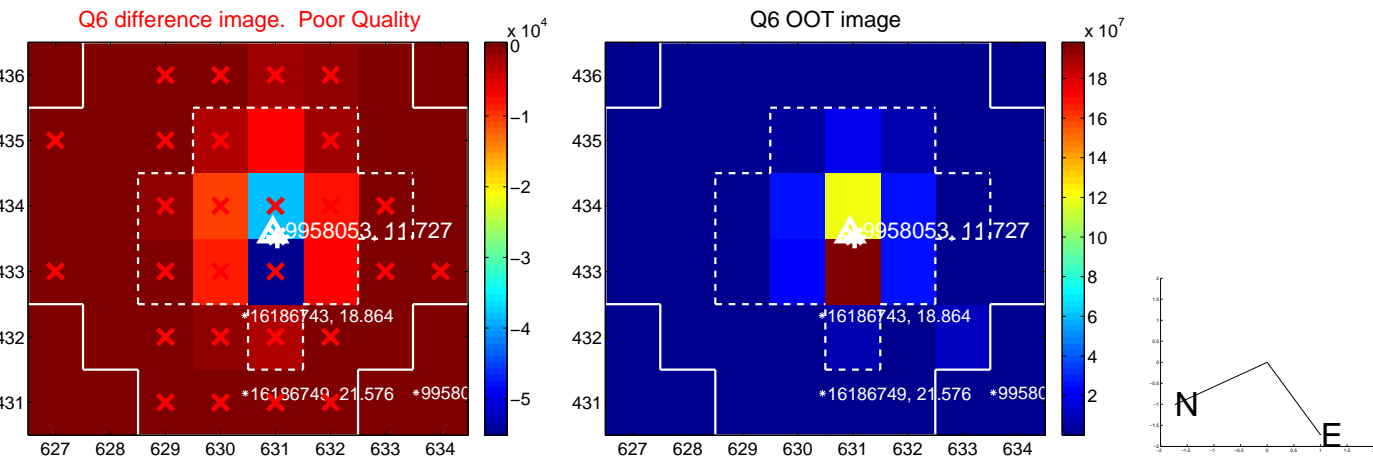
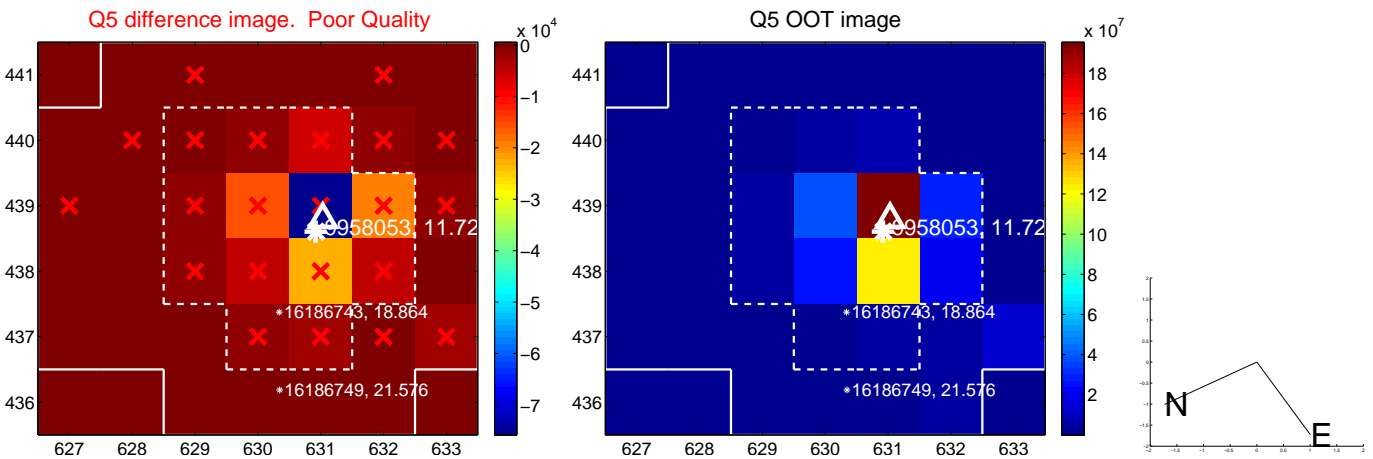


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

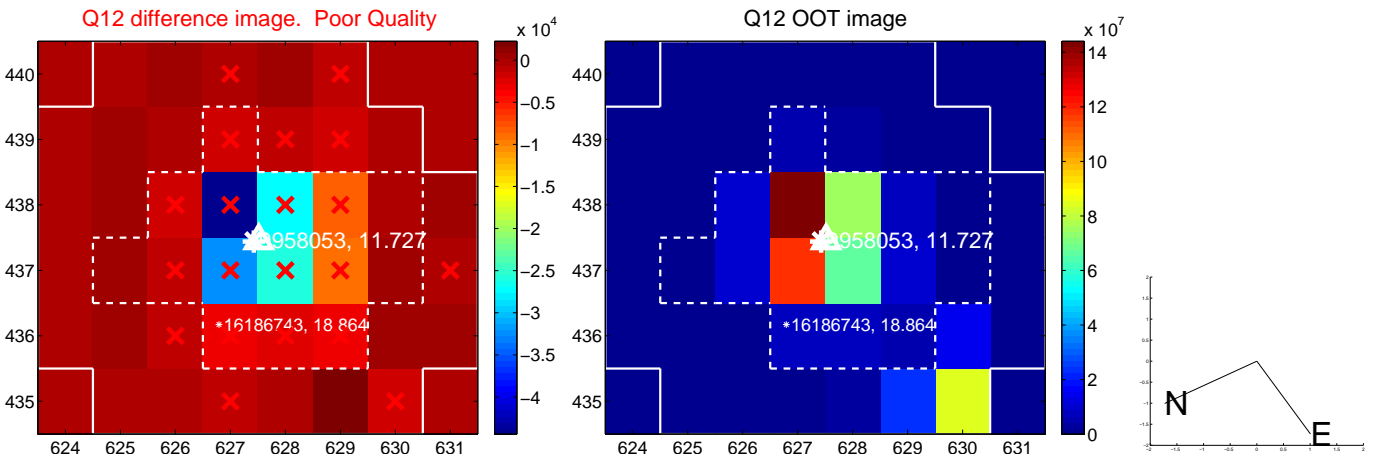
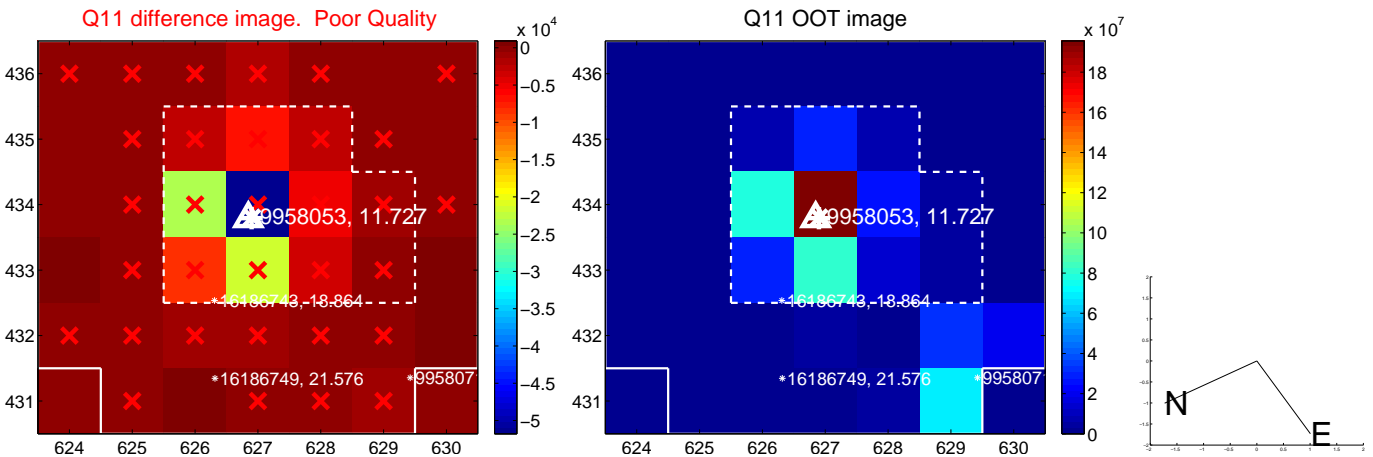
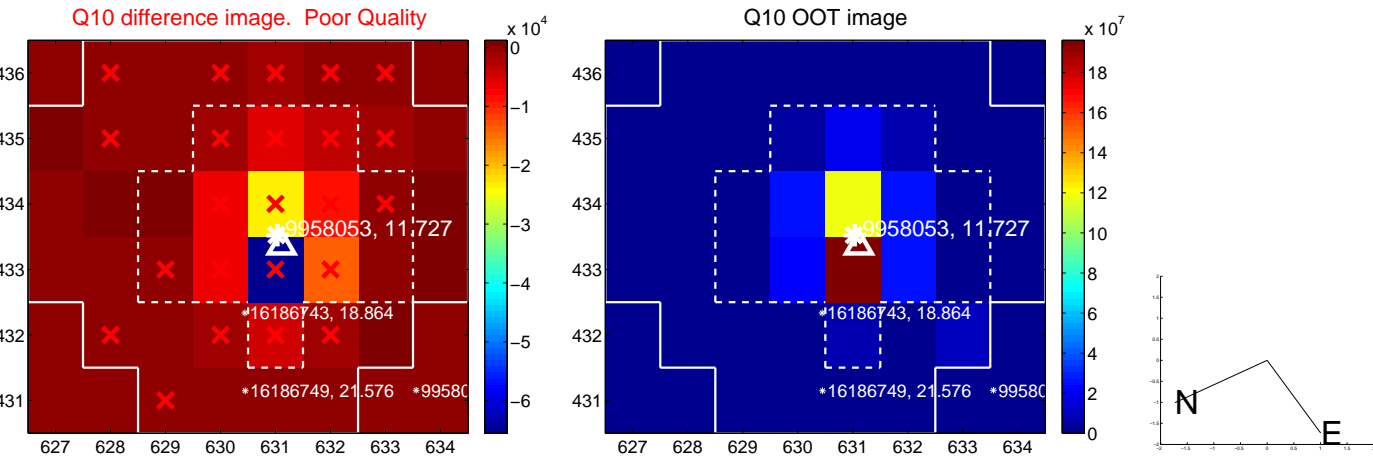
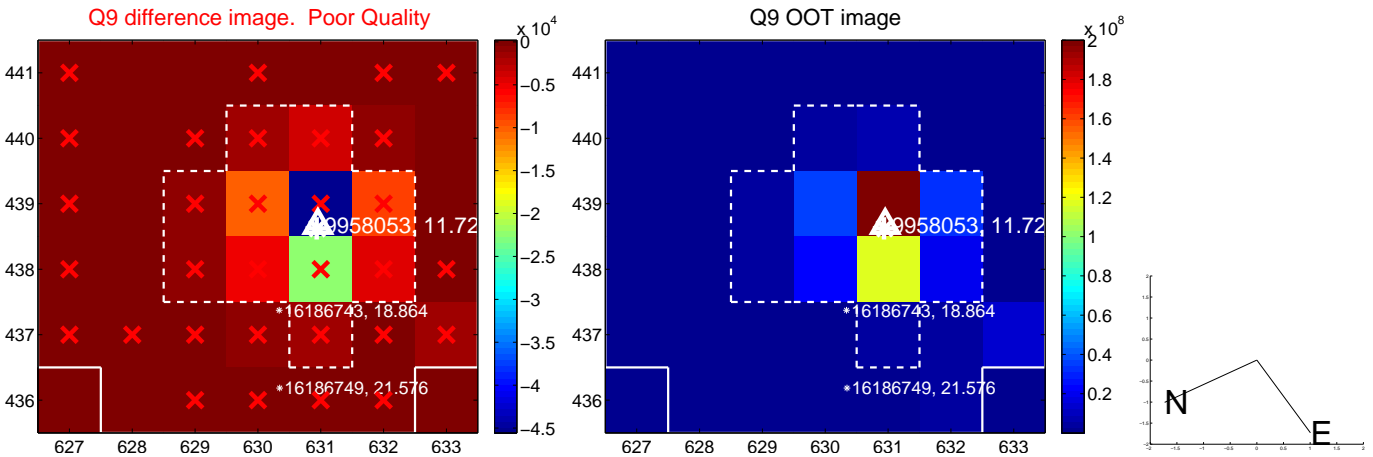


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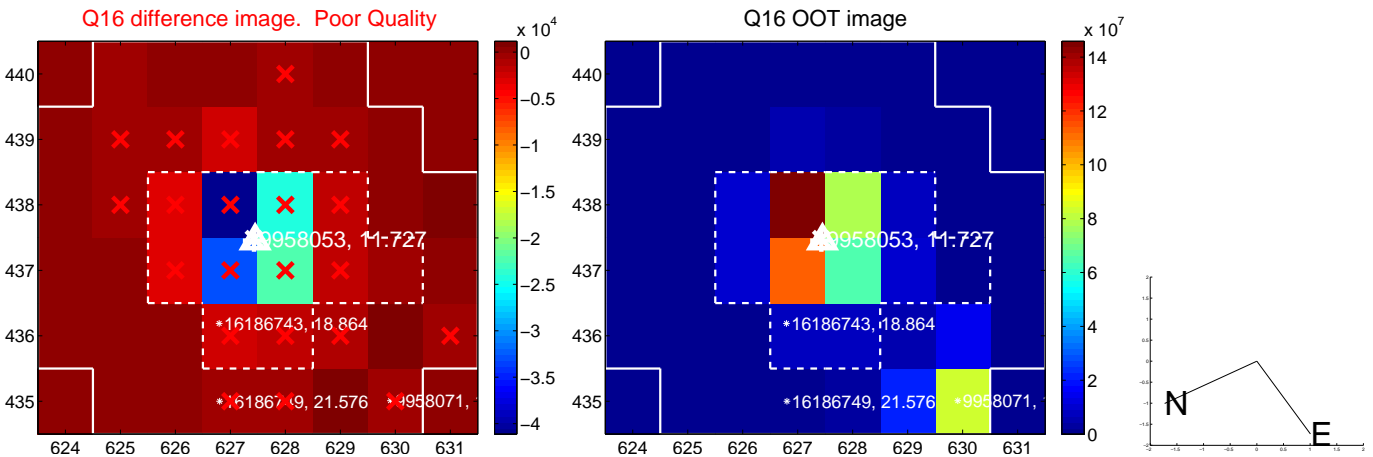
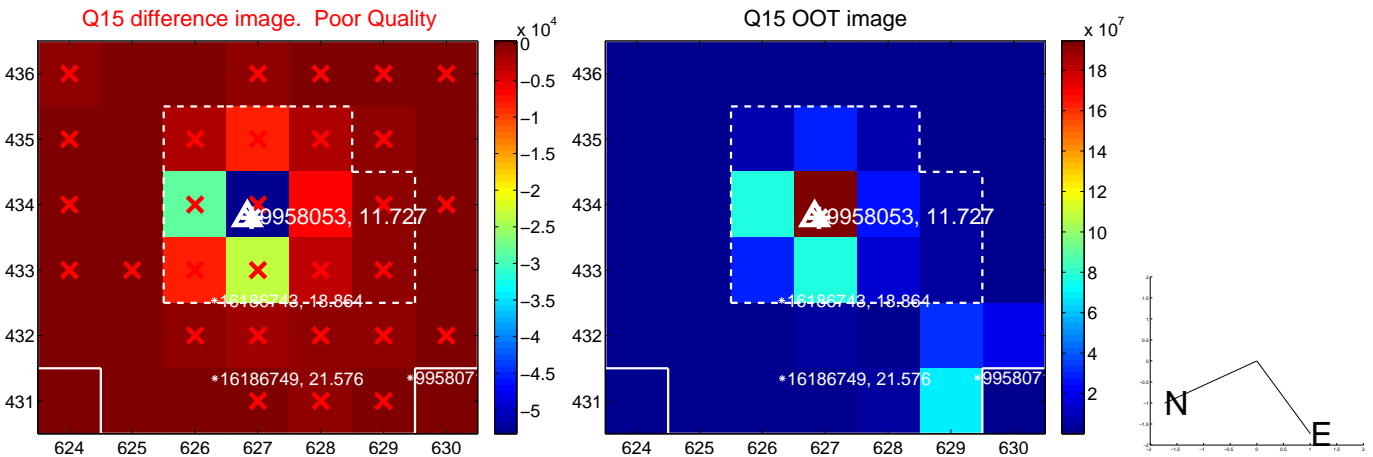
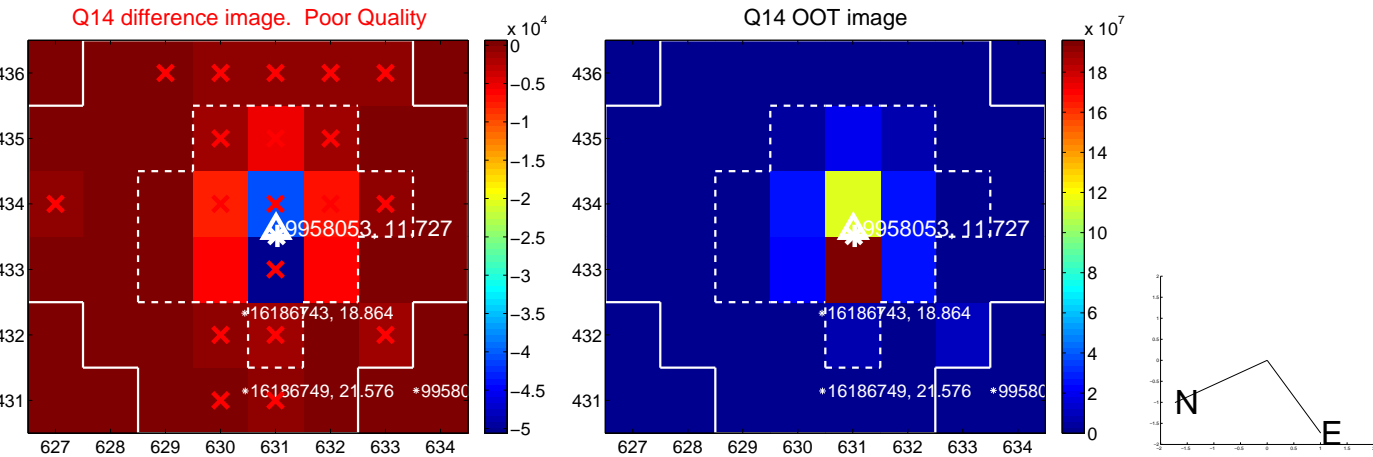
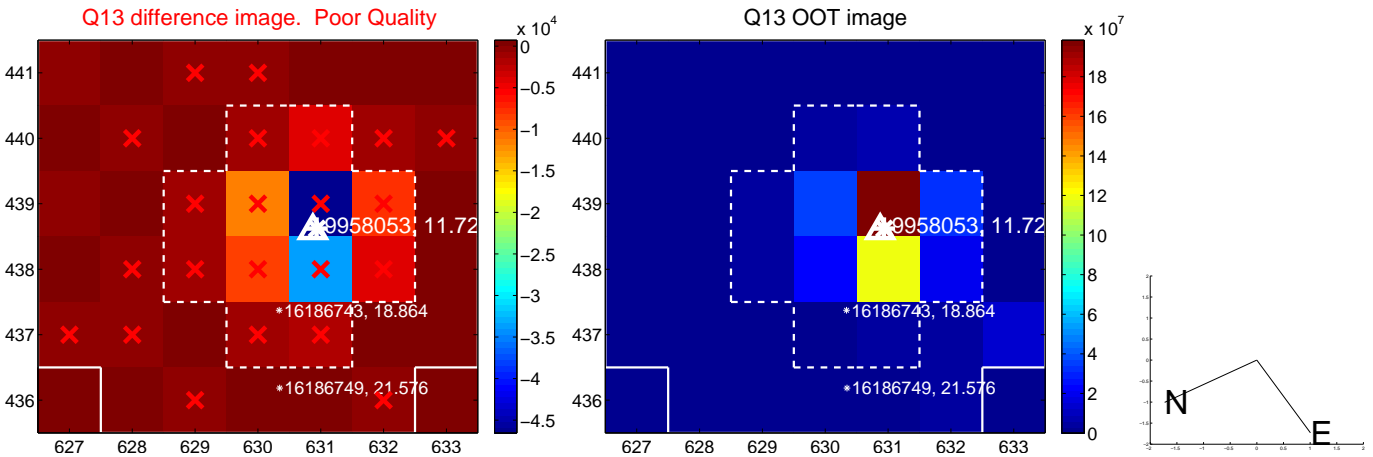




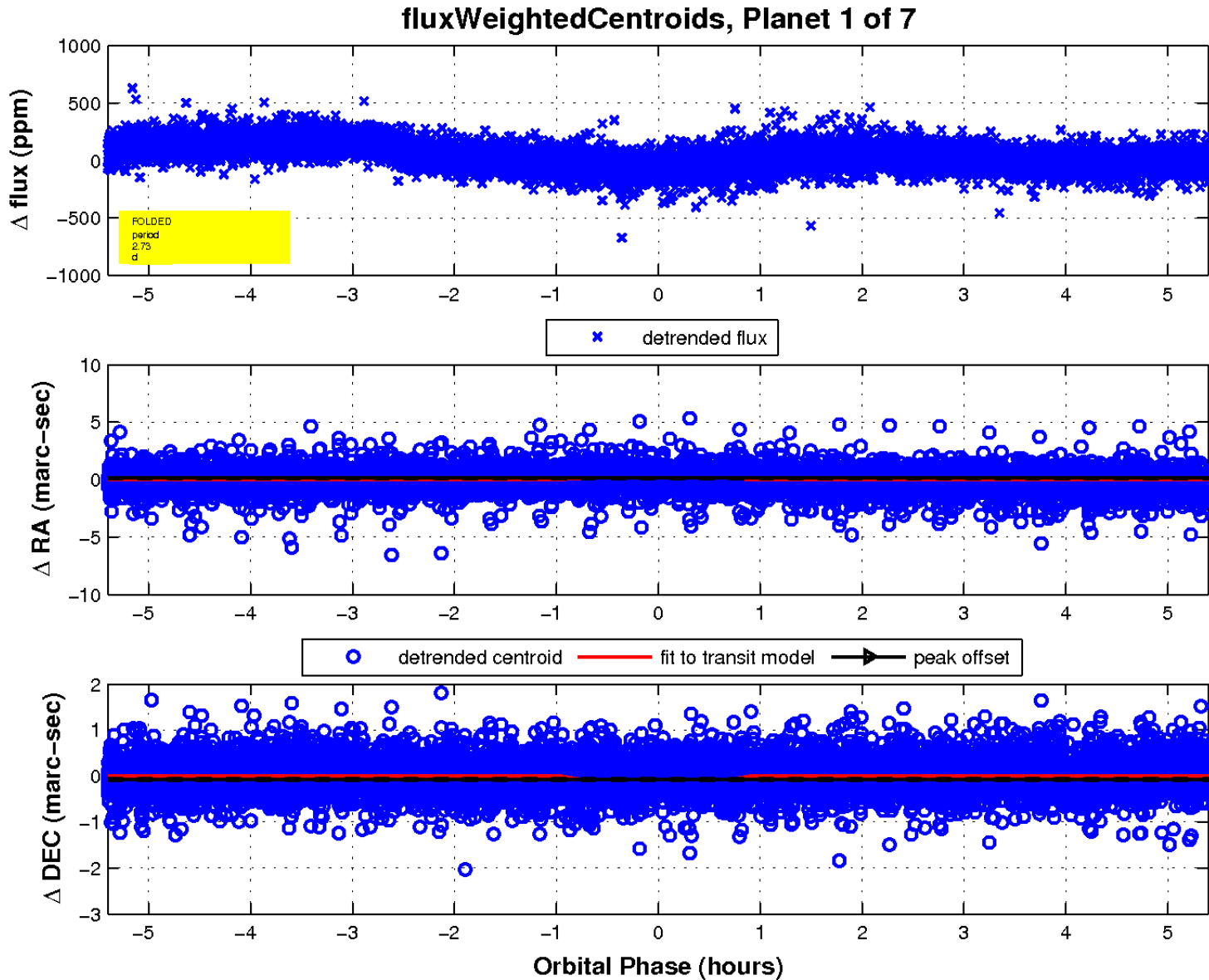
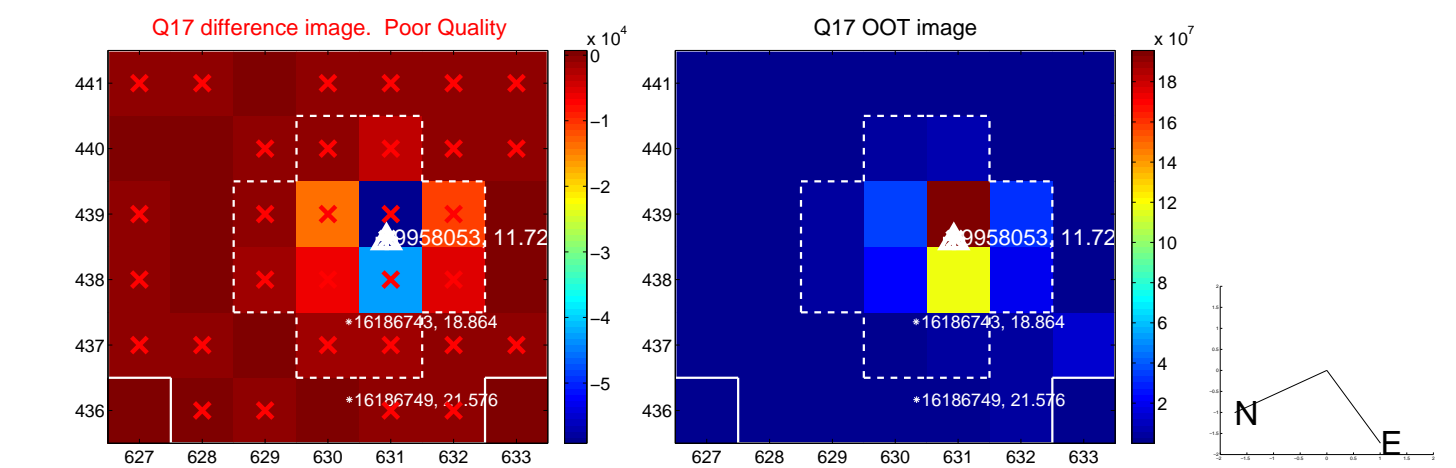
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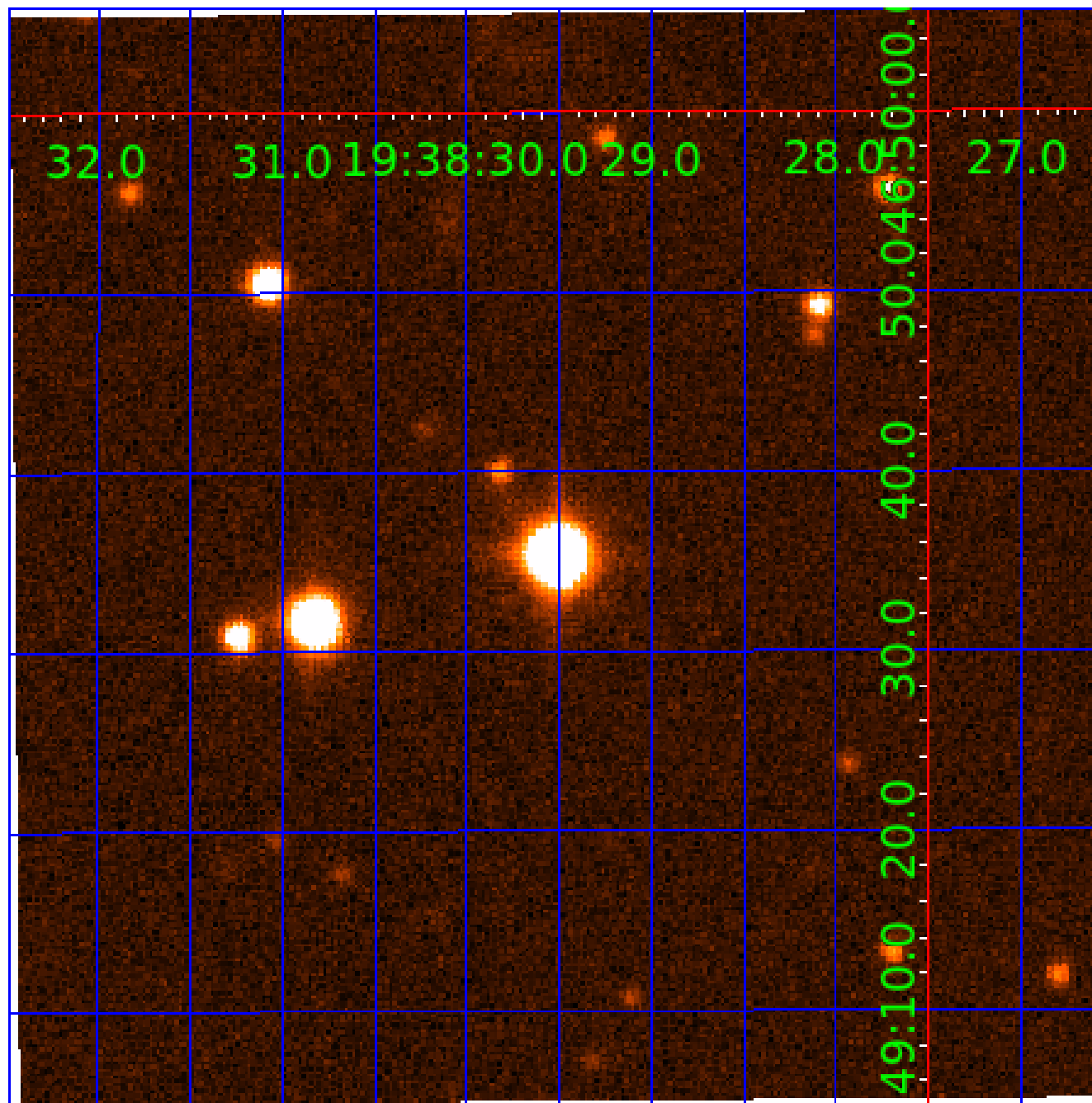


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 009958053

## Q1-17 DR25 TCE Parameters

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009958053-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_FEW_DIFFS
009958053-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009958053-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009958053-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV
009958053-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES
009958053-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009958053-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

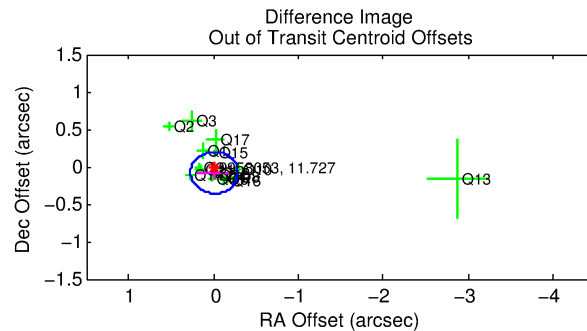
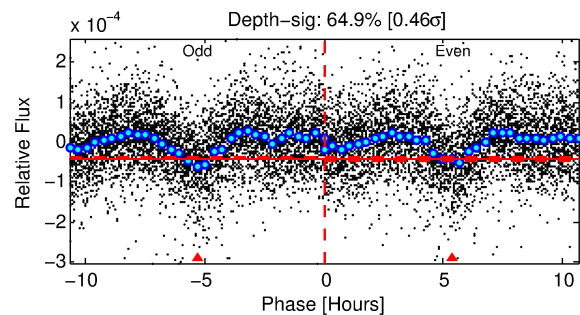
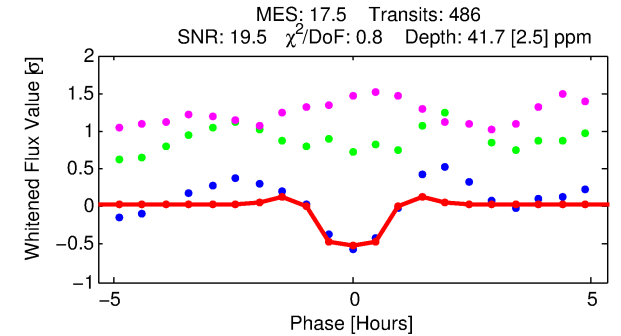
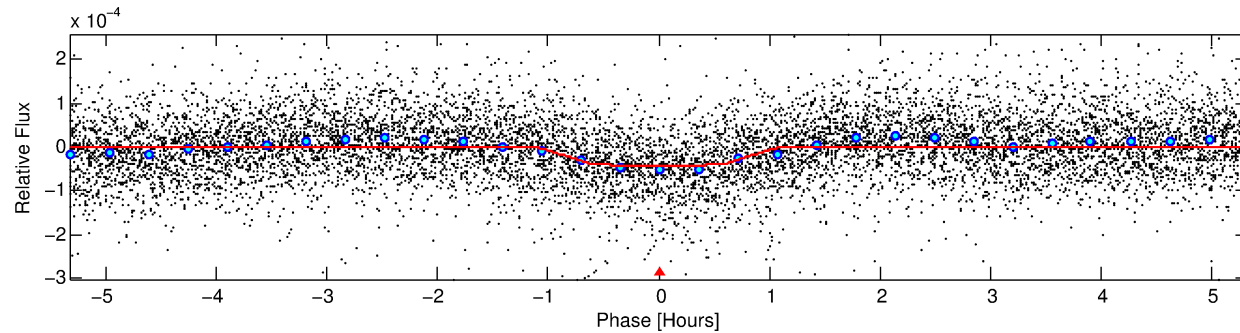
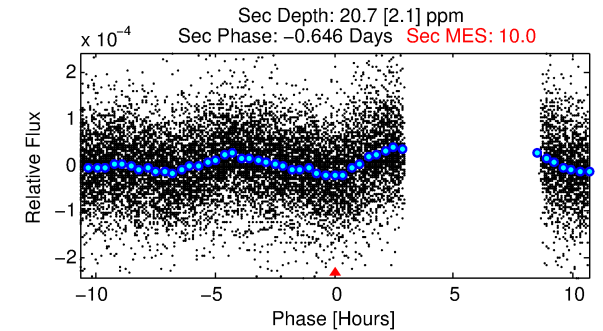
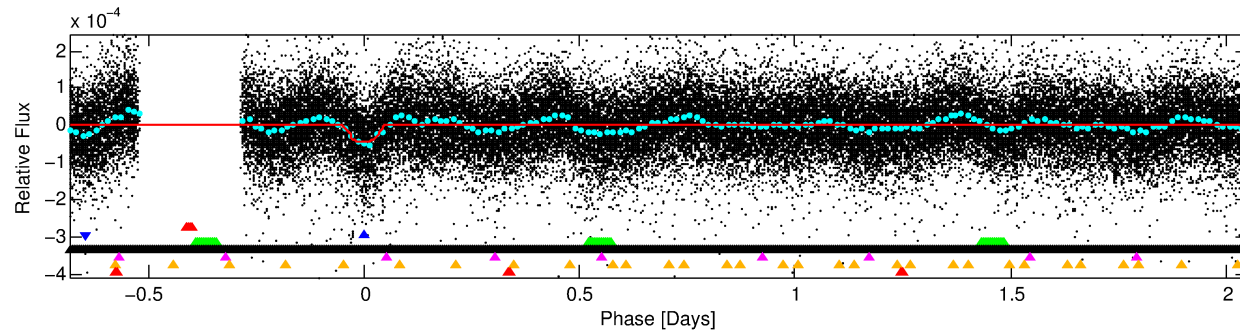
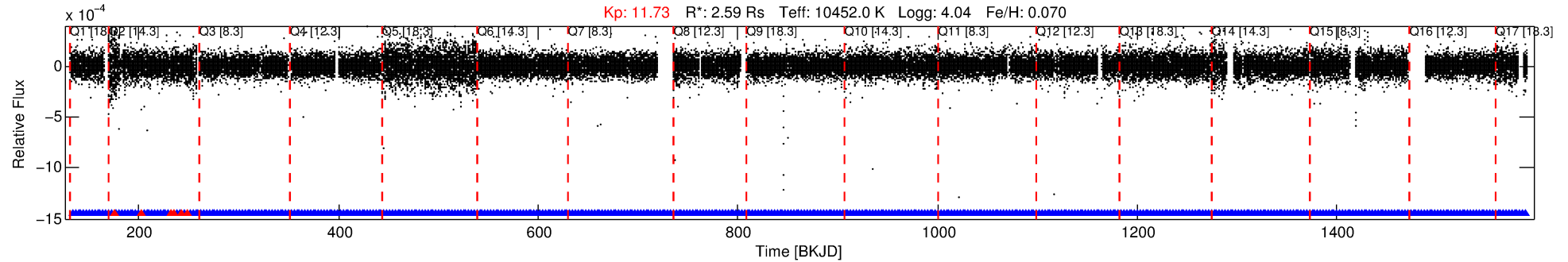
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009958053-02

No Significant Match Found

# DV One-Page Summary

KIC: 9958053 Candidate: 2 of 7 Period: 2.734 d  
KOI: K07263 Corr: No Ephemeris Match



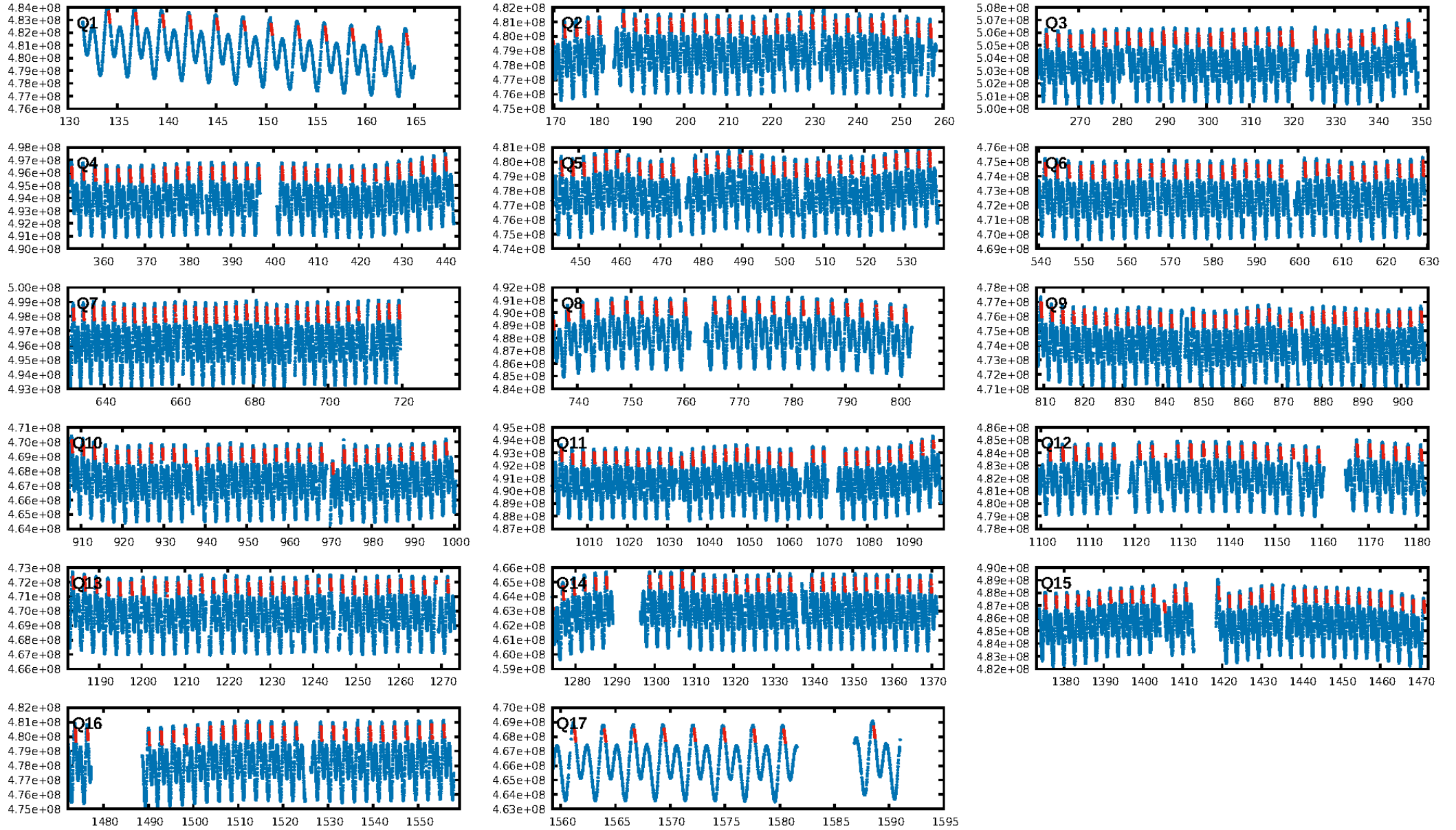
## DV Fit Results:

Period = 2.73398 [0.00001] d  
Epoch = 134.1702 [0.0012] BKJD  
Rp/R\* = 0.0068 [0.0008]  
a/R\* = 5.31 [5.07]  
b = 0.90 [0.20]  
Seff = 25380.45 [11325.32]  
Teq = 3218 [359] K  
Rp = 1.92 [0.66] Re  
a = 0.0532 [0.0149] AU  
Ag = 8.73 [4.29] [1.80σ]  
Teffp = 8552 [666] K [7.05σ]

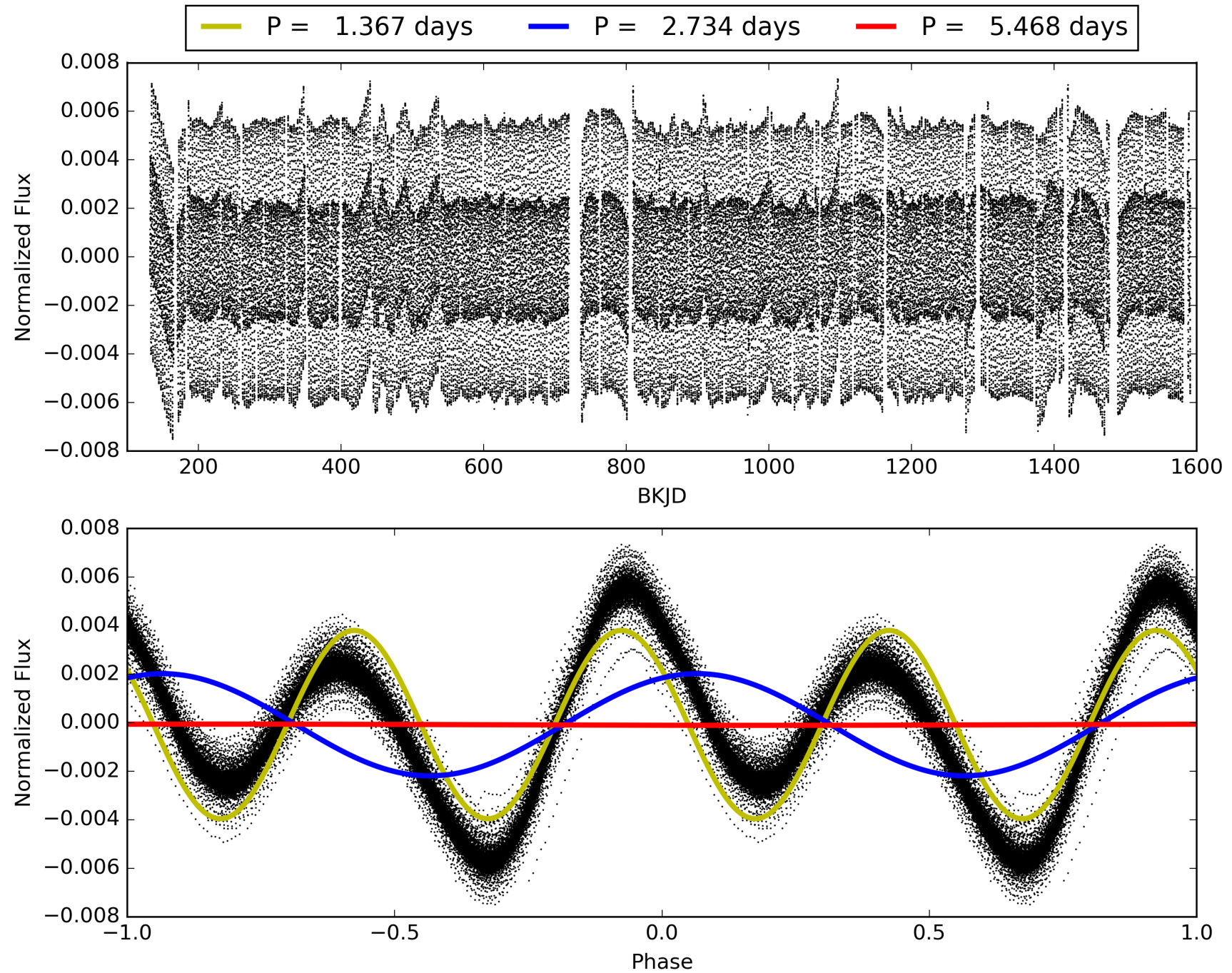
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 100.0% [158.28σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [459/465]  
GhostDiagnostic-chr: 2.338  
Centroid-sig: 0.0%  
Centroid-so: 1.845 arcsec [2.65σ]  
OotOffset-rm: 0.080 arcsec [0.86σ]  
KicOffset-rm: 0.057 arcsec [0.49σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.35 [6/17]

# TCE 009958053-02, PDC Light Curves



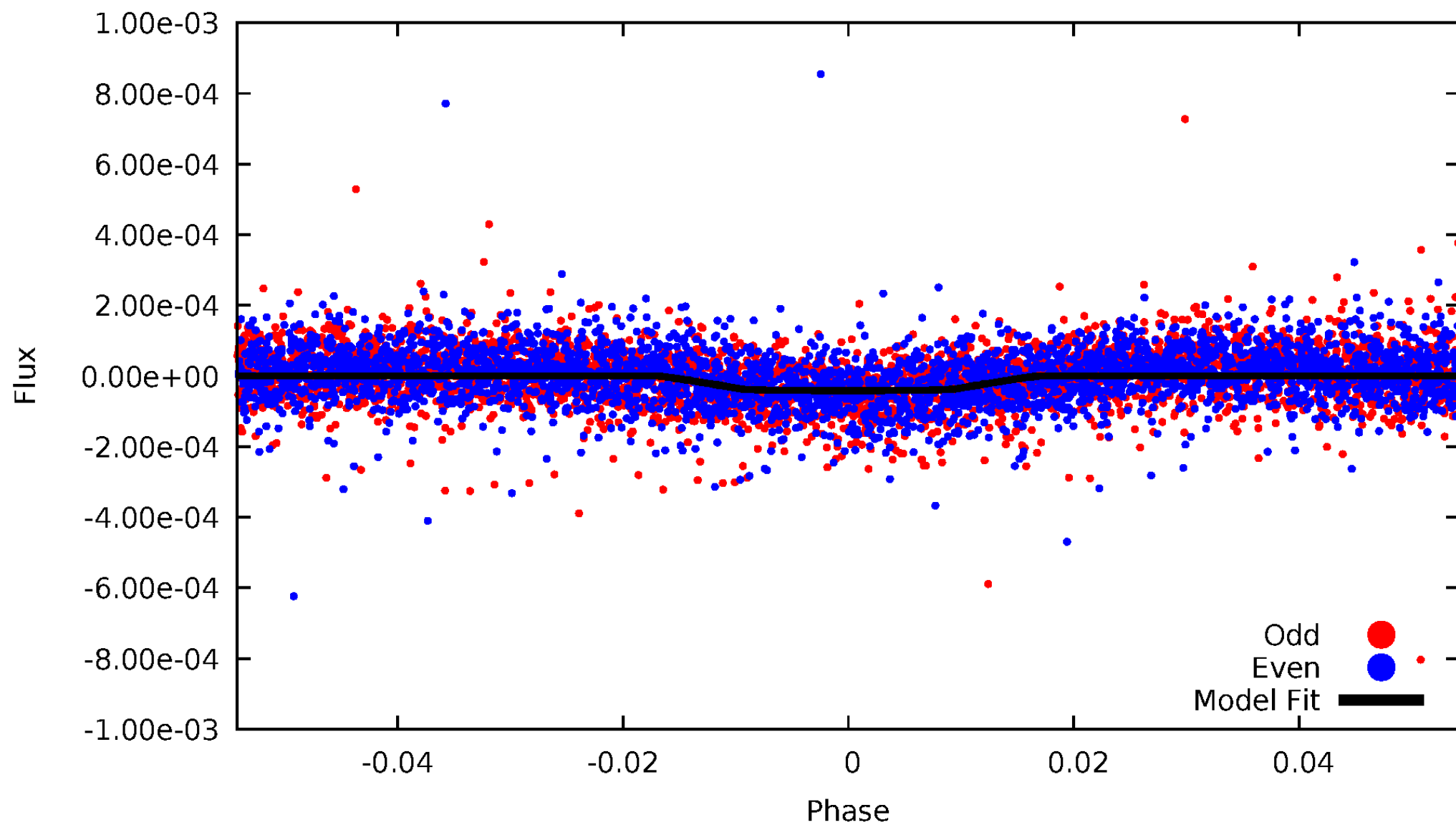
TCE 009958053-02





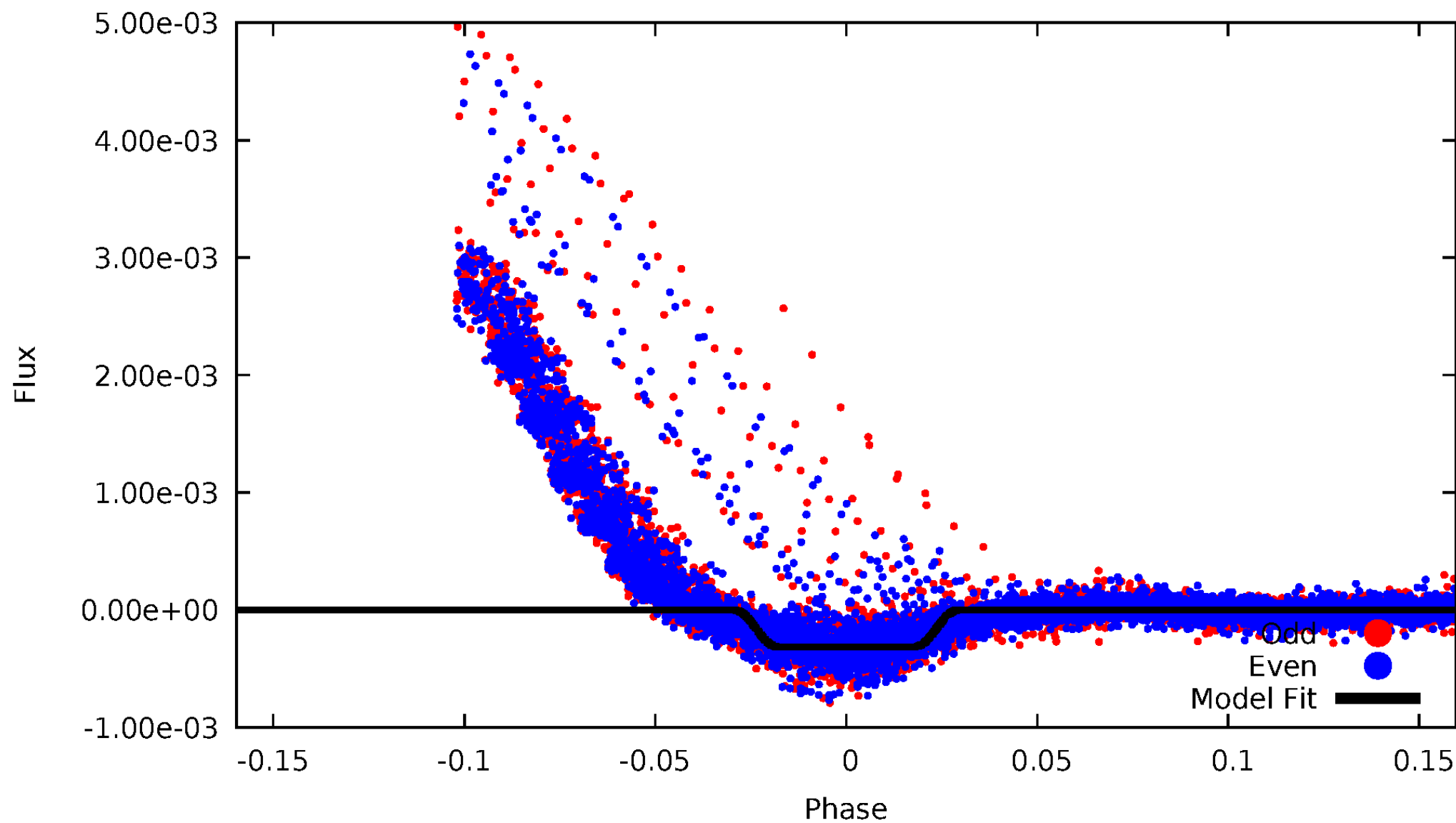
# DV Odd/Even

TCE 009958053-02



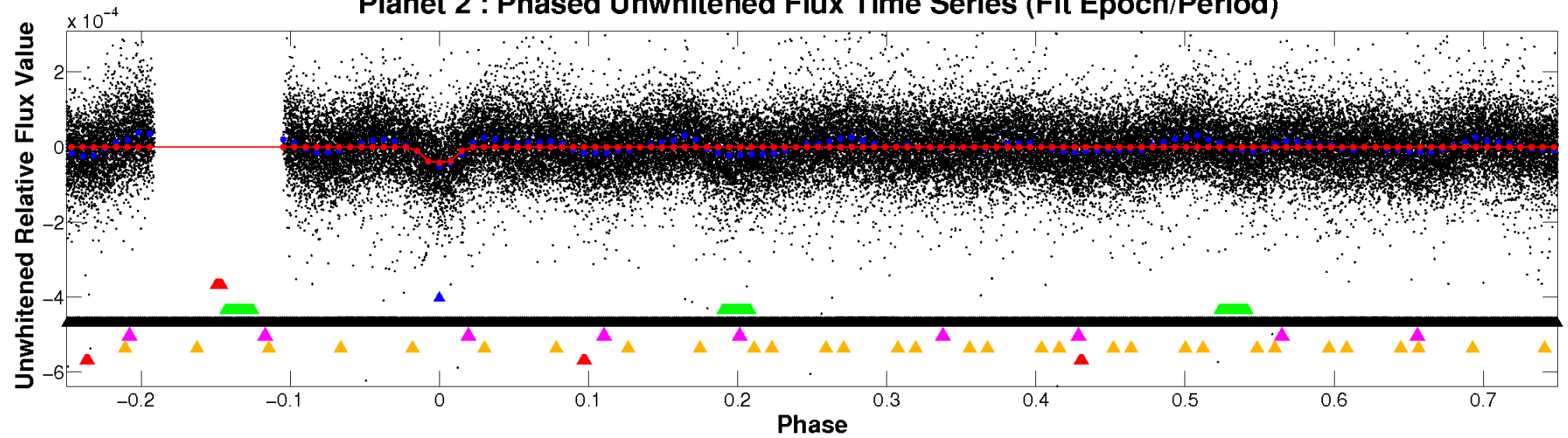
# ALT Odd/Even

TCE 009958053-02

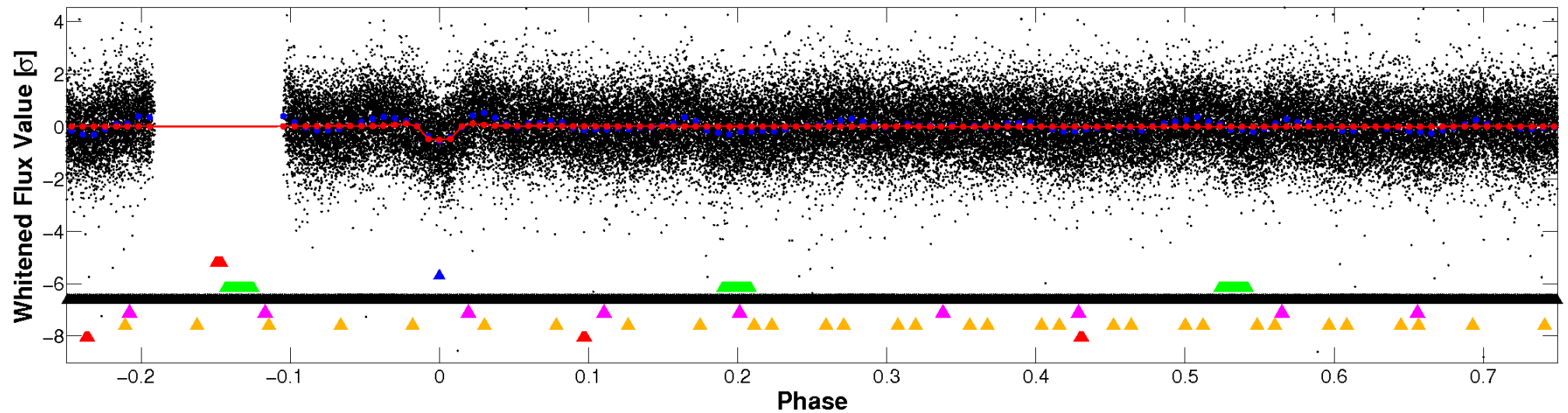


# Non-Whitened Vs. Whitened Light Curve

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



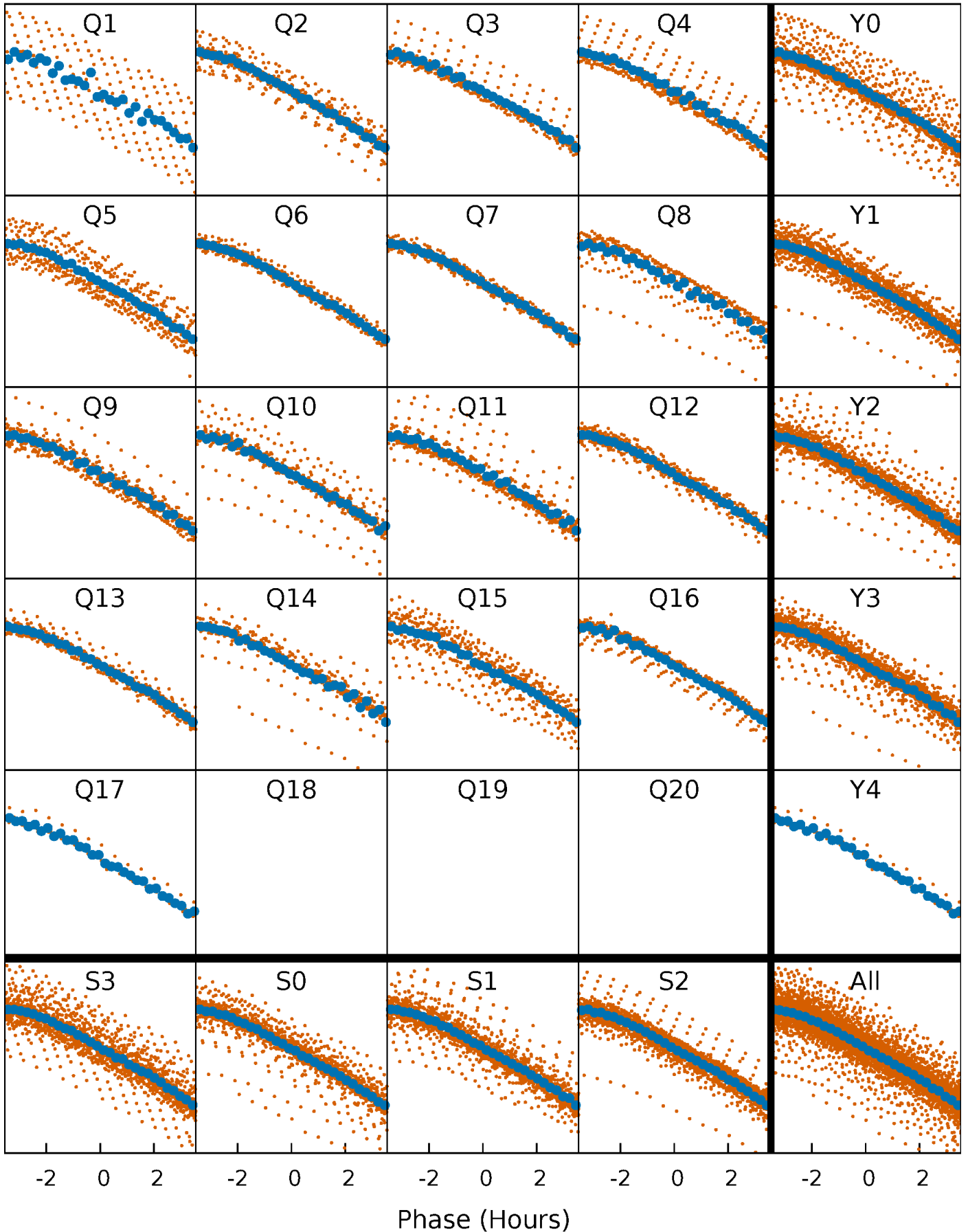
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





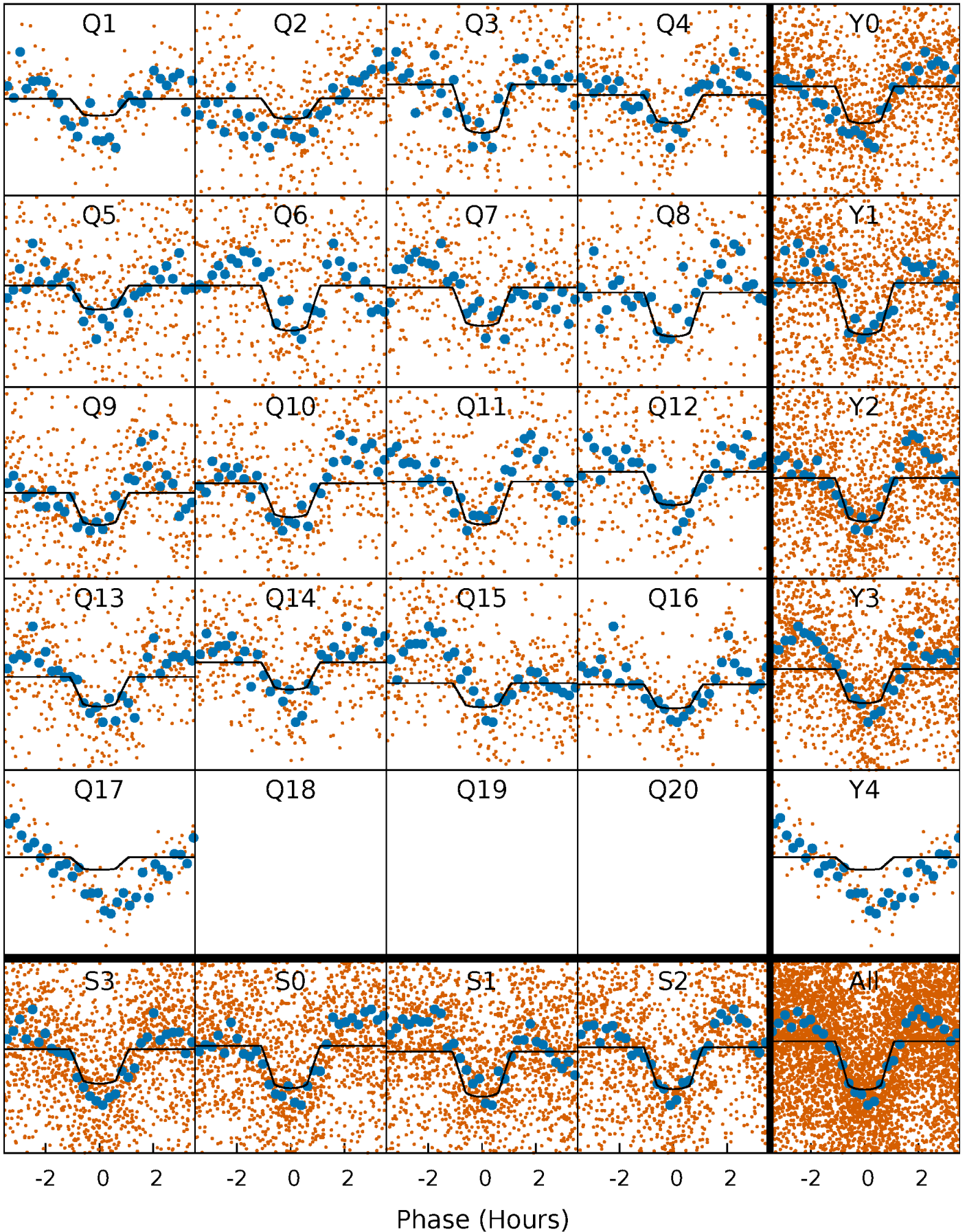
# PDC Quarter-Phased Transit Curves

TCE 009958053-02     $P = 2.733982$  Days     $T_0 = 134.170197$  (BKJD)



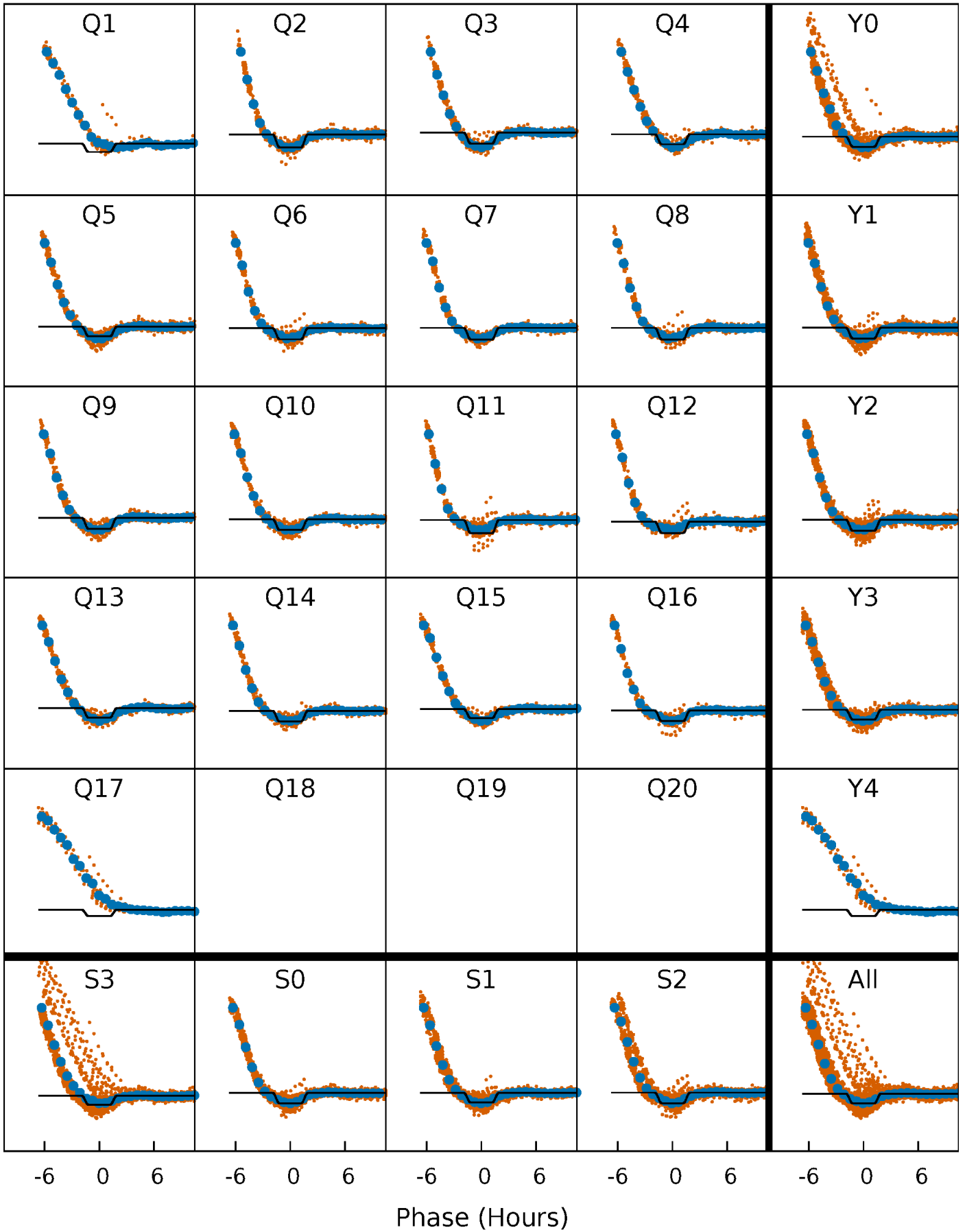
# DV Quarter-Phased Transit Curves

TCE 009958053-02 P= 2.733982 Days  $T_0=134.170197$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

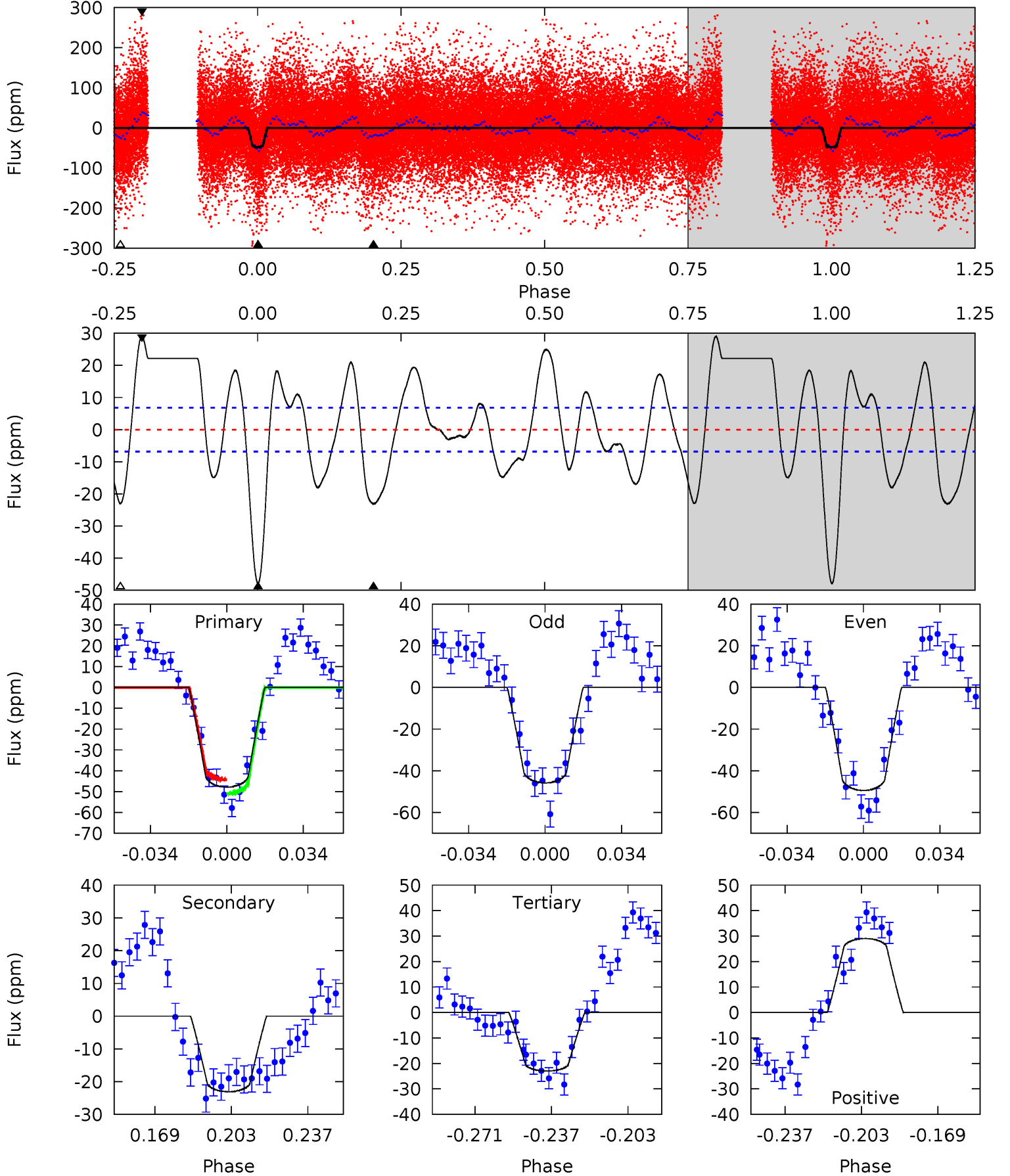
TCE 009958053-02   P= 2.734000 Days    $T_0=134.153885$  (BKJD)



# DV Model-Shift Uniqueness Test

009958053-02, P = 2.733982 Days, E = 131.436215 Days

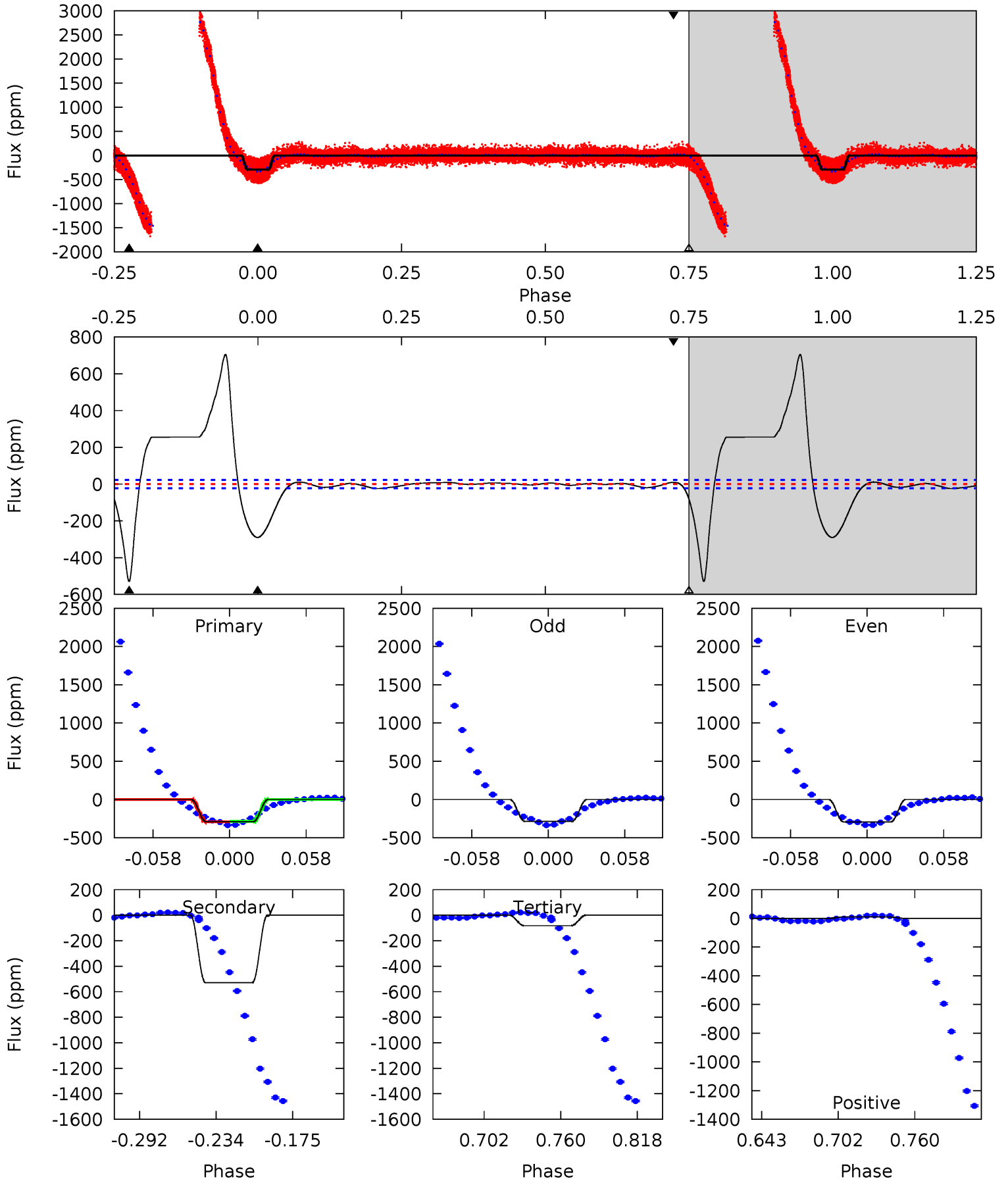
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.5	16.2	16.1	20.3	4.79	2.12	8.33	17.4	13.2	0.07	-4.15	1.28	1.09	0.38	2.31



# Alt Model-Shift Uniqueness Test

009958053-02, P = 2.734000 Days, E = 131.419885 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
59.9	109.3	16.9	2.03	4.68	1.89	15.9	42.9	57.8	92.3	107.2	0.76	0.92	0.57	2.57



### Stellar Parameters For KIC 009958053

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10452^{+286}_{-429}$	$4.040^{+0.231}_{-0.189}$	$0.070^{+0.150}_{-0.550}$	$2.593^{+0.838}_{-0.838}$	$2.691^{+0.354}_{-0.658}$	$0.217^{+0.372}_{-0.104}$
	+3%/-4%	+6%/-5%	+214%/-786%	+32%/-32%	+13%/-24%	+171%/-48%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009958053-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-23 \pm 1$	$1.89^{+0.43}_{-0.36}$	$4472^{+361}_{-395}$	$8073^{+814}_{-588}$	$9.996^{+4.804}_{-3.420}$
Alt.	$-529 \pm 5$	$4.95^{+0.88}_{-0.91}$	$4450^{+387}_{-386}$	$12776^{+761}_{-662}$	$33^{+14}_{-9}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature  
 $T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )  
 $A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

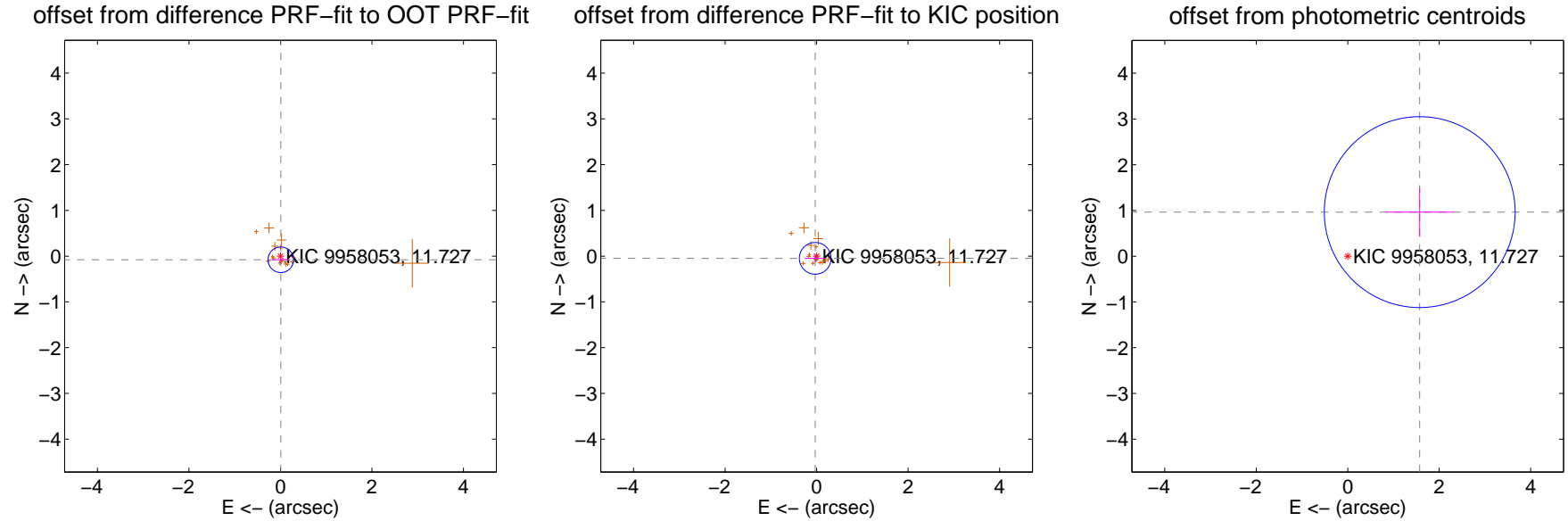
## DV Centroid Data

Supplemental centroid analysis for 009958053-02. **Kepler magnitude: 11.73.** Transit SNR 19.46

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

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

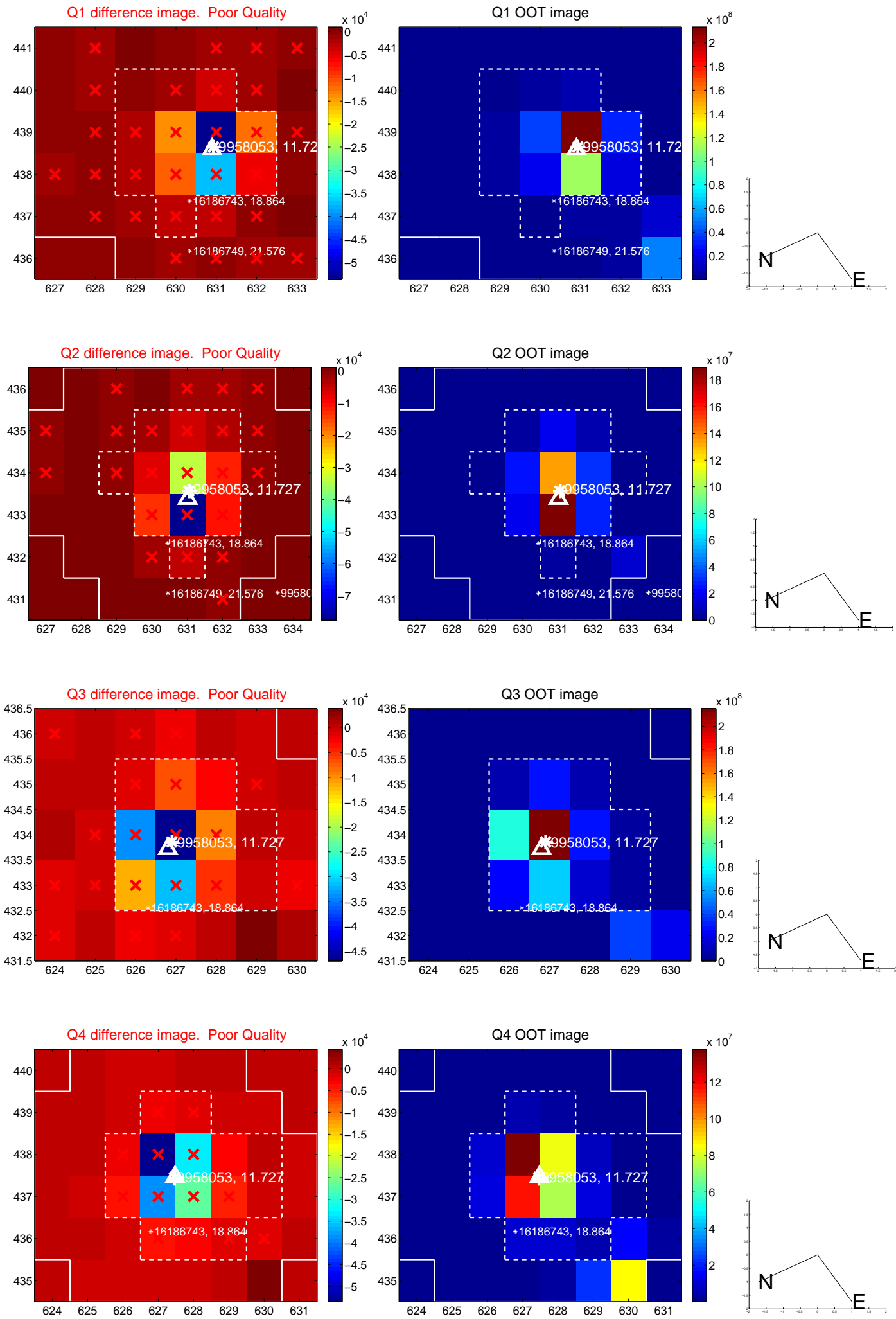
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.080 \pm 0.093$	0.86	$-0.008 \pm 0.188$	$-0.079 \pm 0.088$
PRF-fit source offset from KIC position	$0.057 \pm 0.116$	0.49	$0.030 \pm 0.196$	$-0.049 \pm 0.089$
photometric centroid source offset	$1.85 \pm 0.70$	2.65	$-1.57 \pm 0.75$	$0.96 \pm 0.53$



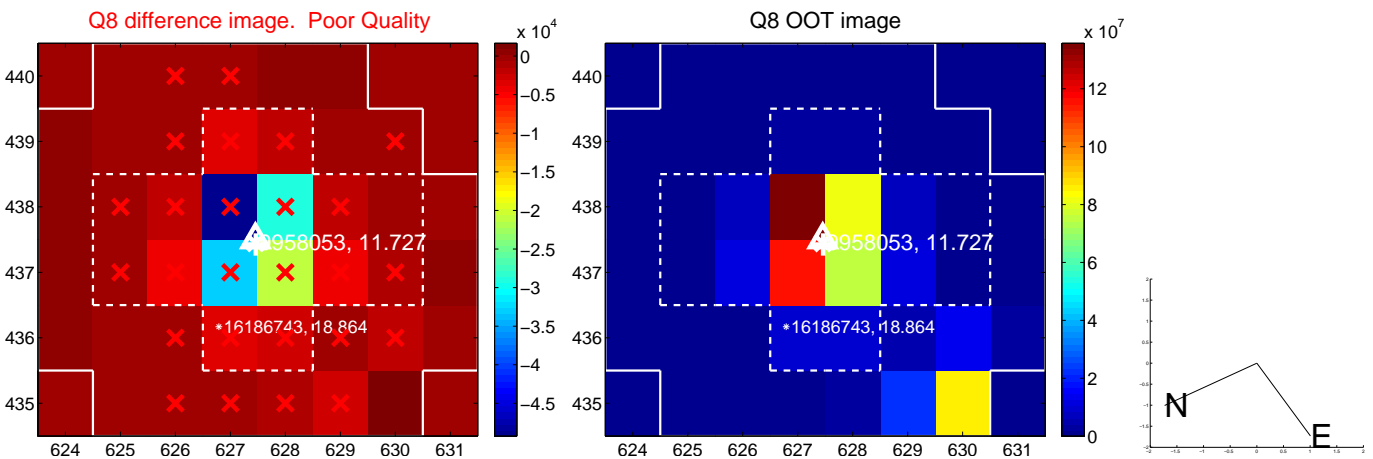
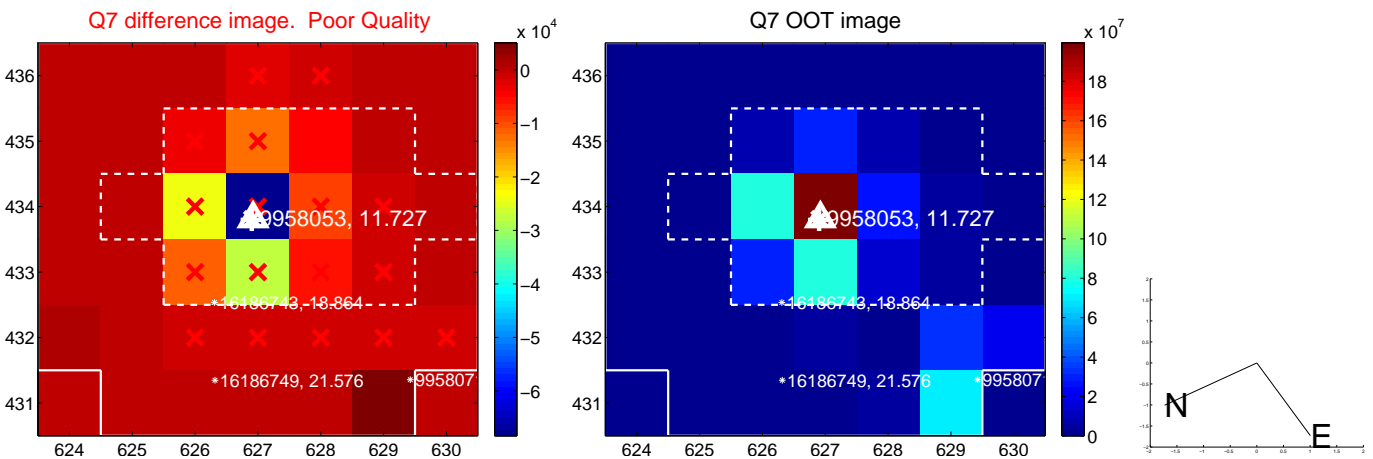
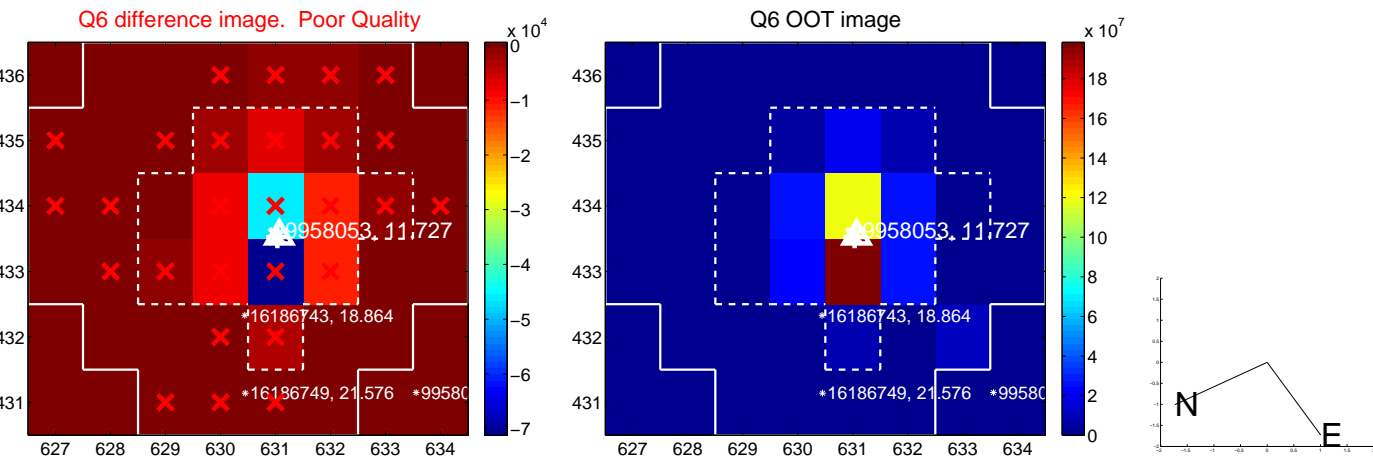
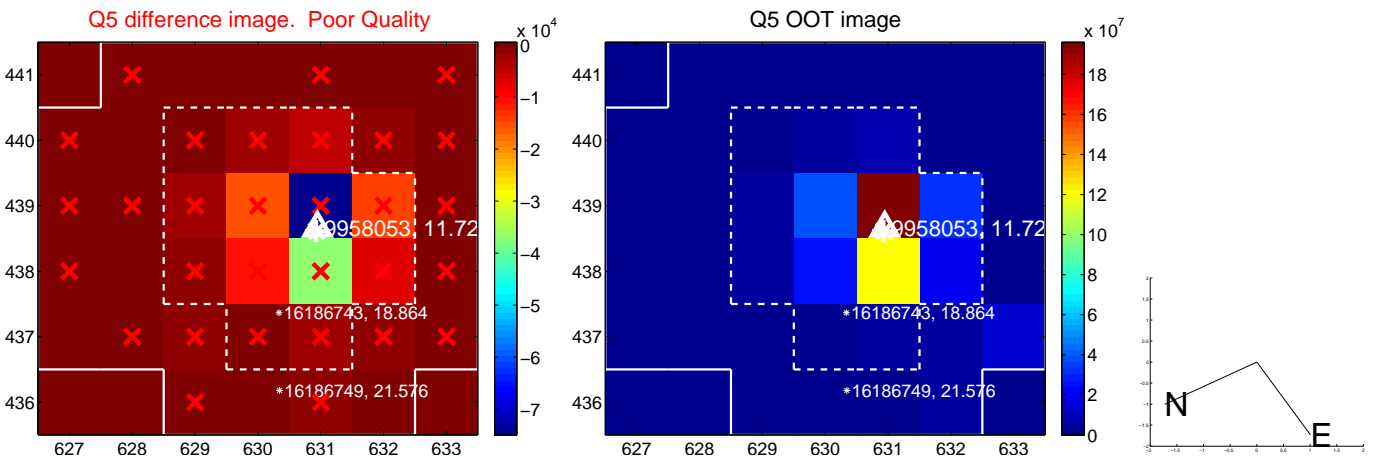
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



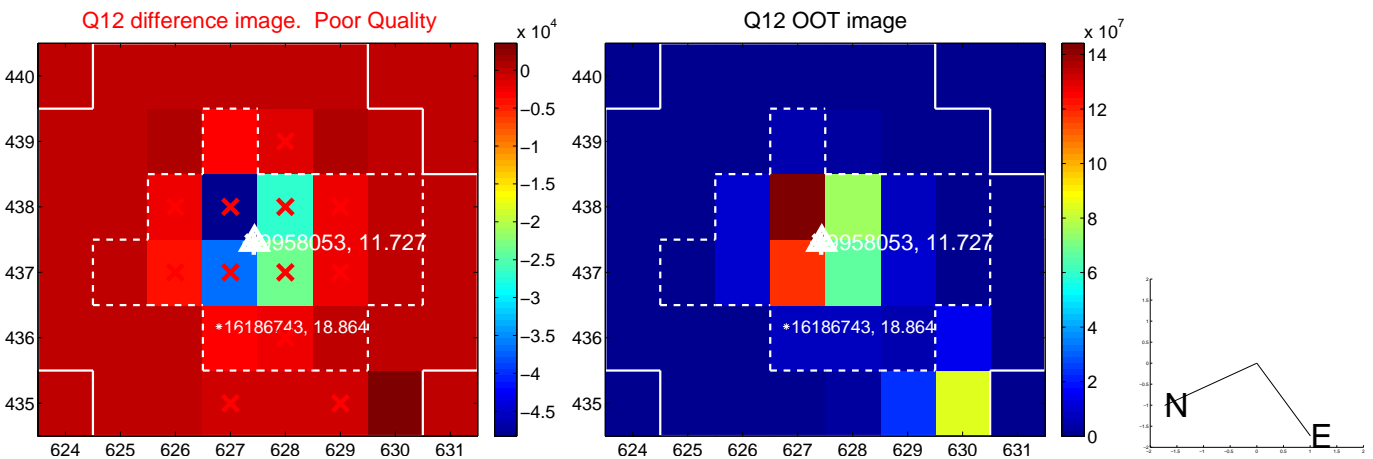
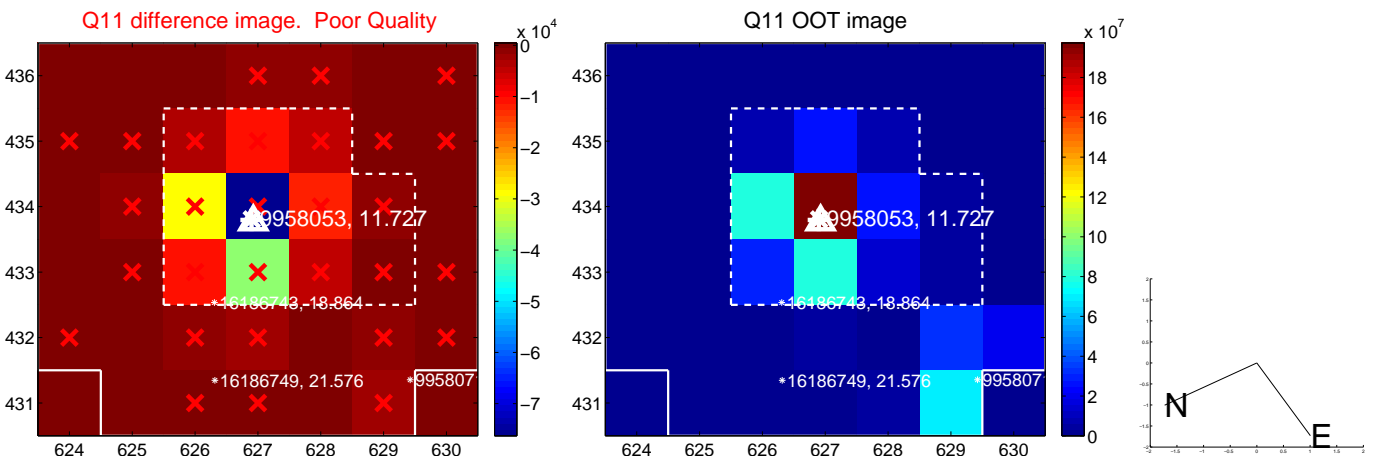
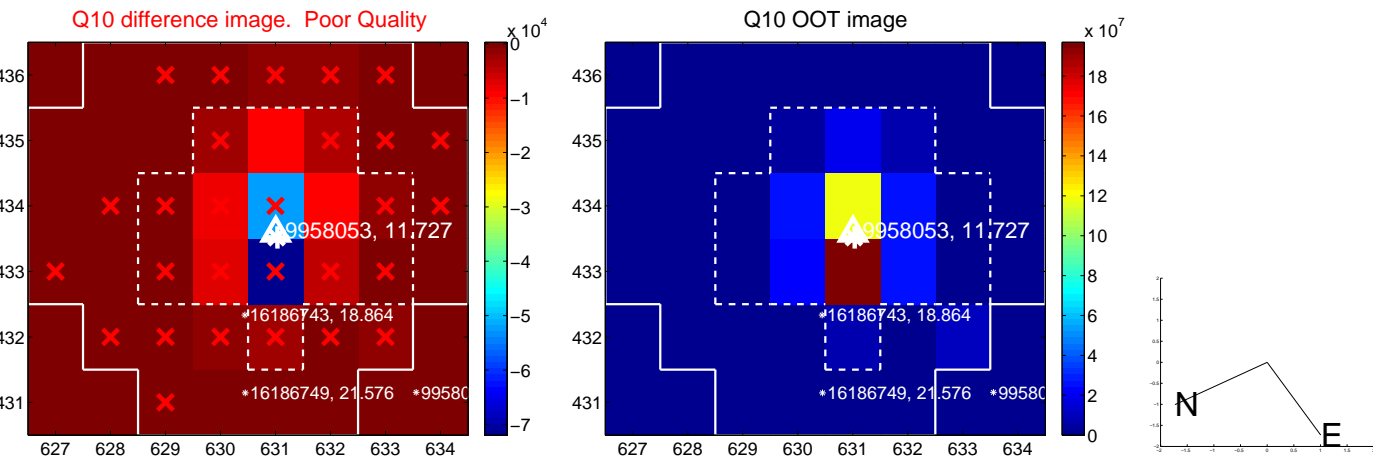
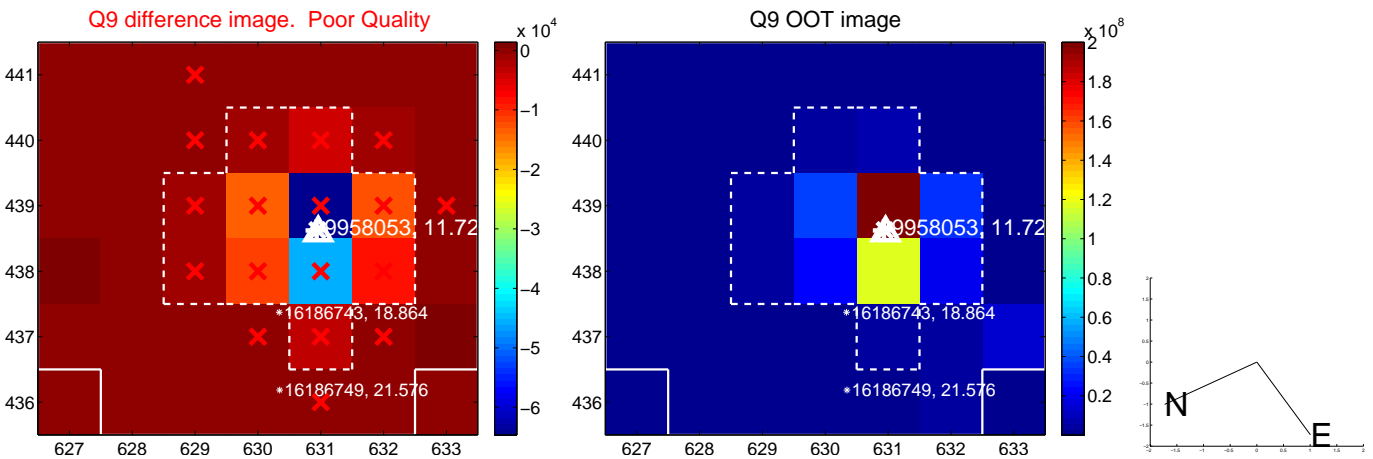
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



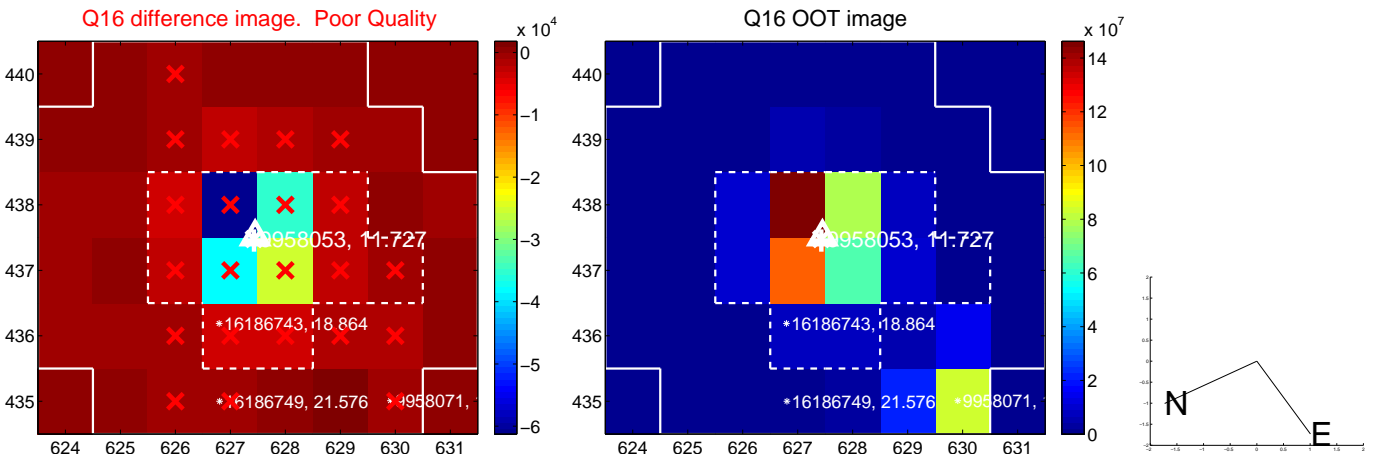
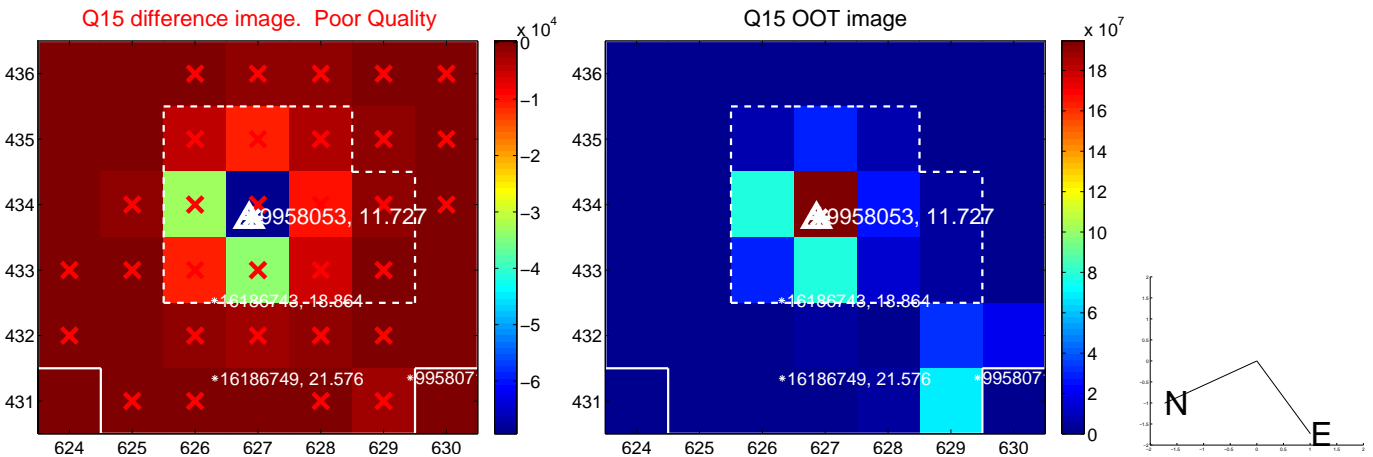
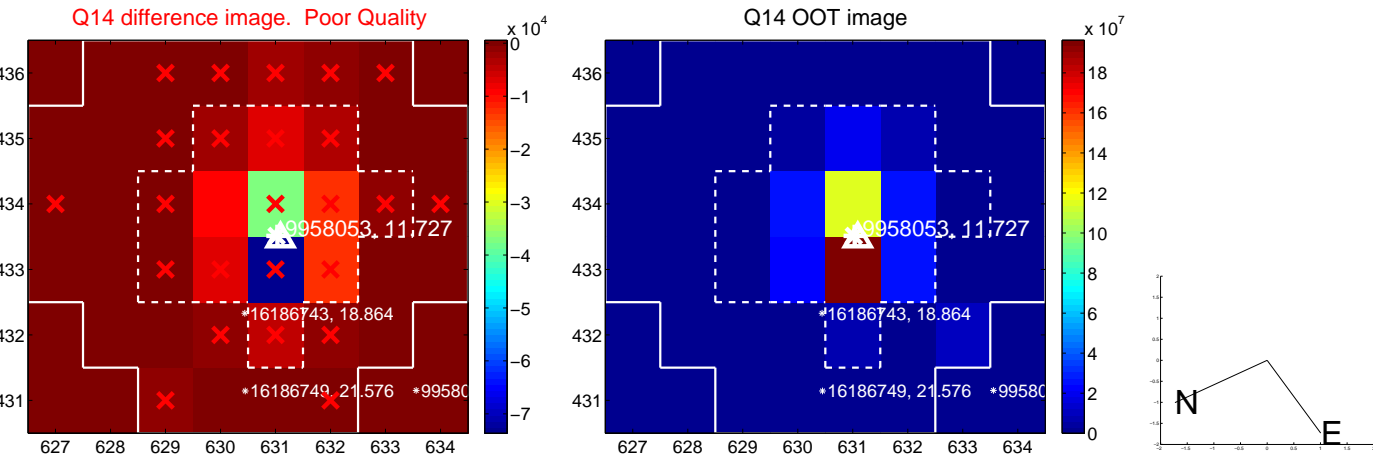
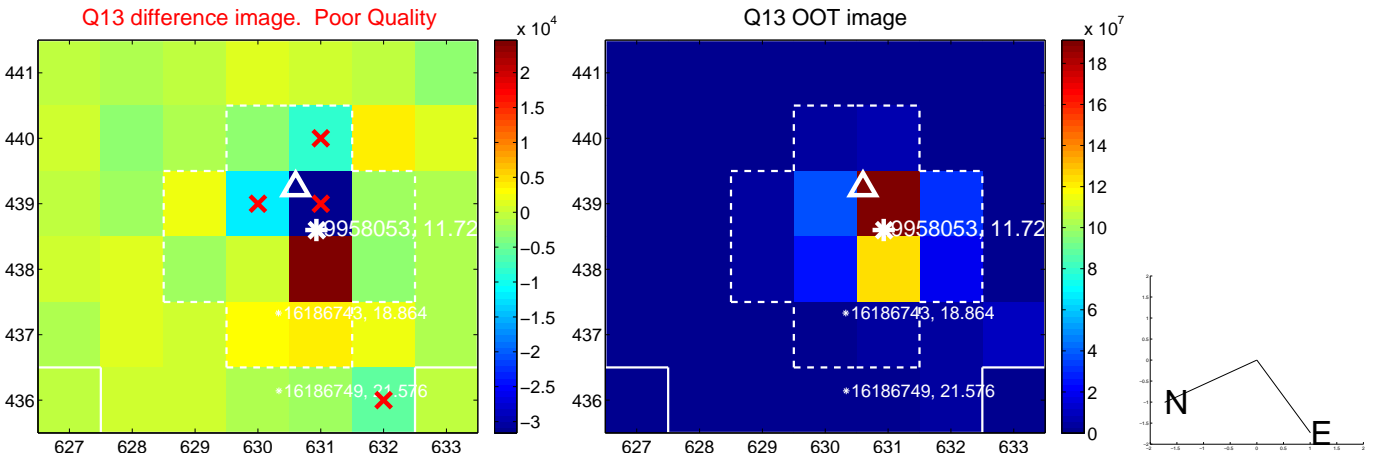
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



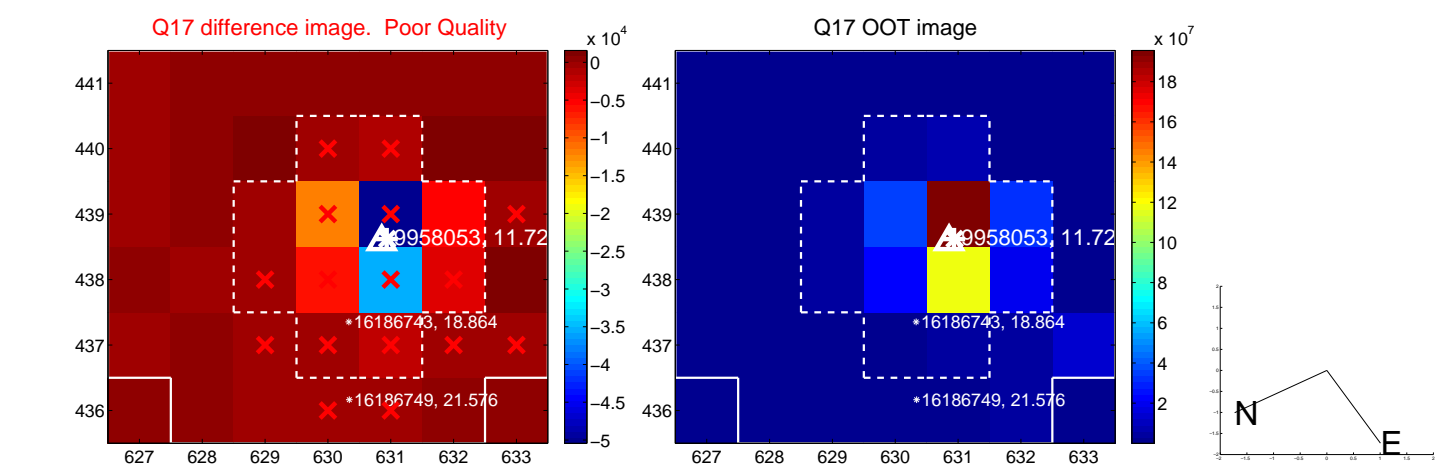
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



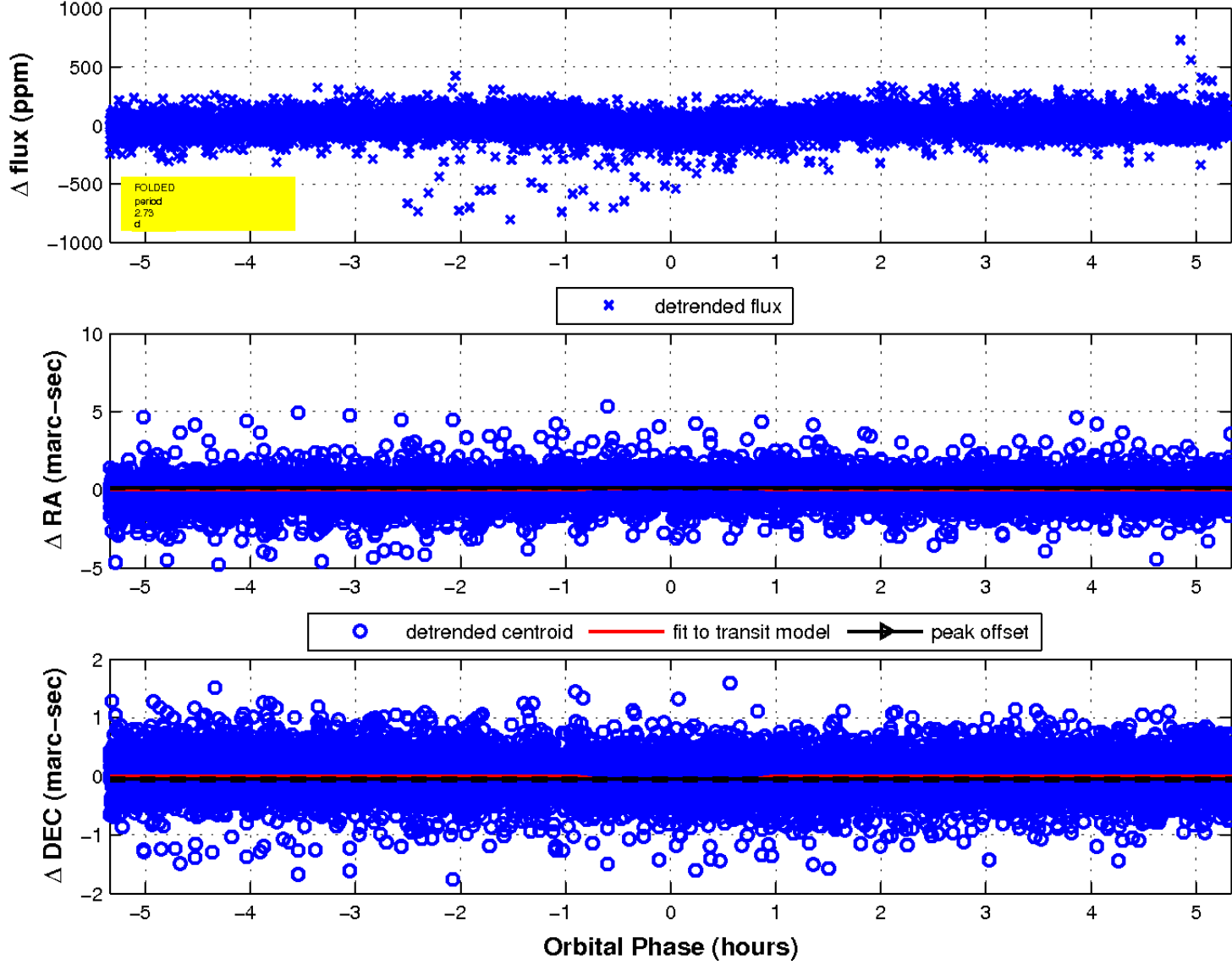
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

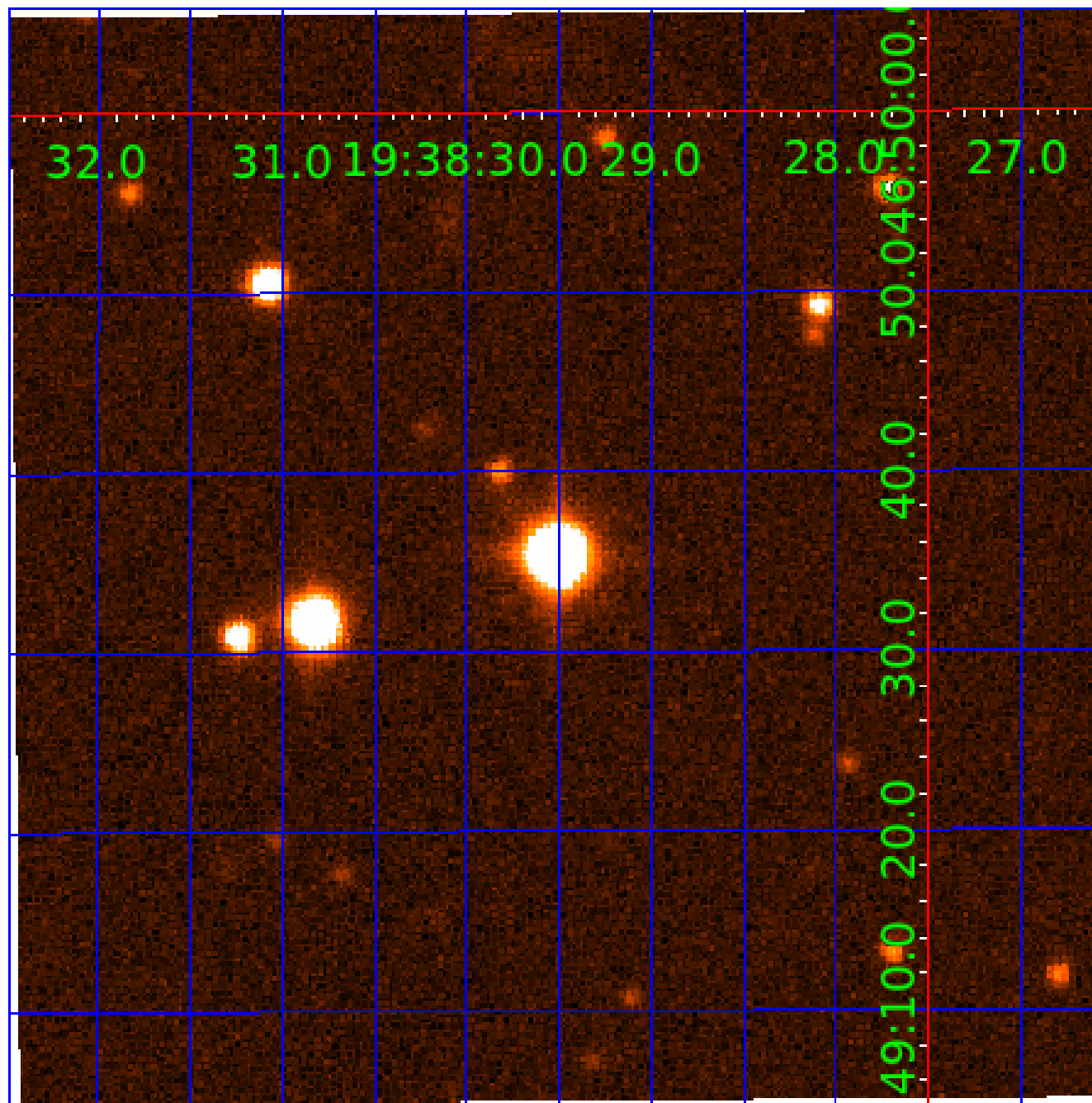


fluxWeightedCentroids, Planet 2 of 7



UKIRT Image

Declination





# KIC 009958053

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009958053-01	OBS	7263.01	2.733960	133.772200	60.1	1.800	26.6	27.3	2.59	10452	2.31	25380.73
009958053-02	OBS	No	2.733982	134.170197	41.7	1.779	17.5	19.5	2.59	10452	1.92	25380.45
009958053-03	OBS	No	0.911295	132.006934	13.5	2.952	13.9	10.2	2.59	10452	1.09	109820.04
009958053-04	OBS	No	0.910122	132.268885	0.1	5.106	10.7	0.1	2.59	10452	0.10	110008.76
009958053-05	OBS	No	167.394272	200.336363	171.2	6.173	11.2	8.8	2.59	10452	3.55	105.17
009958053-06	OBS	No	46.345964	171.507242	79.5	6.369	10.1	6.6	2.59	10452	2.39	582.83
009958053-07	OBS	No	0.911332	131.698494	150.1	1.500	10.3	-1.0	2.59	10452	3.27	109814.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009958053-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_FEW_DIFFS
009958053-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009958053-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009958053-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV
009958053-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES
009958053-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009958053-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

**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 009958053-03

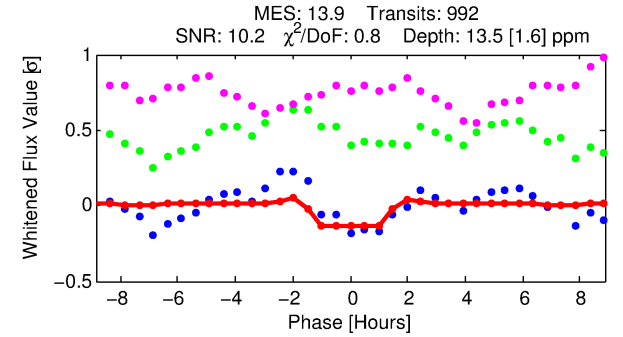
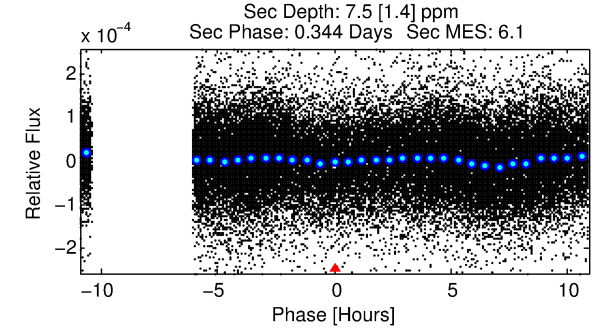
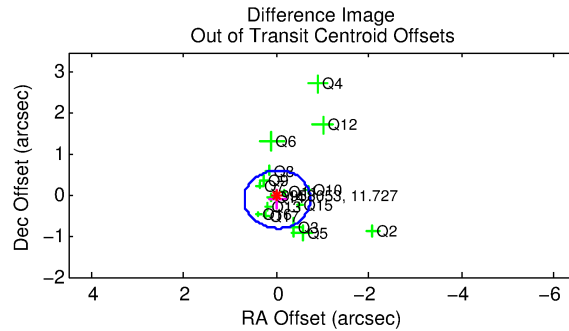
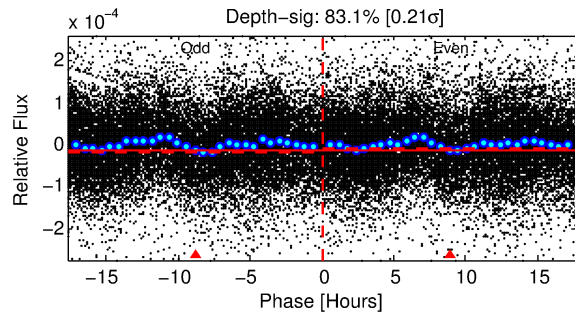
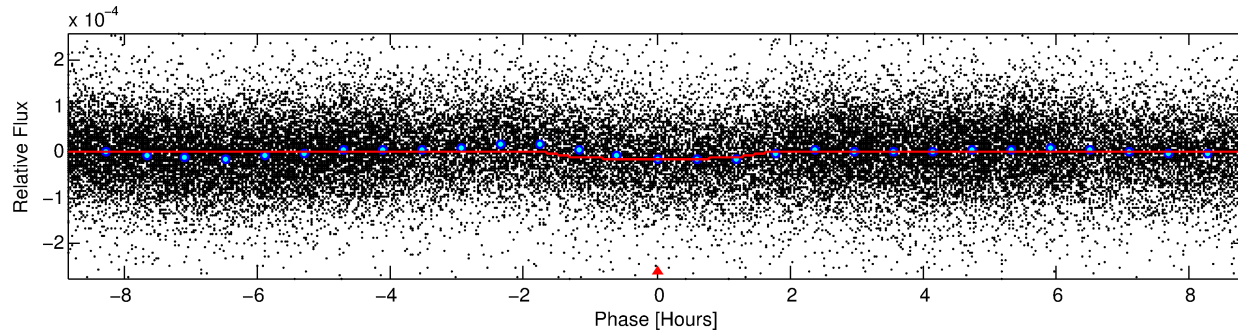
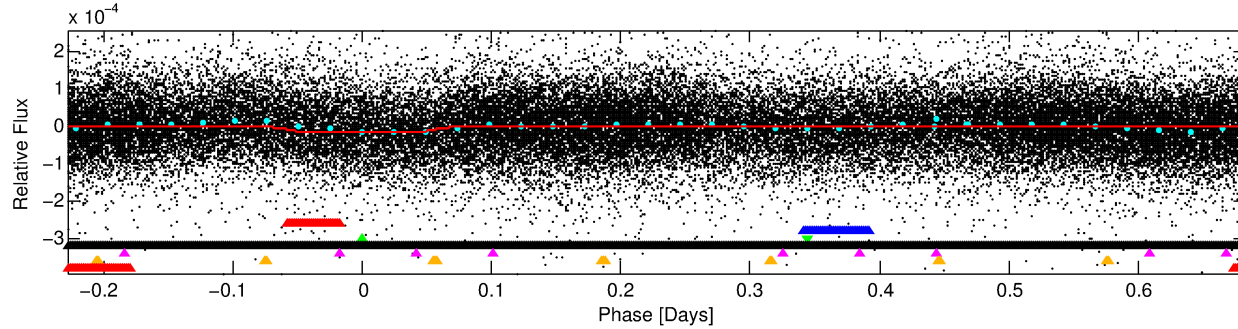
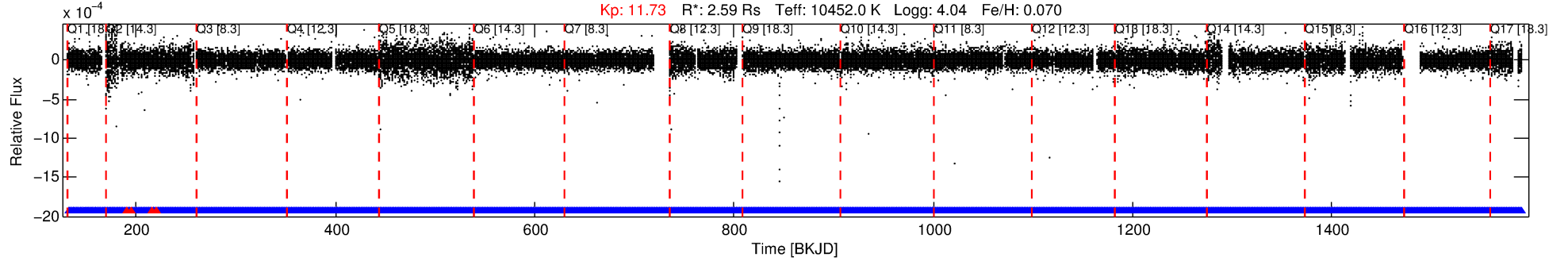
No Significant Match Found

# DV One-Page Summary

KIC: 9958053 Candidate: 3 of 7 Period: 0.911 d

KOI: K07263 Corr: No Ephemeris Match

Kp: 11.73 R\*: 2.59 Rs Teff: 10452.0 K Logg: 4.04 Fe/H: 0.070



## DV Fit Results:

Period = 0.91130 [0.00001] d  
Epoch = 132.0069 [0.0025] BKJD  
Rp/R\* = 0.0039 [0.0006]  
a/R\* = 1.40 [0.75]  
b = 0.90 [0.23]  
Seff = 109820.05 [49004.12]  
Teq = 4642 [518] K  
Rp = 1.09 [0.39] Re  
a = 0.0256 [0.0071] AU  
Ag = 2.27 [1.23] [1.04σ]  
Teffp = 8812 [845] K [4.21σ]

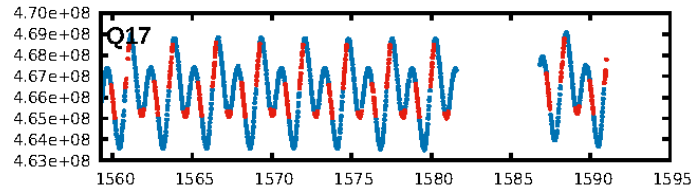
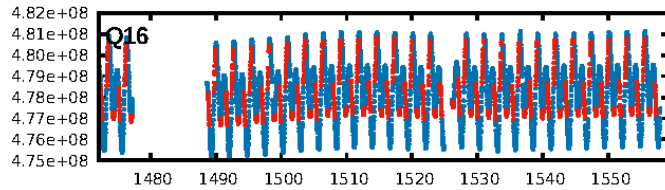
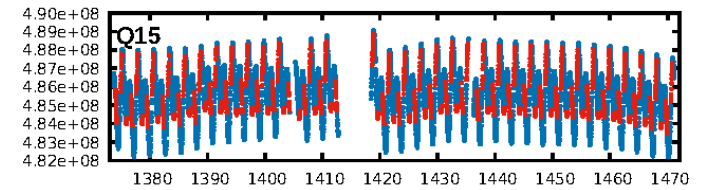
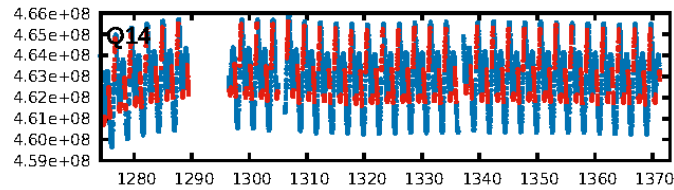
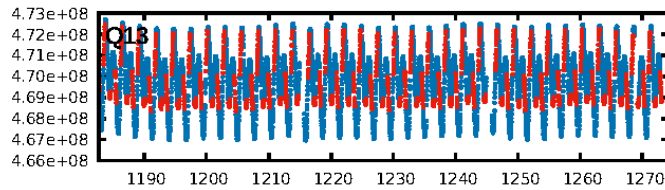
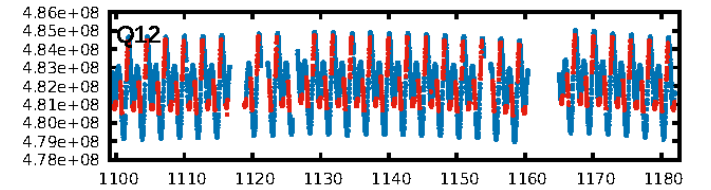
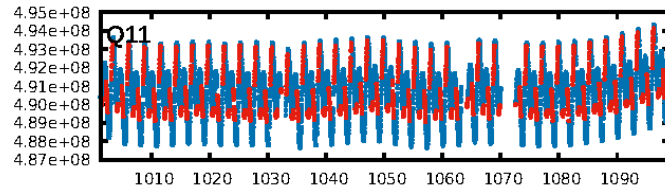
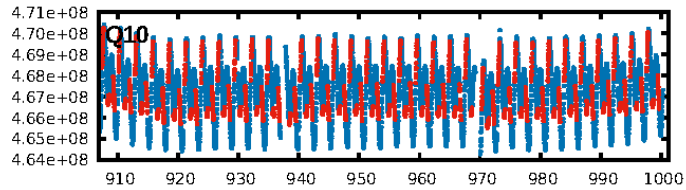
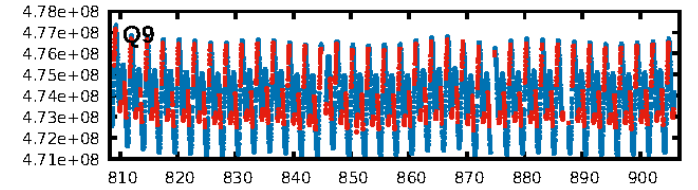
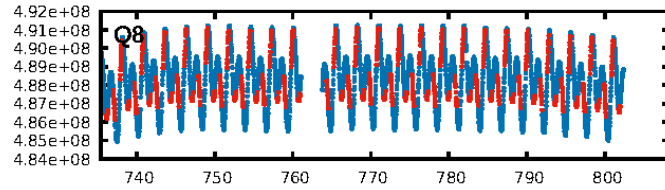
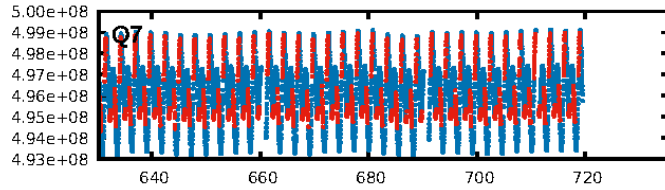
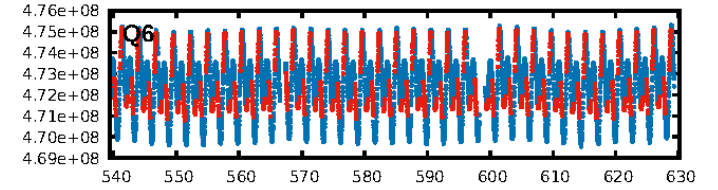
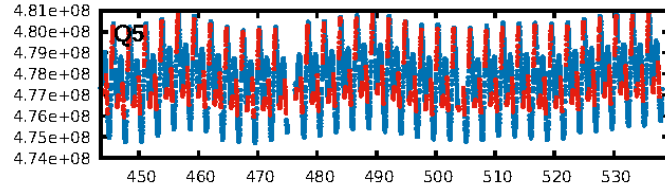
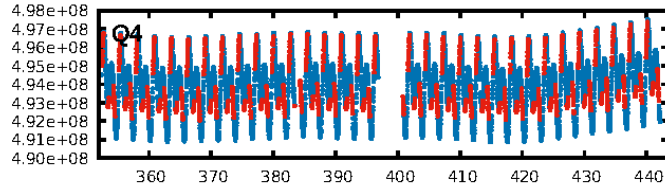
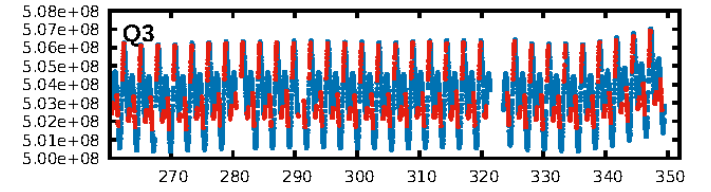
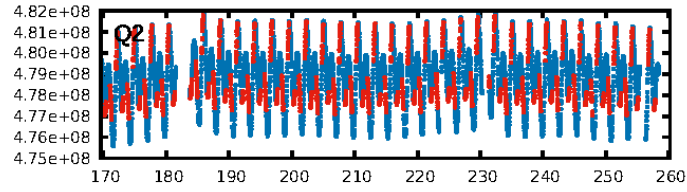
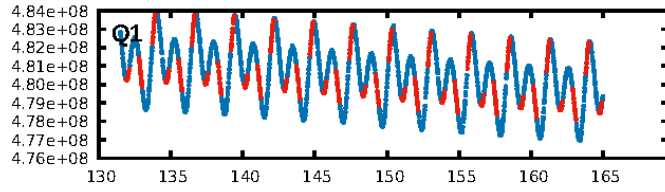
## DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.00σ]  
**LongPeriod-sig: 0.0% [0.00σ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [940/944]  
**GhostDiagnostic-chr: 0.8674**  
**Centroid-sig: 0.0%**  
**Centroid-so: 3.277 arcsec [3.26σ]**  
OotOffset-rm: 0.102 arcsec [0.43σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-rm: 0.088 arcsec [0.35σ]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:01:50 Z

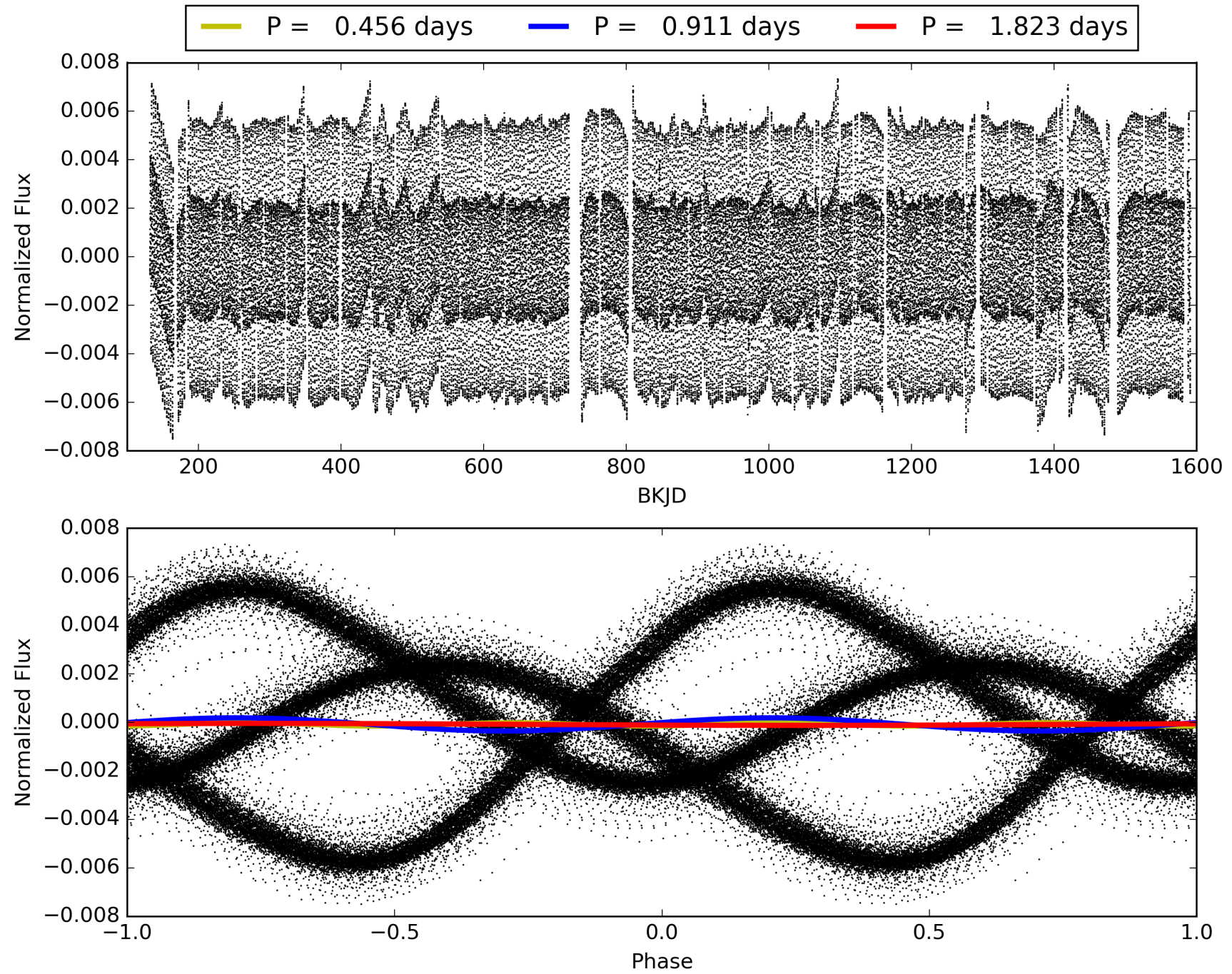
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009958053-03, PDC Light Curves



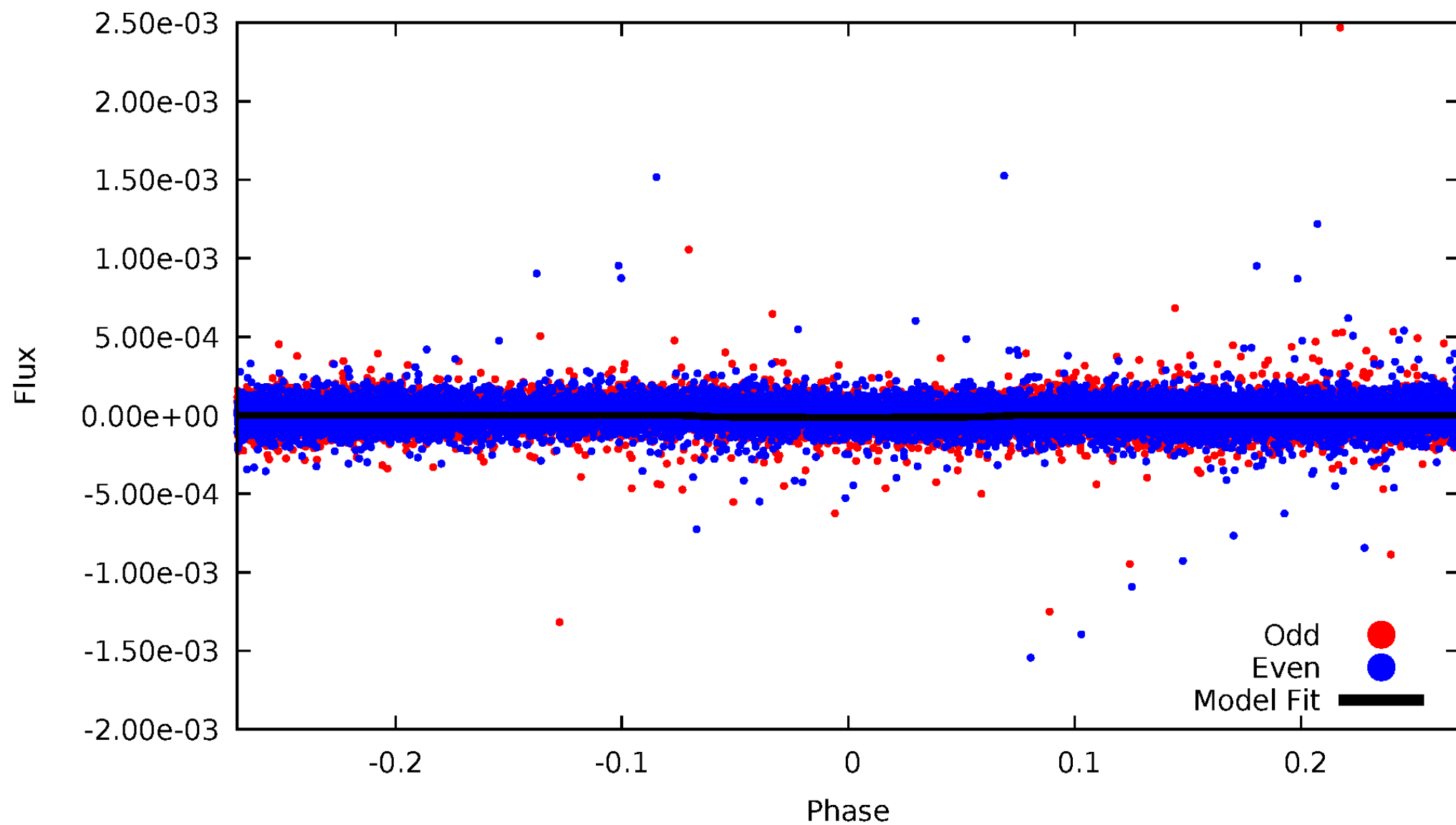


TCE 009958053-03



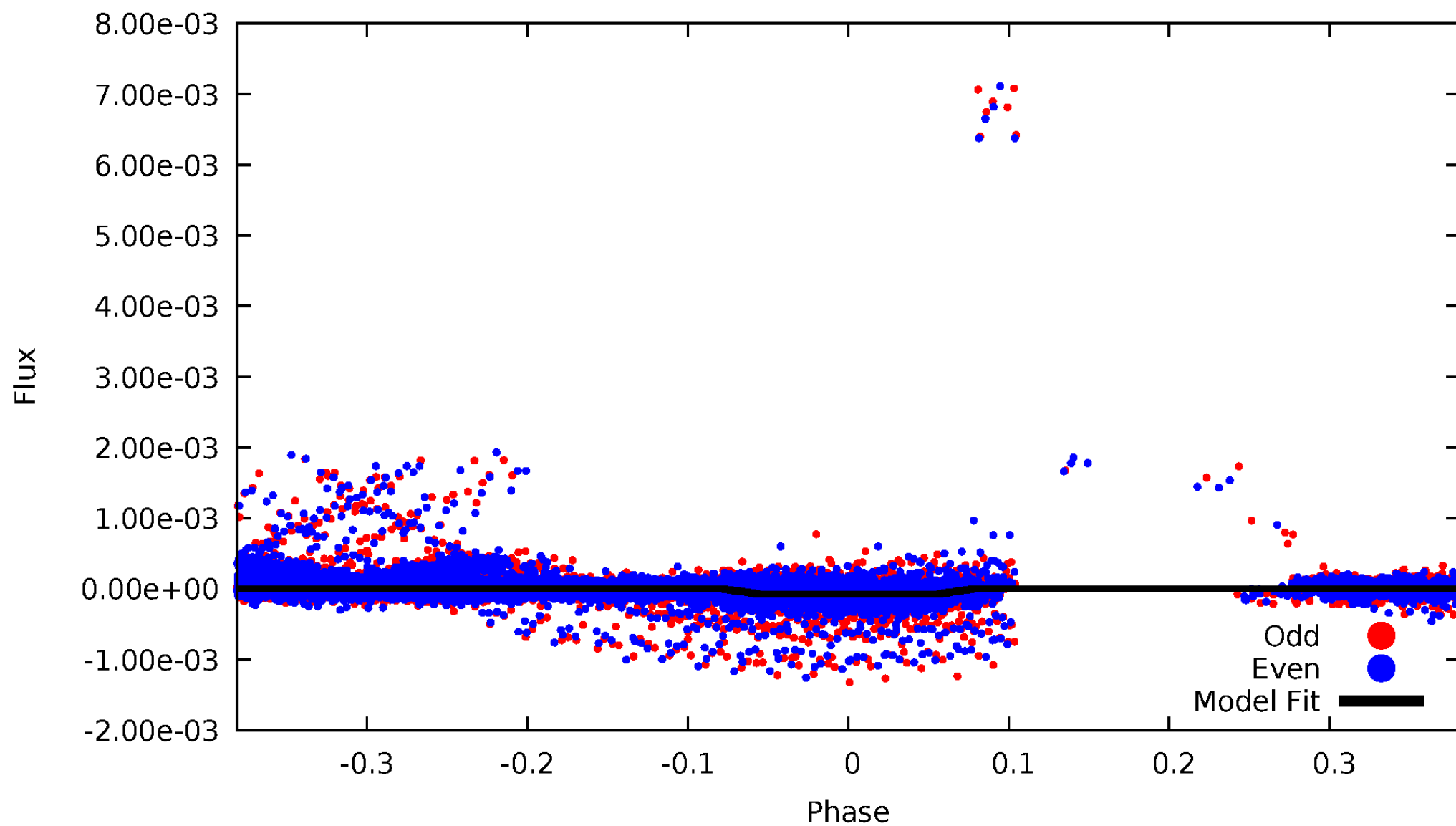
# DV Odd/Even

TCE 009958053-03



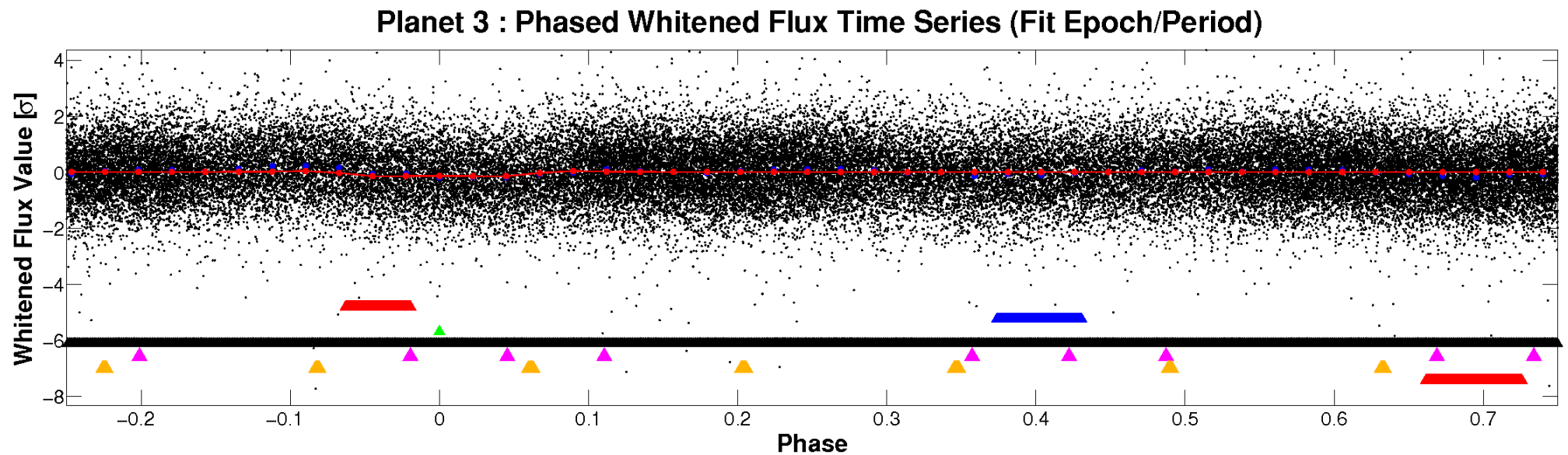
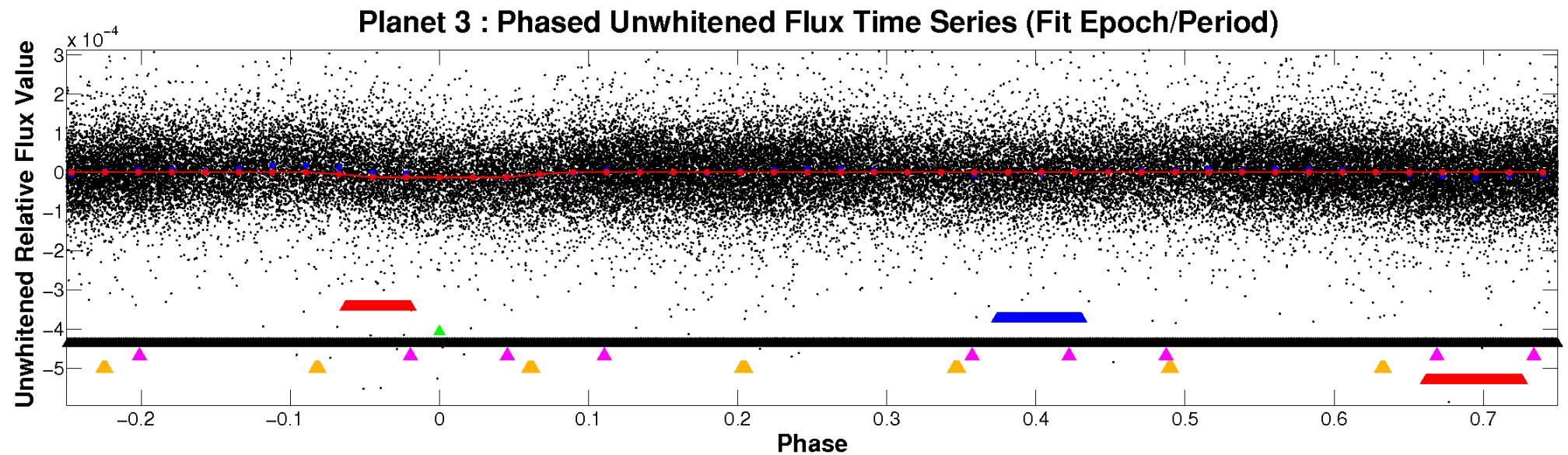
# ALT Odd/Even

TCE 009958053-03



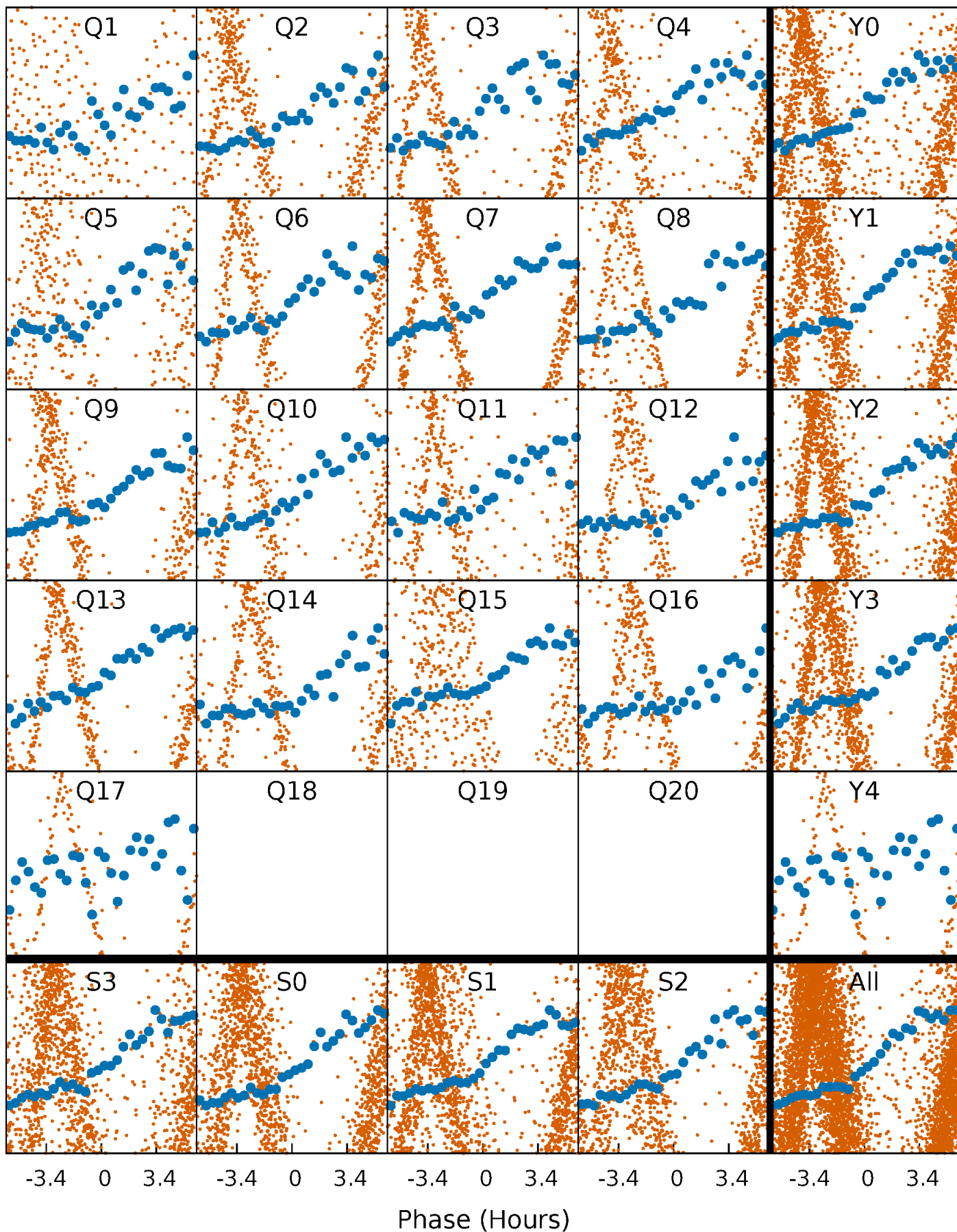


# Non-Whitened Vs. Whitened Light Curve



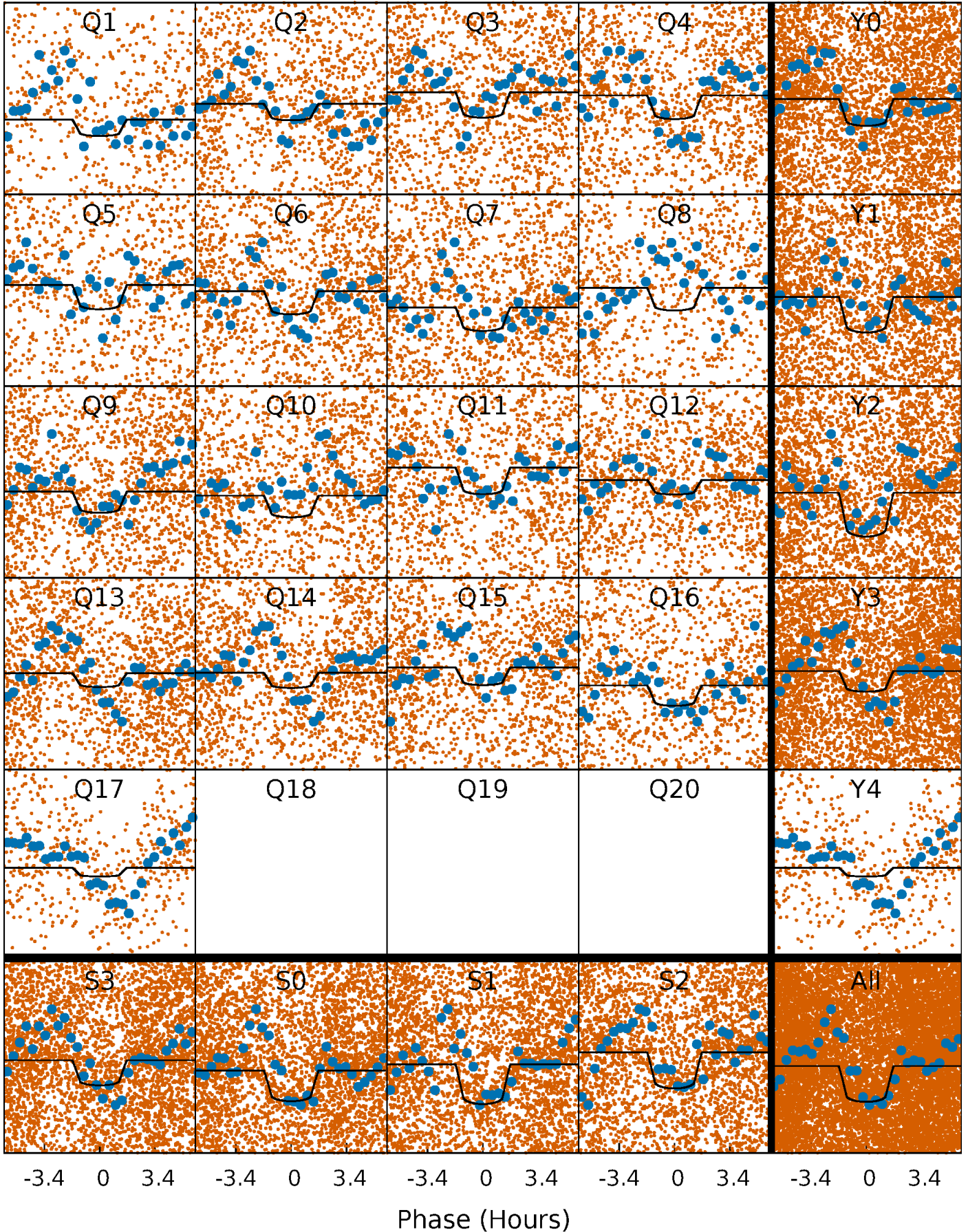
# PDC Quarter-Phased Transit Curves

TCE 009958053-03 P= 0.911295 Days  $T_0=132.006934$  (BKJD)



# DV Quarter-Phased Transit Curves

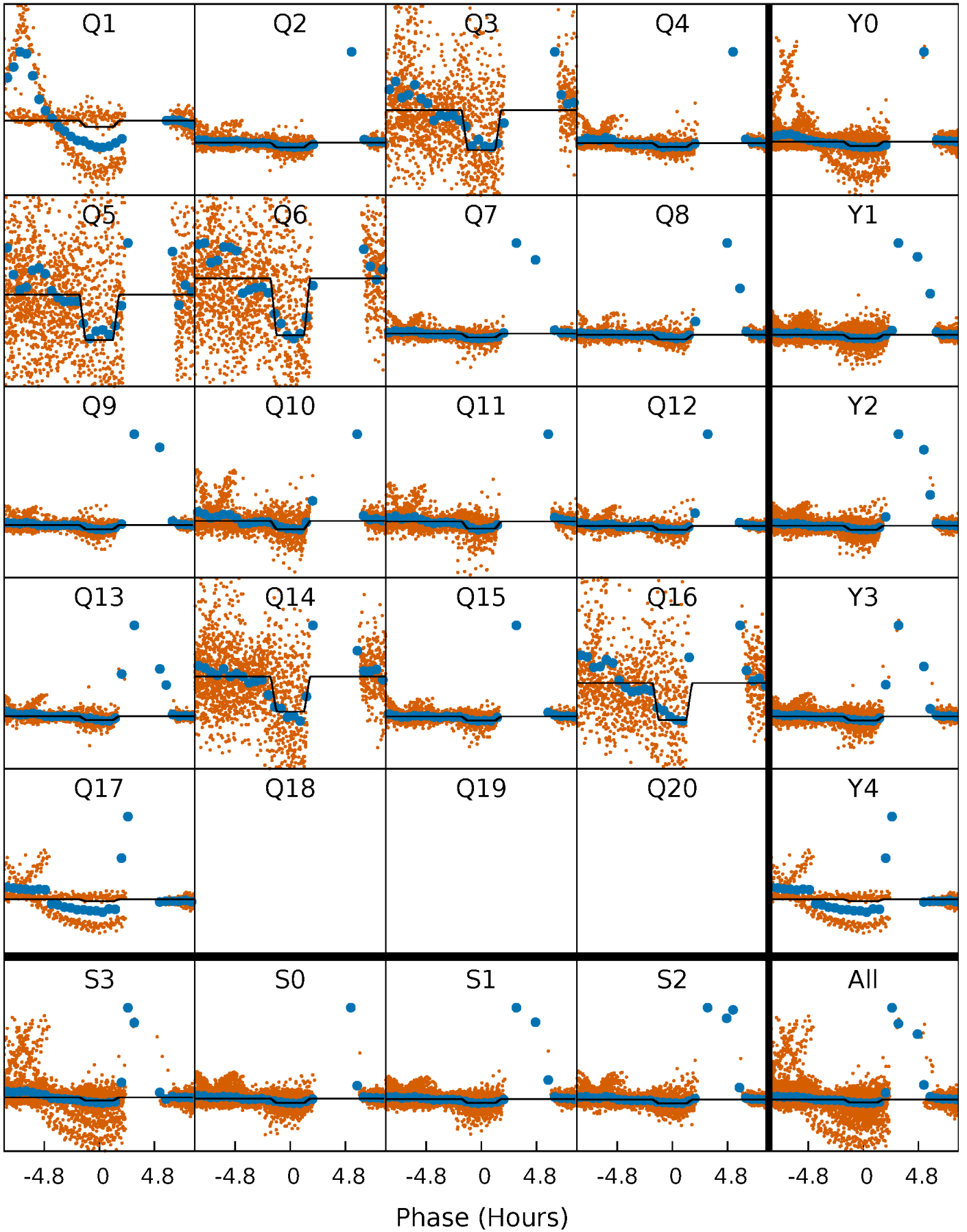
TCE 009958053-03 P= 0.911295 Days  $T_0=132.006934$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

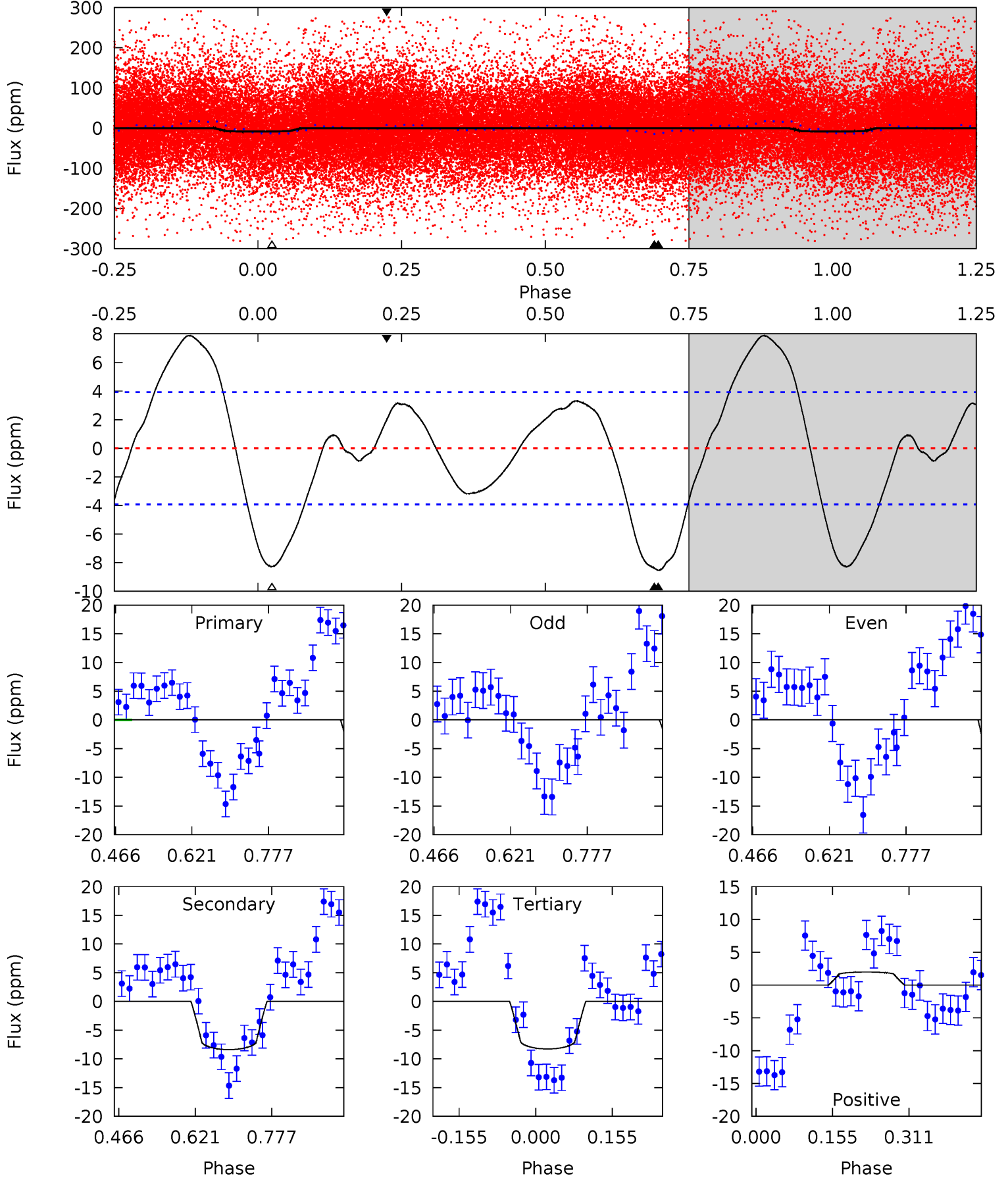
TCE 009958053-03 P= 0.911333 Days  $T_0=131.980459$  (BKJD)



# DV Model-Shift Uniqueness Test

009958053-03, P = 0.911295 Days, E = 131.095639 Days

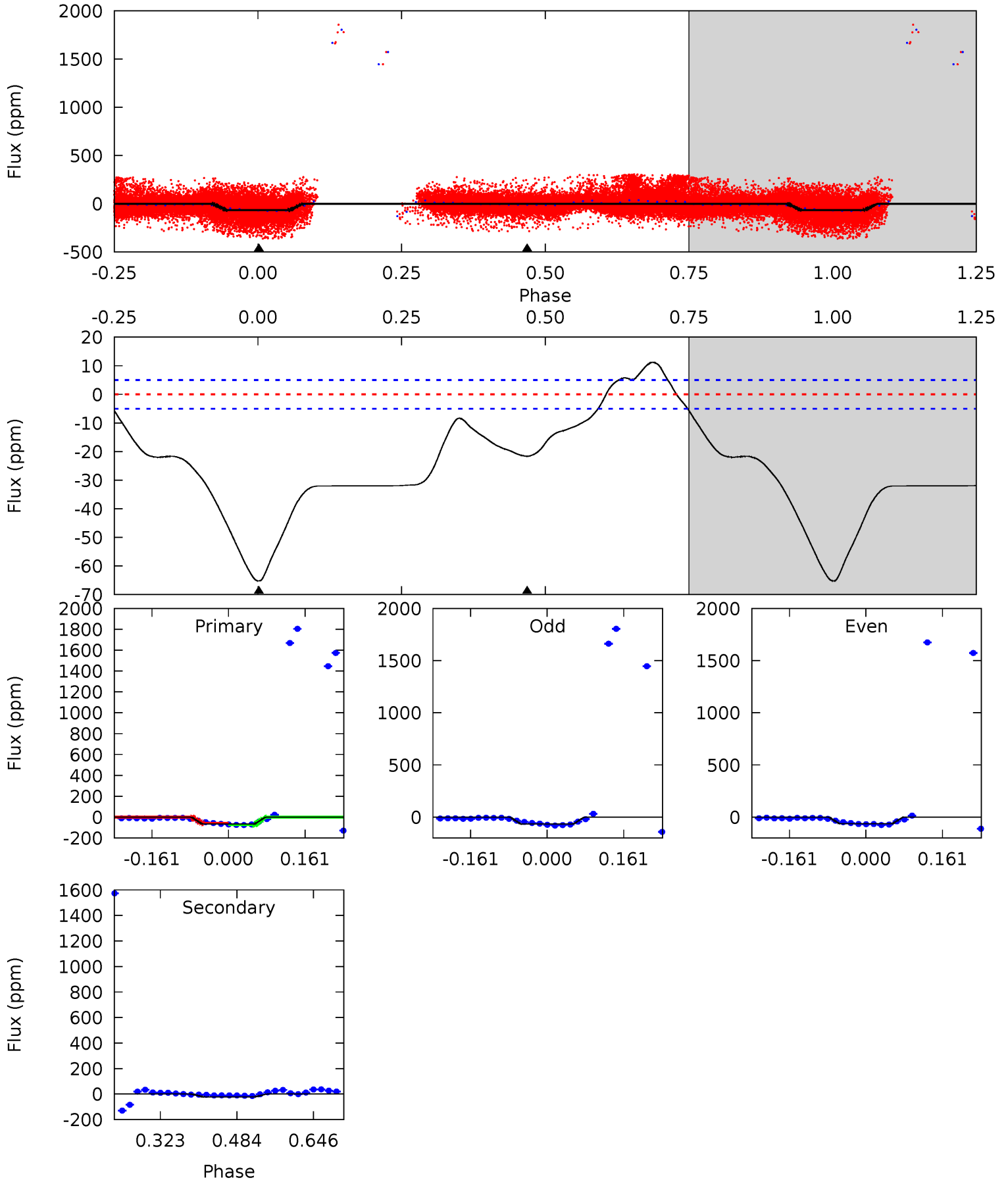
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.71	9.54	9.41	2.26	4.47	1.42	4.30	0.30	7.45	0.13	7.28	2.41	0.95	0.48	6.76



# Alt Model-Shift Uniqueness Test

009958053-03, P = 0.911333 Days, E = 131.069126 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
58.0	19.2	0	0	4.46	1.40	11.3	58.0	58.0	19.2	19.2	1.01	1.23	0.15	6.99



### Stellar Parameters For KIC 009958053

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10452^{+286}_{-429}$	$4.040^{+0.231}_{-0.189}$	$0.070^{+0.150}_{-0.550}$	$2.593^{+0.838}_{-0.838}$	$2.691^{+0.354}_{-0.658}$	$0.217^{+0.372}_{-0.104}$
	+3%/-4%	+6%/-5%	+214%/-786%	+32%/-32%	+13%/-24%	+171%/-48%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009958053-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-8 \pm 1$	$1.08^{+0.28}_{-0.24}$	$6459^{+565}_{-587}$	$8123^{+1079}_{-771}$	$2.533^{+1.550}_{-0.873}$
Alt.	$-22 \pm 1$	$2.45^{+0.45}_{-0.45}$	$6472^{+560}_{-543}$	$6456^{+404}_{-376}$	$1.281^{+0.546}_{-0.348}$

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



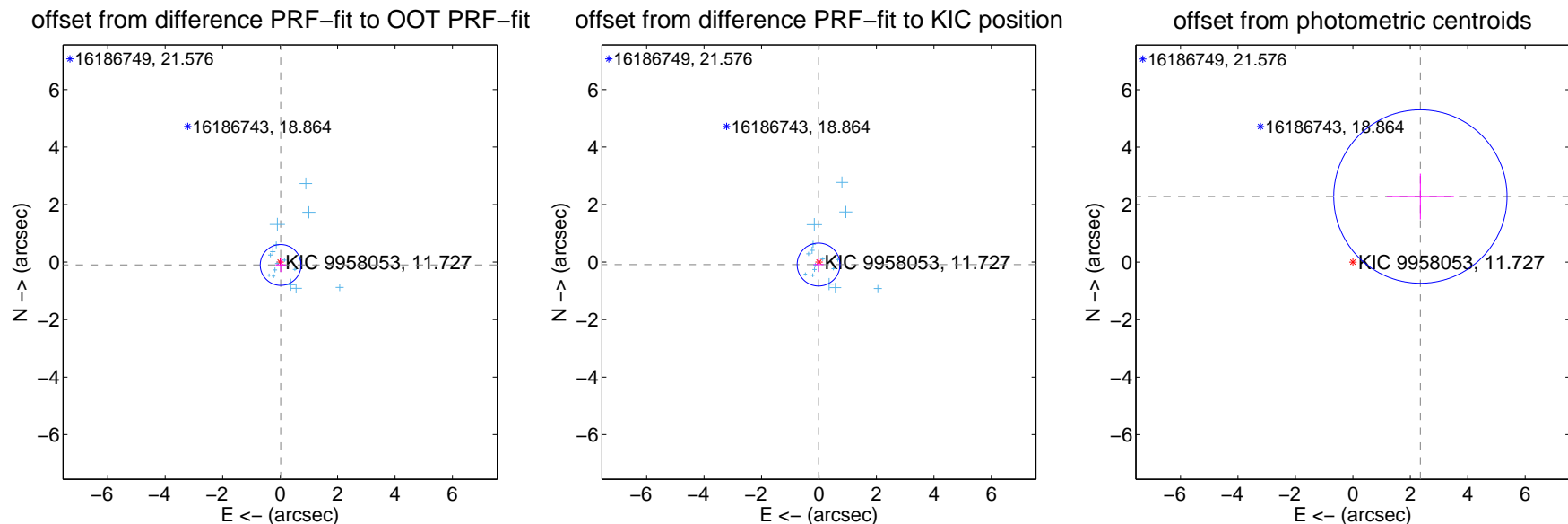
## DV Centroid Data

Supplemental centroid analysis for 009958053-03. **Kepler magnitude: 11.73.** Transit SNR 10.17

There are 16 quarters with good PRF difference image offsets

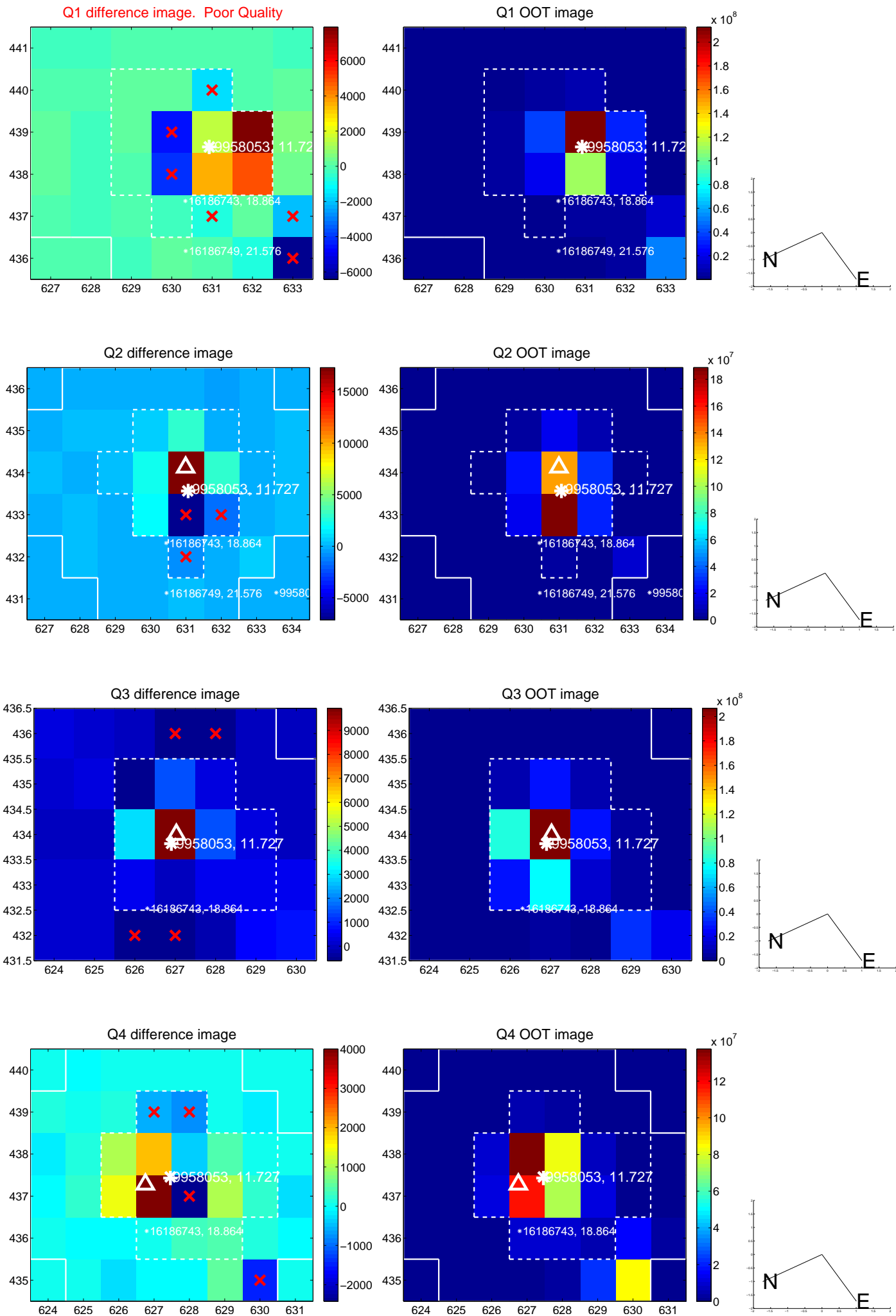
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.102 \pm 0.237$	0.43	$-0.019 \pm 0.179$	$-0.100 \pm 0.244$
PRF-fit source offset from KIC position	$0.088 \pm 0.249$	0.35	$0.014 \pm 0.172$	$-0.086 \pm 0.250$
photometric centroid source offset	<b><math>3.28 \pm 1.01</math></b>	<b>3.26</b>	$-2.35 \pm 1.17$	$2.28 \pm 0.80$

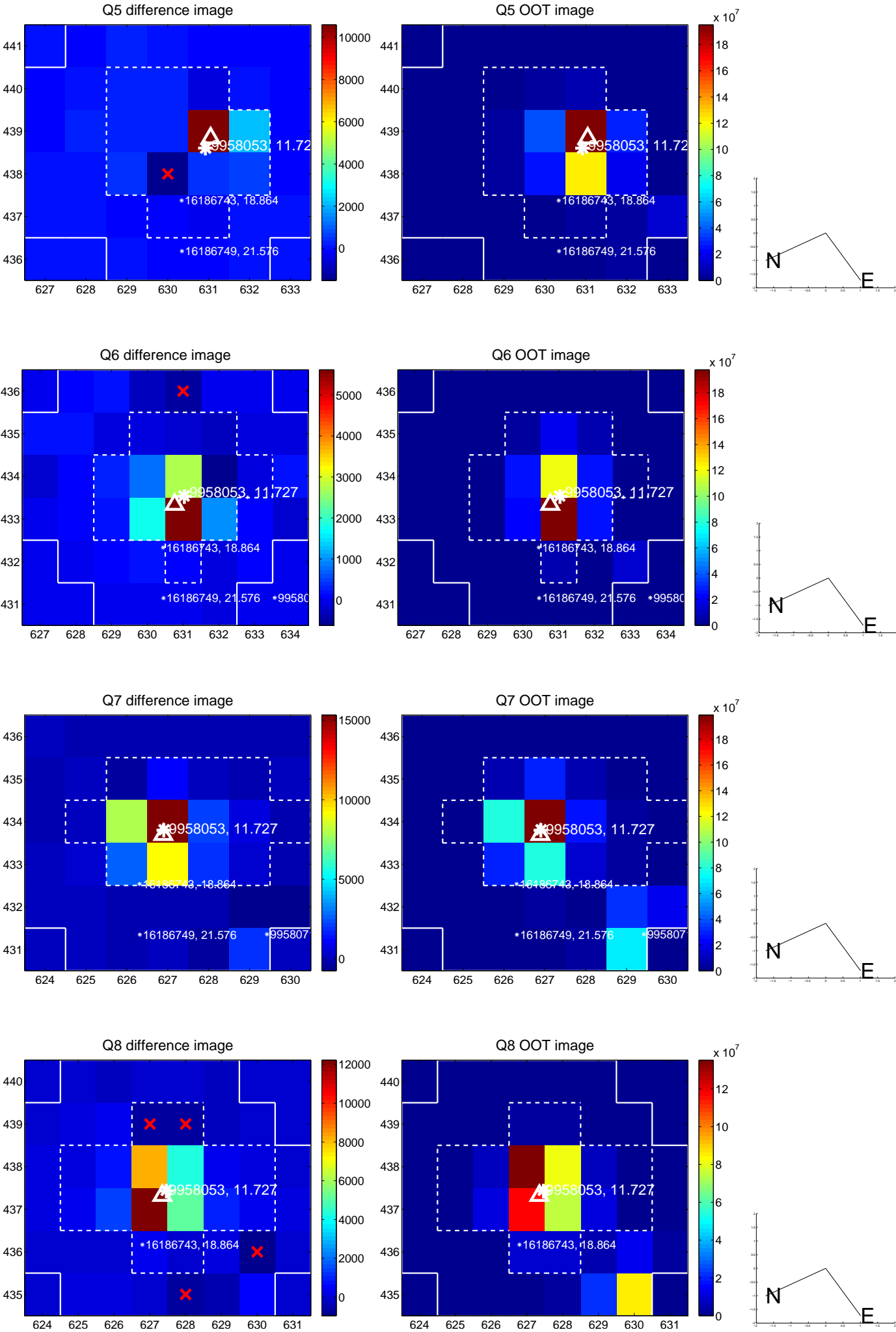


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

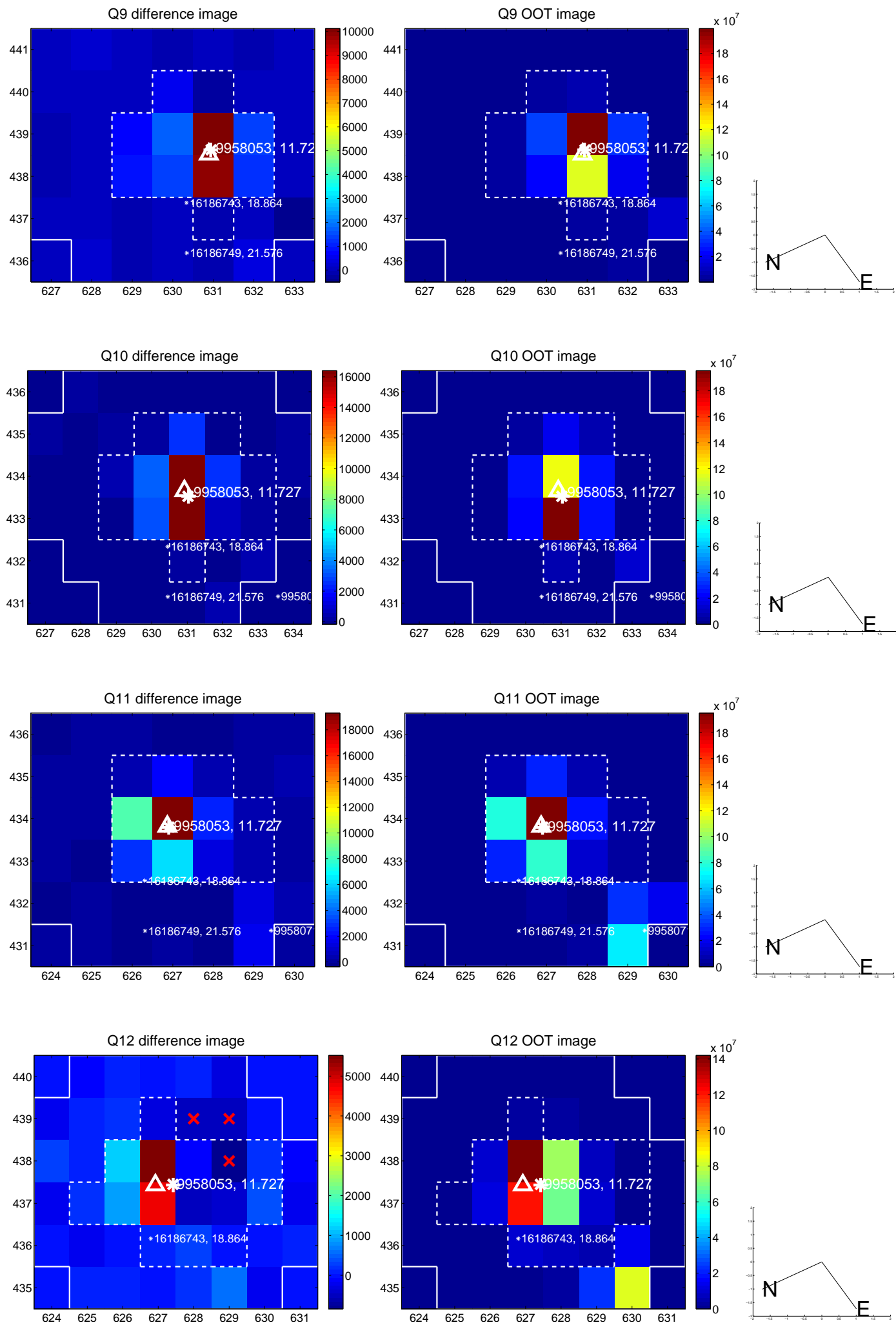
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



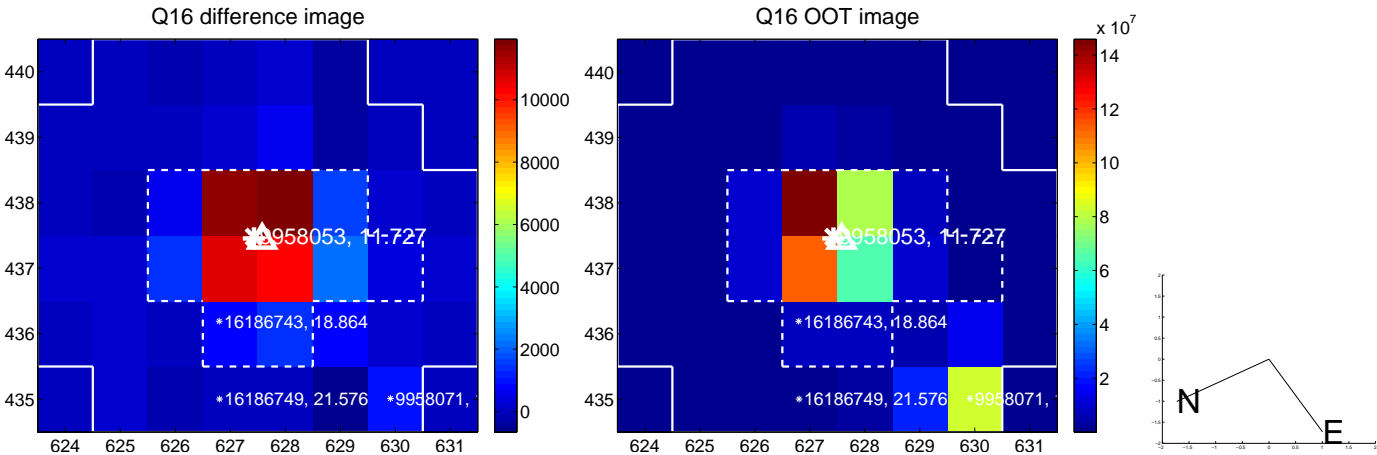
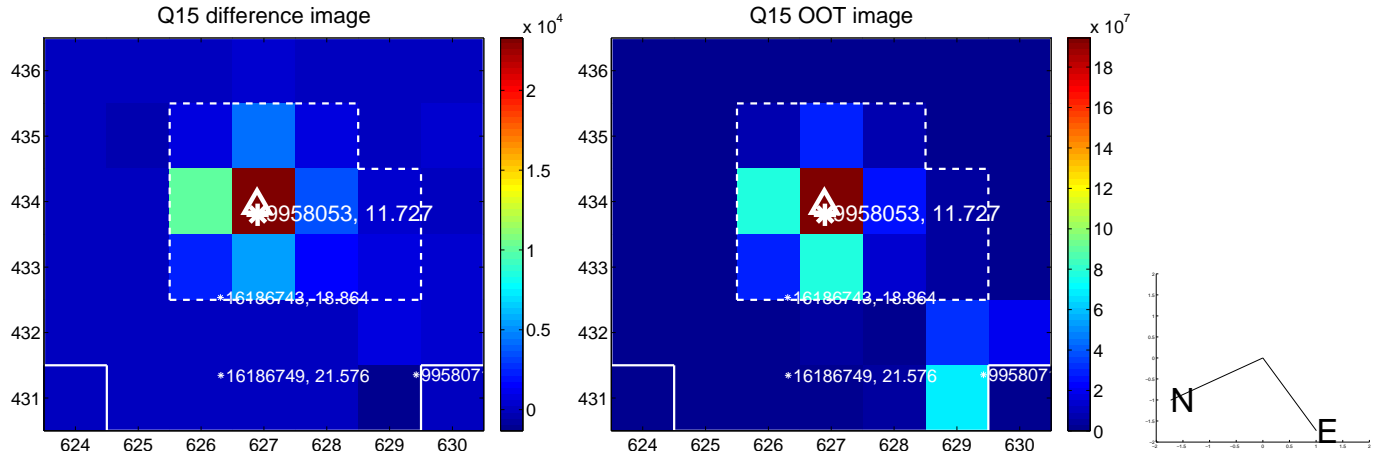
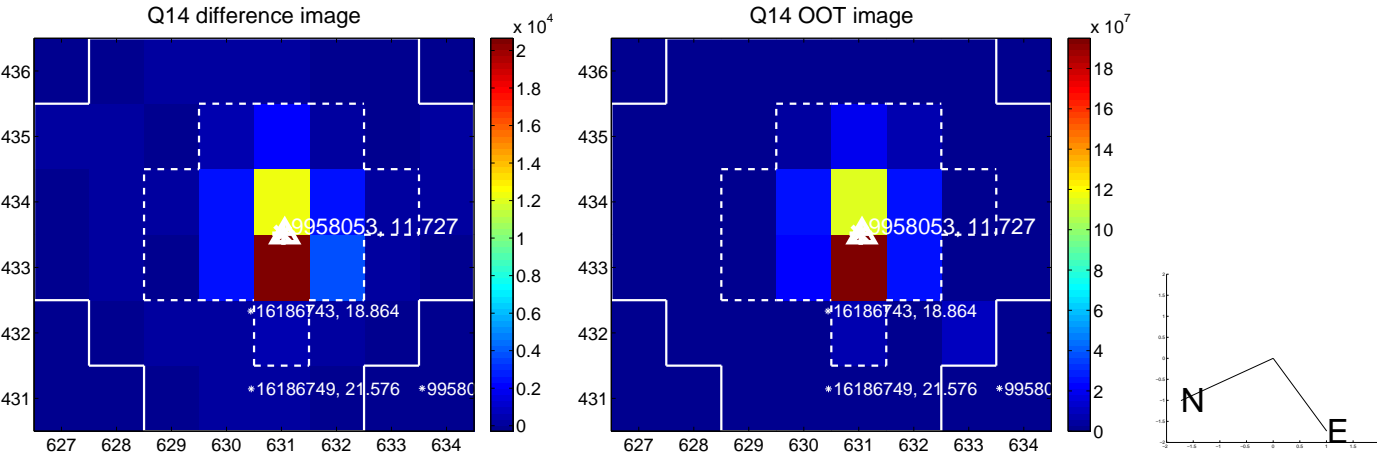
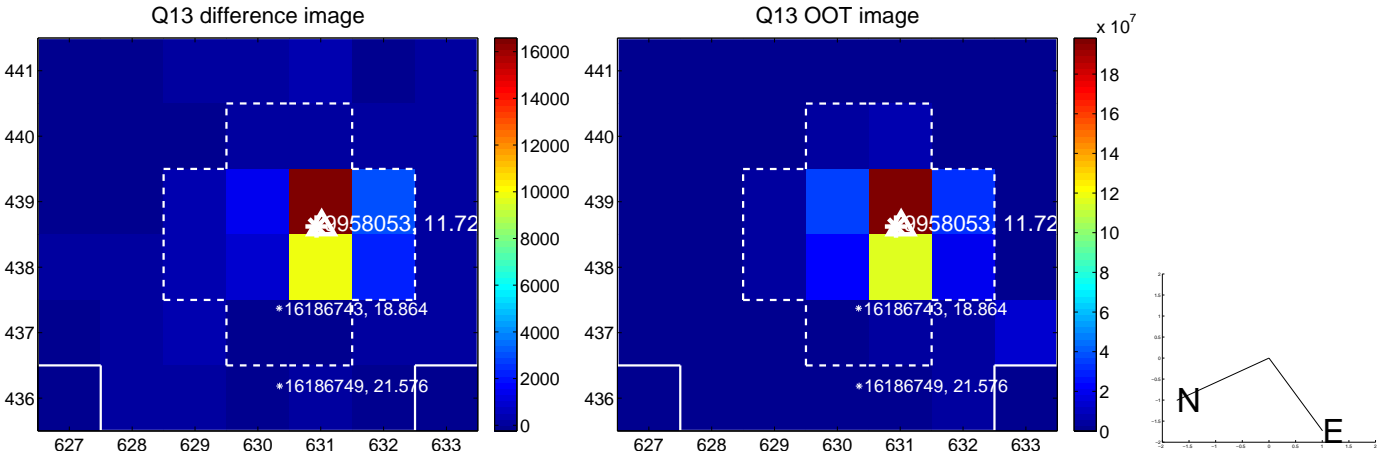
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



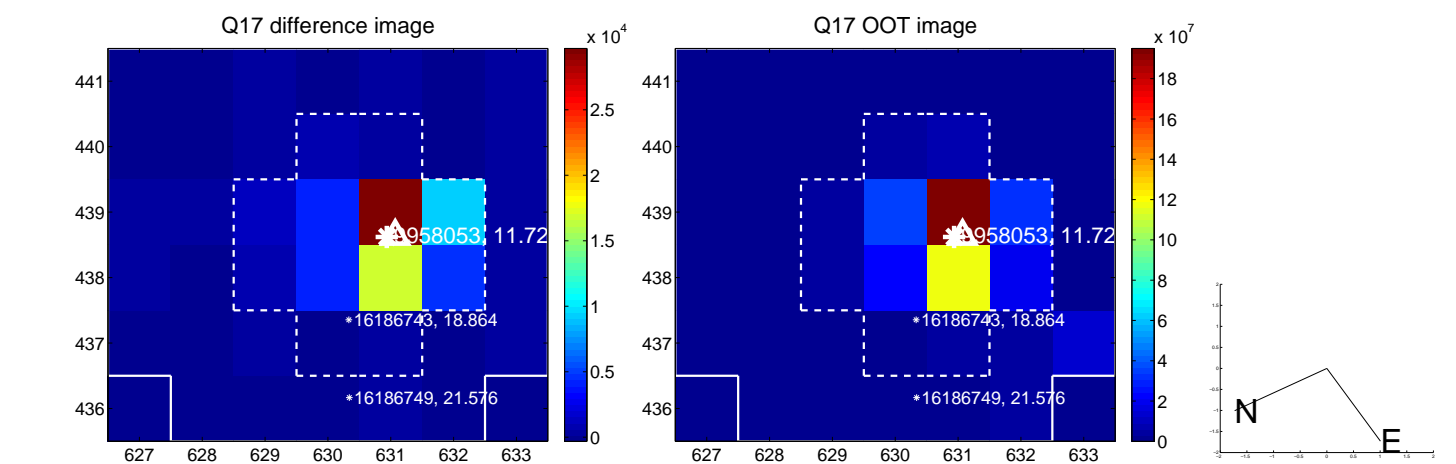
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



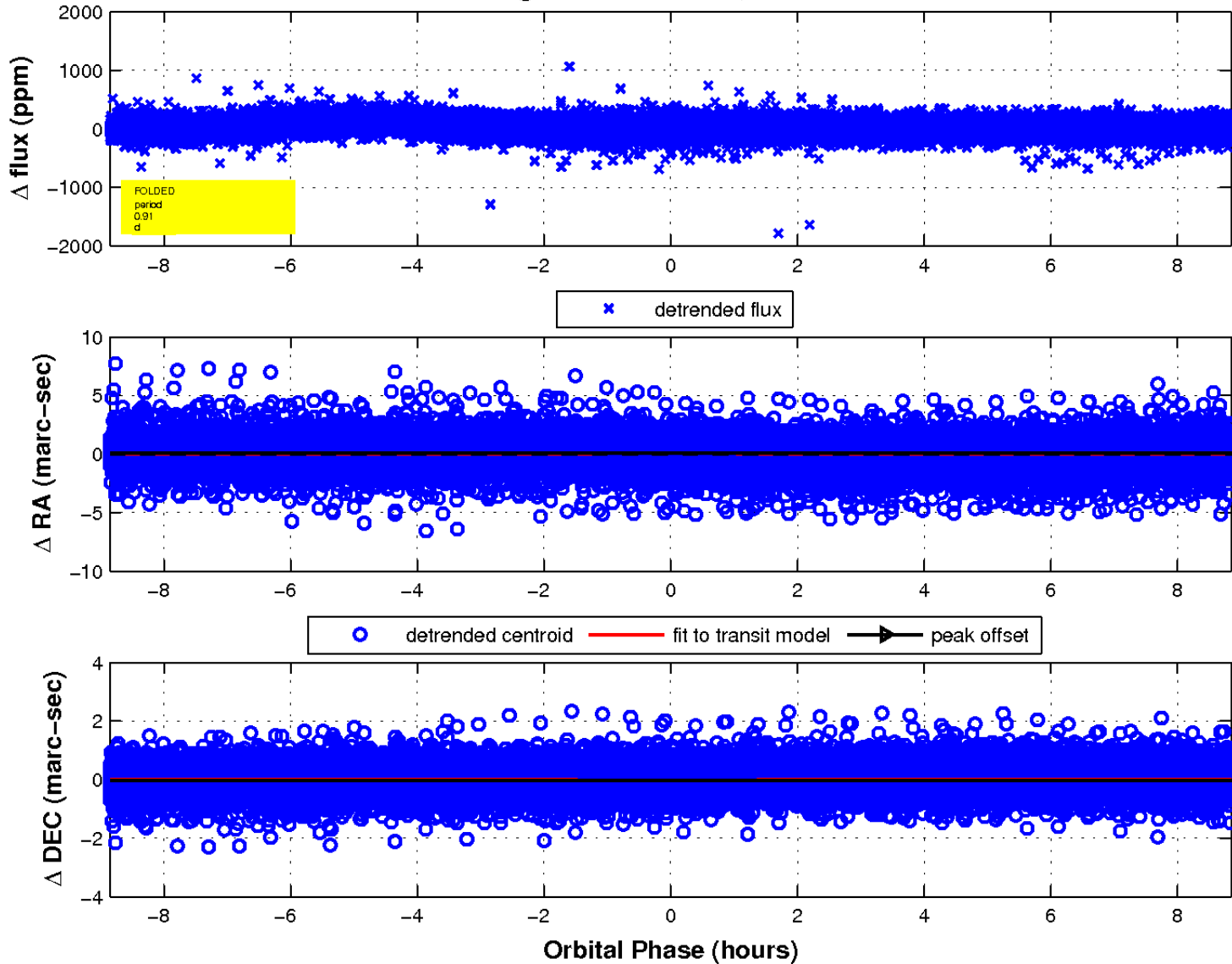
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

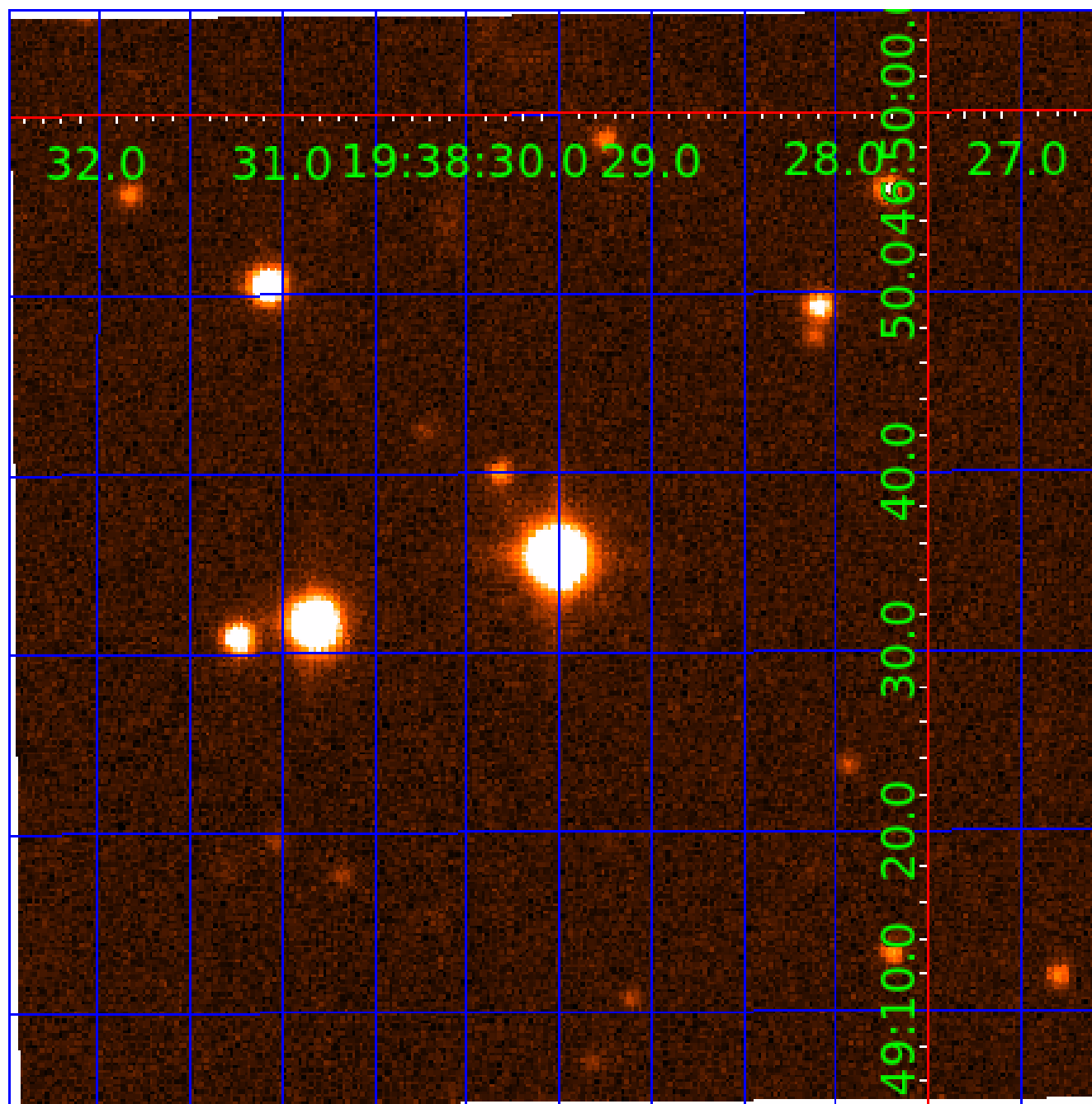


fluxWeightedCentroids, Planet 3 of 7



UKIRT Image

Declination





# KIC 009958053

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009958053-01	OBS	7263.01	2.733960	133.772200	60.1	1.800	26.6	27.3	2.59	10452	2.31	25380.73
009958053-02	OBS	No	2.733982	134.170197	41.7	1.779	17.5	19.5	2.59	10452	1.92	25380.45
009958053-03	OBS	No	0.911295	132.006934	13.5	2.952	13.9	10.2	2.59	10452	1.09	109820.04
009958053-04	OBS	No	0.910122	132.268885	0.1	5.106	10.7	0.1	2.59	10452	0.10	110008.76
009958053-05	OBS	No	167.394272	200.336363	171.2	6.173	11.2	8.8	2.59	10452	3.55	105.17
009958053-06	OBS	No	46.345964	171.507242	79.5	6.369	10.1	6.6	2.59	10452	2.39	582.83
009958053-07	OBS	No	0.911332	131.698494	150.1	1.500	10.3	-1.0	2.59	10452	3.27	109814.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009958053-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_FEW_DIFFS
009958053-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009958053-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009958053-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV
009958053-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES
009958053-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009958053-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

**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 009958053-04

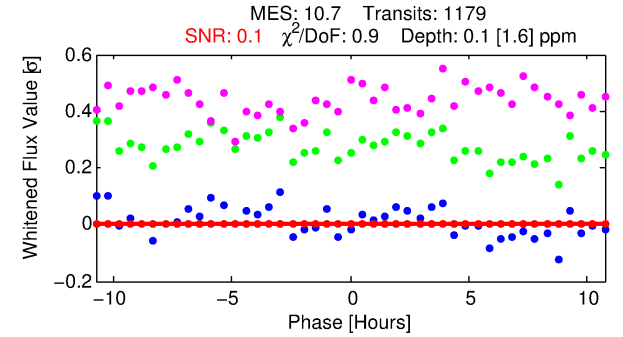
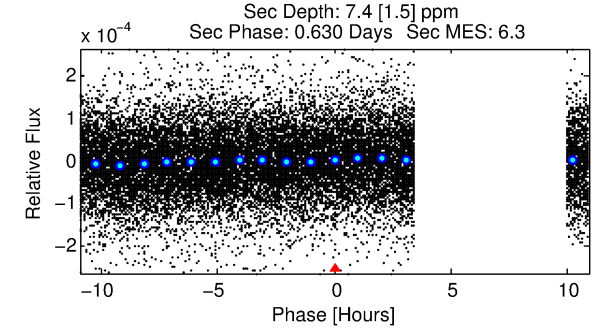
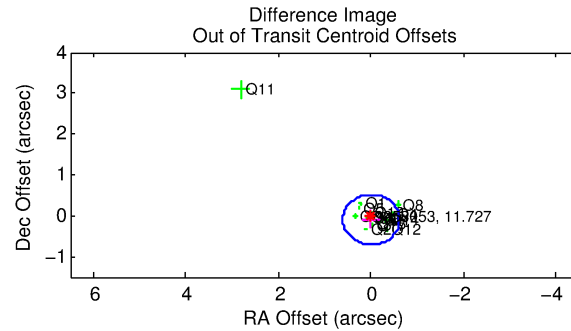
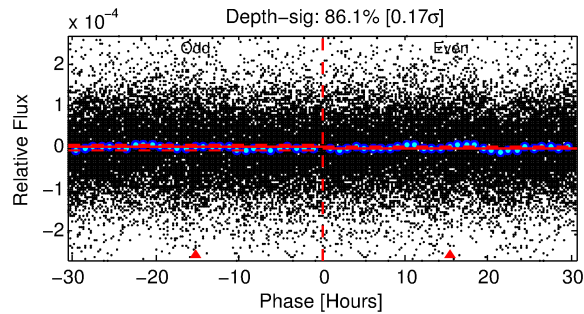
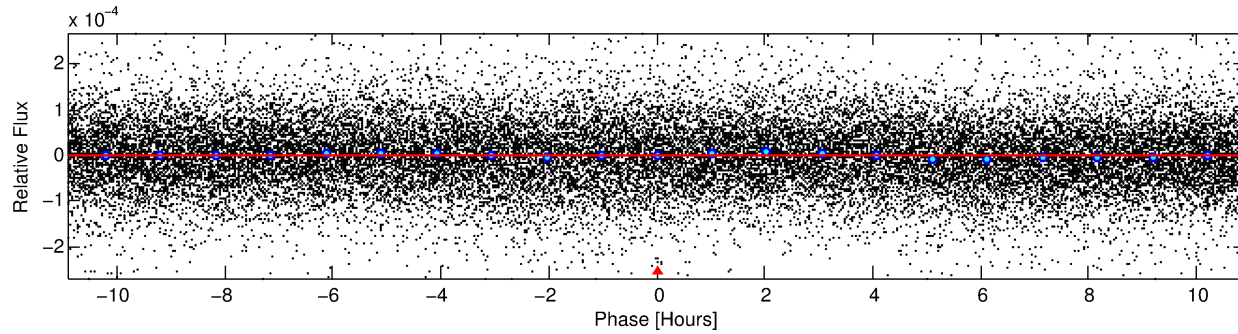
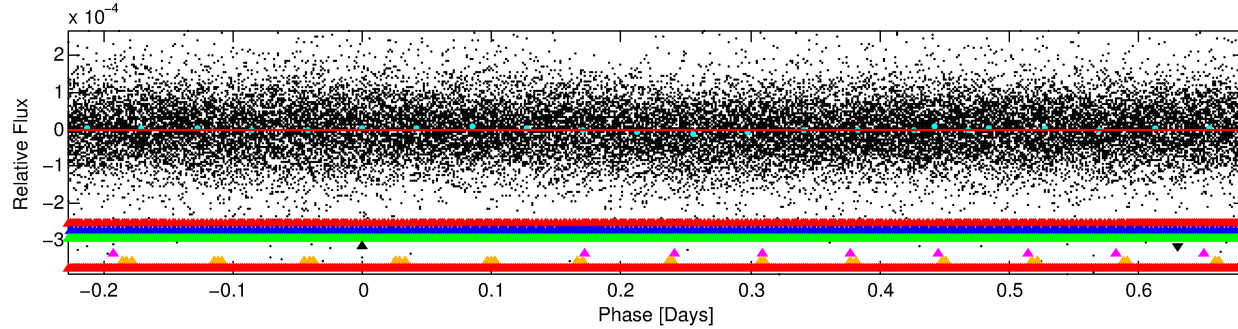
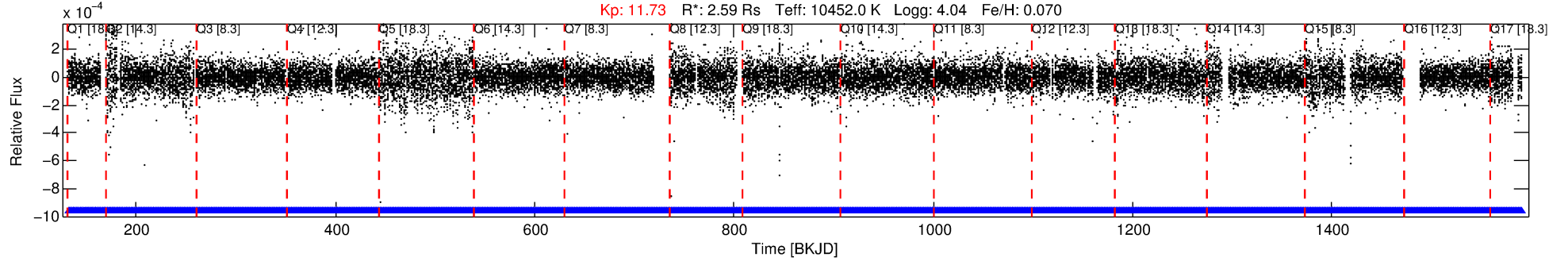
No Significant Match Found

# DV One-Page Summary

KIC: 9958053 Candidate: 4 of 7 Period: 0.910 d

KOI: K07263 Corr: No Ephemeris Match

Kp: 11.73 R\*: 2.59 Rs Teff: 10452.0 K Logg: 4.04 Fe/H: 0.070



## DV Fit Results:

Period = 0.91012 [0.00103] d  
Epoch = 132.2689 [0.3455] BKJD  
Rp/R\* = 0.0004 [0.0054]  
a/R\* = 1.49 [85.18]  
b = 0.07 [1428.17]  
Seff = 110008.76 [49088.61]  
Teq = 4644 [518] K  
Rp = 0.10 [1.52] Re  
a = 0.0256 [0.0071] AU  
Ag = 252.51 [7472.49] [0.03σ]  
Teffp = 28621 [211735] K [0.11σ]

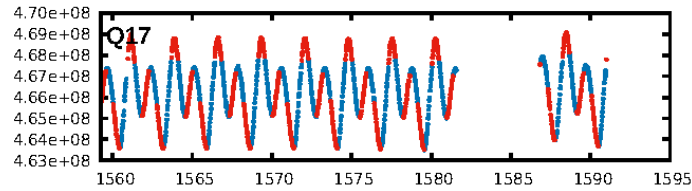
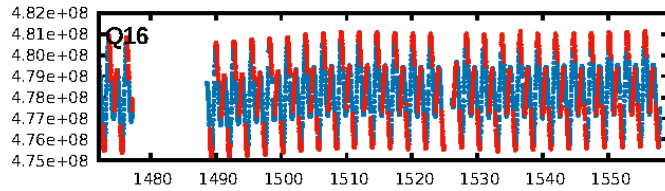
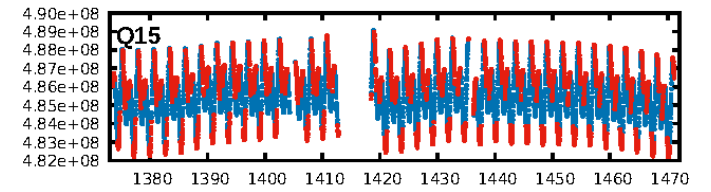
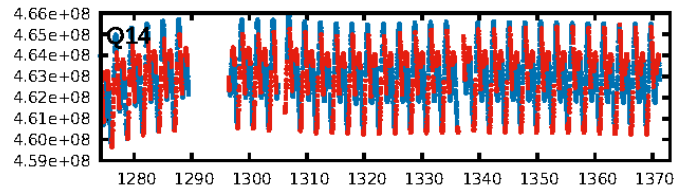
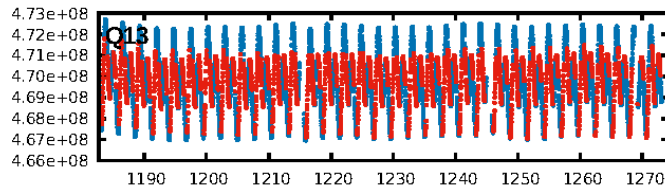
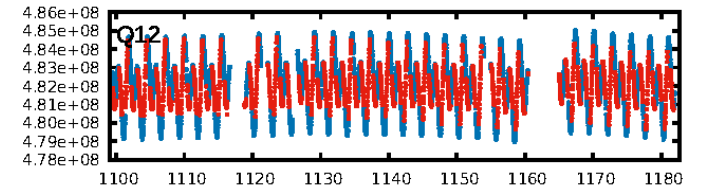
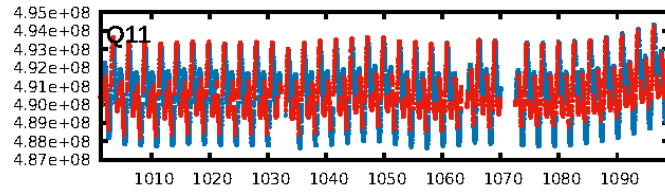
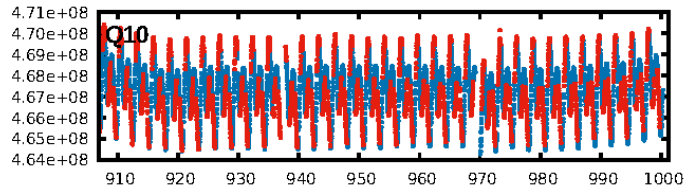
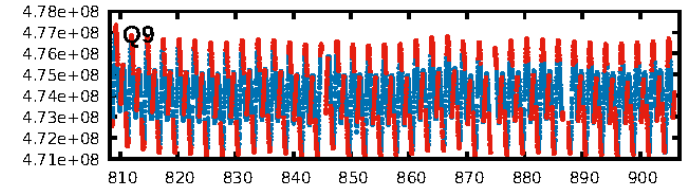
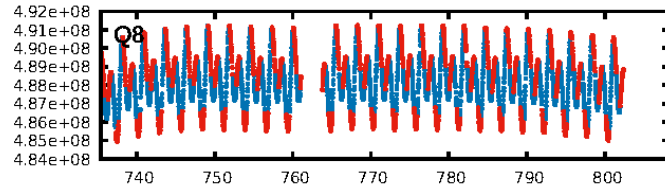
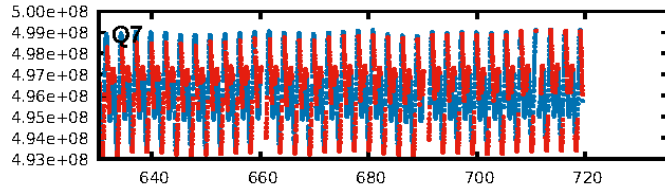
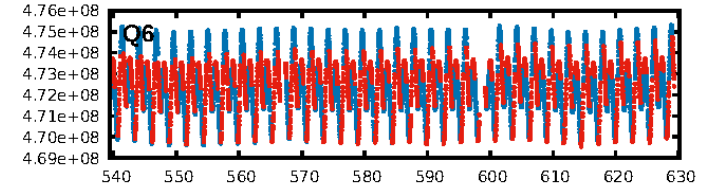
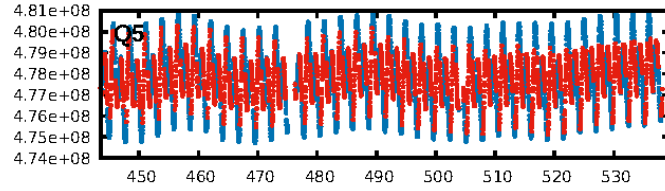
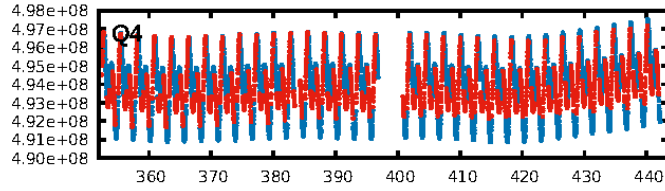
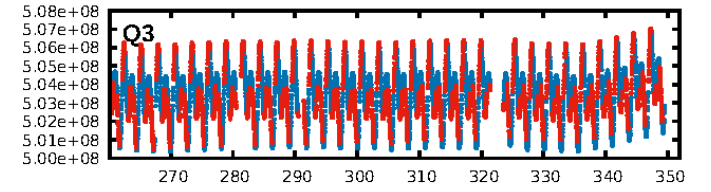
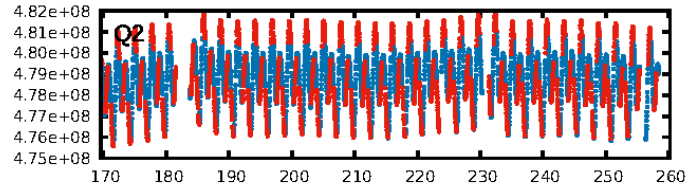
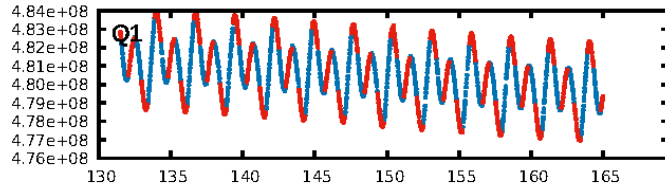
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.4% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1114/1114]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.098 arcsec [0.48σ]  
KicOffset-rm: 0.068 arcsec [0.43σ]  
OotOffset-st: 4/3/4/5 [16]  
KicOffset-st: 4/3/4/5 [16]  
DiffImageQuality-fgm: 0.44 [7/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:02:03 Z

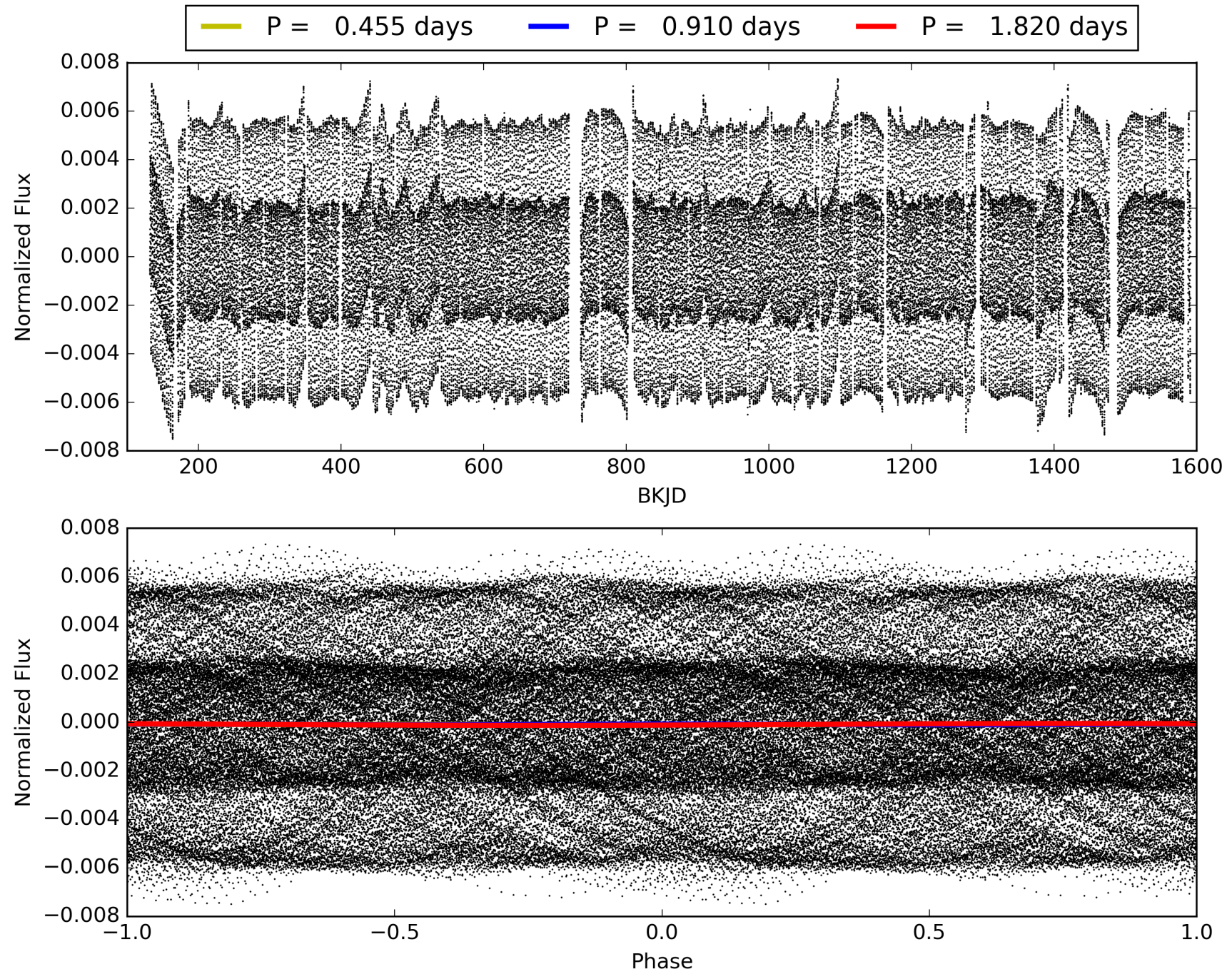
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009958053-04, PDC Light Curves



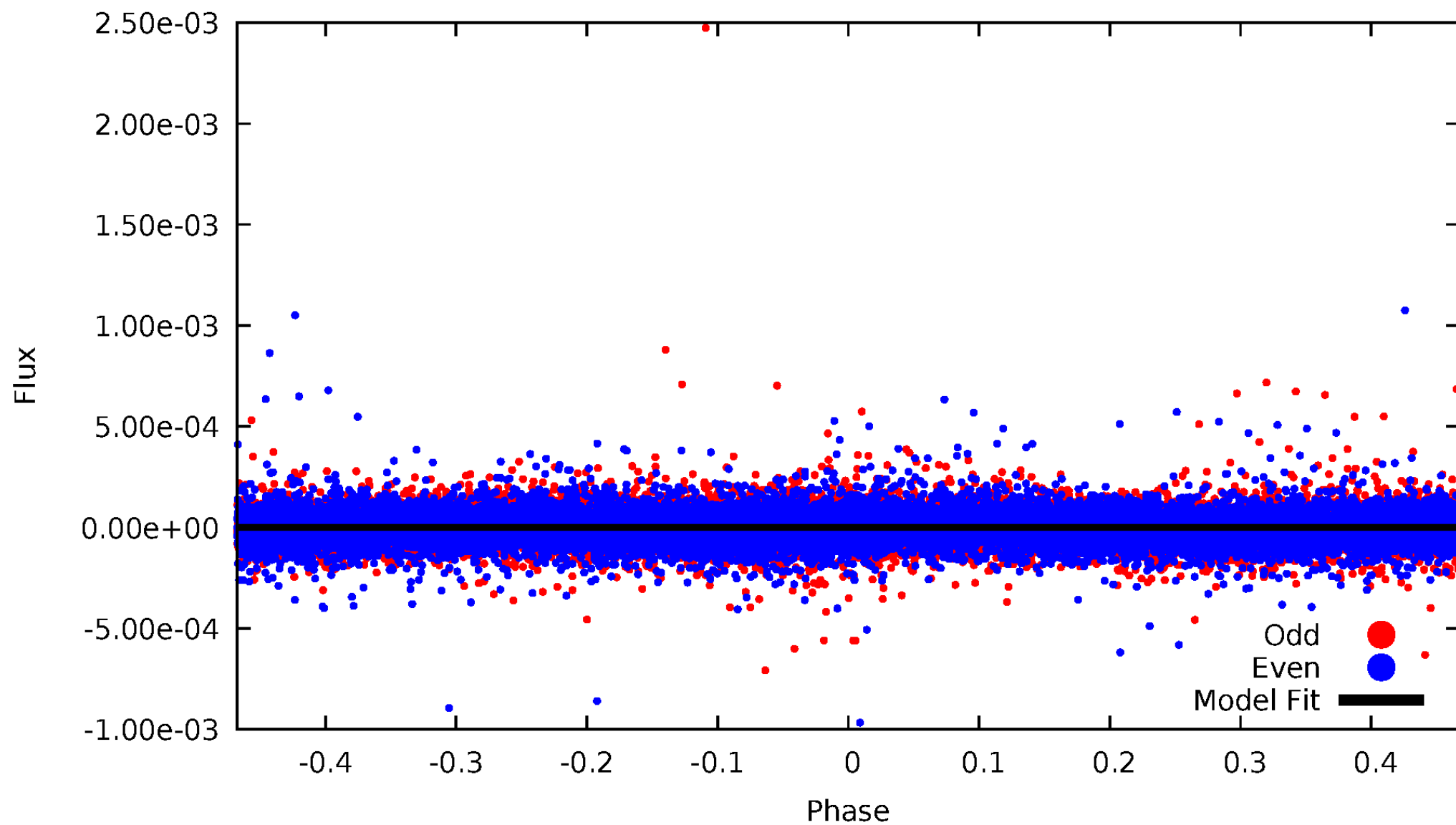


TCE 009958053-04



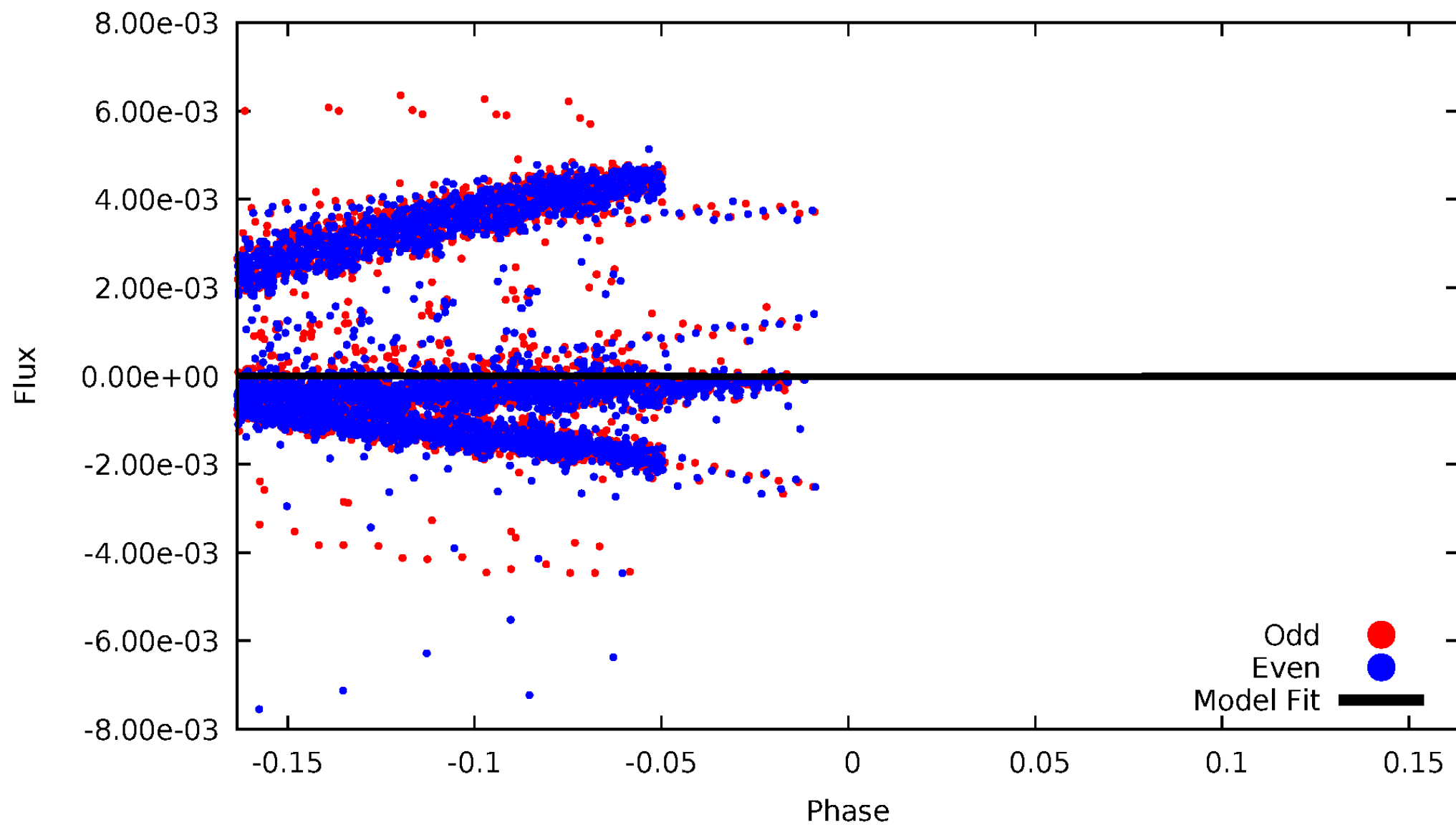
# DV Odd/Even

TCE 009958053-04



ALT Odd/Even

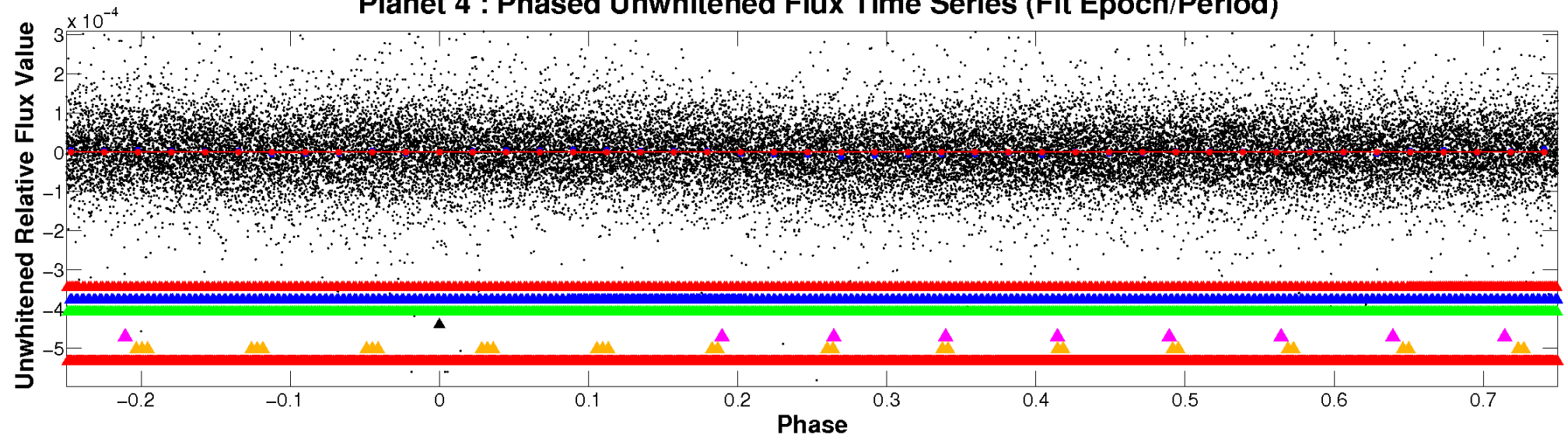
TCE 009958053-04



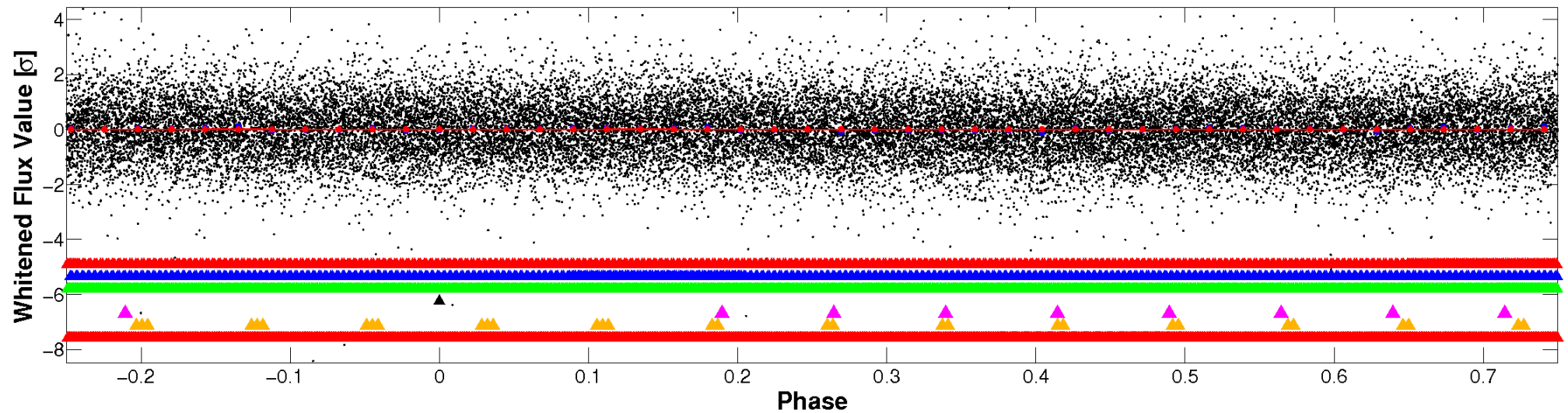


# Non-Whitened Vs. Whitened Light Curve

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

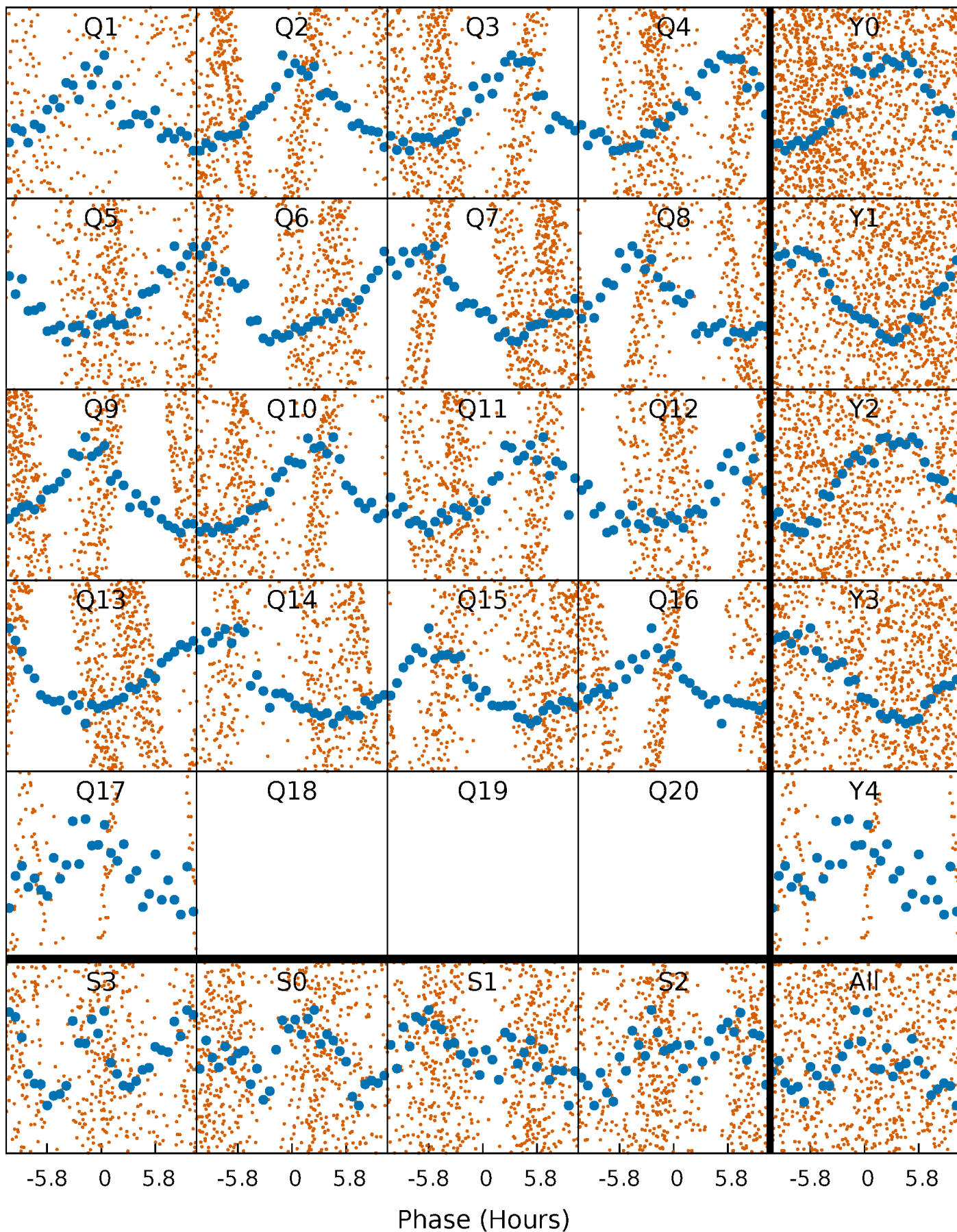


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



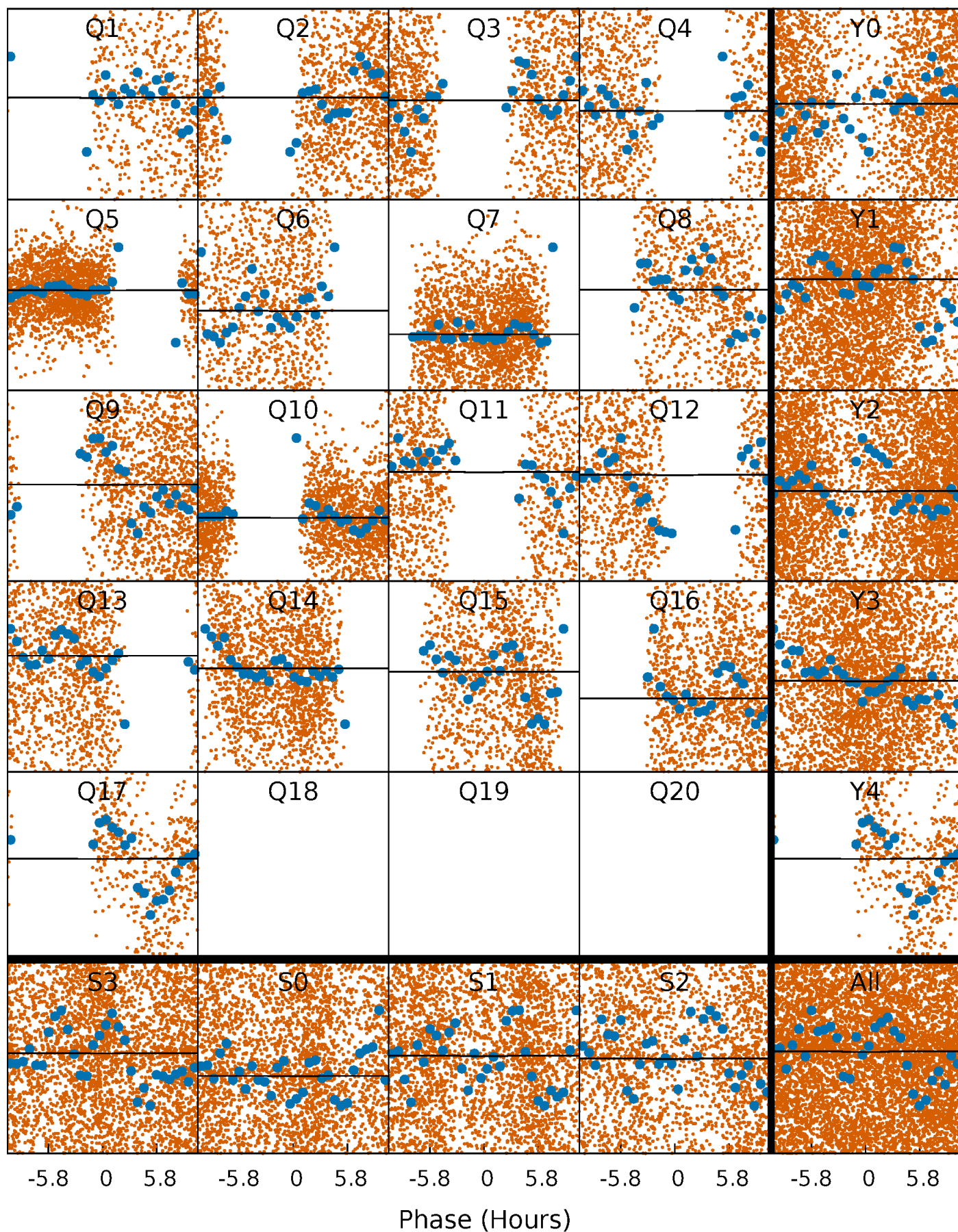
# PDC Quarter-Phased Transit Curves

TCE 009958053-04 P= 0.910122 Days  $T_0=132.268885$  (BKJD)



# DV Quarter-Phased Transit Curves

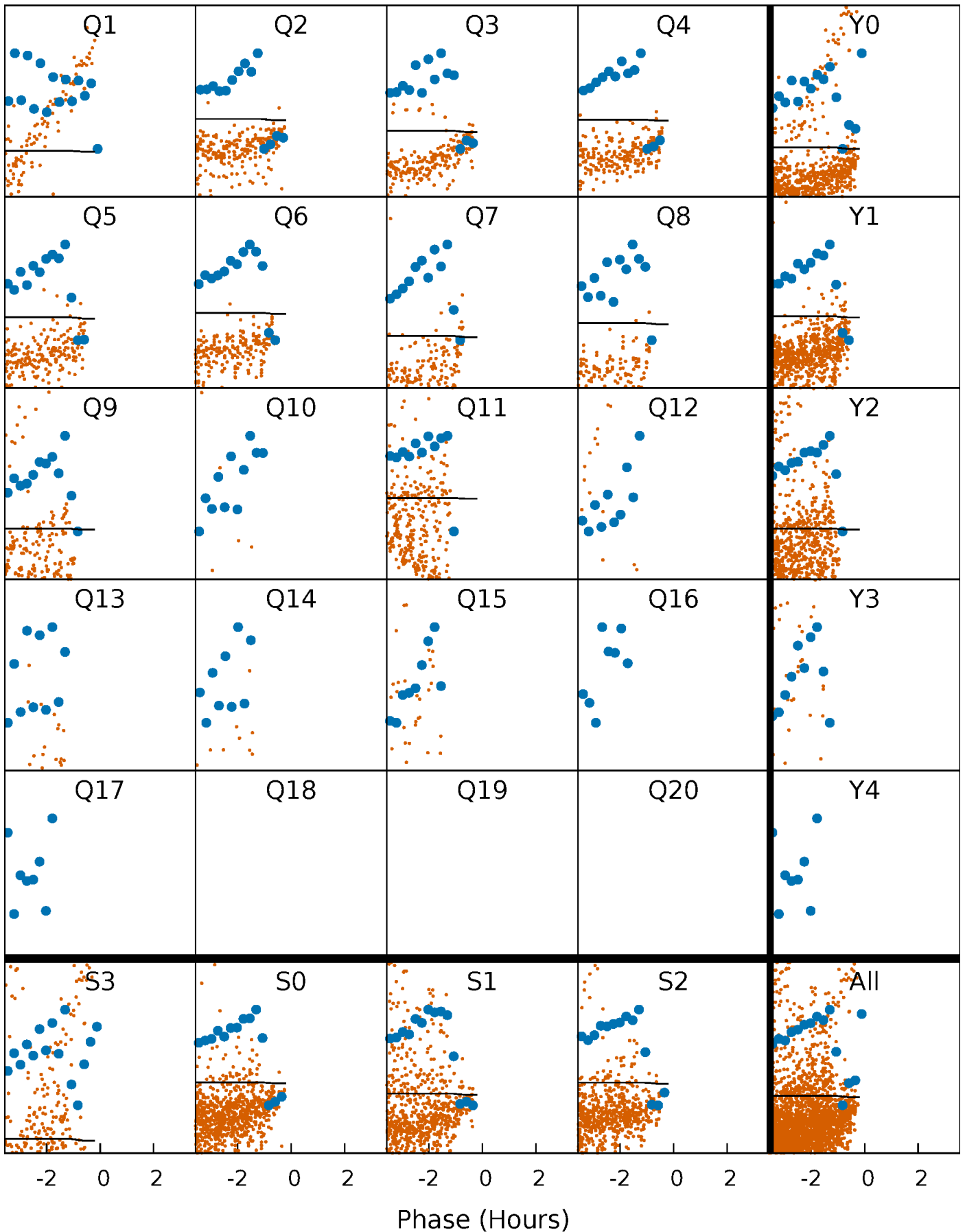
TCE 009958053-04 P= 0.910122 Days  $T_0=132.268885$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

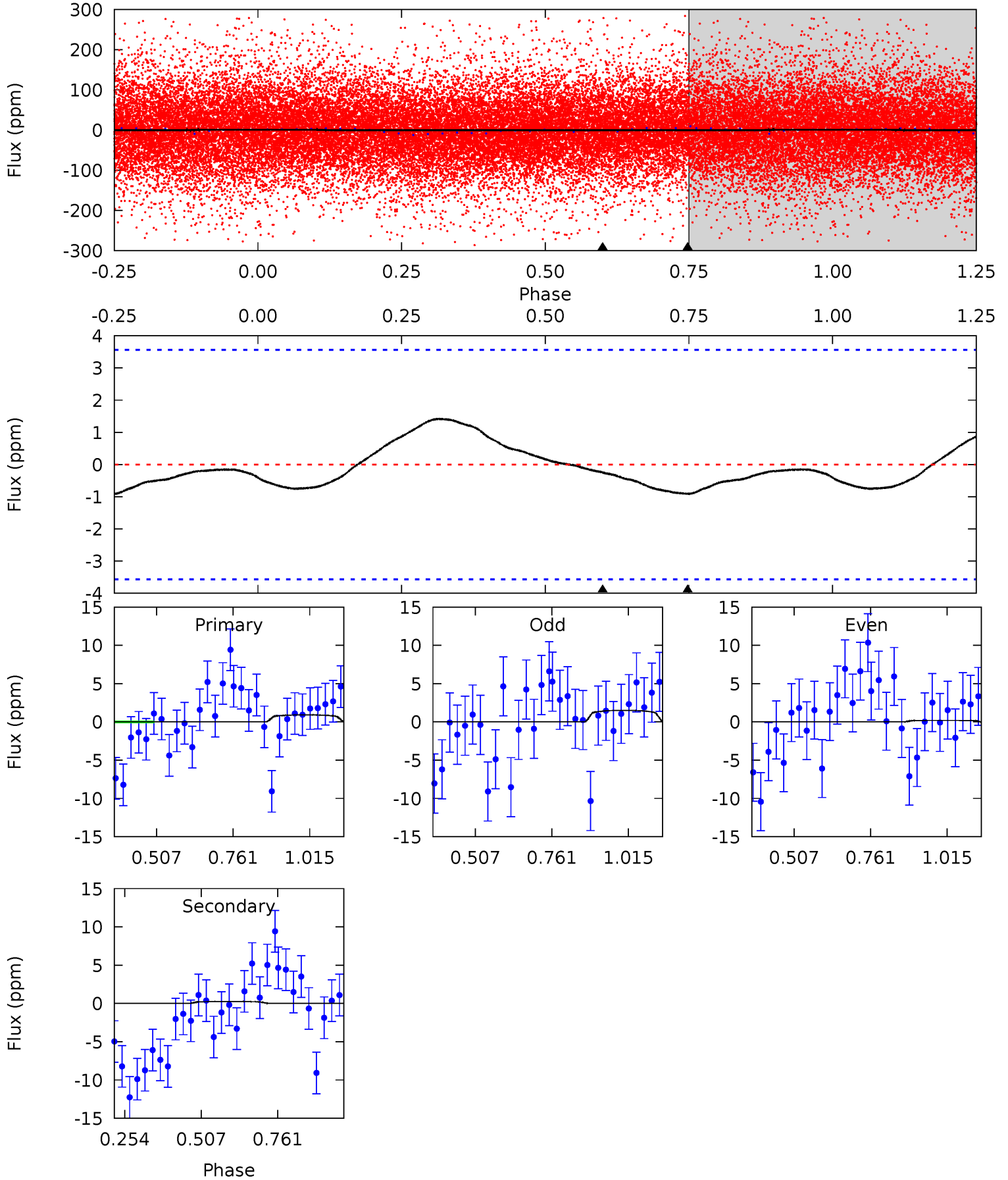
TCE 009958053-04   P= 0.911336 Days    $T_0=131.819224$  (BKJD)



# DV Model-Shift Uniqueness Test

009958053-04, P = 0.910122 Days, E = 131.358763 Days

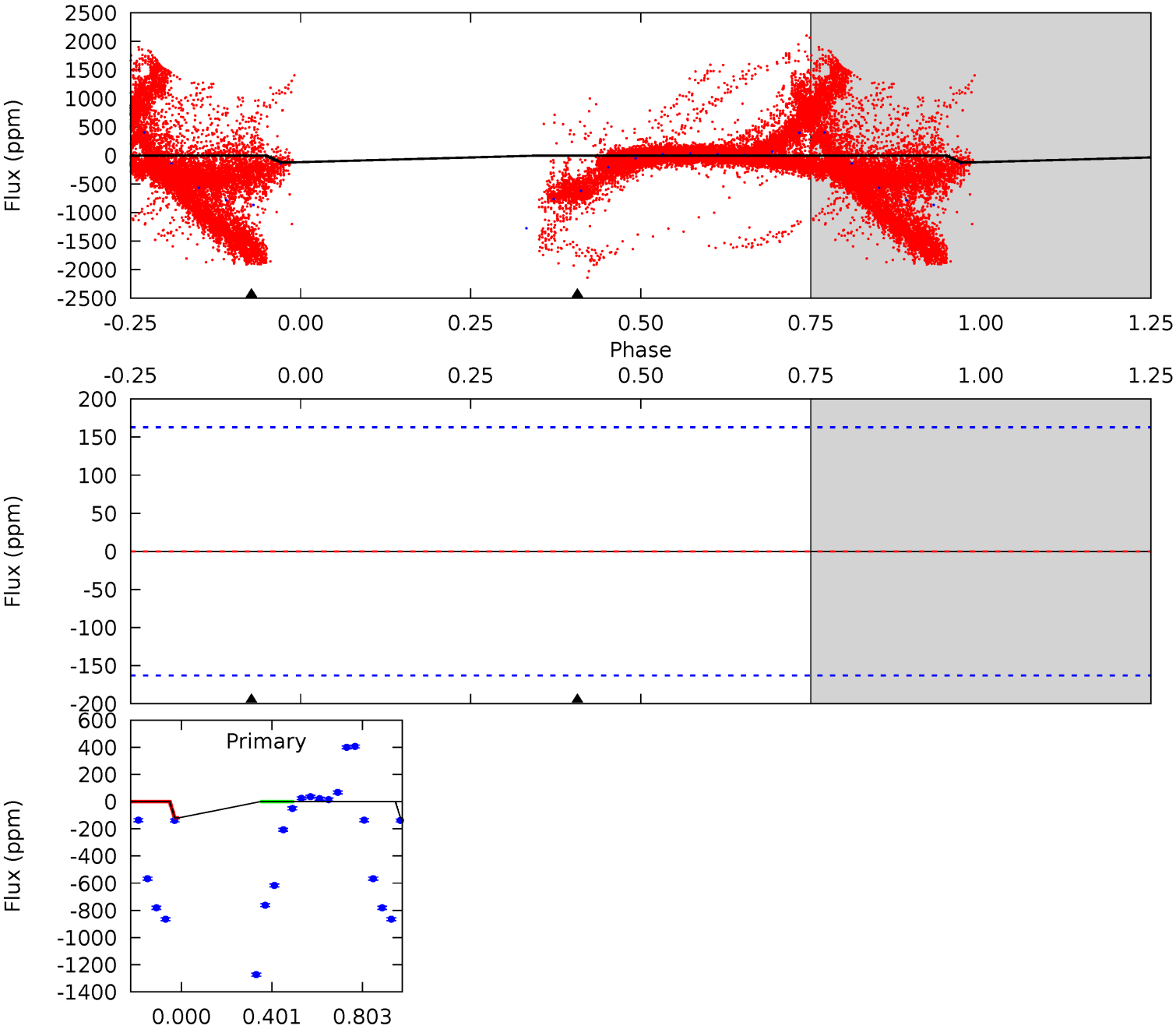
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.12	0.31	0	0	4.37	1.14	0.99	1.12	1.12	0.31	0.31	0.82	1.81	0.61	1.03



# Alt Model-Shift Uniqueness Test

009958053-04, P = 0.911336 Days, E = 130.907888 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	4.26	0.84	0	0	0	0	0	0	0	0	0





### Stellar Parameters For KIC 009958053

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10452^{+286}_{-429}$	$4.040^{+0.231}_{-0.189}$	$0.070^{+0.150}_{-0.550}$	$2.593^{+0.838}_{-0.838}$	$2.691^{+0.354}_{-0.658}$	$0.217^{+0.372}_{-0.104}$
	+3%/-4%	+6%/-5%	+214%/-786%	+32%/-32%	+13%/-24%	+171%/-48%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009958053-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	-0 $\pm$ 1	$0.98^{+1.14}_{-0.69}$	$6476^{+566}_{-552}$	$-4748^{+10414}_{-889}$	$0.038^{+0.876}_{-0.268}$
Alt.	-0 $\pm$ 38	$1.44^{+1.26}_{-0.97}$	$6403^{+575}_{-543}$	$-5125^{+19681}_{-10364}$	$-0.004^{+11.311}_{-12.583}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming A=0.3)

$A_{\text{obs}}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

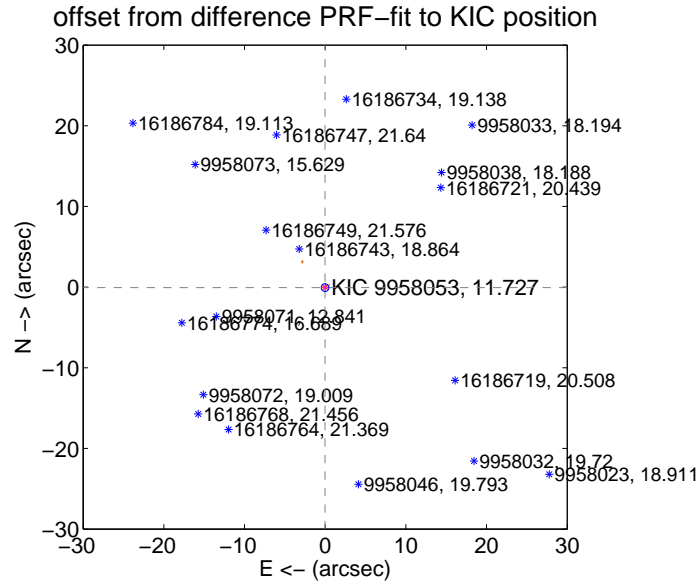
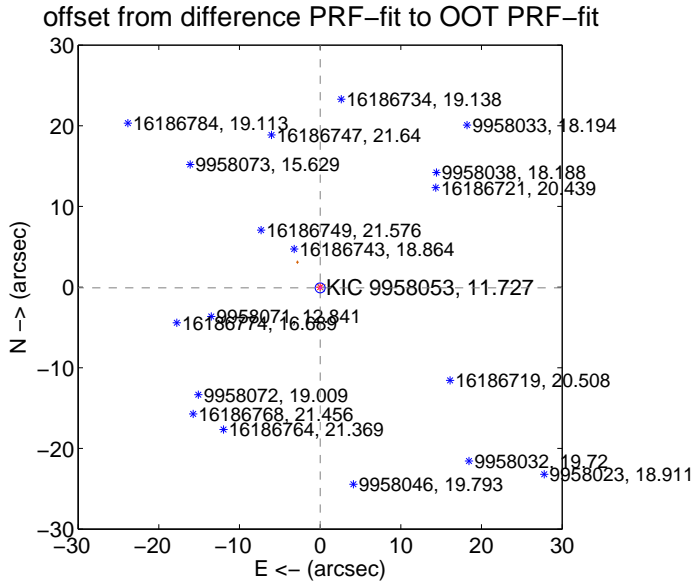
## DV Centroid Data

Supplemental centroid analysis for 009958053-04. **Kepler magnitude: 11.73.** Transit SNR 0.11

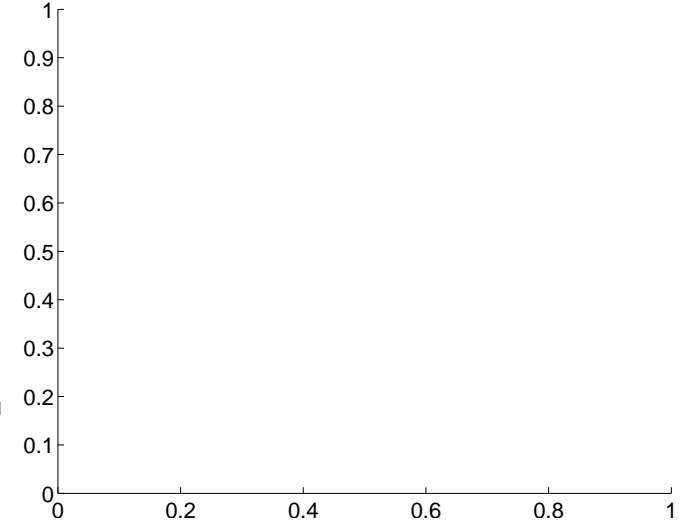
There are 7 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.098 \pm 0.205$	0.48	$-0.001 \pm 0.189$	$-0.098 \pm 0.203$
PRF-fit source offset from KIC position	$0.068 \pm 0.159$	0.43	$0.020 \pm 0.190$	$-0.065 \pm 0.211$
photometric centroid source offset	—	—	—	—

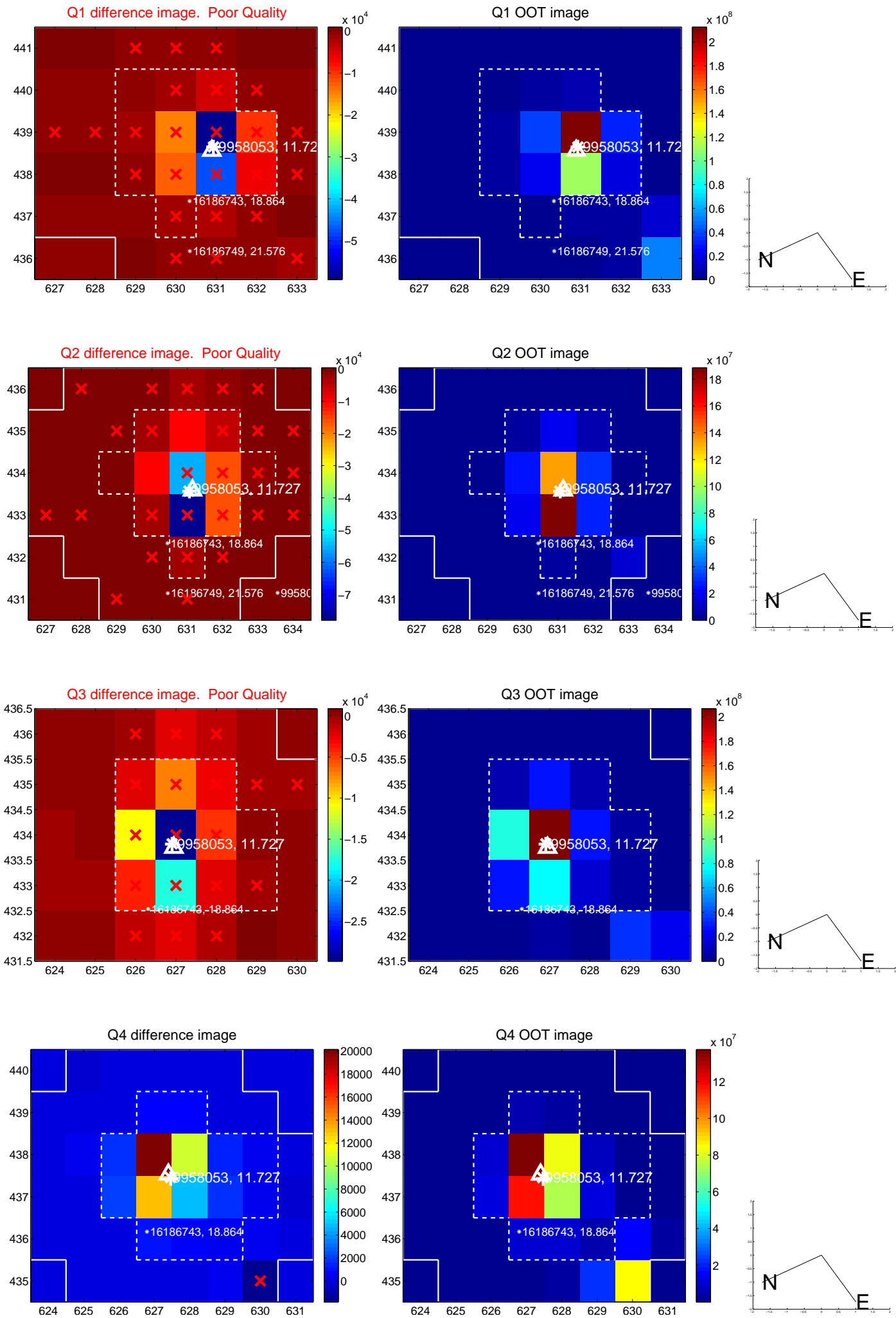


There are no photometric centroids

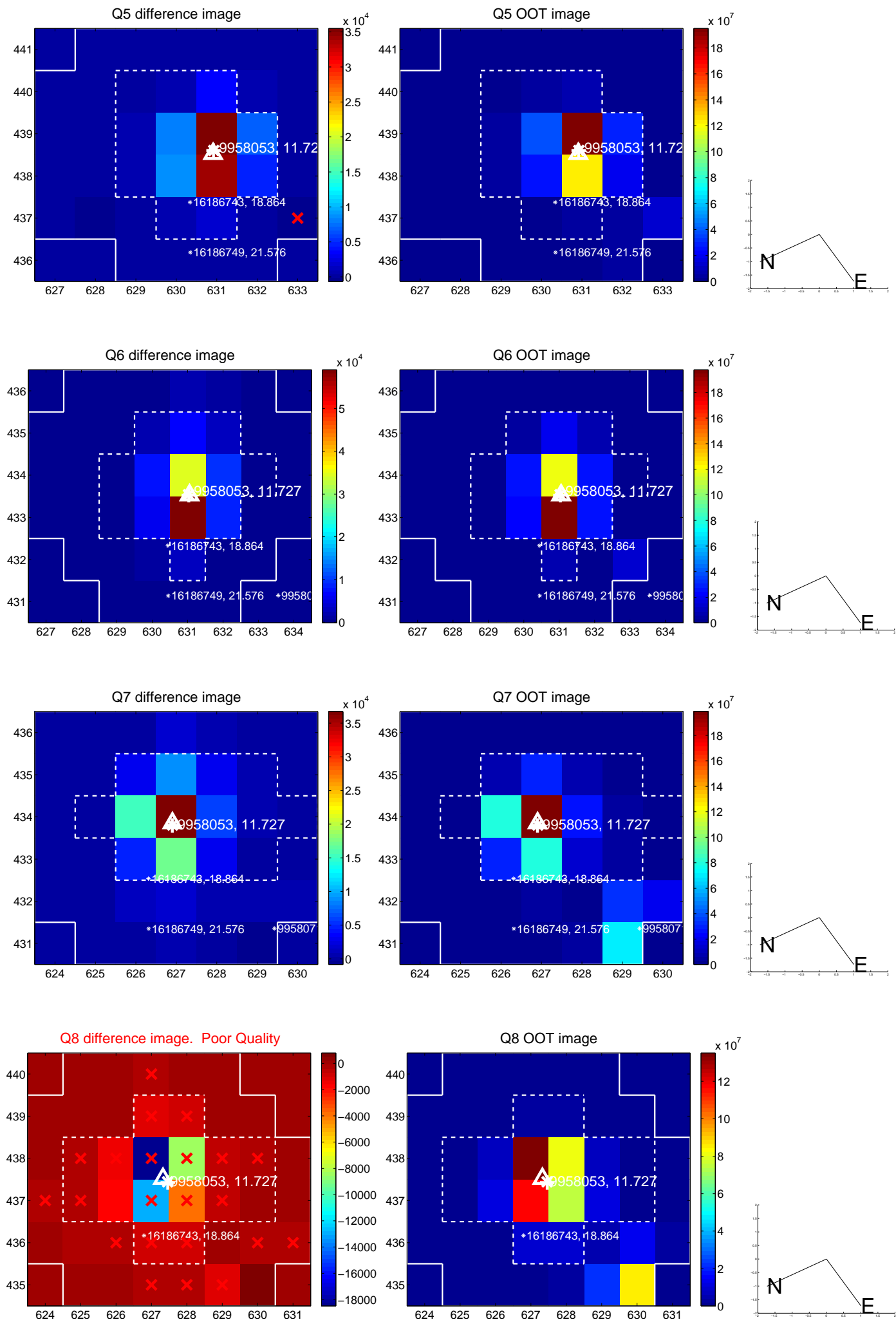


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

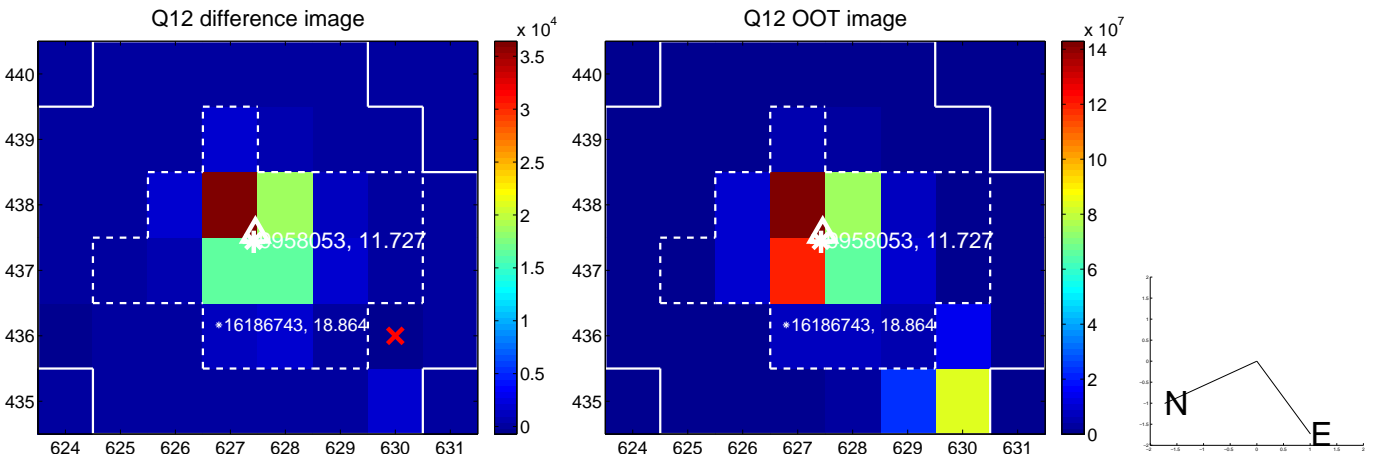
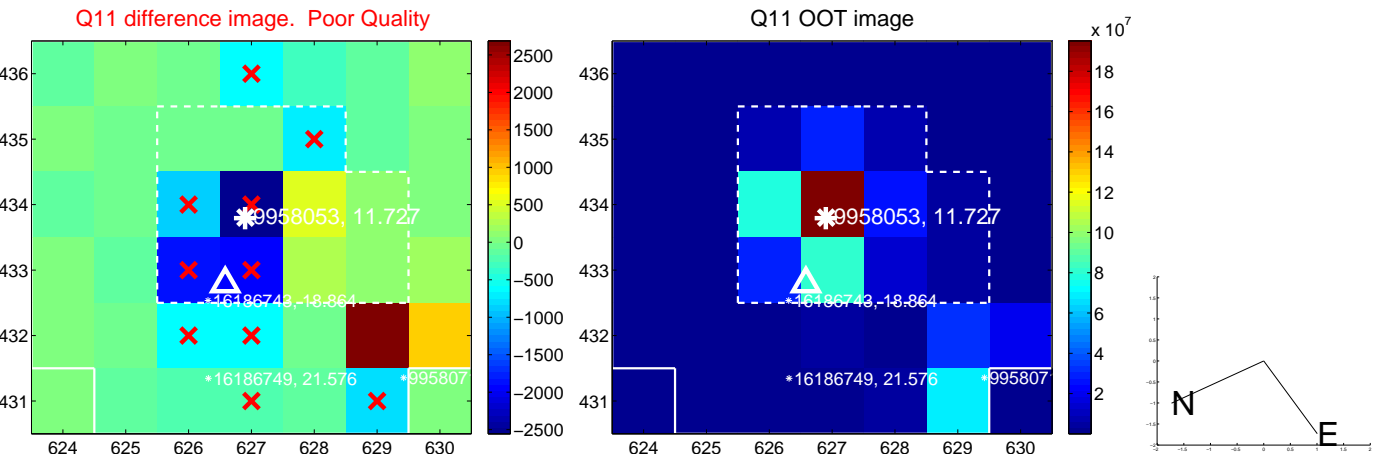
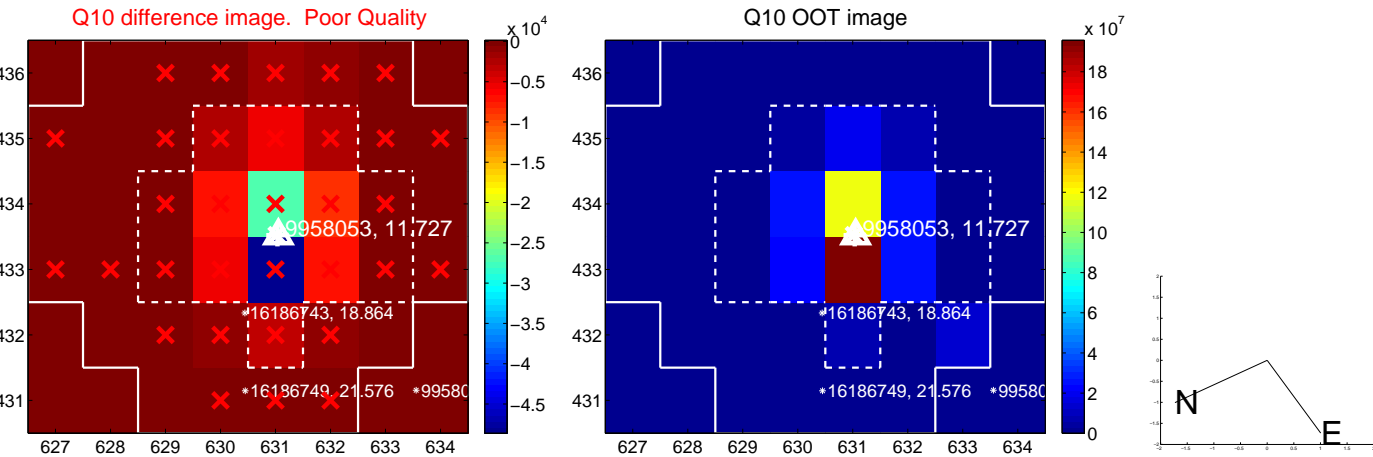
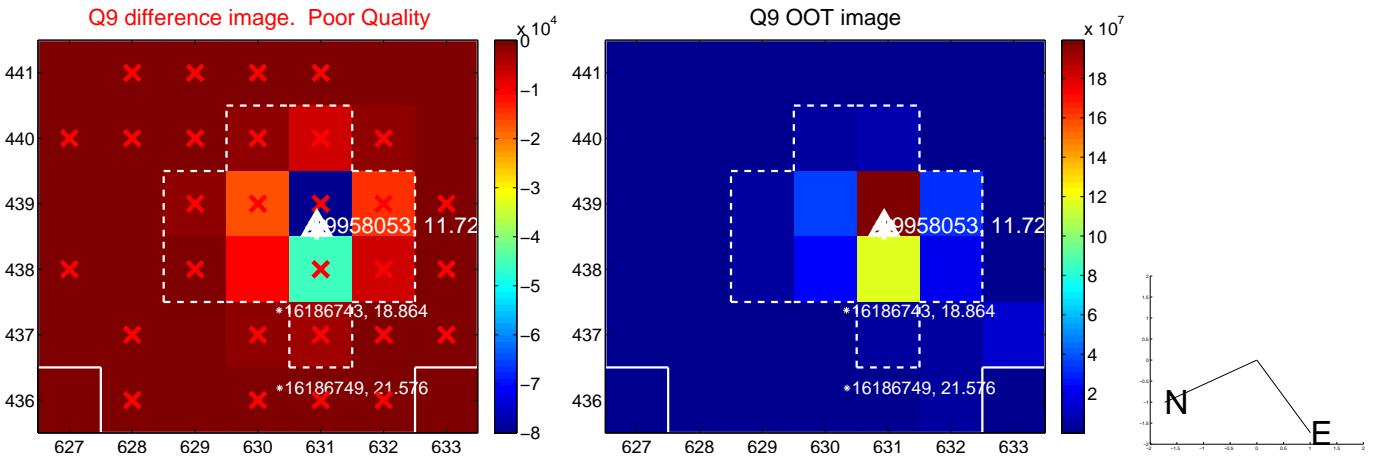
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



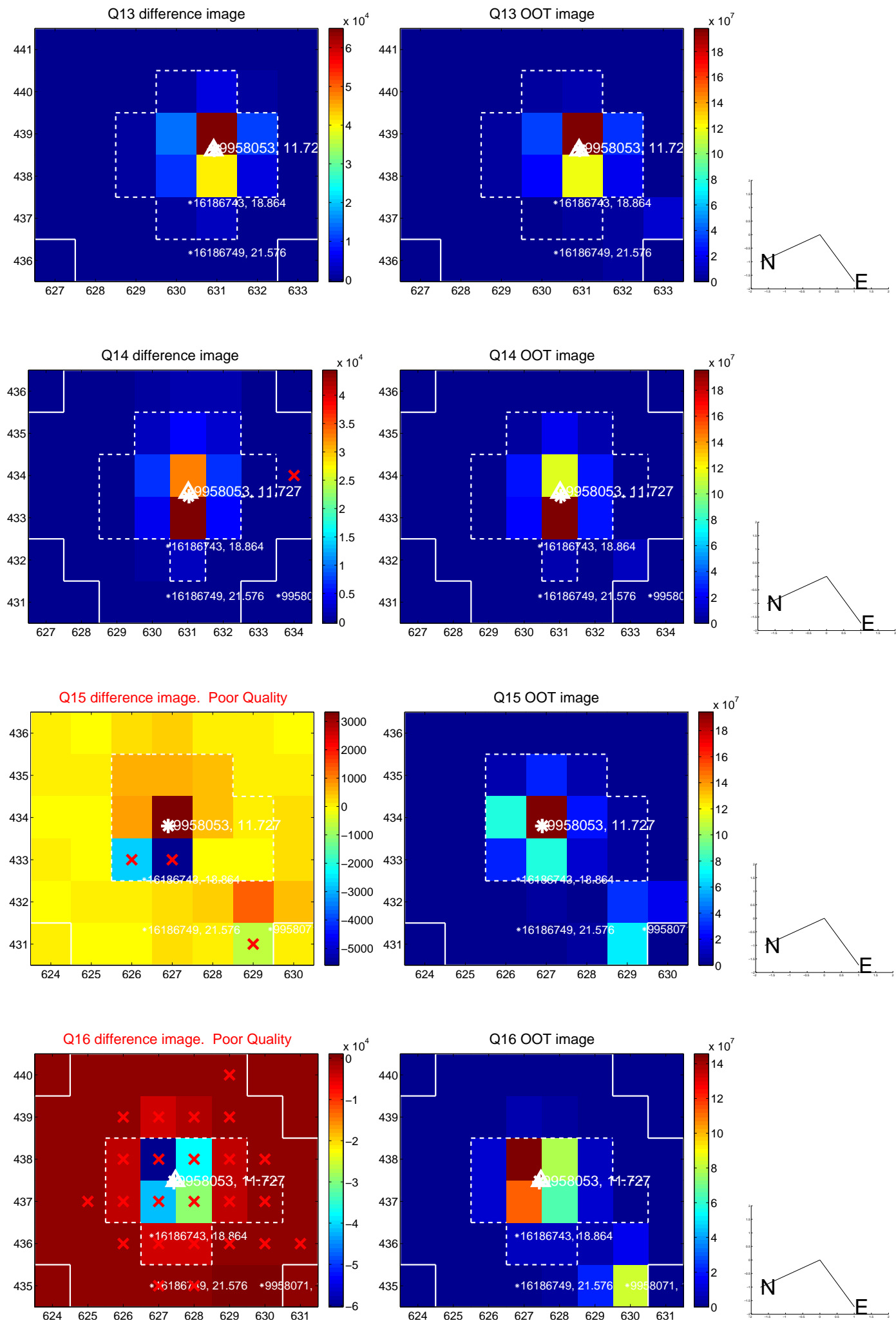
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



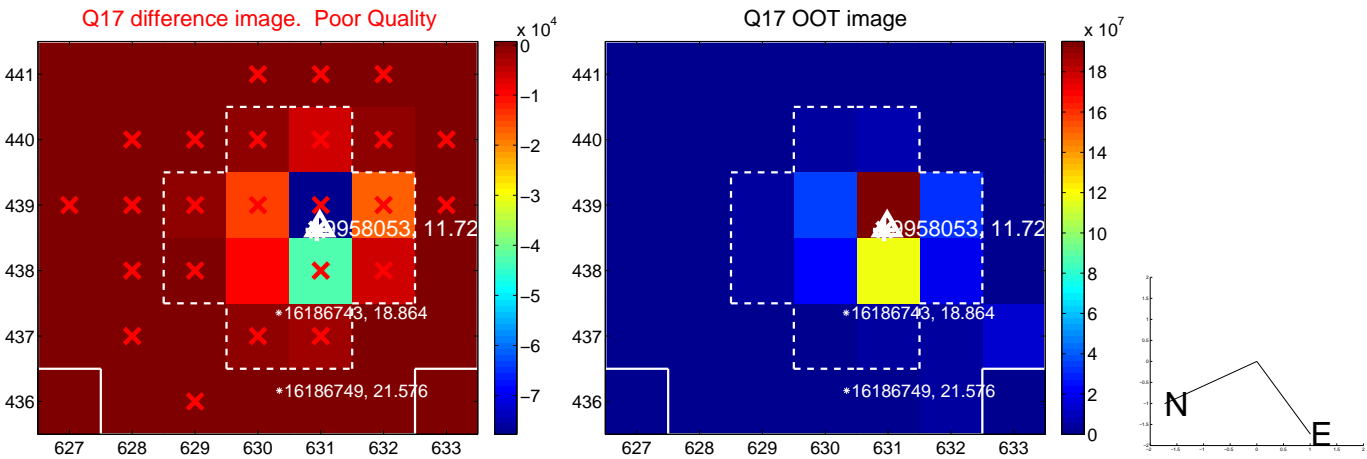
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

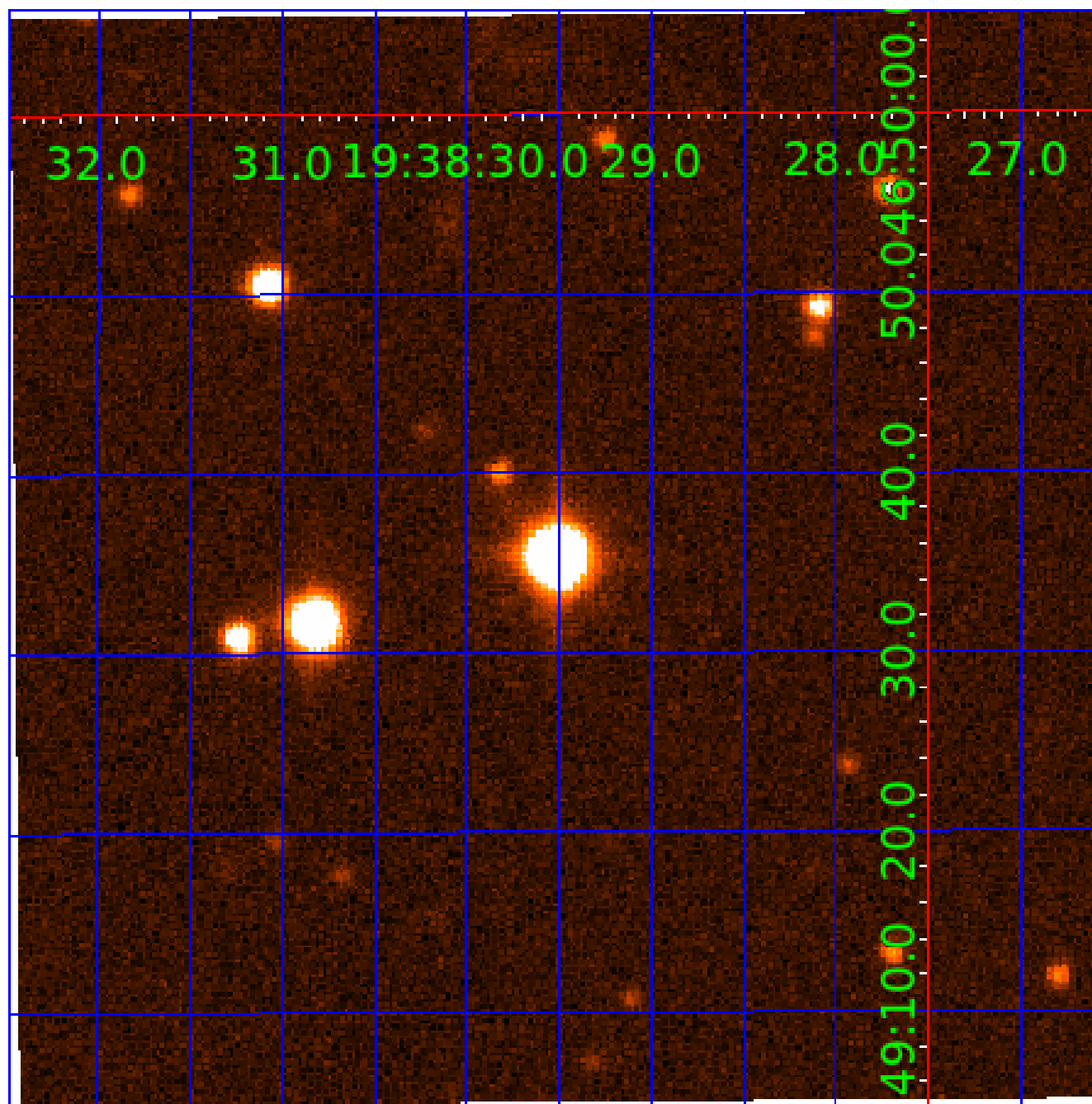


folded centroid time series figure for this object.



UKIRT Image

Declination



# KIC 009958053

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009958053-01	OBS	7263.01	2.733960	133.772200	60.1	1.800	26.6	27.3	2.59	10452	2.31	25380.73
009958053-02	OBS	No	2.733982	134.170197	41.7	1.779	17.5	19.5	2.59	10452	1.92	25380.45
009958053-03	OBS	No	0.911295	132.006934	13.5	2.952	13.9	10.2	2.59	10452	1.09	109820.04
009958053-04	OBS	No	0.910122	132.268885	0.1	5.106	10.7	0.1	2.59	10452	0.10	110008.76
009958053-05	OBS	No	167.394272	200.336363	171.2	6.173	11.2	8.8	2.59	10452	3.55	105.17
009958053-06	OBS	No	46.345964	171.507242	79.5	6.369	10.1	6.6	2.59	10452	2.39	582.83
009958053-07	OBS	No	0.911332	131.698494	150.1	1.500	10.3	-1.0	2.59	10452	3.27	109814.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009958053-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_FEW_DIFFS
009958053-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009958053-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009958053-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV
009958053-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES
009958053-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009958053-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

**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 009958053-05

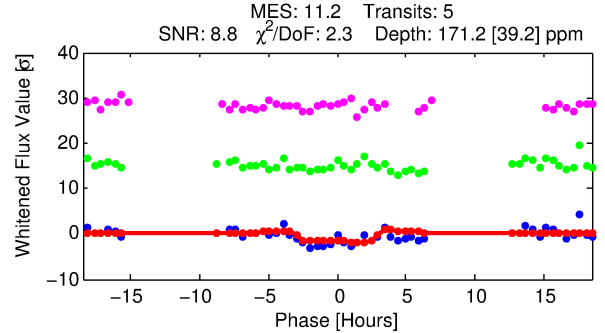
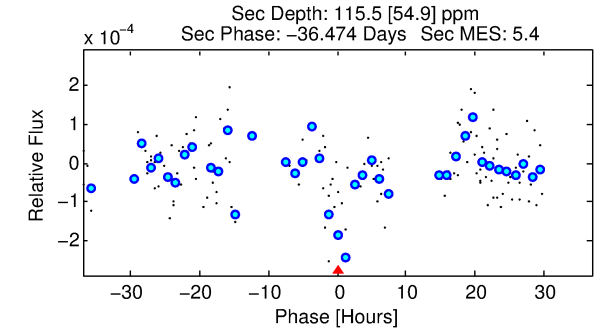
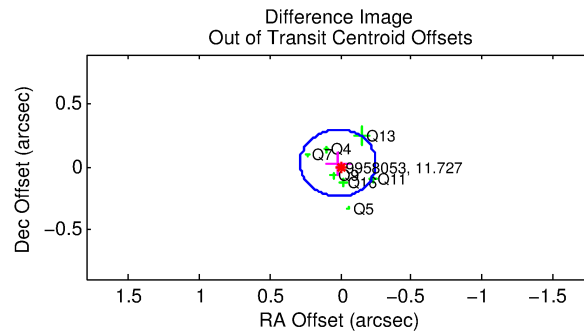
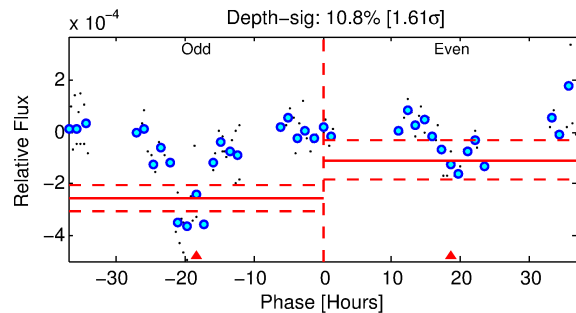
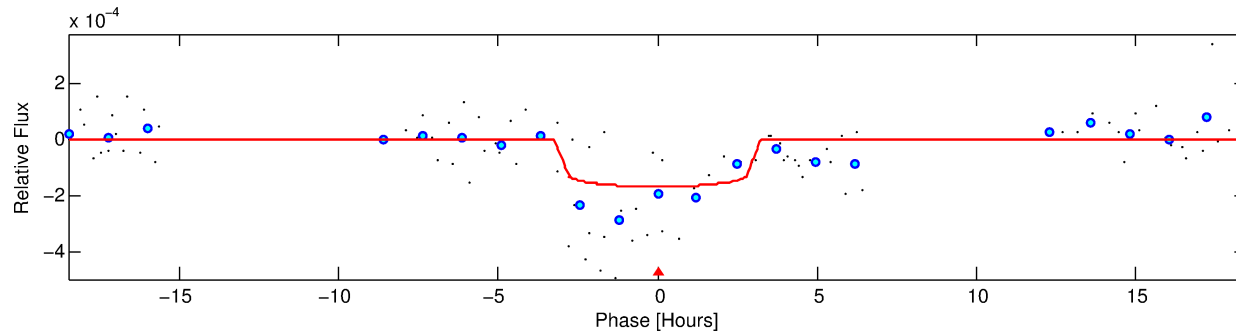
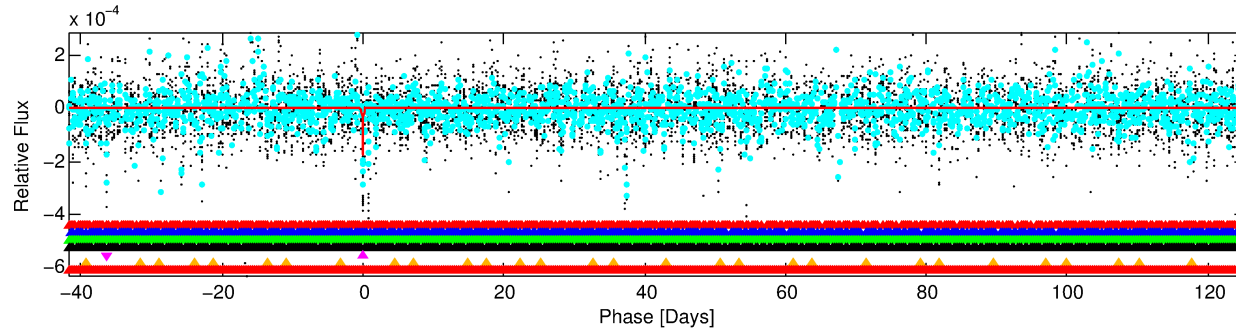
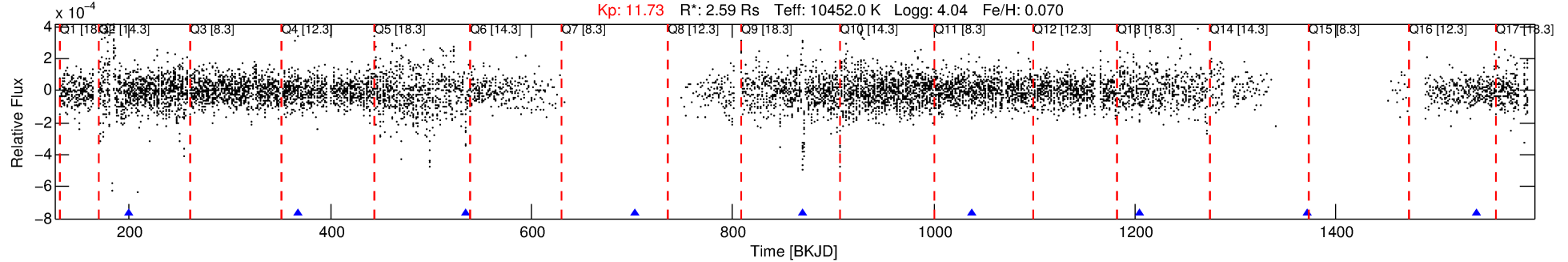
No Significant Match Found

# DV One-Page Summary

KIC: 9958053 Candidate: 5 of 7 Period: 167.394 d

KOI: K07263 Corr: No Ephemeris Match

Kp: 11.73 R\*: 2.59 Rs Teff: 10452.0 K Logg: 4.04 Fe/H: 0.070



## DV Fit Results:

Period = 167.39427 [0.01337] d  
Epoch = 200.3364 [0.0463] BKJD  
Rp/R\* = 0.0126 [0.0138]  
a/R\* = 182.71 [1509.16]  
b = 0.50 [12.58]  
Seff = 105.17 [46.93]  
Teq = 817 [91] K  
Rp = 3.55 [4.06] Re  
a = 0.8268 [0.2307] AU  
Ag = 3438.28 [7844.67] [0.44σ]  
Teffp = 9668 [5437] K [1.63σ]

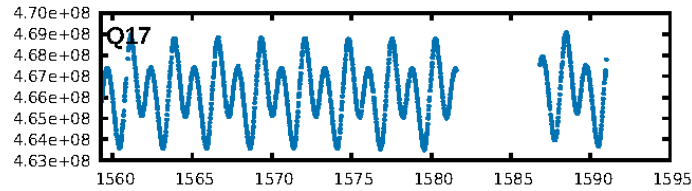
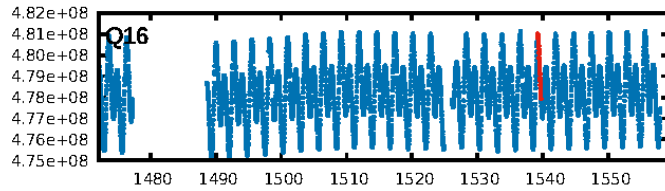
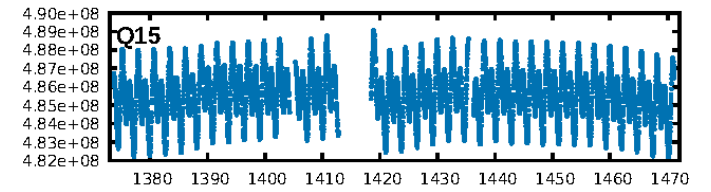
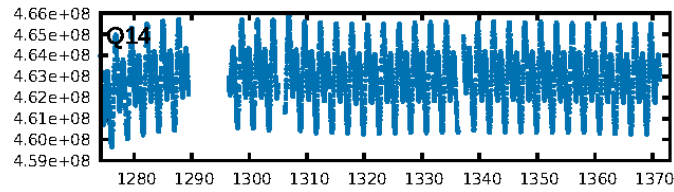
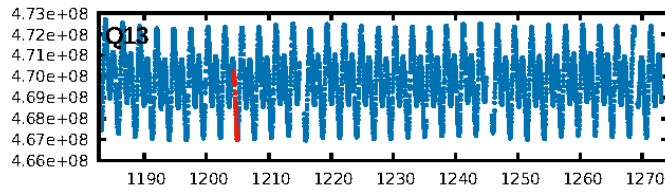
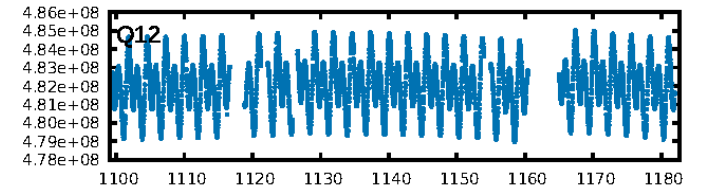
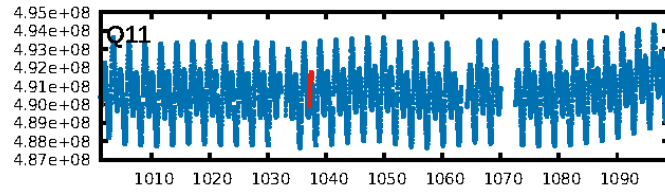
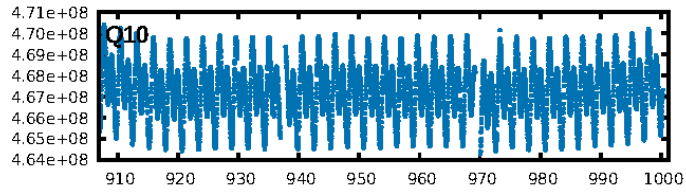
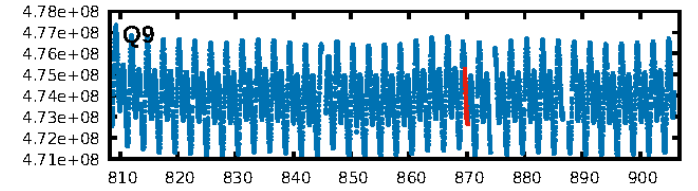
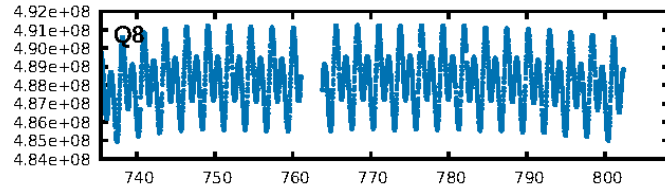
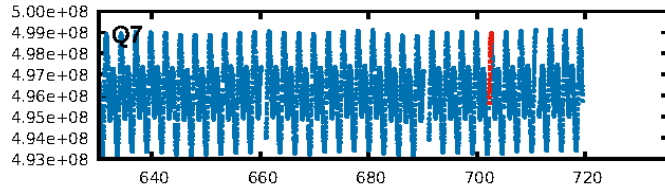
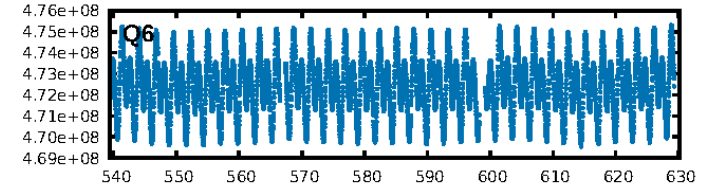
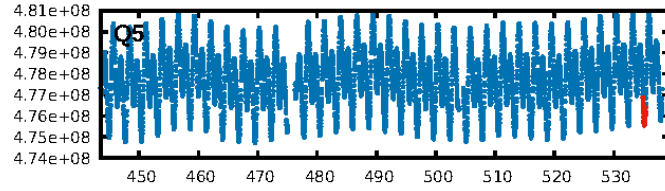
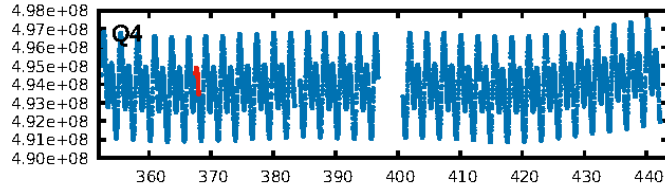
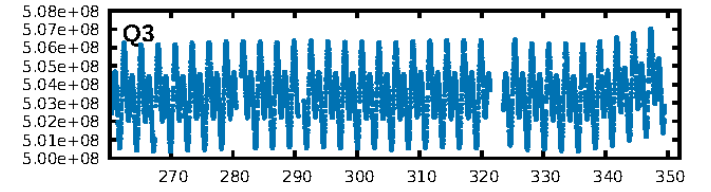
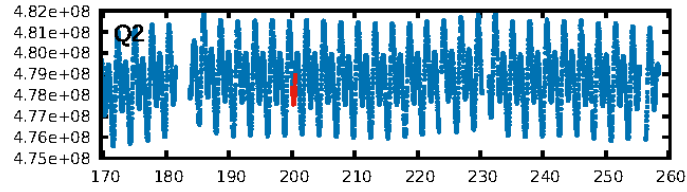
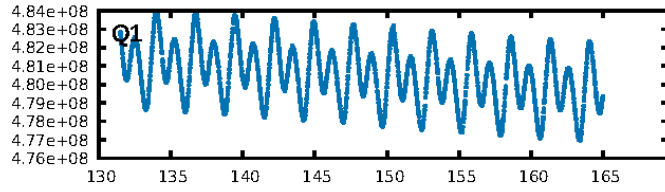
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [327.55σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 82.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 7.419  
Centroid-sig: 17.2%  
Centroid-so: 1.134 arcsec [1.31σ]  
OotOffset-rm: 0.034 arcsec [0.38σ]  
KicOffset-rm: 0.086 arcsec [0.86σ]  
OotOffset-st: 0/2/2/3 [7]  
KicOffset-st: 0/2/2/3 [7]  
DiffImageQuality-fgm: 0.43 [3/7]  
DiffImageOverlap-fno: 0.00 [0/7]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:02:10 Z

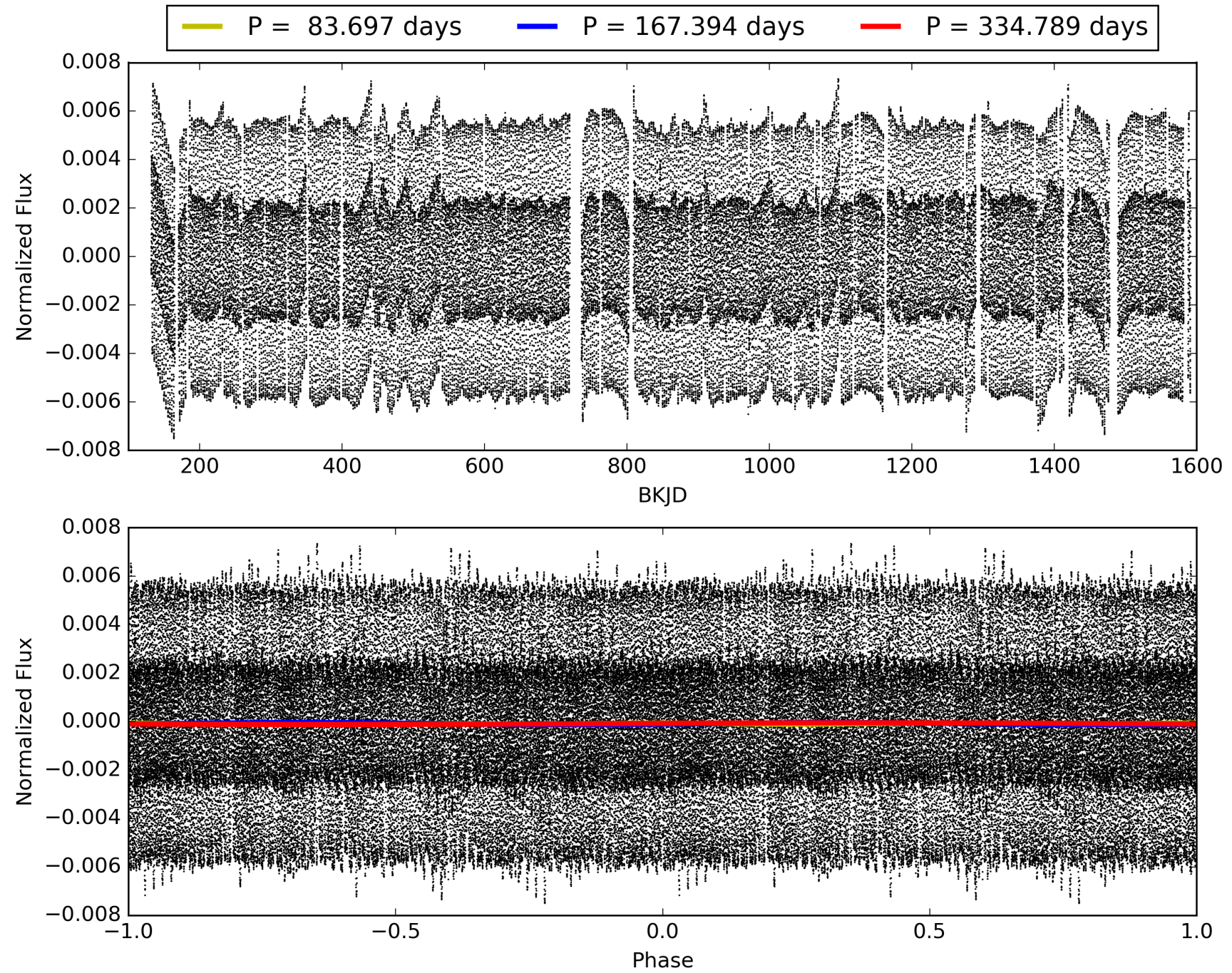
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009958053-05, PDC Light Curves



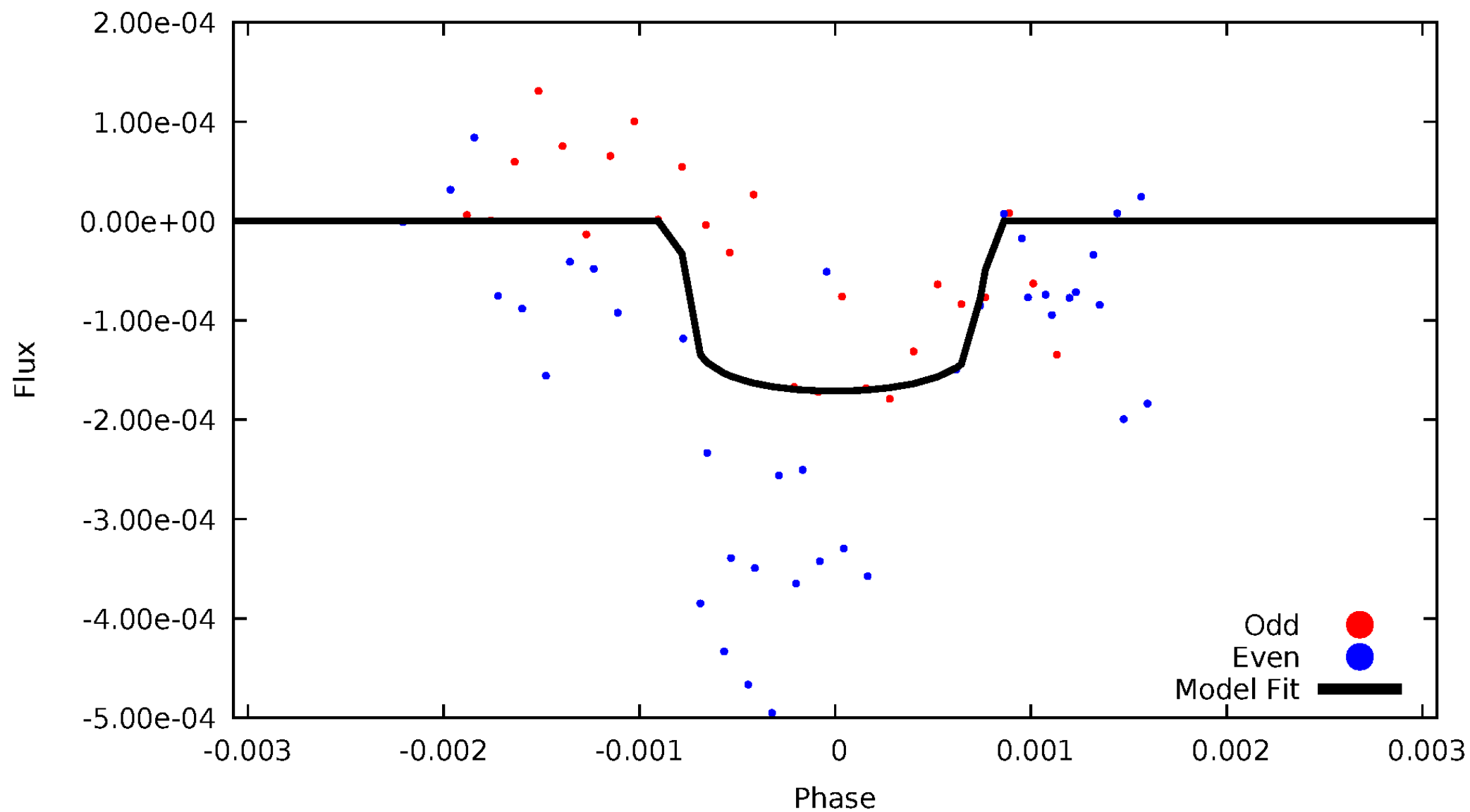


TCE 009958053-05



# DV Odd/Even

TCE 009958053-05





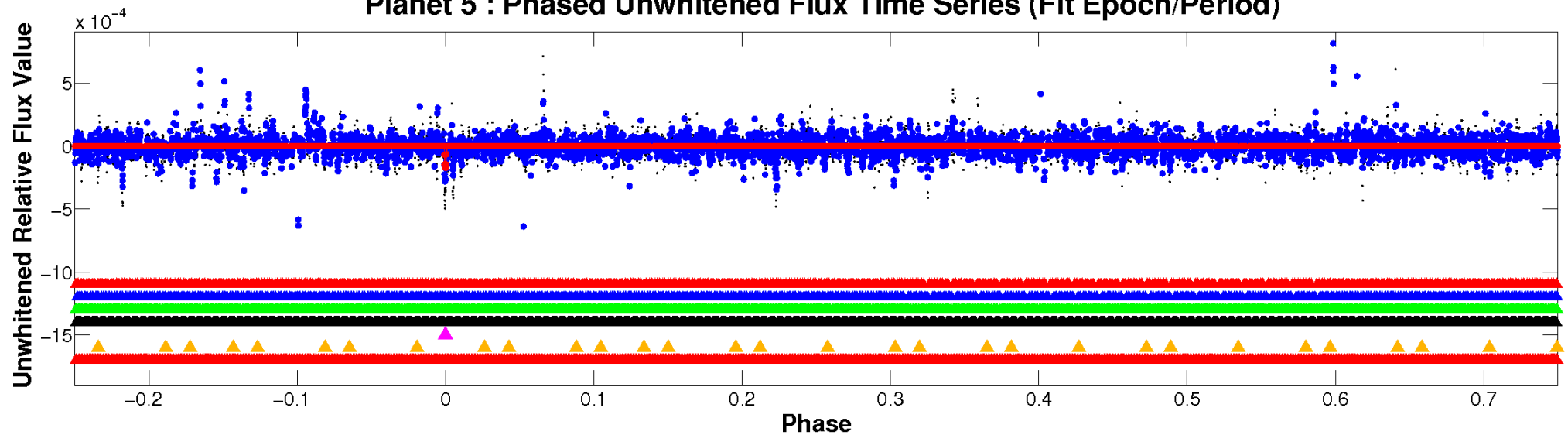


ALT Odd/Even

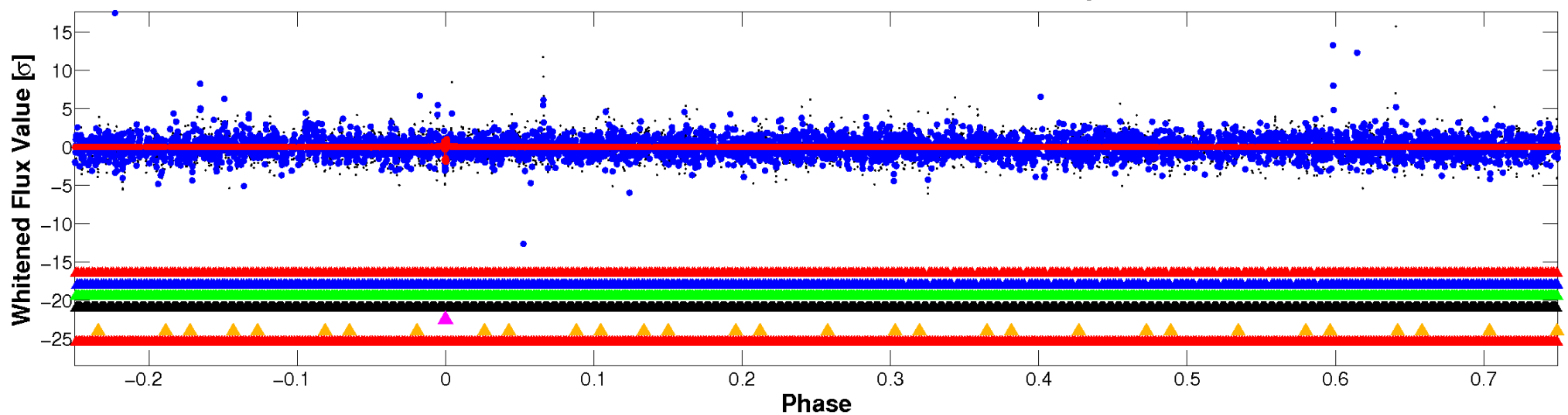
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

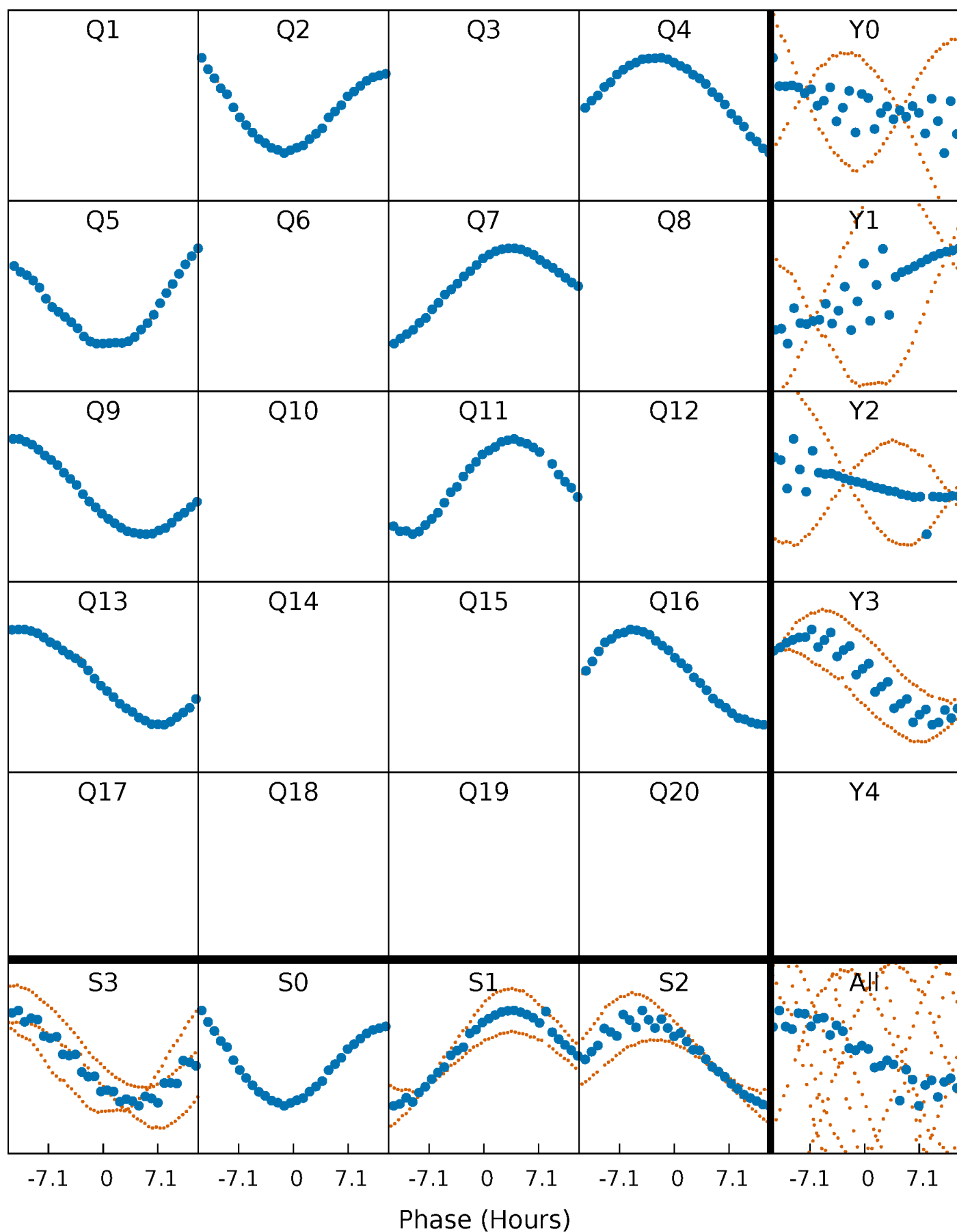


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



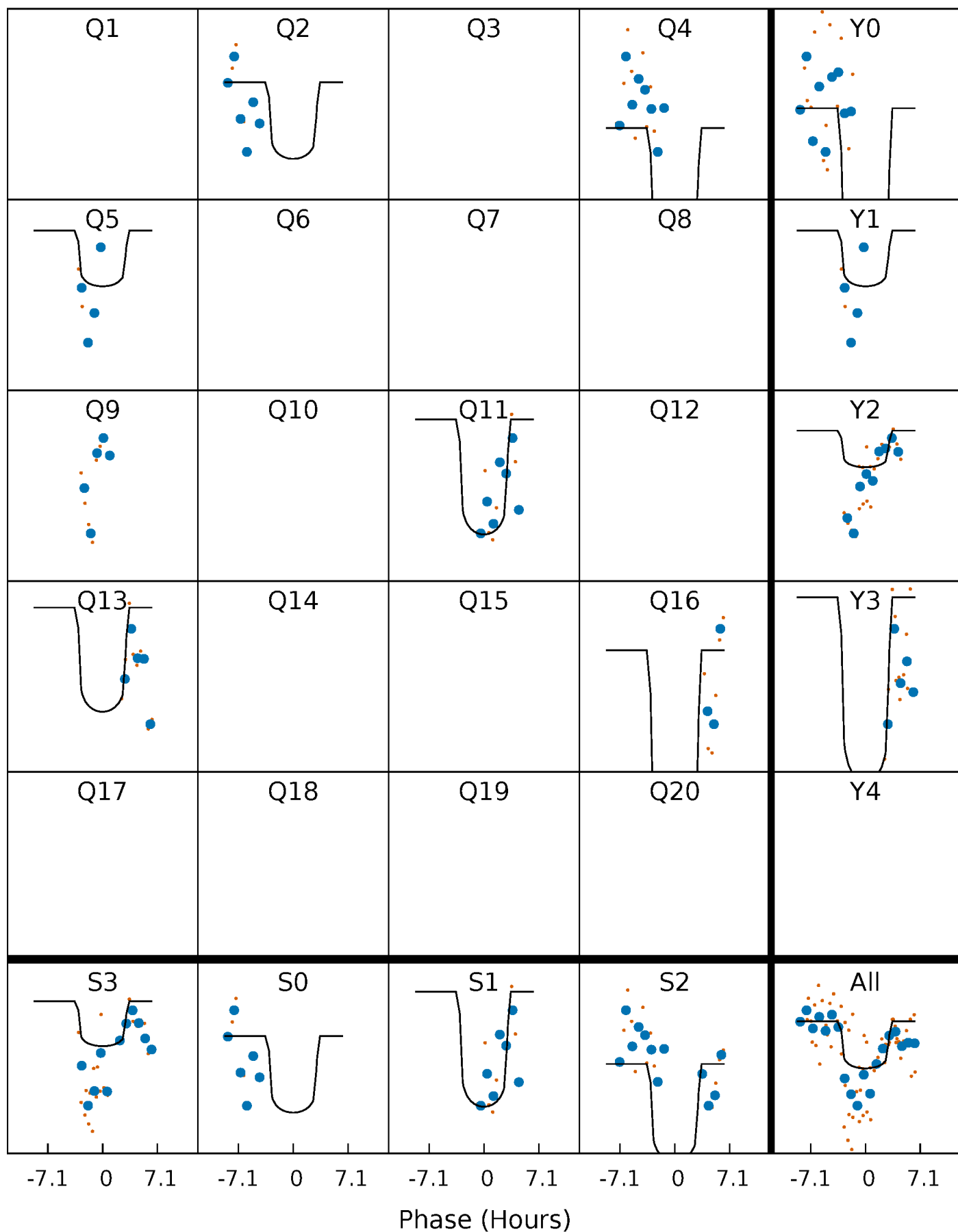
# PDC Quarter-Phased Transit Curves

TCE 009958053-05     $P=167.394272$  Days     $T_0=200.336363$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 009958053-05 P=167.394272 Days  $T_0=200.336363$  (BKJD)



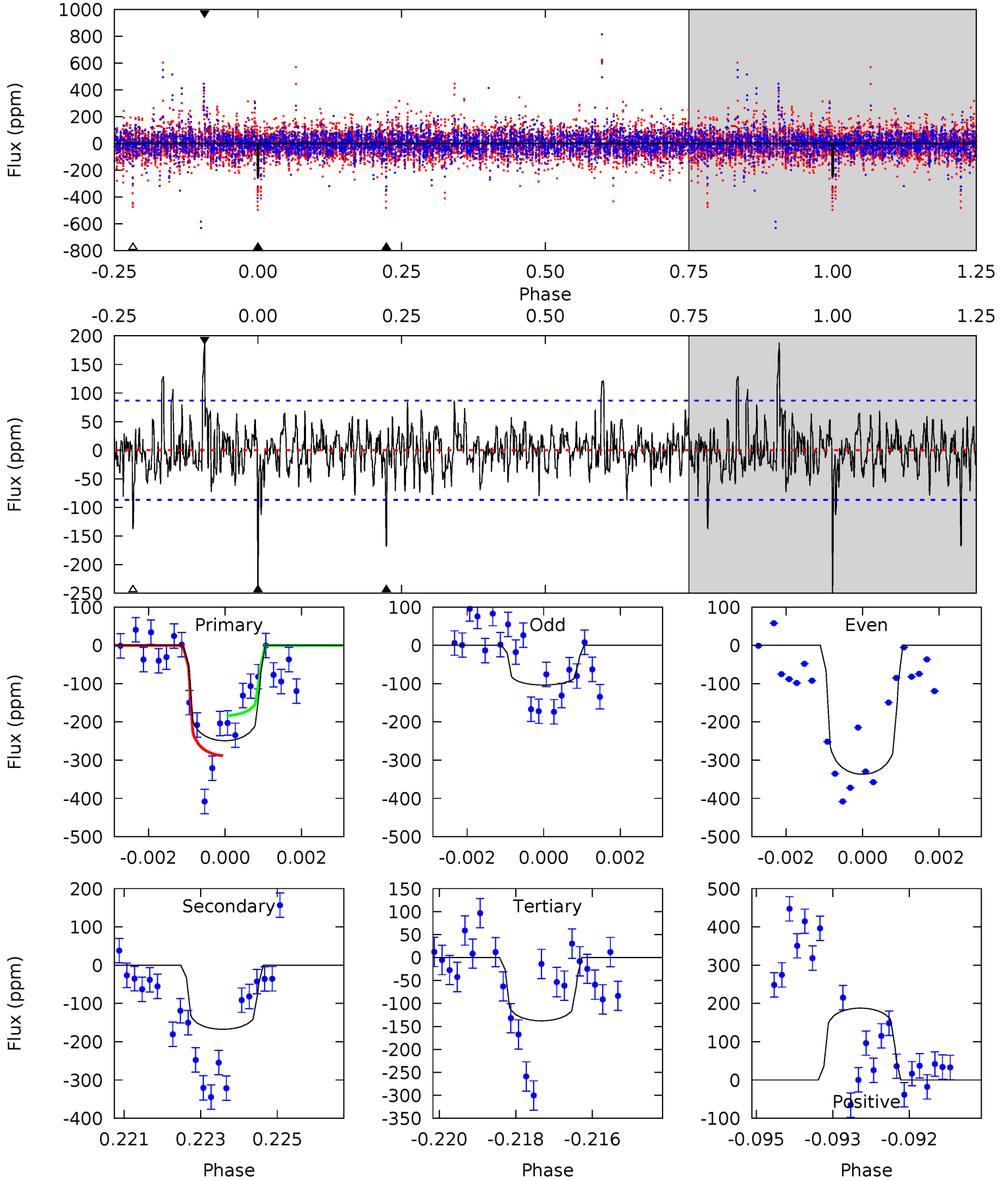
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

009958053-05,  $P = 167.394272$  Days,  $E = 32.942091$  Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	10.3	8.51	11.6	5.36	3.15	1.97	6.89	3.80	1.83	-1.26	7.54	1.12	0.43	3.22



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 009958053

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10452^{+286}_{-429}$	$4.040^{+0.231}_{-0.189}$	$0.070^{+0.150}_{-0.550}$	$2.593^{+0.838}_{-0.838}$	$2.691^{+0.354}_{-0.658}$	$0.217^{+0.372}_{-0.104}$
	+3%/-4%	+6%/-5%	+214%/-786%	+32%/-32%	+13%/-24%	+171%/-48%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009958053-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-167 \pm 16$	$4.30^{+3.58}_{-2.63}$	$1131^{+100}_{-88}$	$9085^{+11949}_{-2594}$	$3313^{+18888}_{-2337}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature  
 $T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )  
 $A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

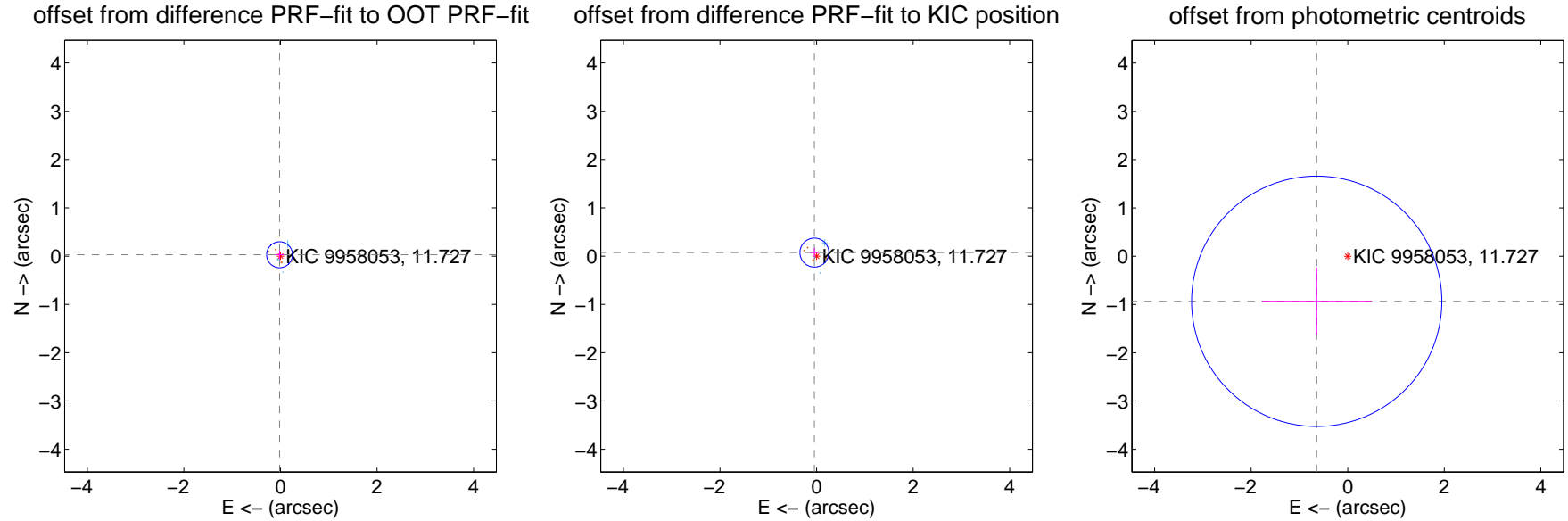
## DV Centroid Data

Supplemental centroid analysis for 009958053-05. **Kepler magnitude: 11.73.** Transit SNR 8.78

**There are 3 quarters with good PRF difference image offsets**

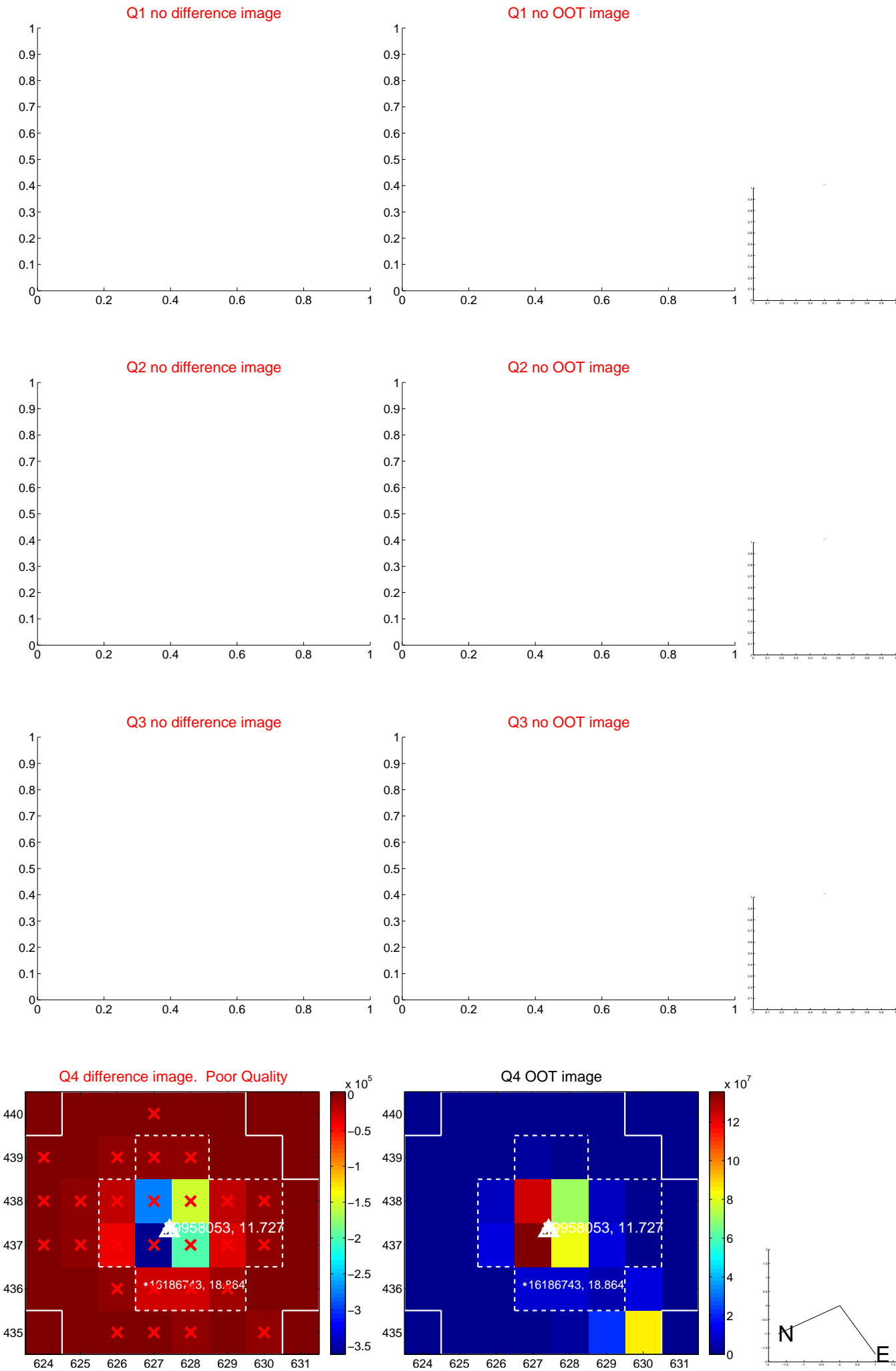
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.034 \pm 0.089$	0.38	$0.018 \pm 0.084$	$0.029 \pm 0.091$
PRF-fit source offset from KIC position	$0.086 \pm 0.100$	0.86	$0.045 \pm 0.086$	$0.073 \pm 0.098$
photometric centroid source offset	$1.13 \pm 0.86$	1.31	$0.64 \pm 1.14$	$-0.93 \pm 0.70$

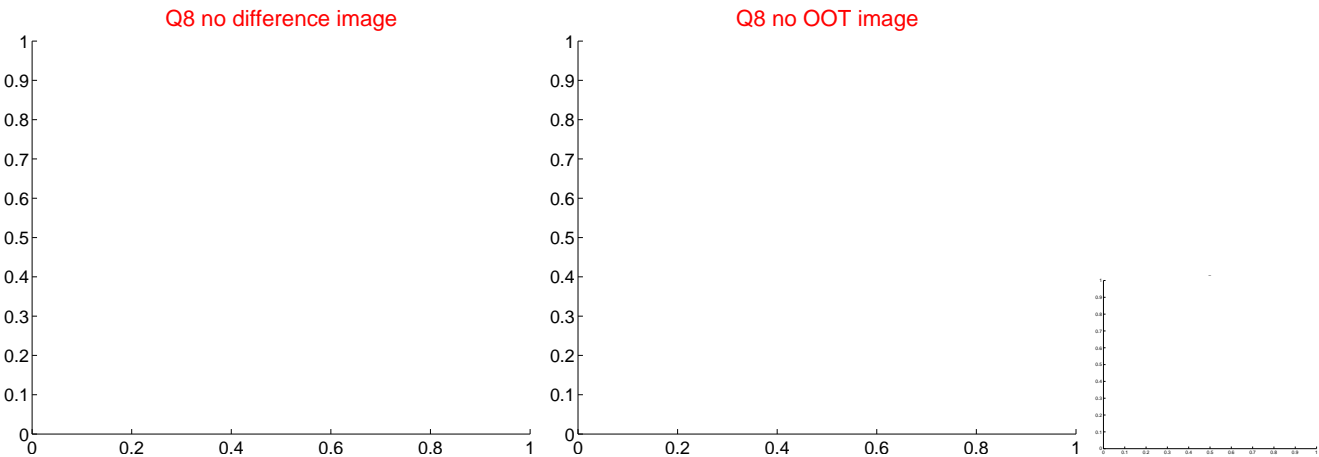
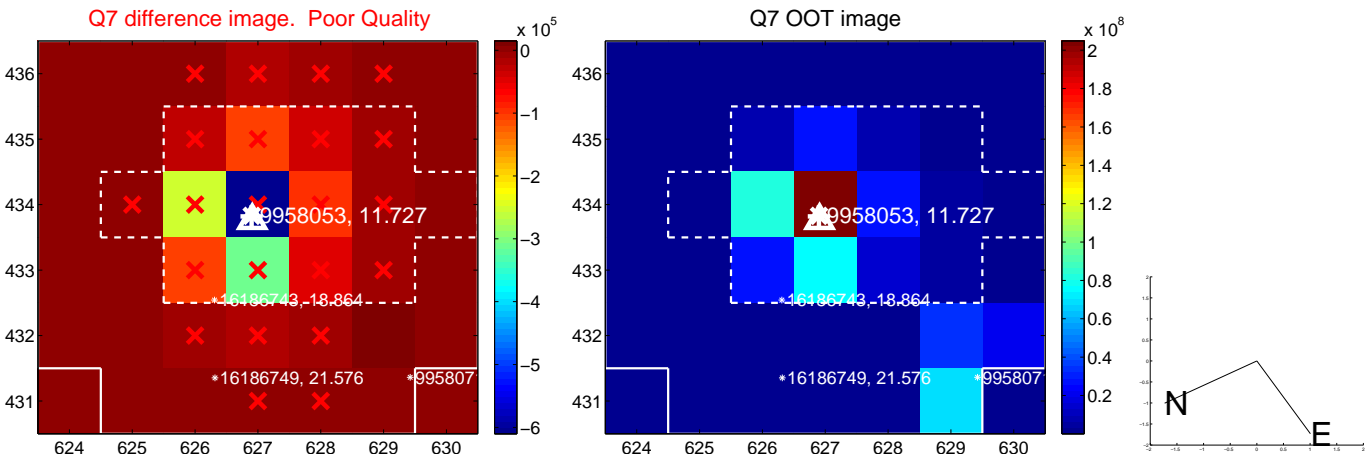
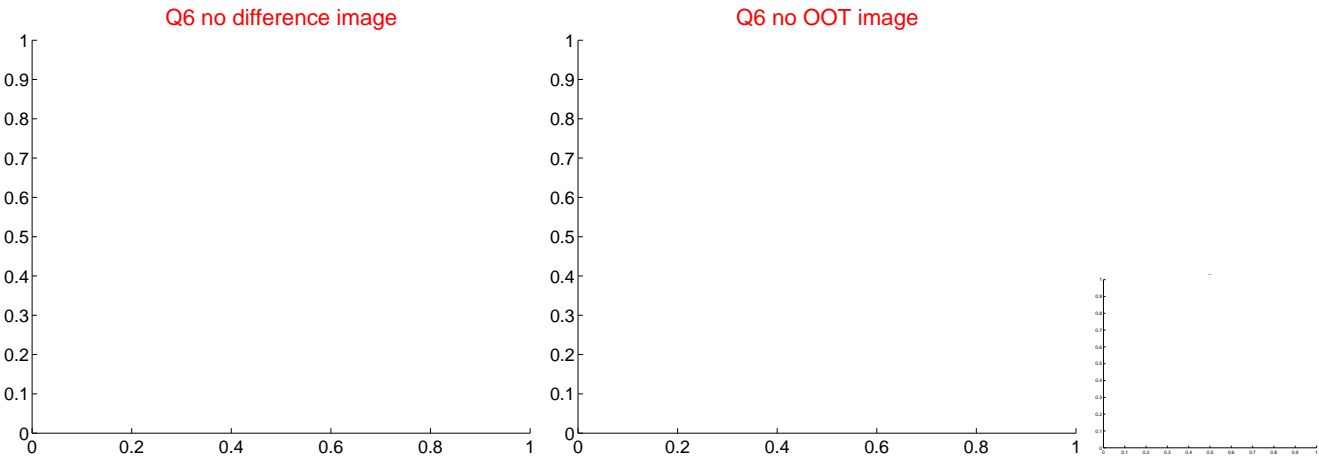
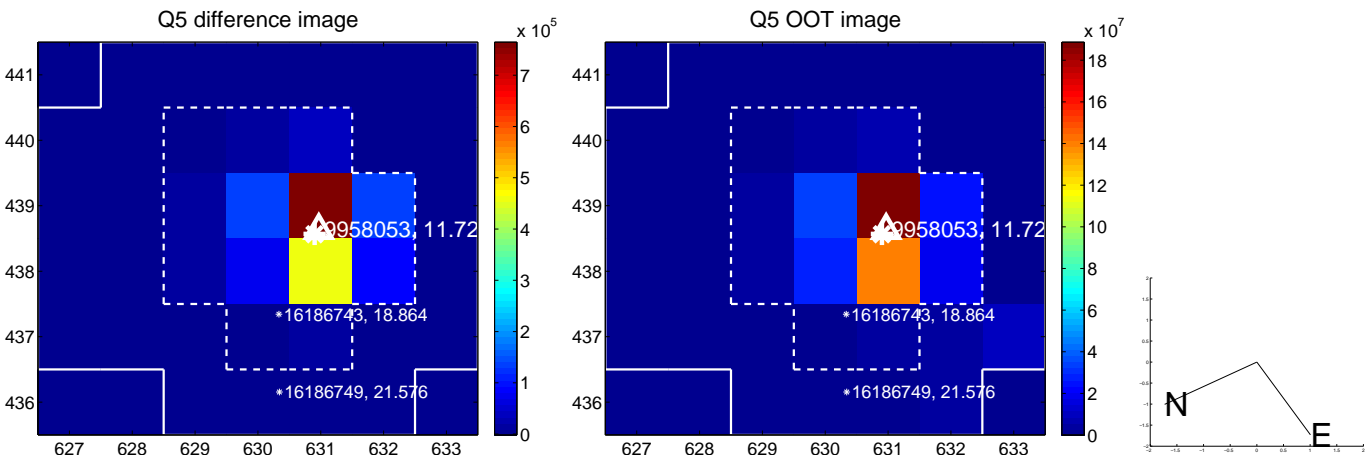


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

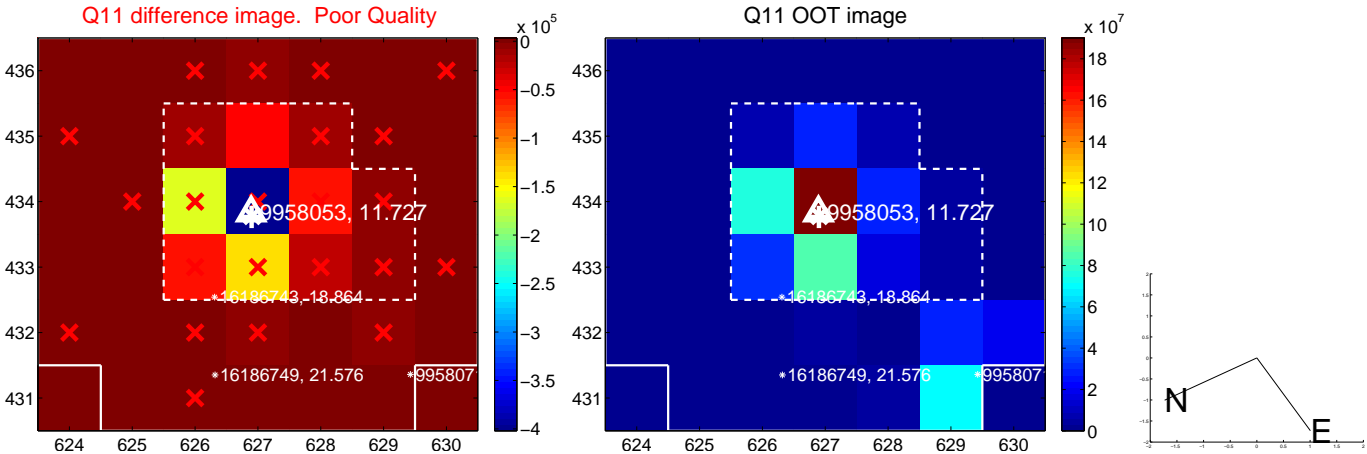
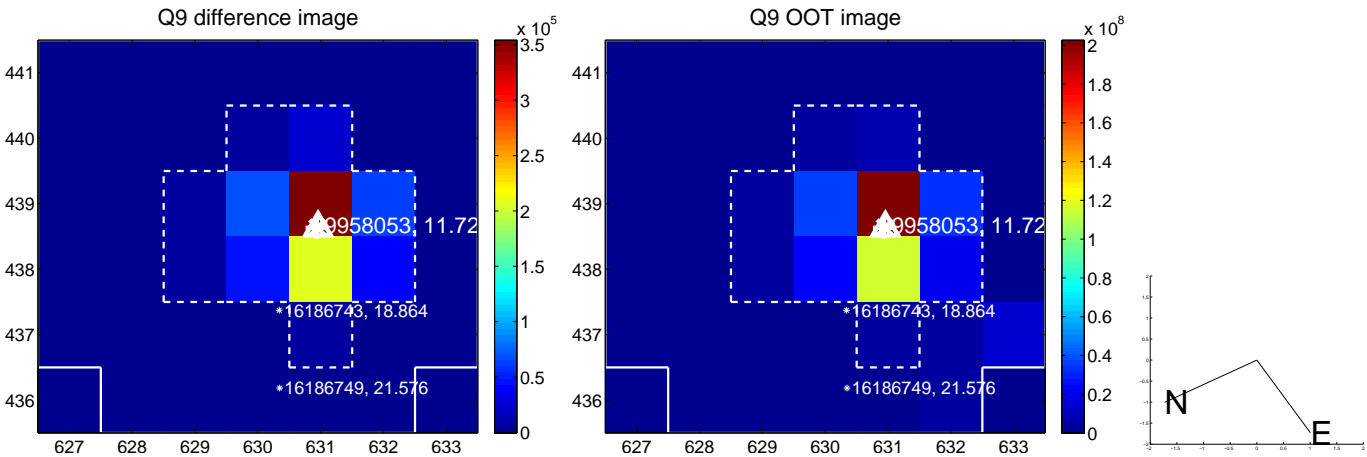


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

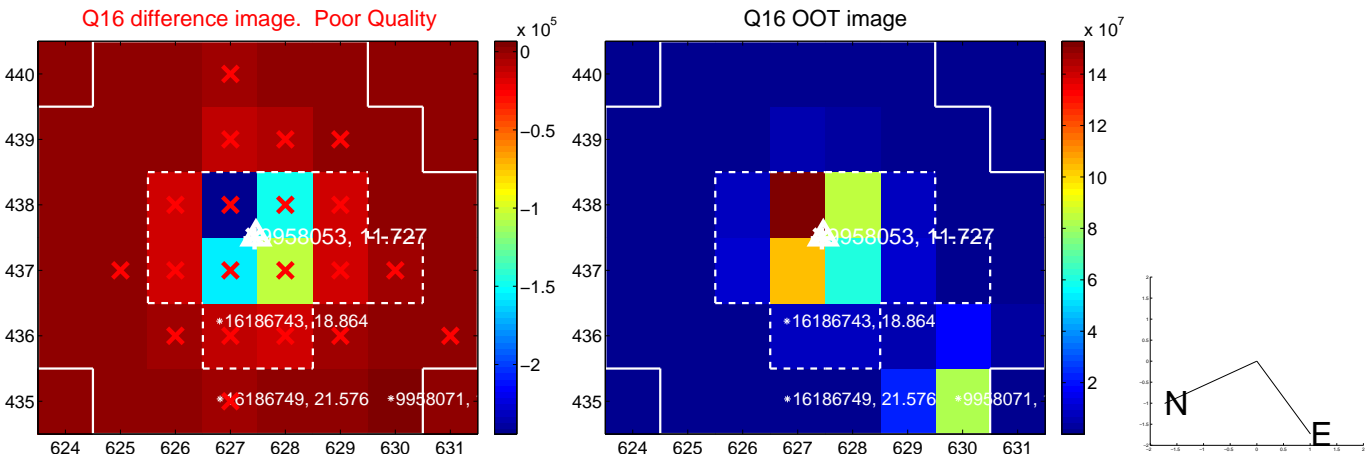
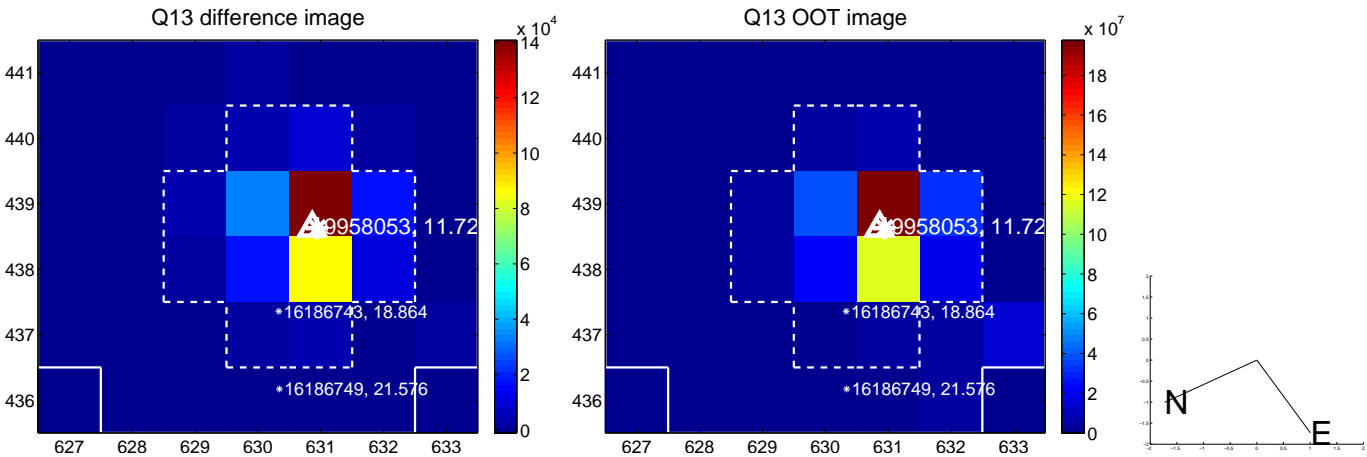




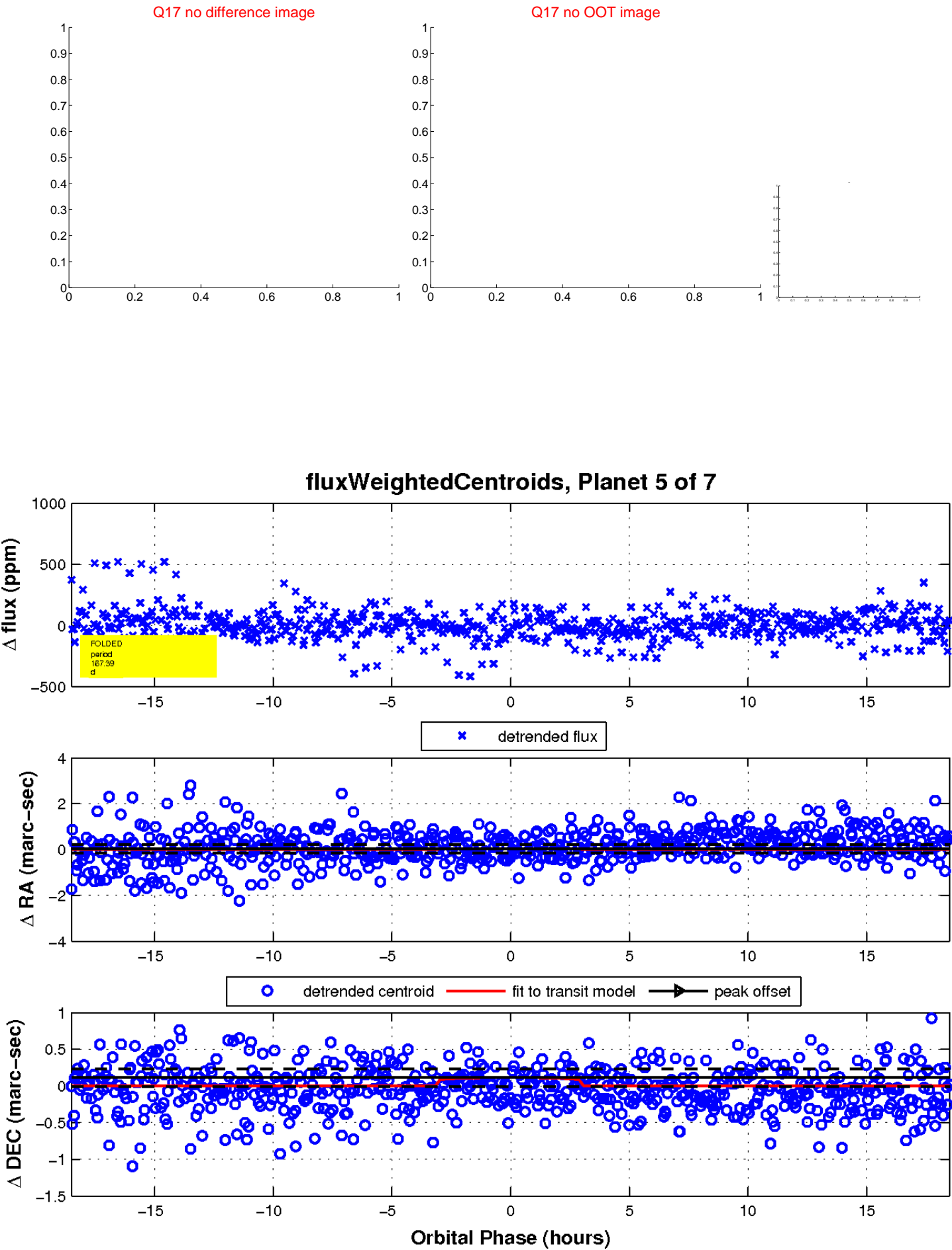
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

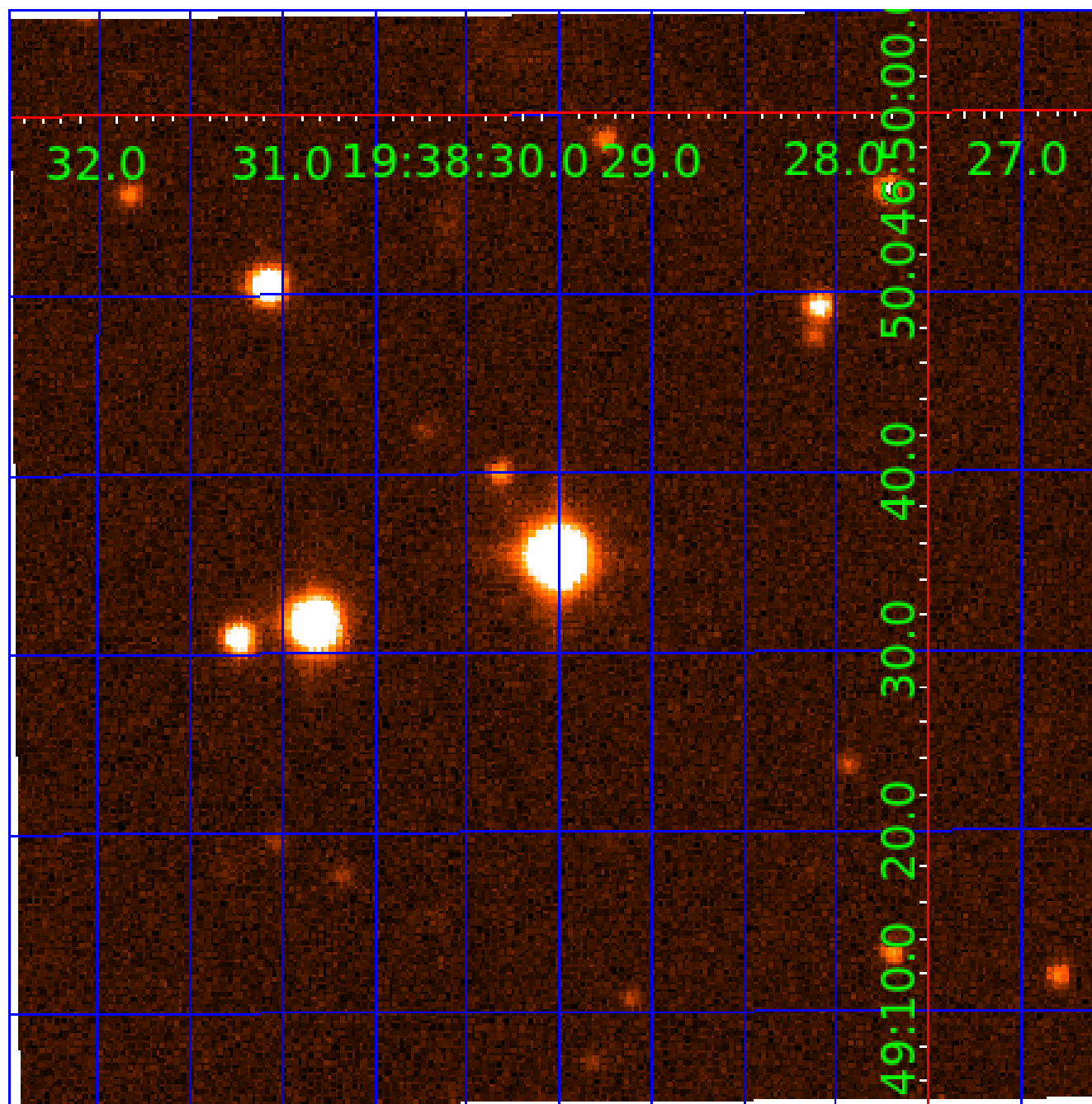


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 009958053

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009958053-01	OBS	7263.01	2.733960	133.772200	60.1	1.800	26.6	27.3	2.59	10452	2.31	25380.73
009958053-02	OBS	No	2.733982	134.170197	41.7	1.779	17.5	19.5	2.59	10452	1.92	25380.45
009958053-03	OBS	No	0.911295	132.006934	13.5	2.952	13.9	10.2	2.59	10452	1.09	109820.04
009958053-04	OBS	No	0.910122	132.268885	0.1	5.106	10.7	0.1	2.59	10452	0.10	110008.76
009958053-05	OBS	No	167.394272	200.336363	171.2	6.173	11.2	8.8	2.59	10452	3.55	105.17
009958053-06	OBS	No	46.345964	171.507242	79.5	6.369	10.1	6.6	2.59	10452	2.39	582.83
009958053-07	OBS	No	0.911332	131.698494	150.1	1.500	10.3	-1.0	2.59	10452	3.27	109814.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009958053-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_FEW_DIFFS
009958053-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009958053-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009958053-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV
009958053-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES
009958053-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009958053-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

**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.

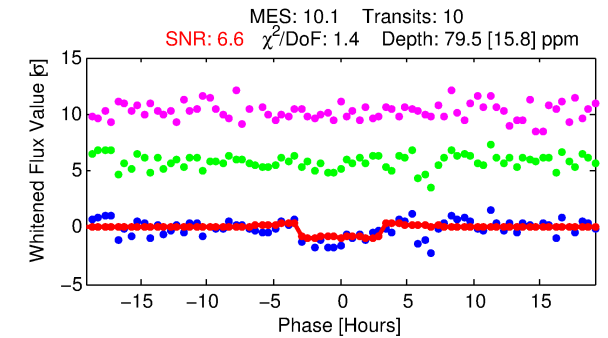
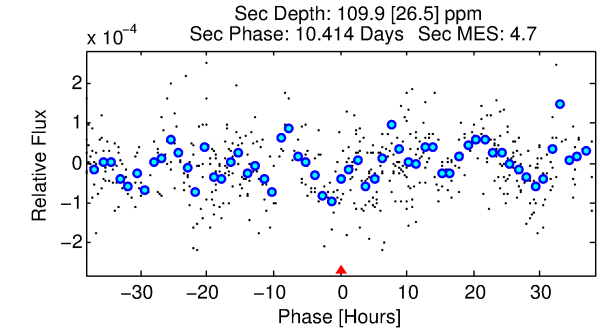
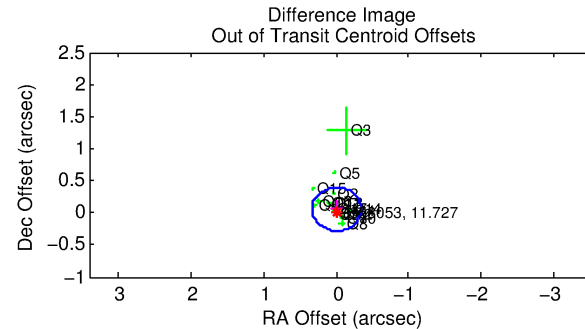
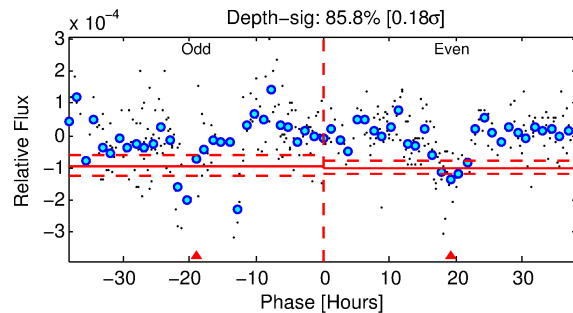
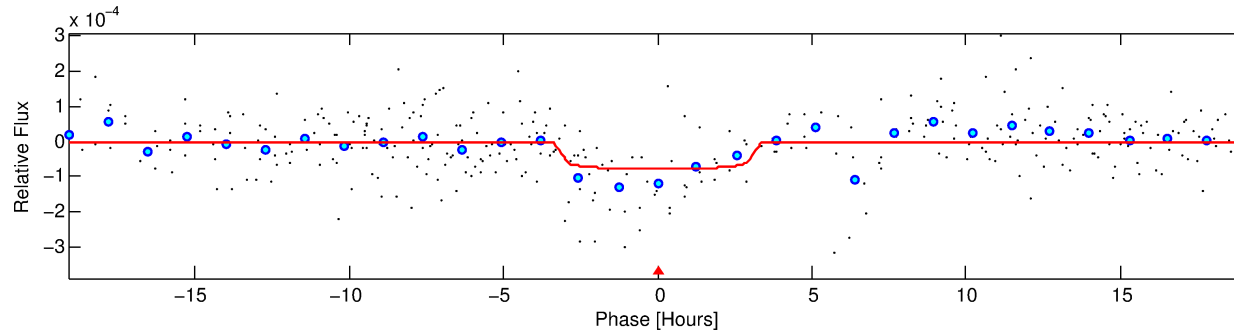
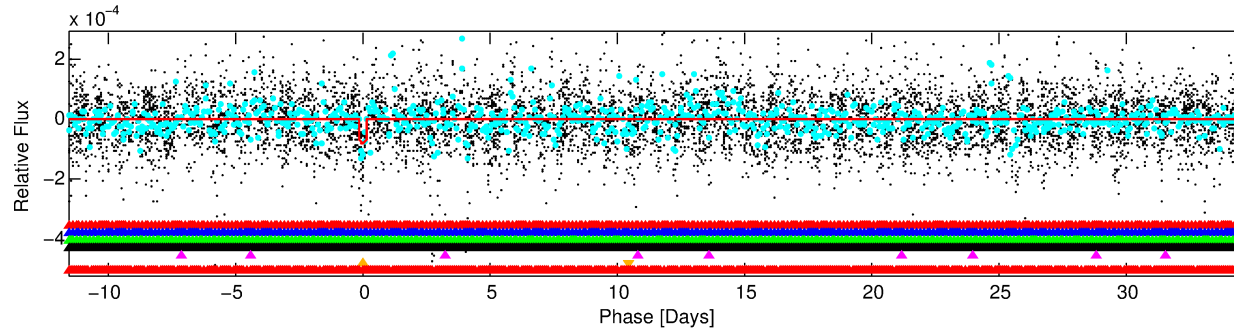
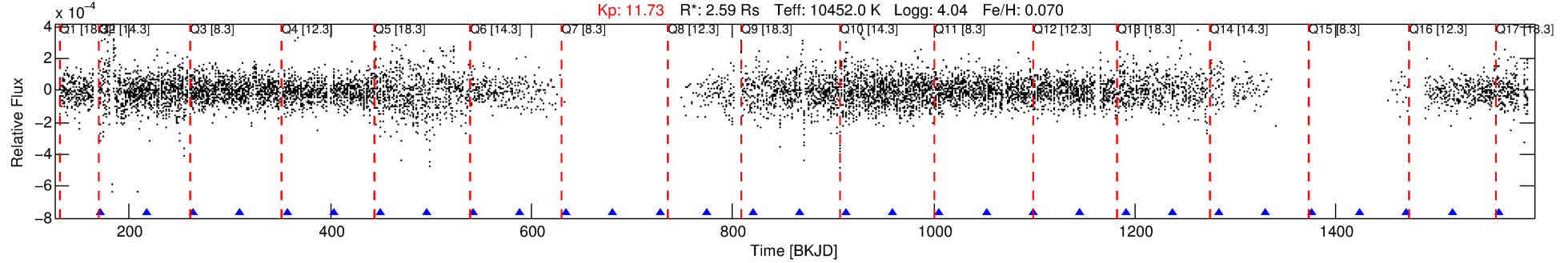
## Ephemeris Match Information For 009958053-06

No Significant Match Found

# DV One-Page Summary

KIC: 9958053 Candidate: 6 of 7 Period: 46.346 d  
KOI: K07263 Corr: No Ephemeris Match

Kp: 11.73 R\*: 2.59 Rs Teff: 10452.0 K Logg: 4.04 Fe/H: 0.070



## DV Fit Results:

Period = 46.34596 [0.00139] d  
Epoch = 171.5072 [0.0255] BKJD  
Rp/R\* = 0.0085 [0.0078]  
a/R\* = 53.37 [365.76]  
b = 0.31 [20.16]  
Seff = 582.83 [260.07]  
Teq = 1253 [140] K  
Rp = 2.39 [2.35] Re  
a = 0.3512 [0.0980] AU  
Ag = 1303.55 [2500.03] [0.52σ]  
Teffp = 11640 [5469] K [1.90σ]

## DV Diagnostic Results:

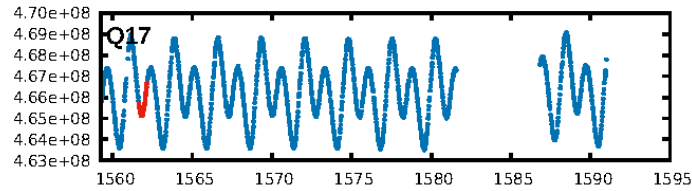
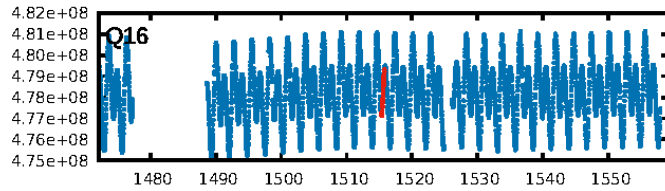
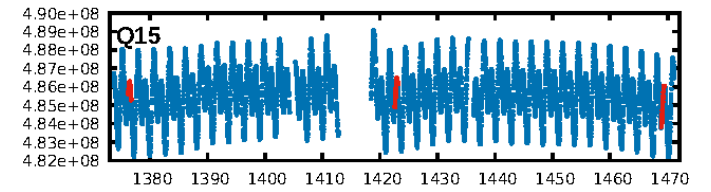
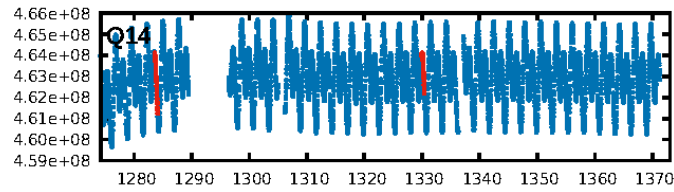
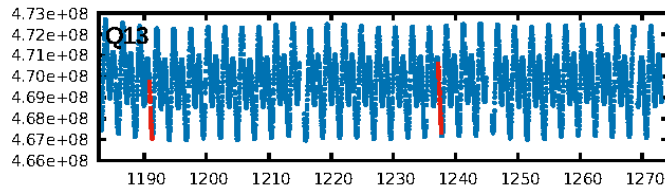
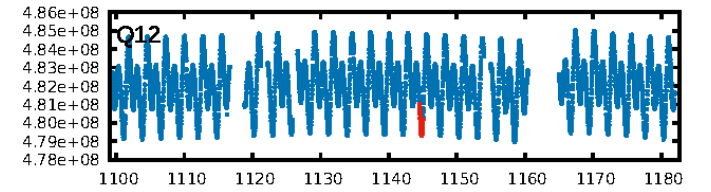
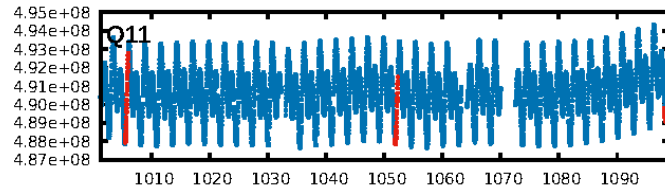
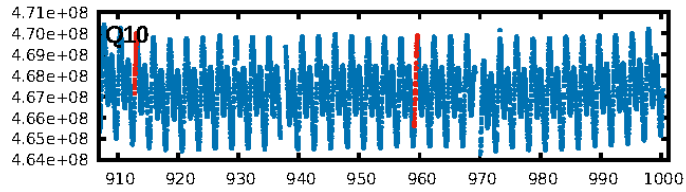
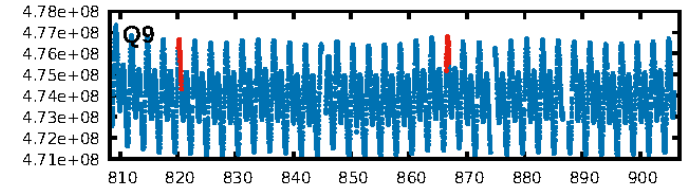
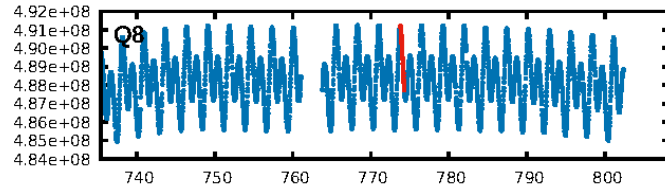
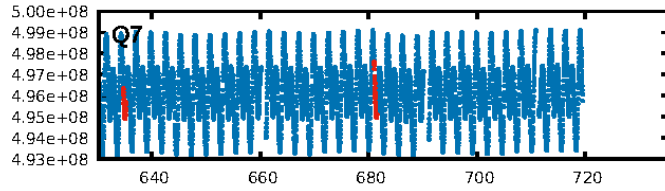
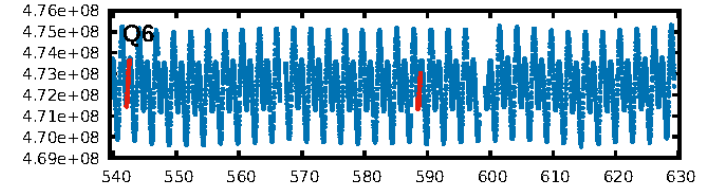
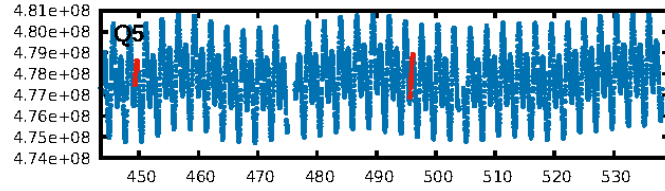
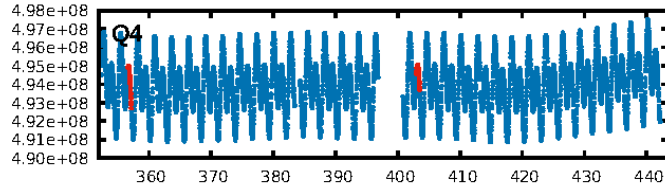
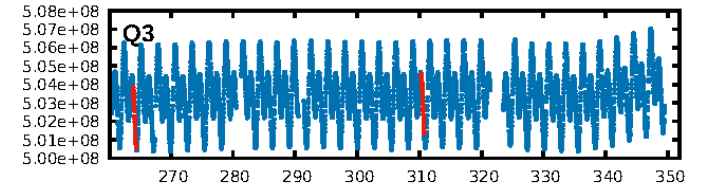
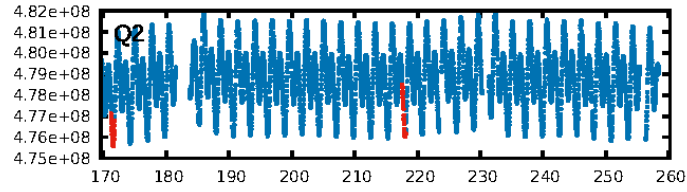
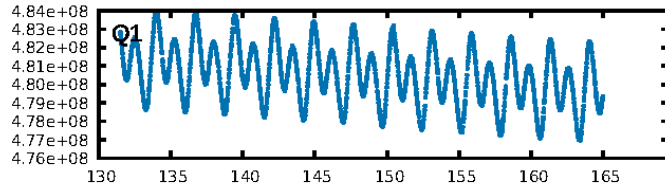
ShortPeriod-sig: 100.0% [158.28σ]  
LongPeriod-sig: 100.0% [327.55σ]  
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ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [10/10]  
GhostDiagnostic-chr: -34.52  
Centroid-sig: 20.7%  
Centroid-so: 1.829 arcsec [1.49σ]  
OotOffset-rm: 0.055 arcsec [0.49σ]  
KicOffset-rm: 0.053 arcsec [0.54σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.50 [8/16]  
DiffImageOverlap-fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:02:14 Z

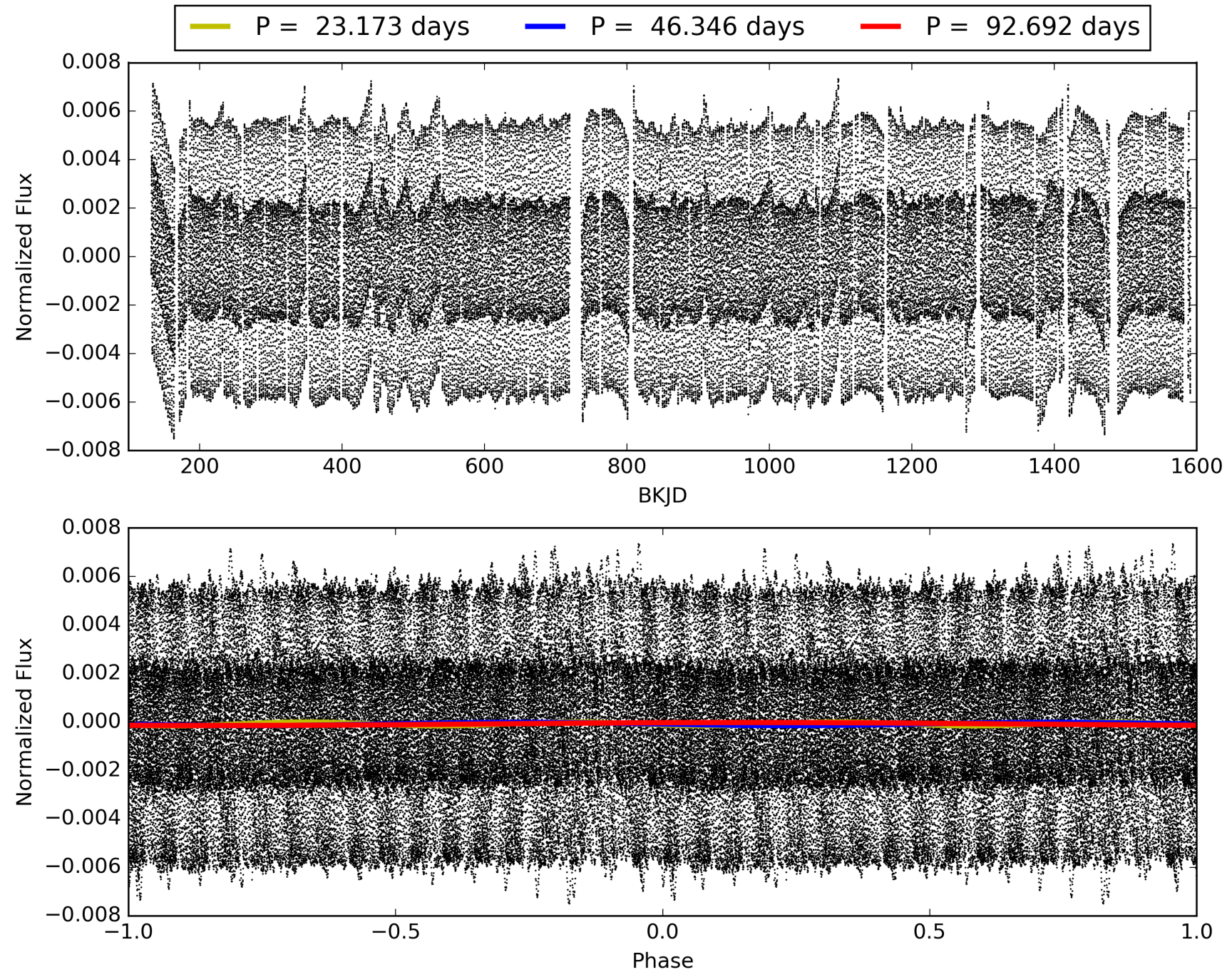
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 009958053-06, PDC Light Curves

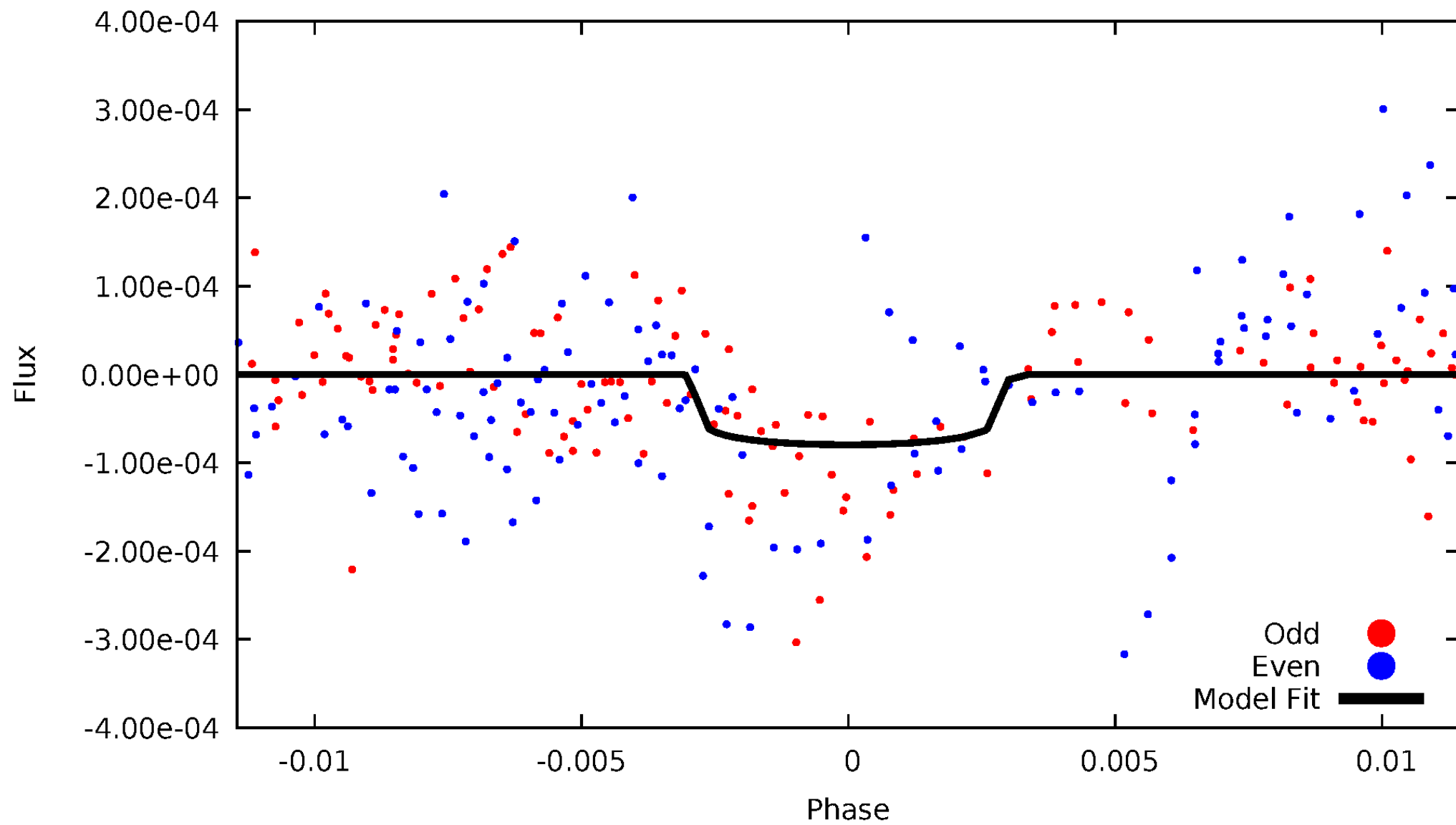


# TCE 009958053-06



# DV Odd/Even

TCE 009958053-06



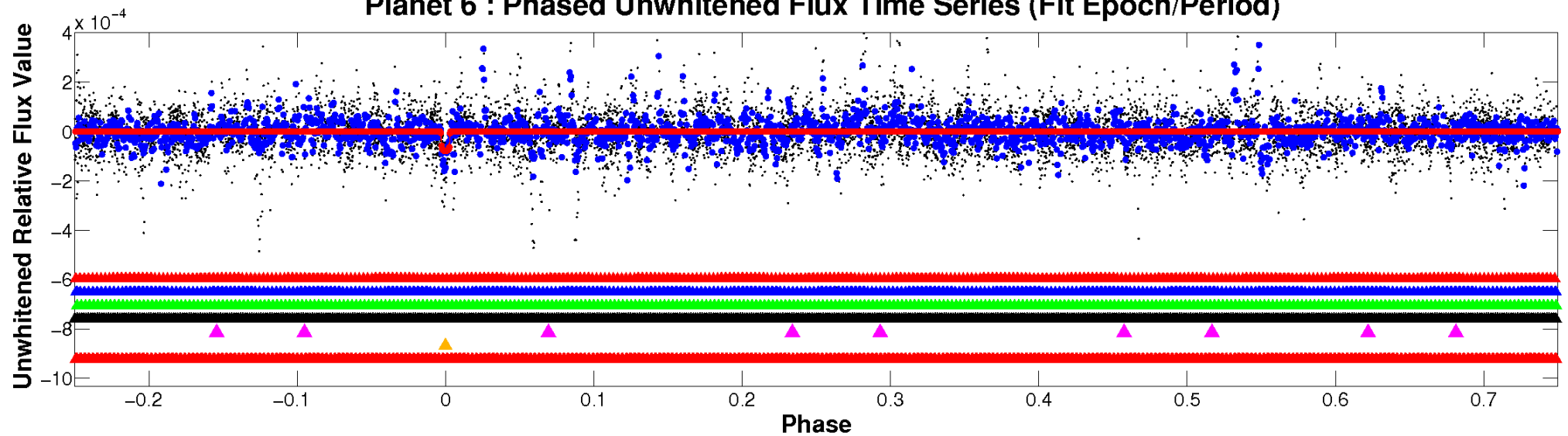


ALT Odd/Even

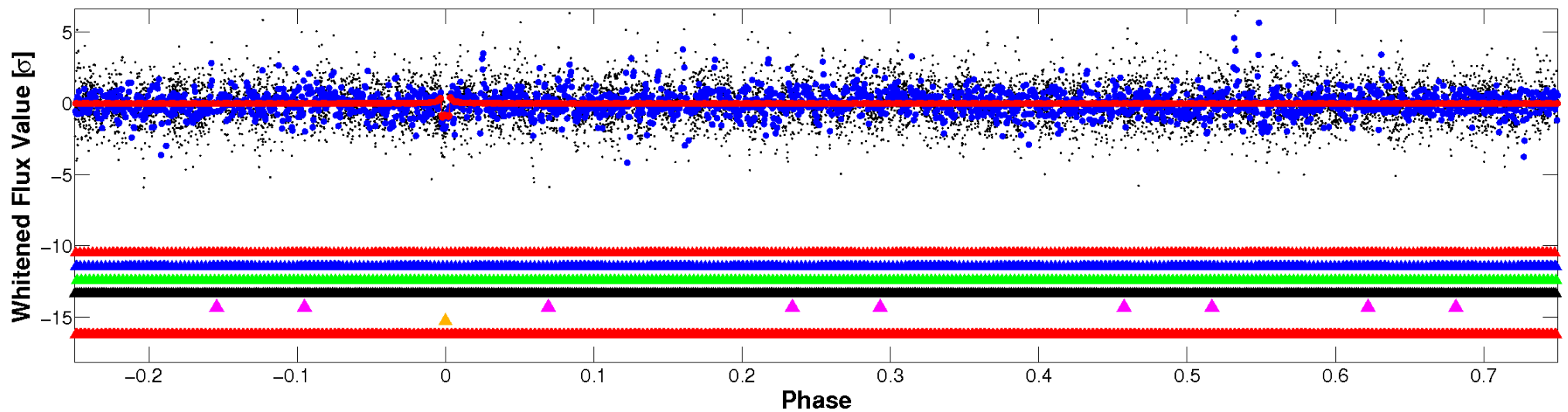
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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



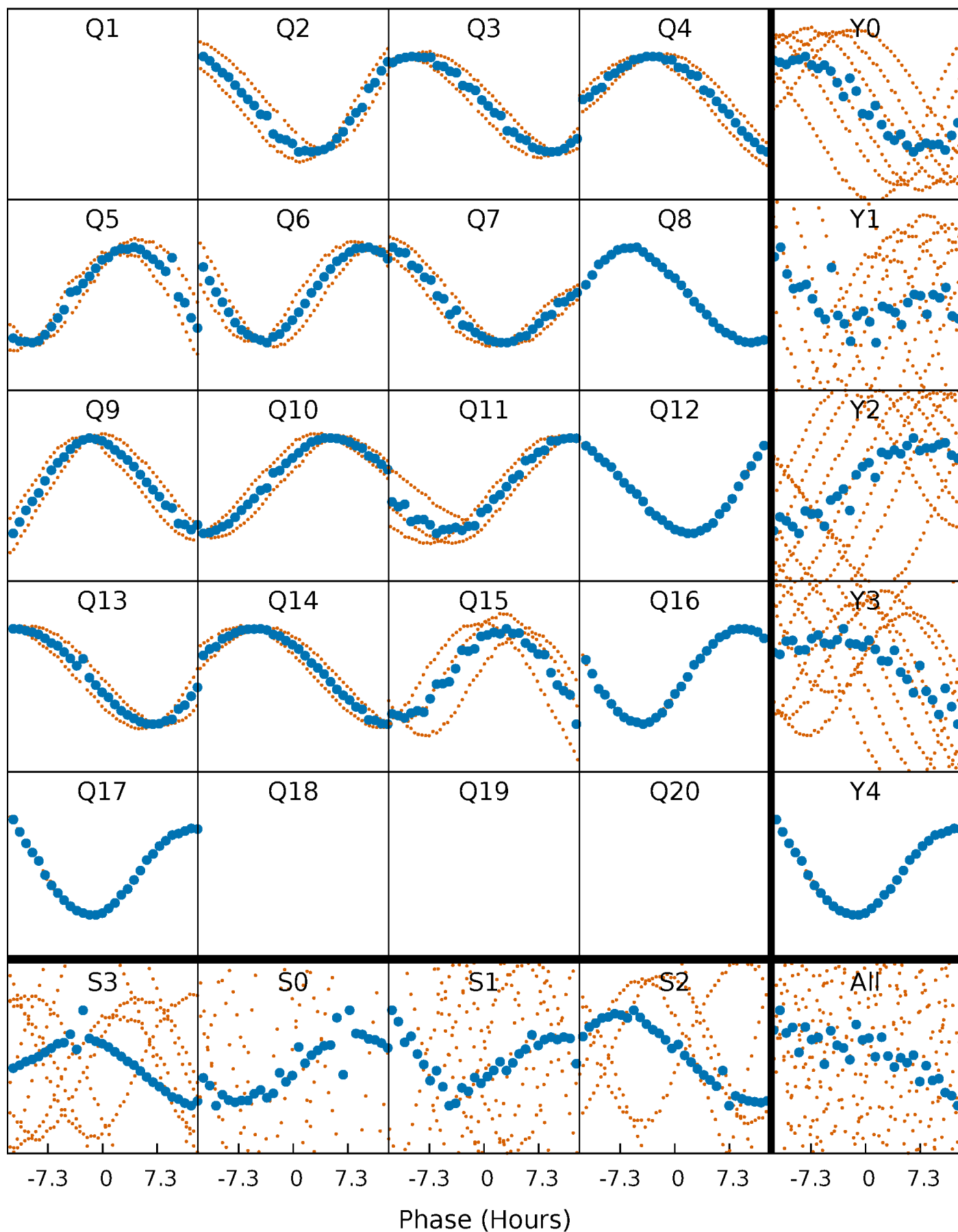
## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

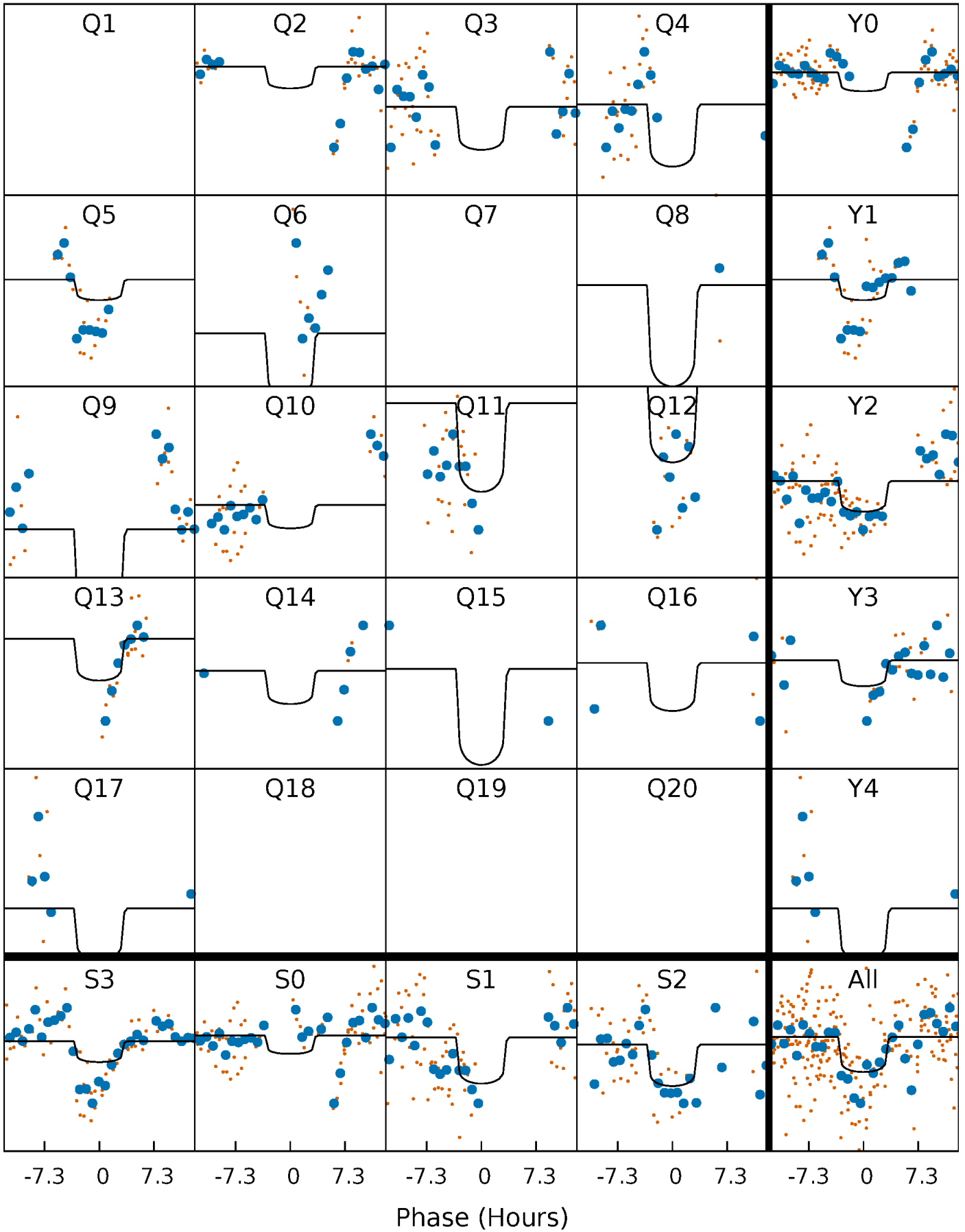
TCE 009958053-06 P= 46.345964 Days  $T_0=171.507242$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 009958053-06     $P = 46.345964$  Days     $T_0 = 171.507242$  (BKJD)

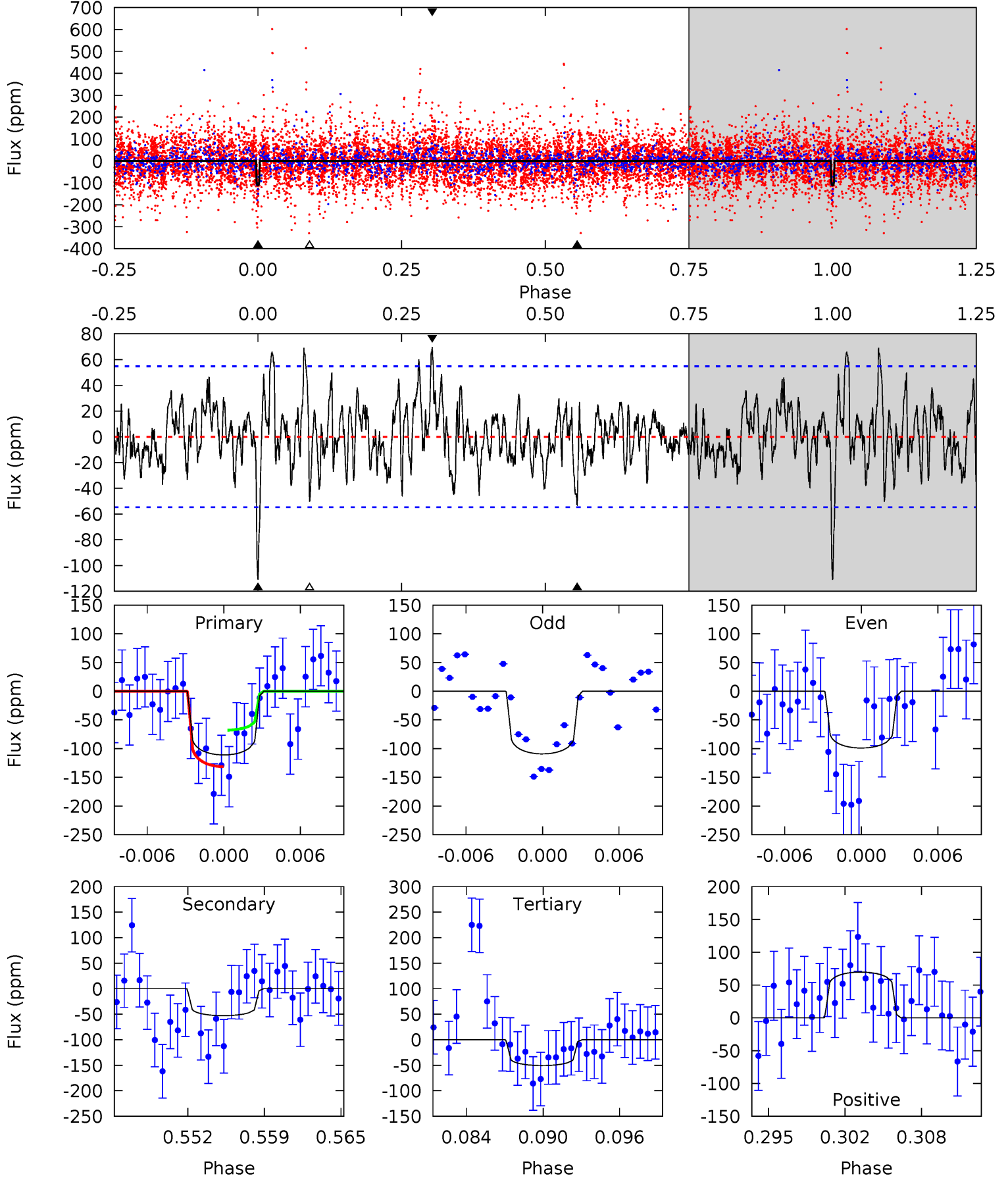


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

009958053-06, P = 46.345964 Days, E = 125.161278 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	4.93	4.72	6.51	5.11	2.73	1.76	5.65	3.85	0.21	-1.59	0.47	0.91	0.39	2.93



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 009958053

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10452^{+286}_{-429}$	$4.040^{+0.231}_{-0.189}$	$0.070^{+0.150}_{-0.550}$	$2.593^{+0.838}_{-0.838}$	$2.691^{+0.354}_{-0.658}$	$0.217^{+0.372}_{-0.104}$
	+3%/-4%	+6%/-5%	+214%/-786%	+32%/-32%	+13%/-24%	+171%/-48%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009958053-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-53 \pm 11$	$2.71^{+2.20}_{-1.68}$	$1737^{+149}_{-145}$	$8430^{+10531}_{-2237}$	$458^{+2709}_{-308}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature  
 $T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )  
 $A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

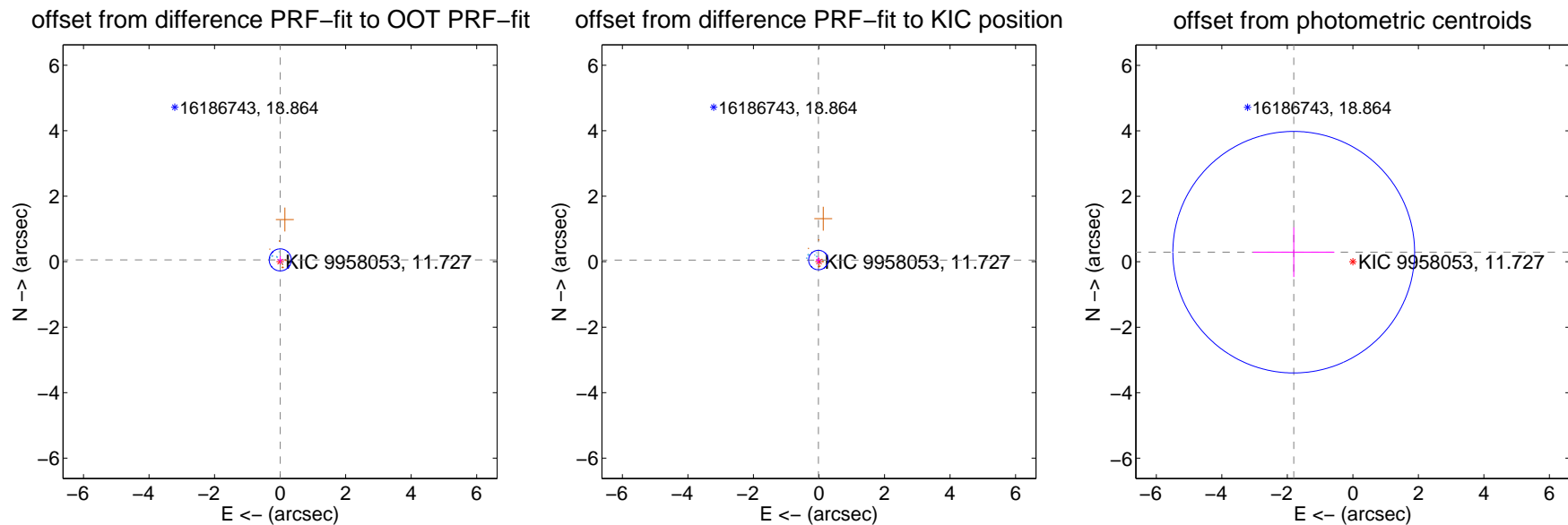
## DV Centroid Data

Supplemental centroid analysis for 009958053-06. **Kepler magnitude: 11.73.** Transit SNR 6.62

There are 8 quarters with good PRF difference image offsets

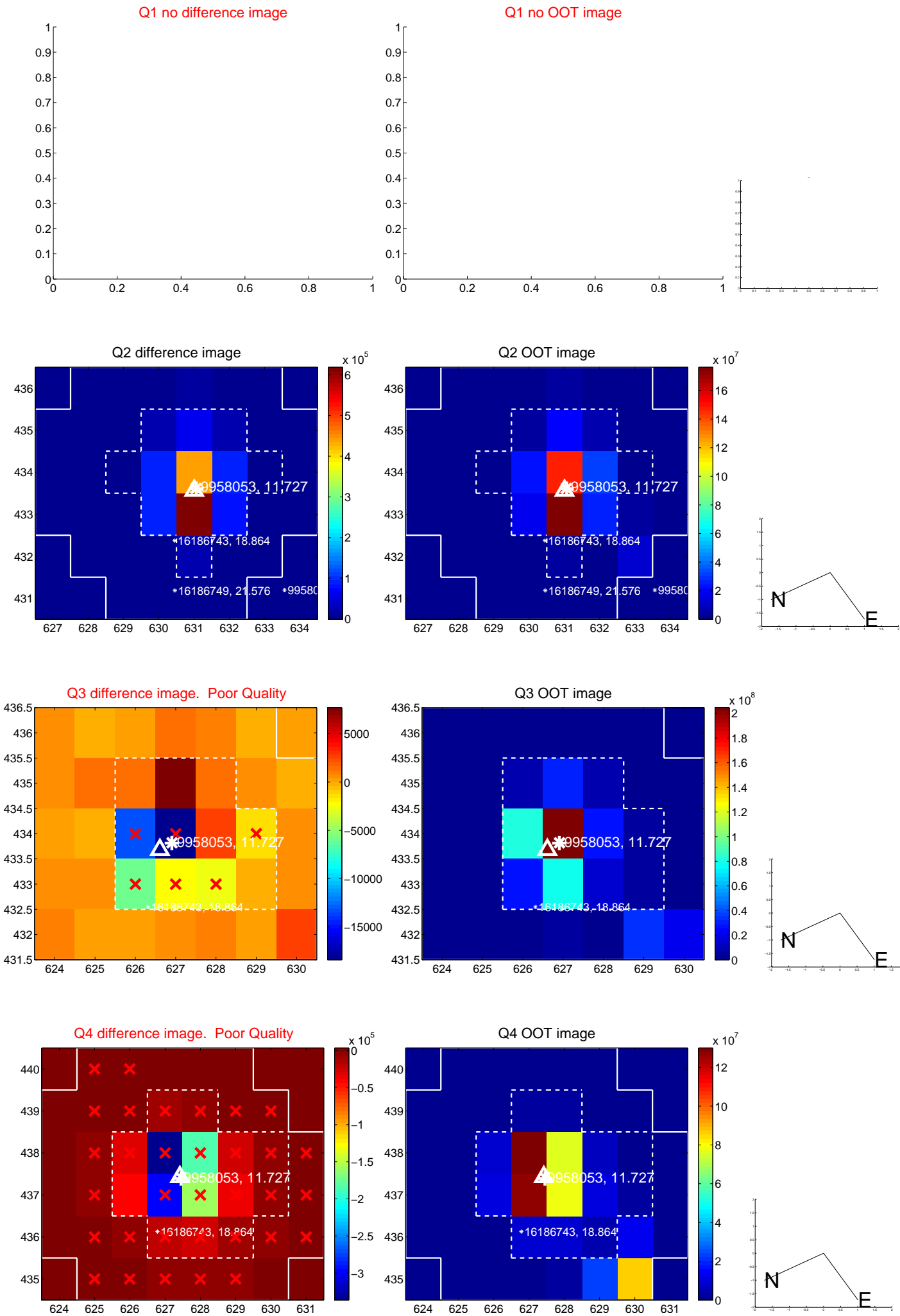
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.055 \pm 0.112$	0.49	$-0.004 \pm 0.076$	$0.055 \pm 0.112$
PRF-fit source offset from KIC position	$0.053 \pm 0.099$	0.54	$0.018 \pm 0.079$	$0.050 \pm 0.103$
photometric centroid source offset	$1.83 \pm 1.23$	1.49	$1.81 \pm 1.24$	$0.29 \pm 0.76$



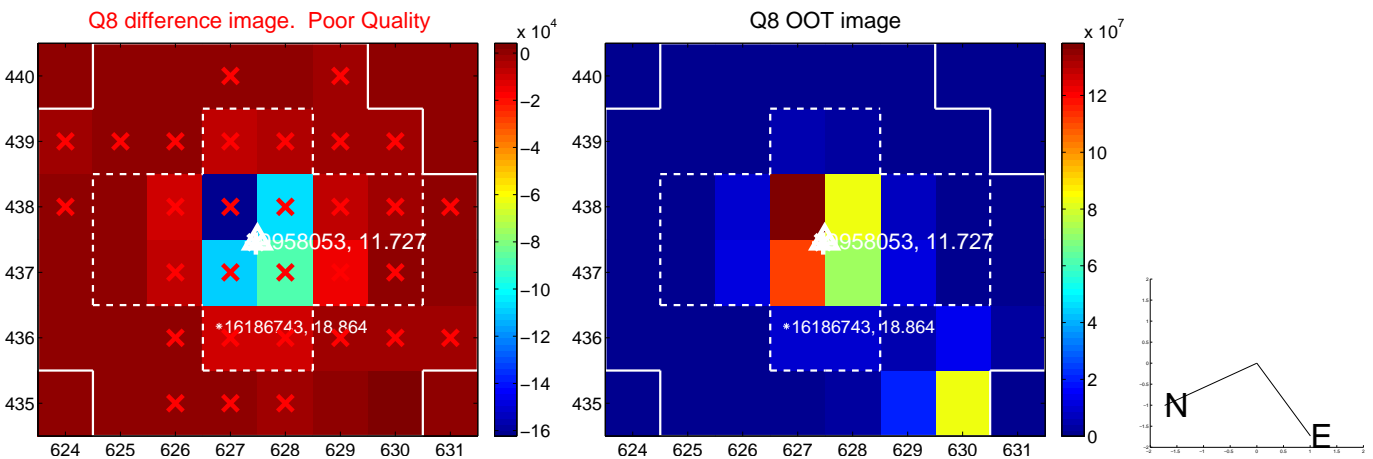
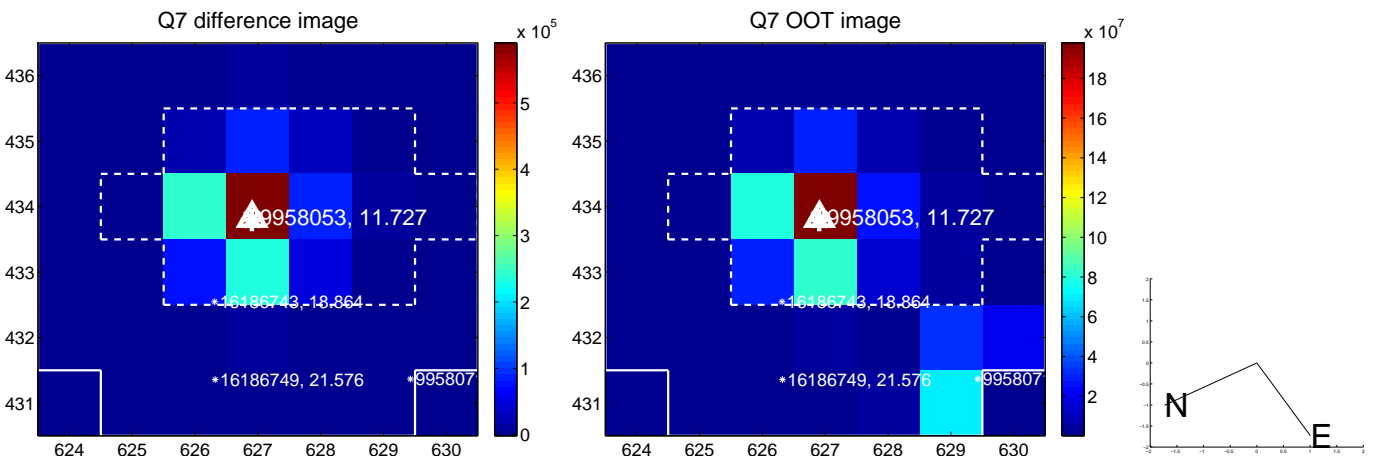
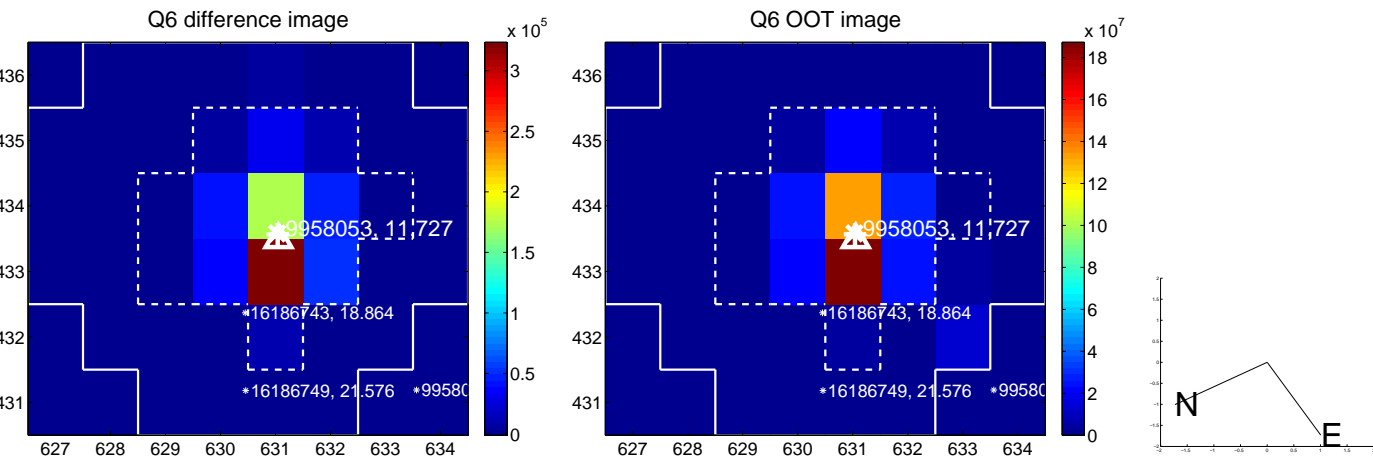
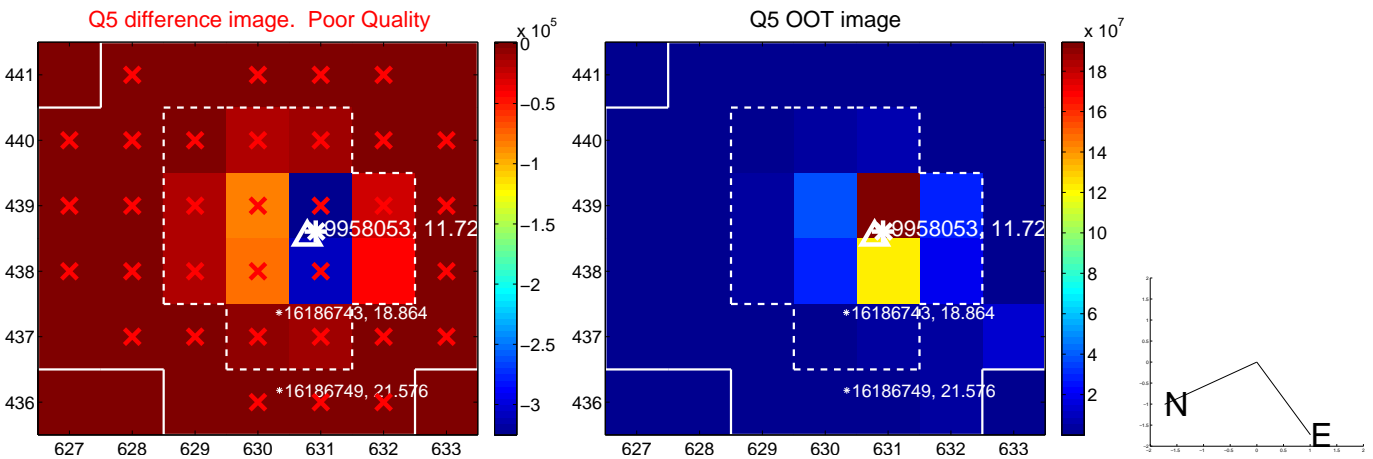
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

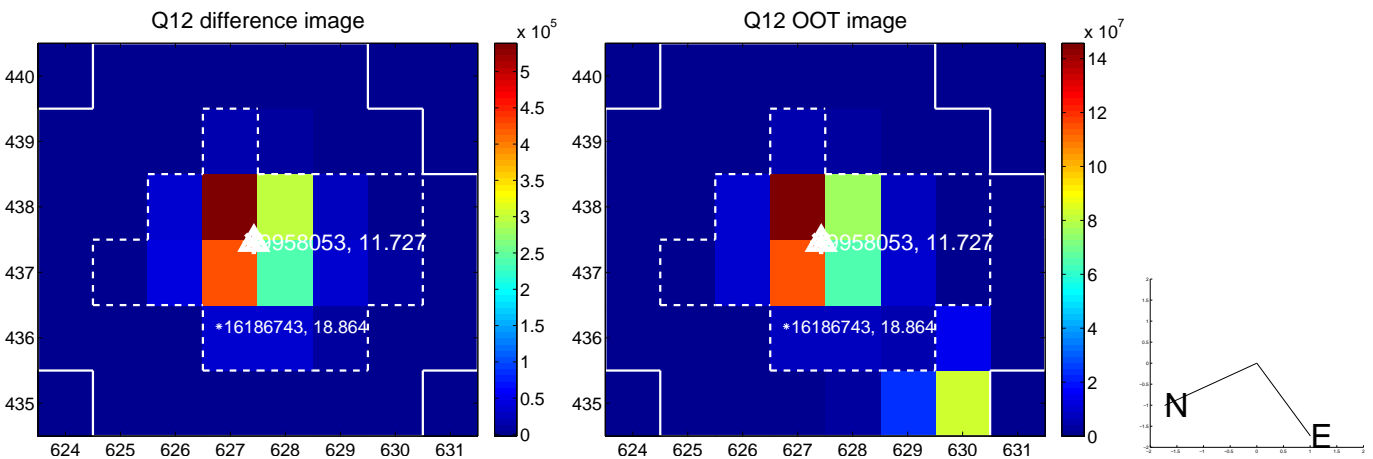
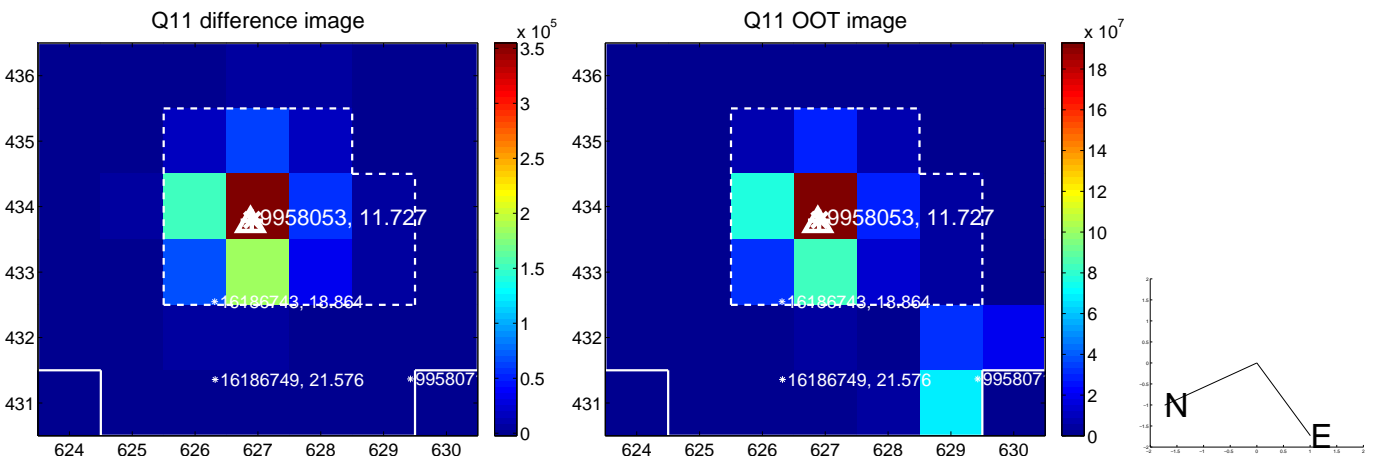
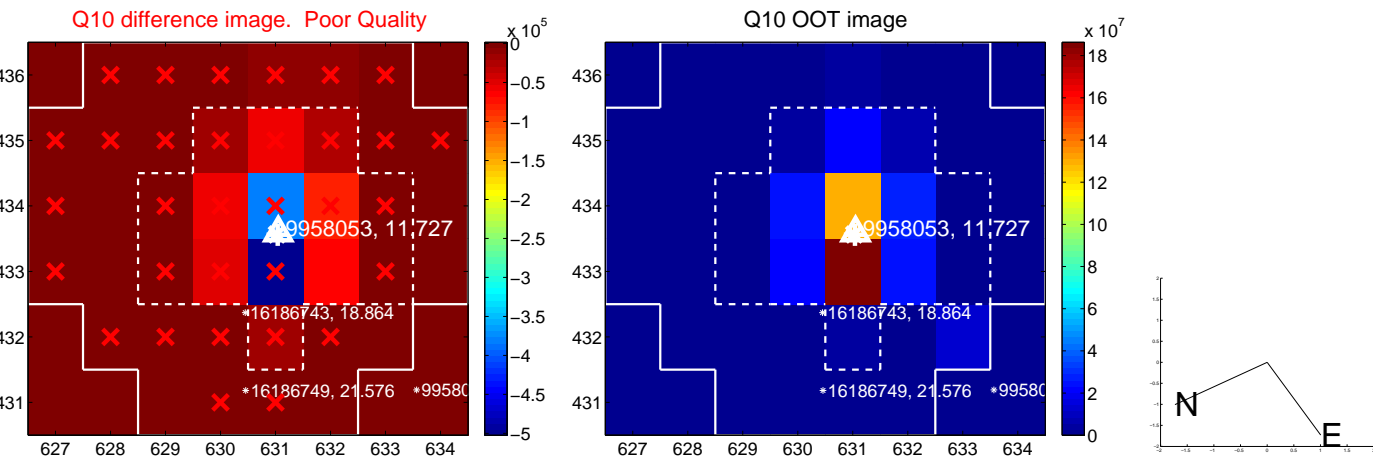
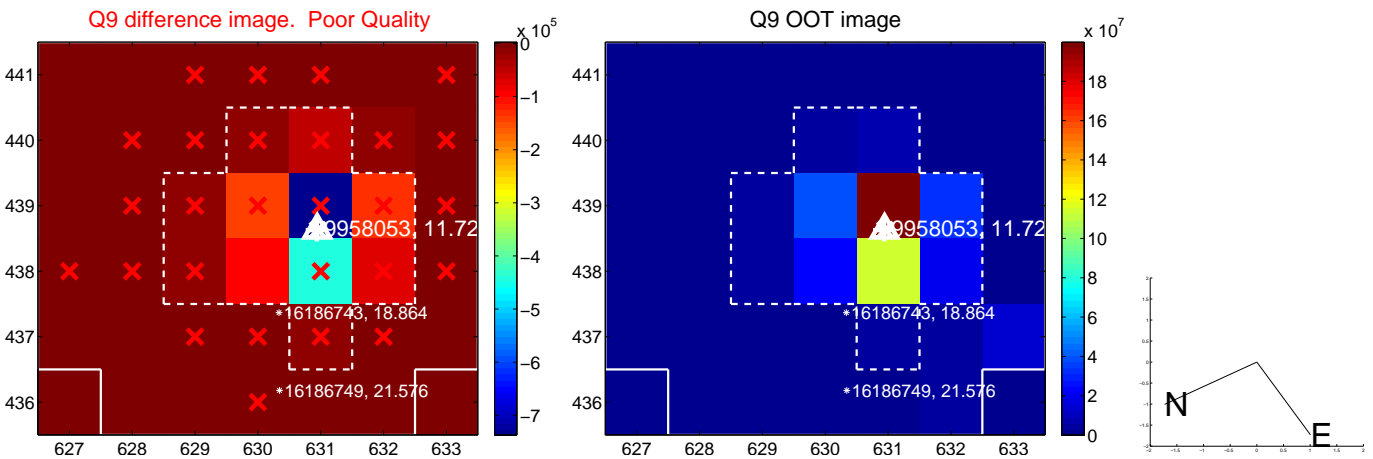




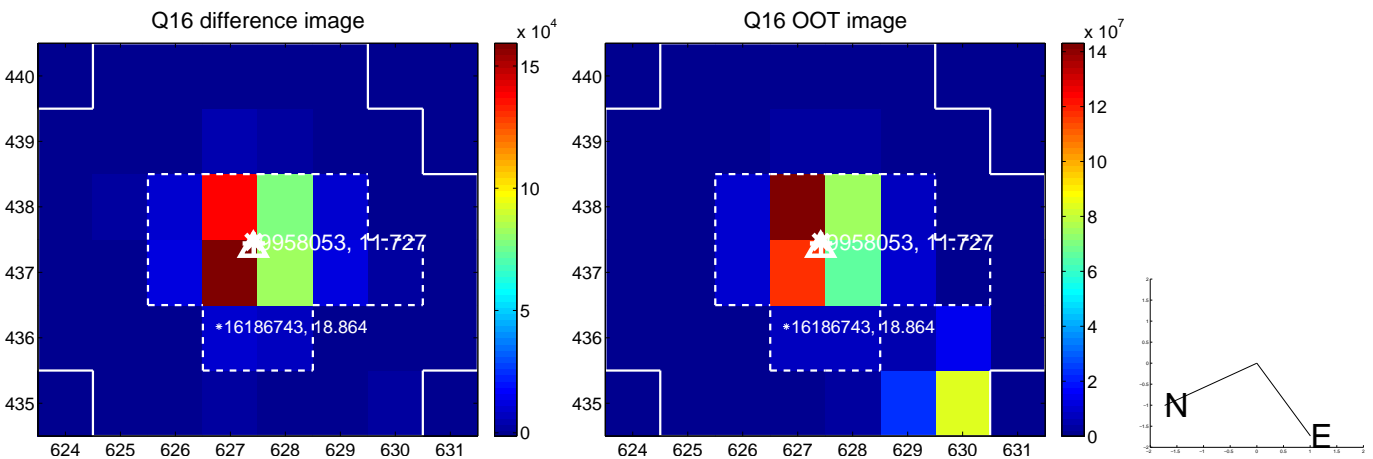
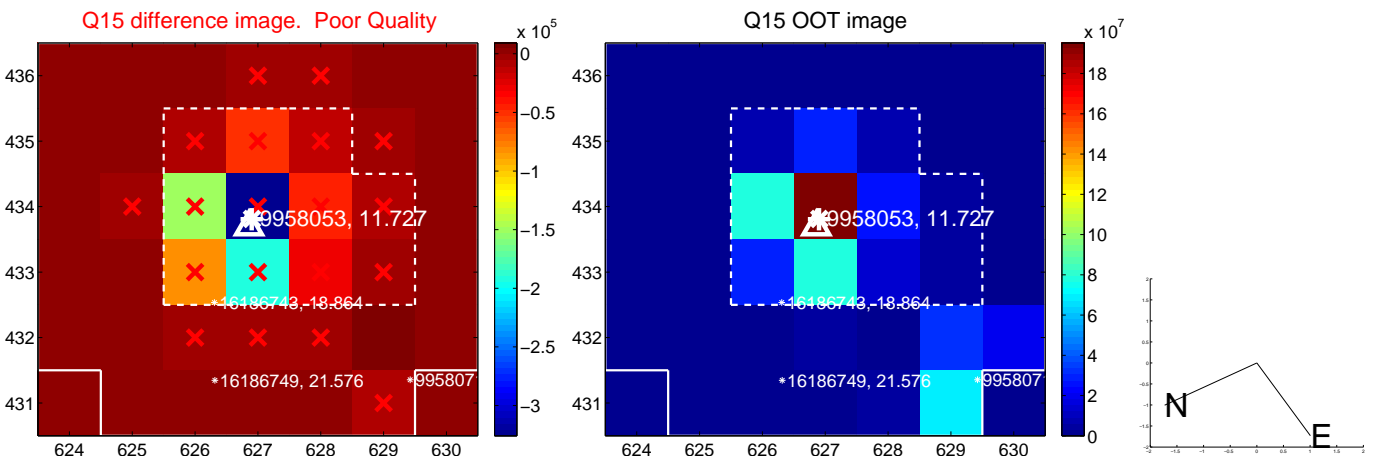
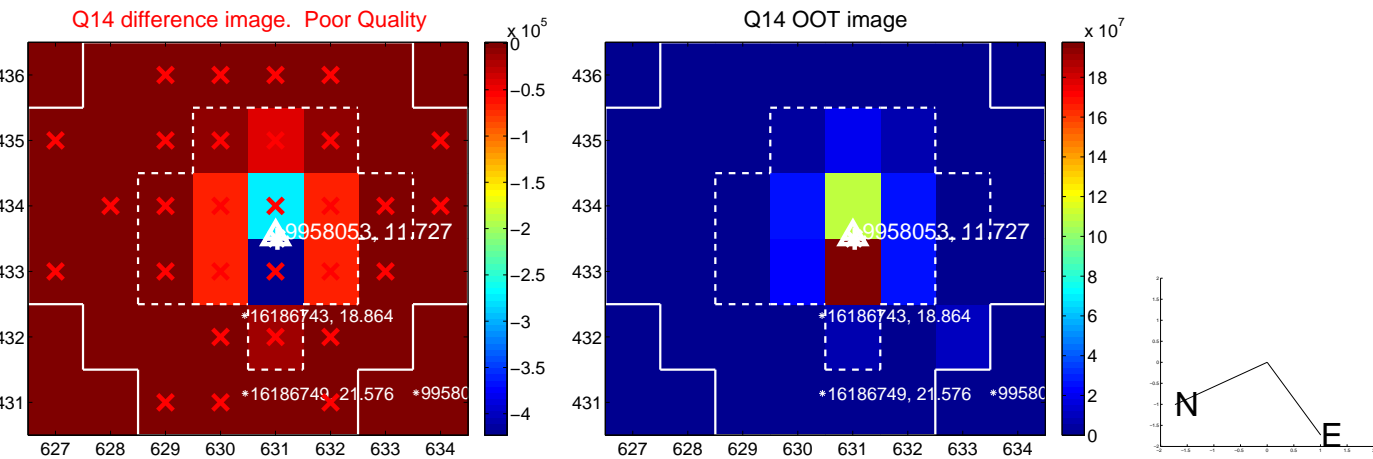
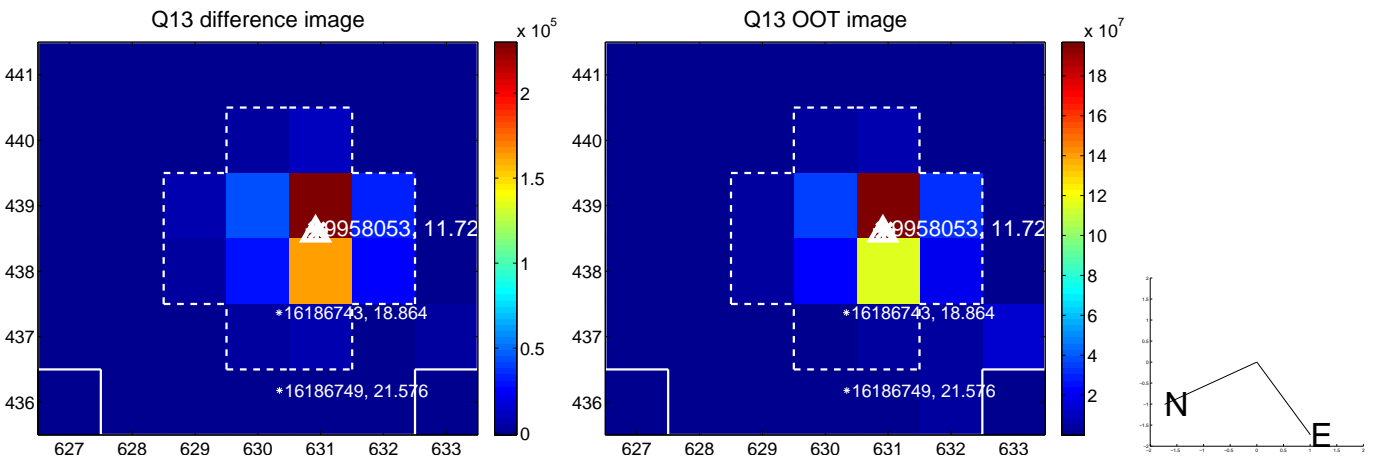
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



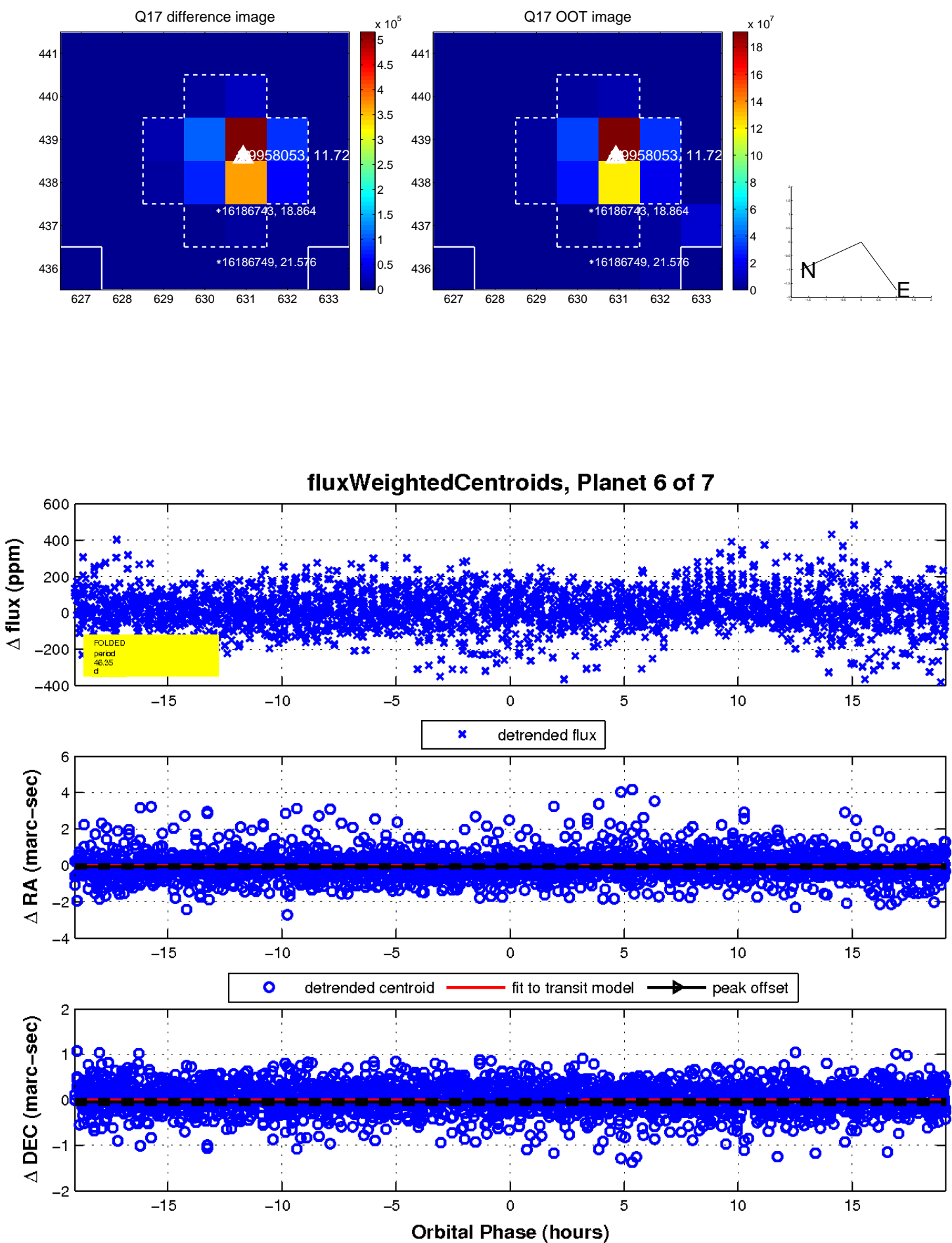
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

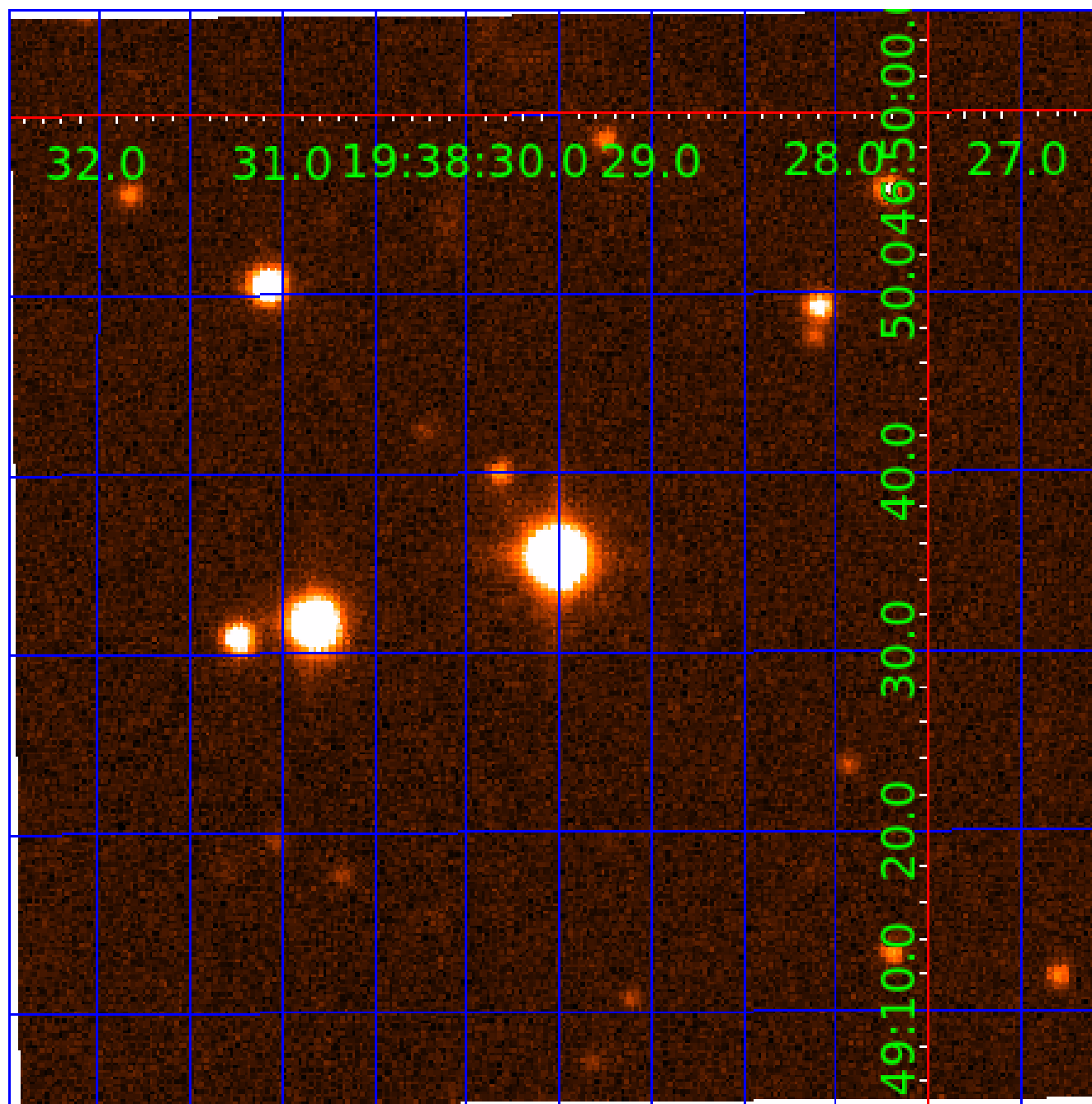


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 009958053

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009958053-01	OBS	7263.01	2.733960	133.772200	60.1	1.800	26.6	27.3	2.59	10452	2.31	25380.73
009958053-02	OBS	No	2.733982	134.170197	41.7	1.779	17.5	19.5	2.59	10452	1.92	25380.45
009958053-03	OBS	No	0.911295	132.006934	13.5	2.952	13.9	10.2	2.59	10452	1.09	109820.04
009958053-04	OBS	No	0.910122	132.268885	0.1	5.106	10.7	0.1	2.59	10452	0.10	110008.76
009958053-05	OBS	No	167.394272	200.336363	171.2	6.173	11.2	8.8	2.59	10452	3.55	105.17
009958053-06	OBS	No	46.345964	171.507242	79.5	6.369	10.1	6.6	2.59	10452	2.39	582.83
009958053-07	OBS	No	0.911332	131.698494	150.1	1.500	10.3	-1.0	2.59	10452	3.27	109814.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009958053-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_FEW_DIFFS
009958053-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009958053-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009958053-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV
009958053-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES
009958053-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009958053-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

**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.

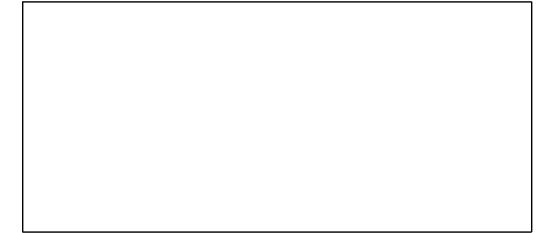
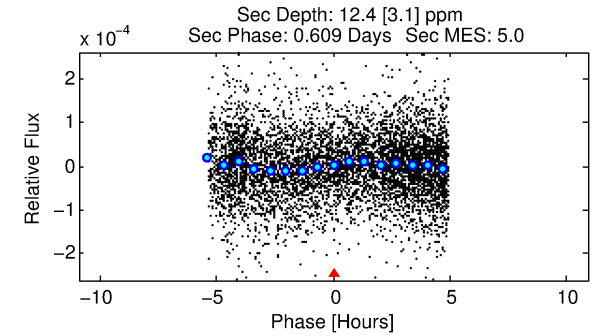
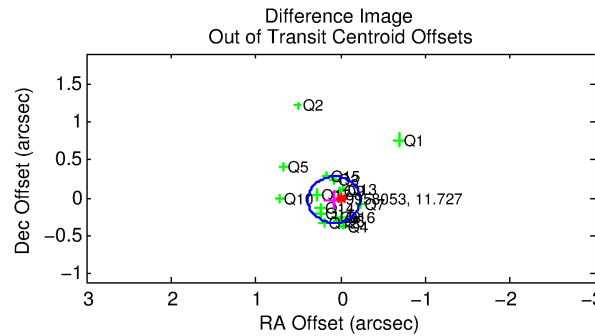
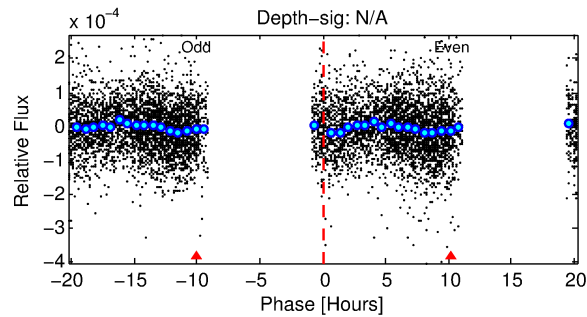
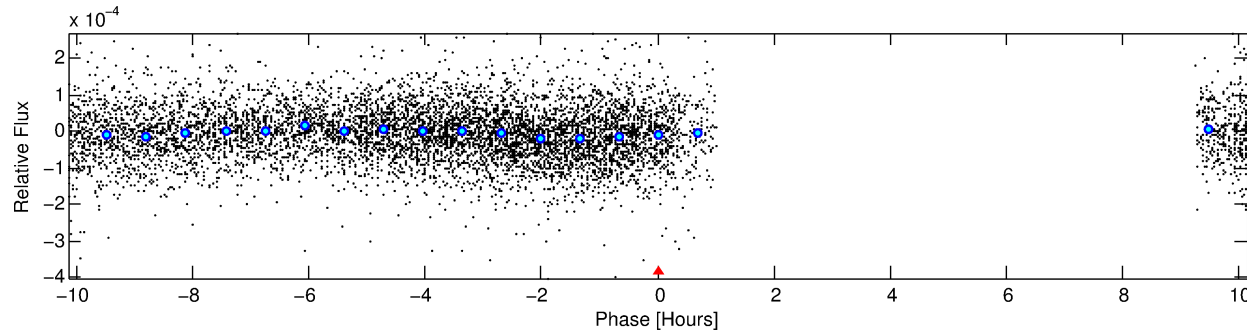
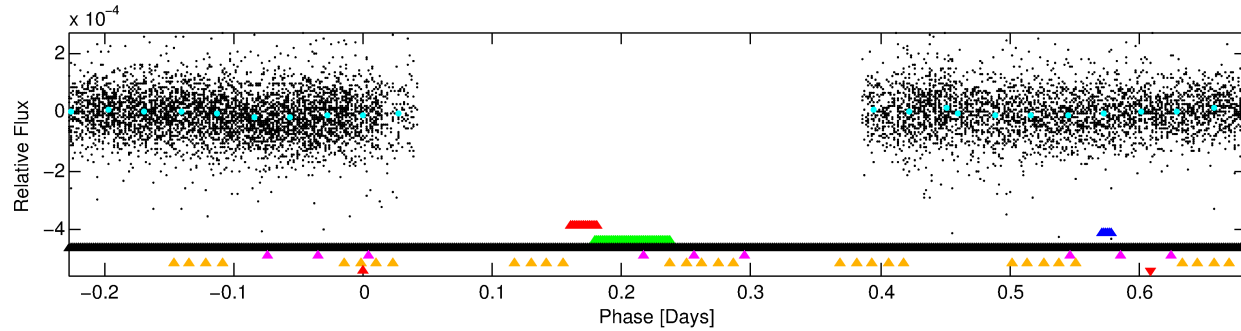
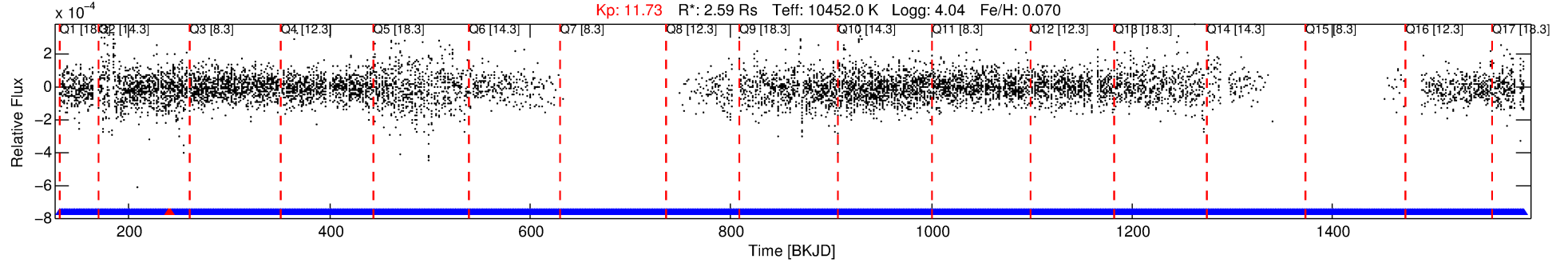
Ephemeris Match Information For 009958053-07

No Significant Match Found

# DV One-Page Summary

KIC: 9958053 Candidate: 7 of 7 Period: 0.911 d  
KOI: K07263 Corr: No Ephemeris Match

Kp: 11.73 R\*: 2.59 Rs Teff: 10452.0 K Logg: 4.04 Fe/H: 0.070



## TPS TCE Results:

Period = 0.91133 d  
Epoch = 131.6985 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

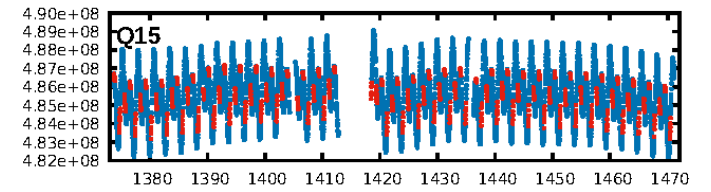
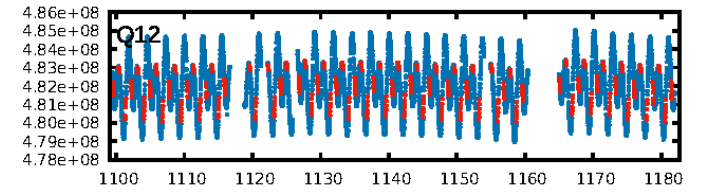
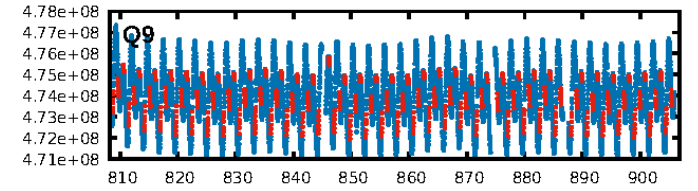
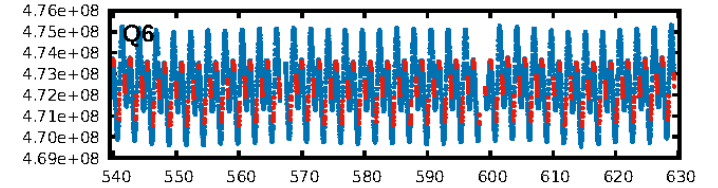
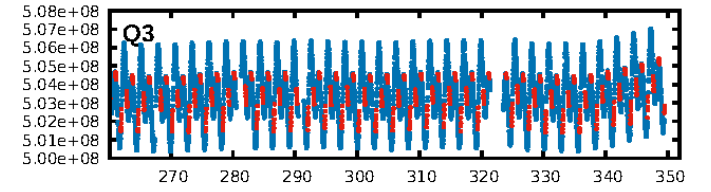
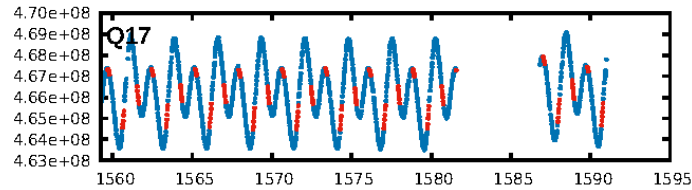
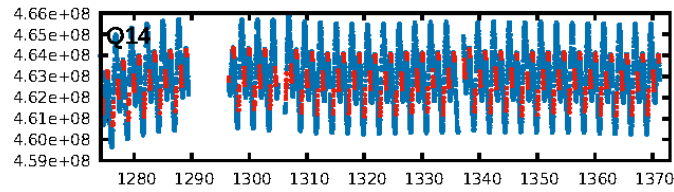
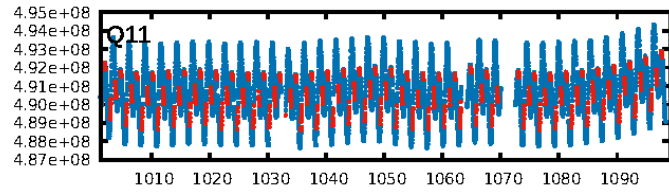
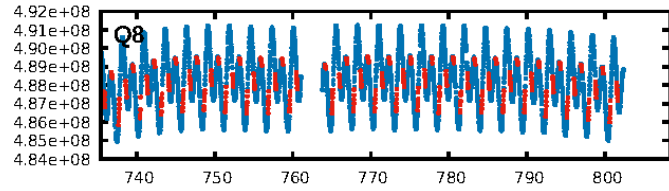
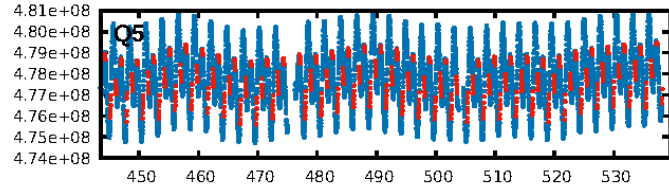
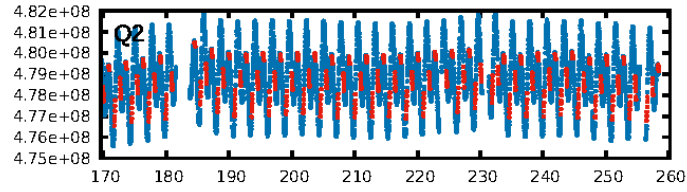
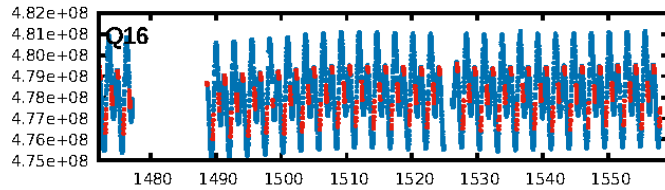
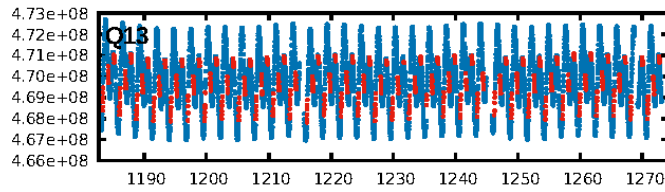
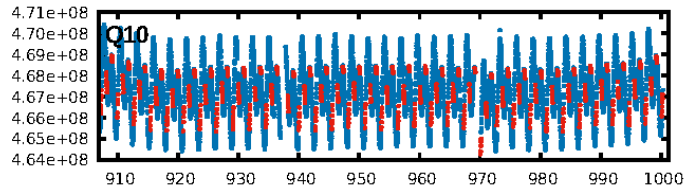
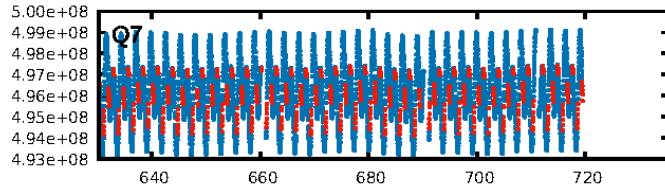
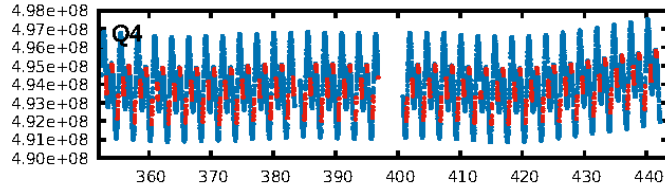
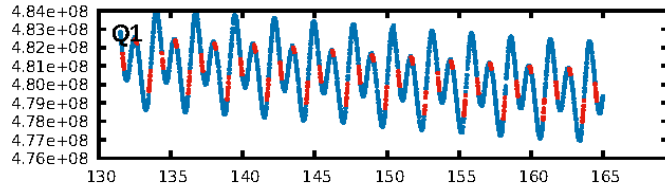
ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [18.67 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [483/485]  
GhostDiagnostic-chr: -0.8425  
Centroid-sig: 0.3%  
Centroid-so: 1.121 arcsec [10.55 $\sigma$ ]  
OotOffset-rm: 0.080 arcsec [0.78 $\sigma$ ]  
KicOffset-rm: 0.114 arcsec [1.14 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:02:19 Z

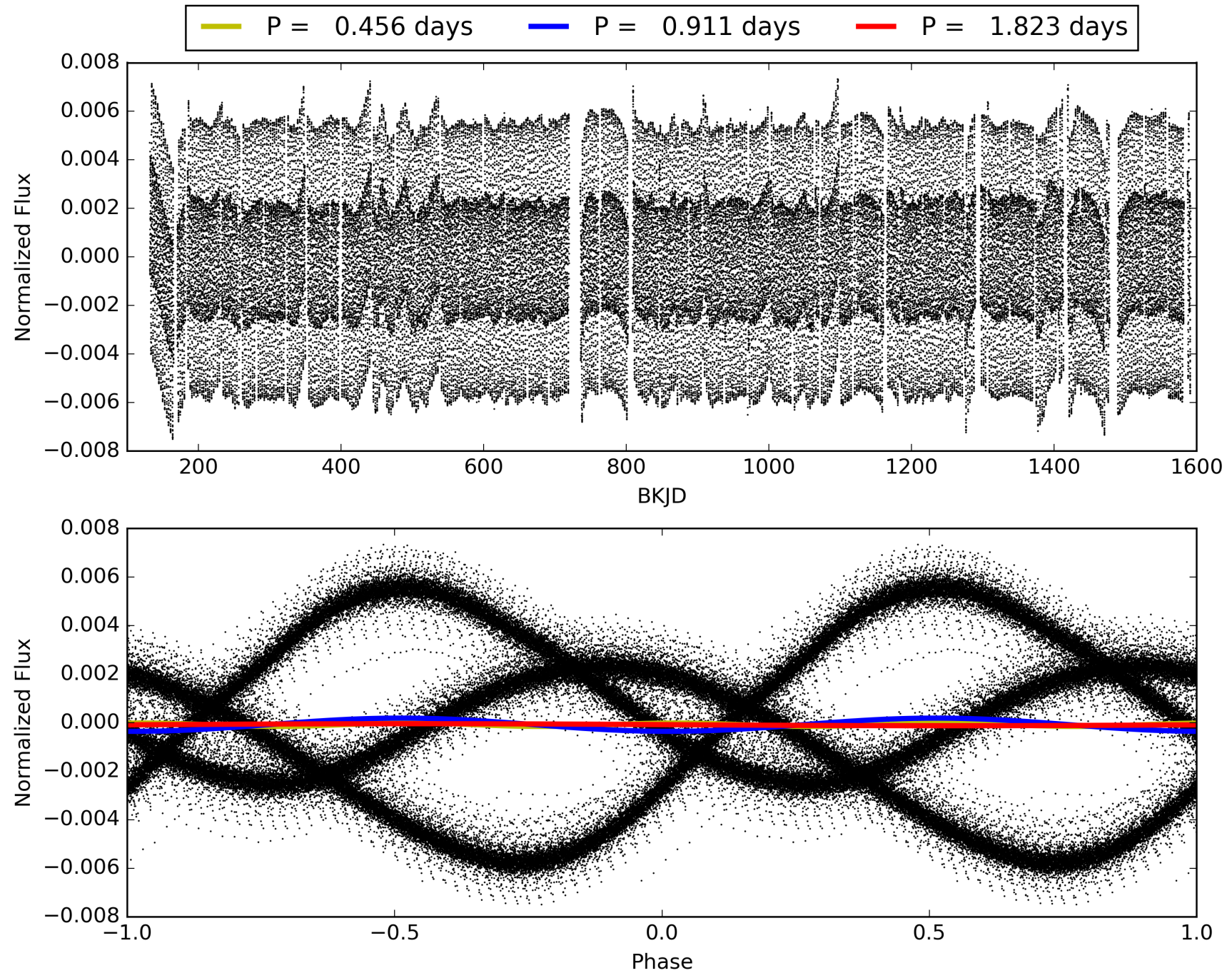
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 009958053-07, PDC Light Curves

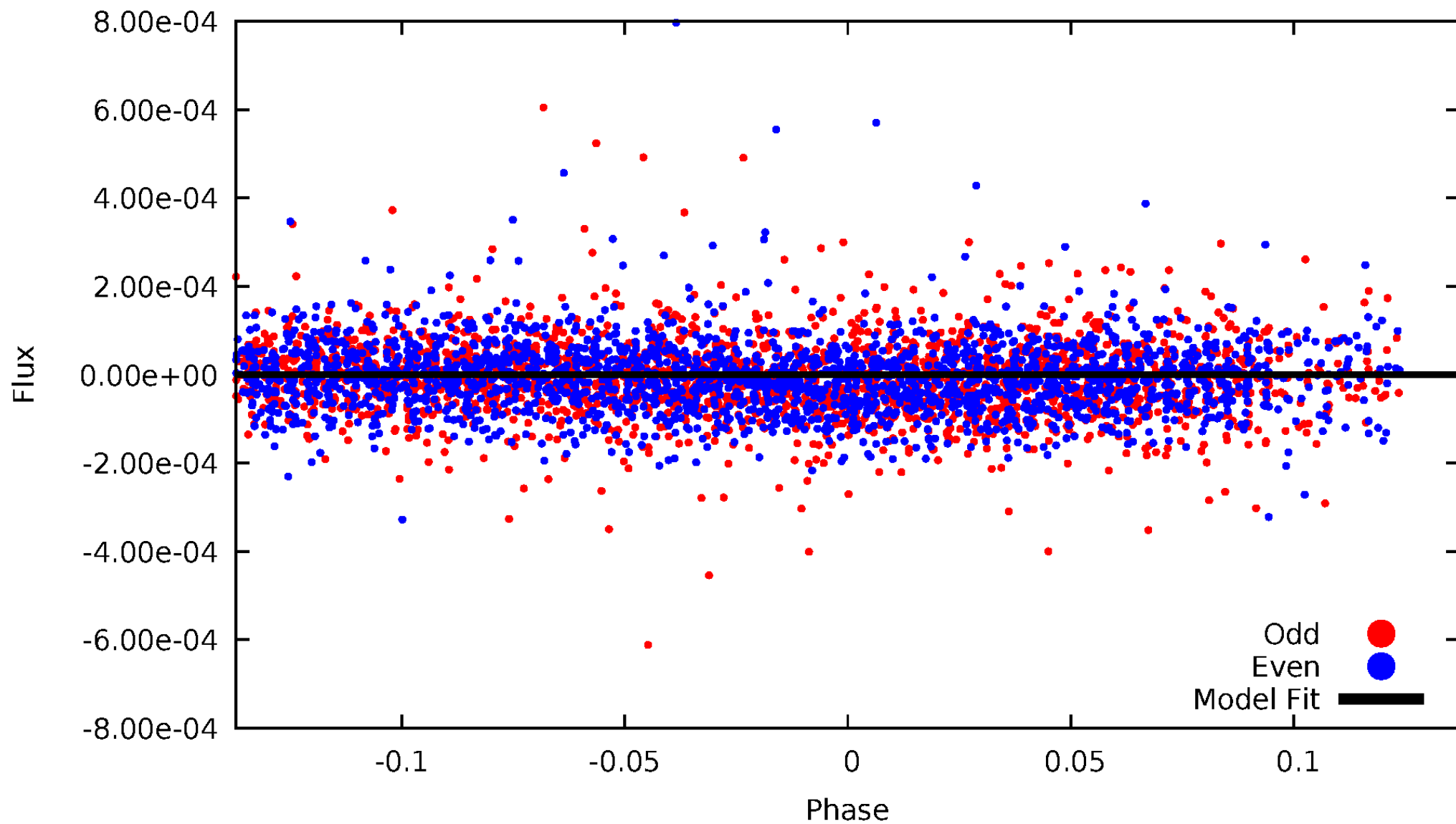


TCE 009958053-07



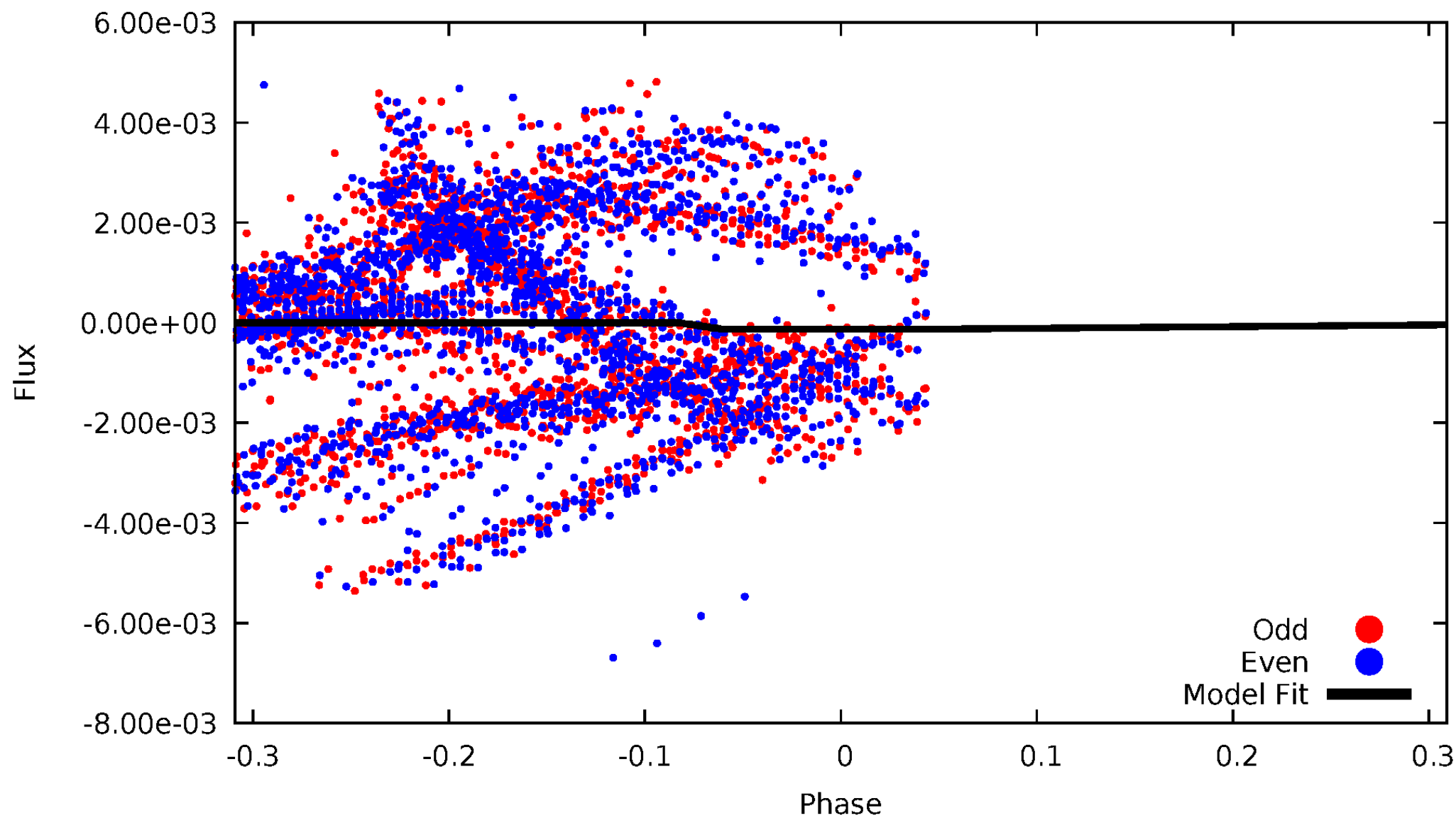
# DV Odd/Even

TCE 009958053-07



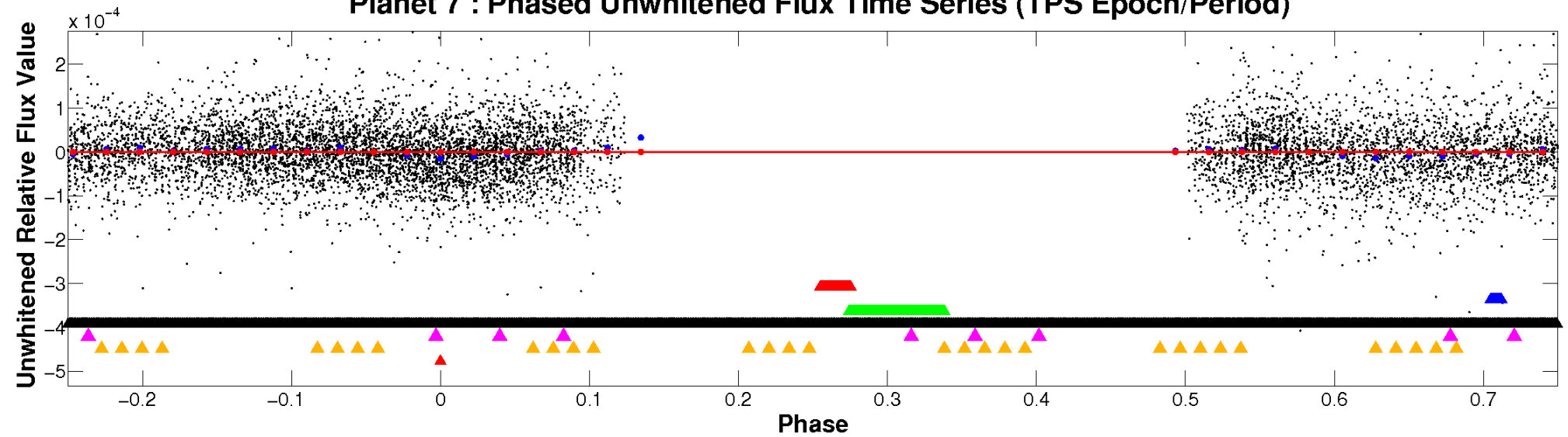
# ALT Odd/Even

TCE 009958053-07

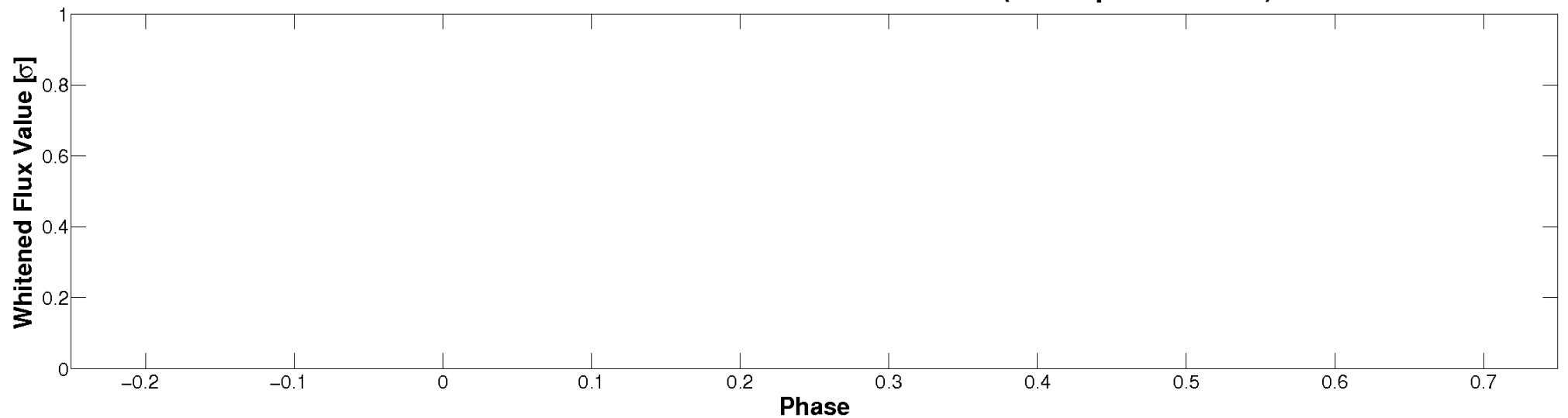


# Non-Whitened Vs. Whitened Light Curve

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



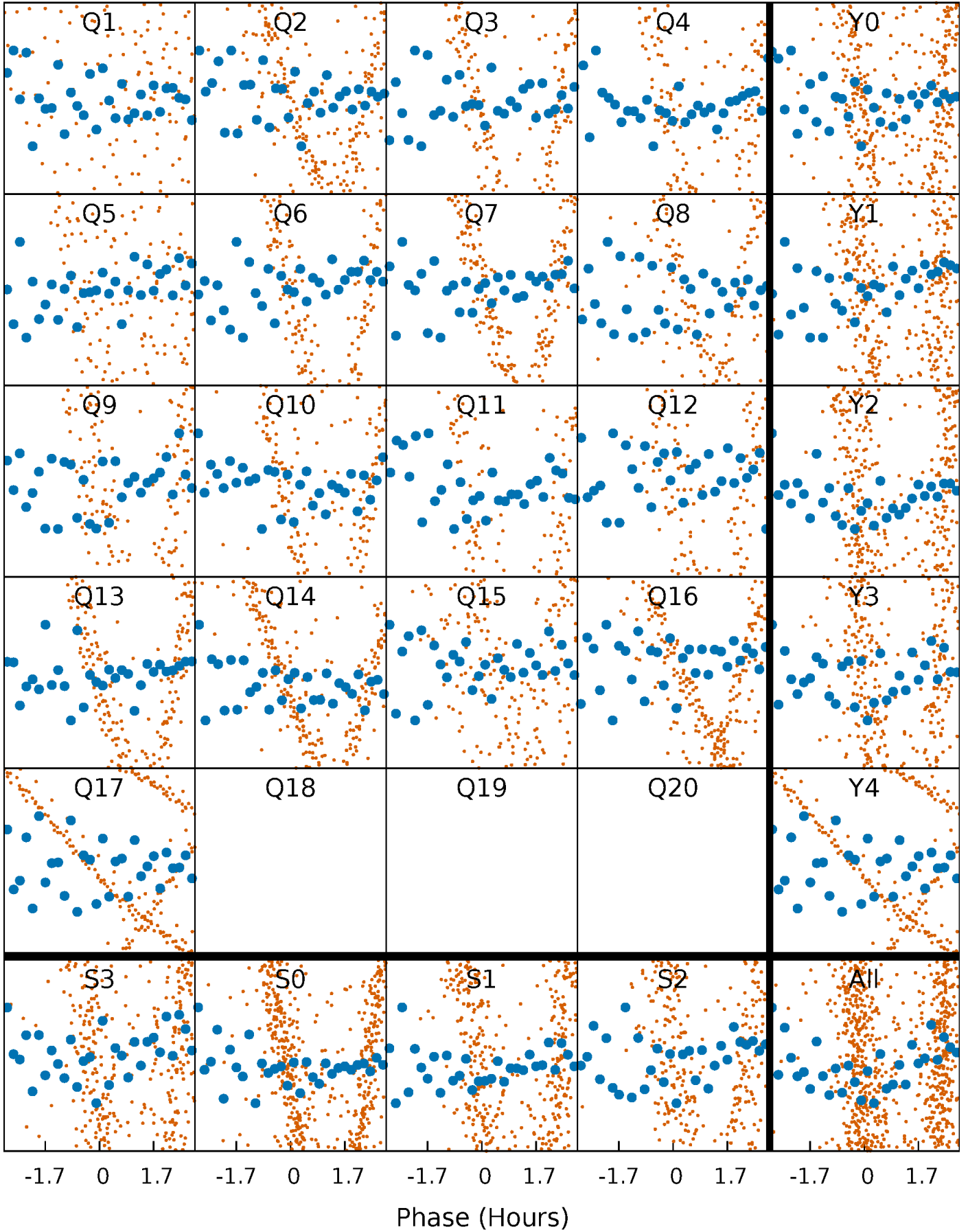
**Planet 7 : Phased Whitened Flux Time Series (TPS Epoch/Period)**





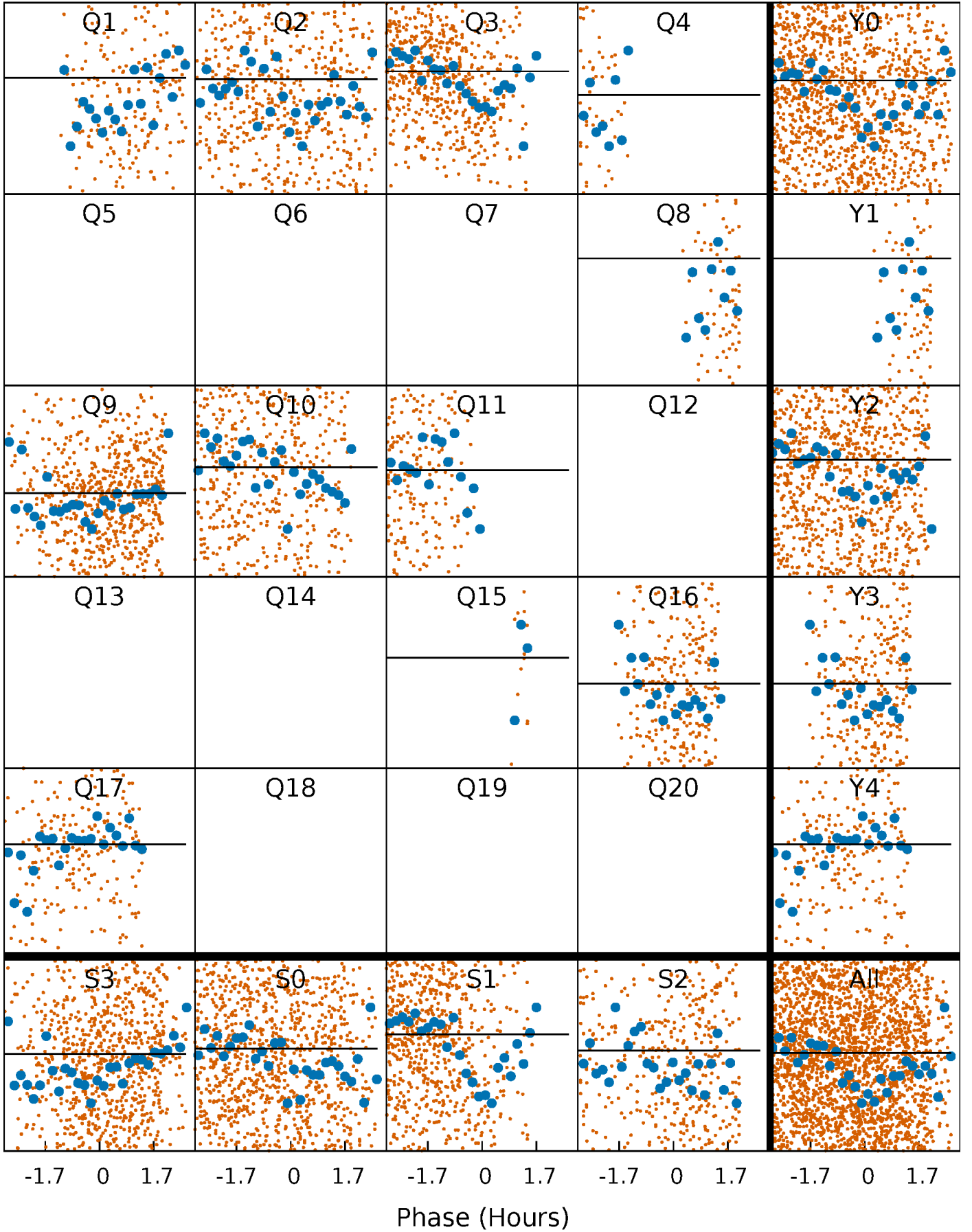
# PDC Quarter-Phased Transit Curves

TCE 009958053-07   P= 0.911332 Days    $T_0=131.698494$  (BKJD)



# DV Quarter-Phased Transit Curves

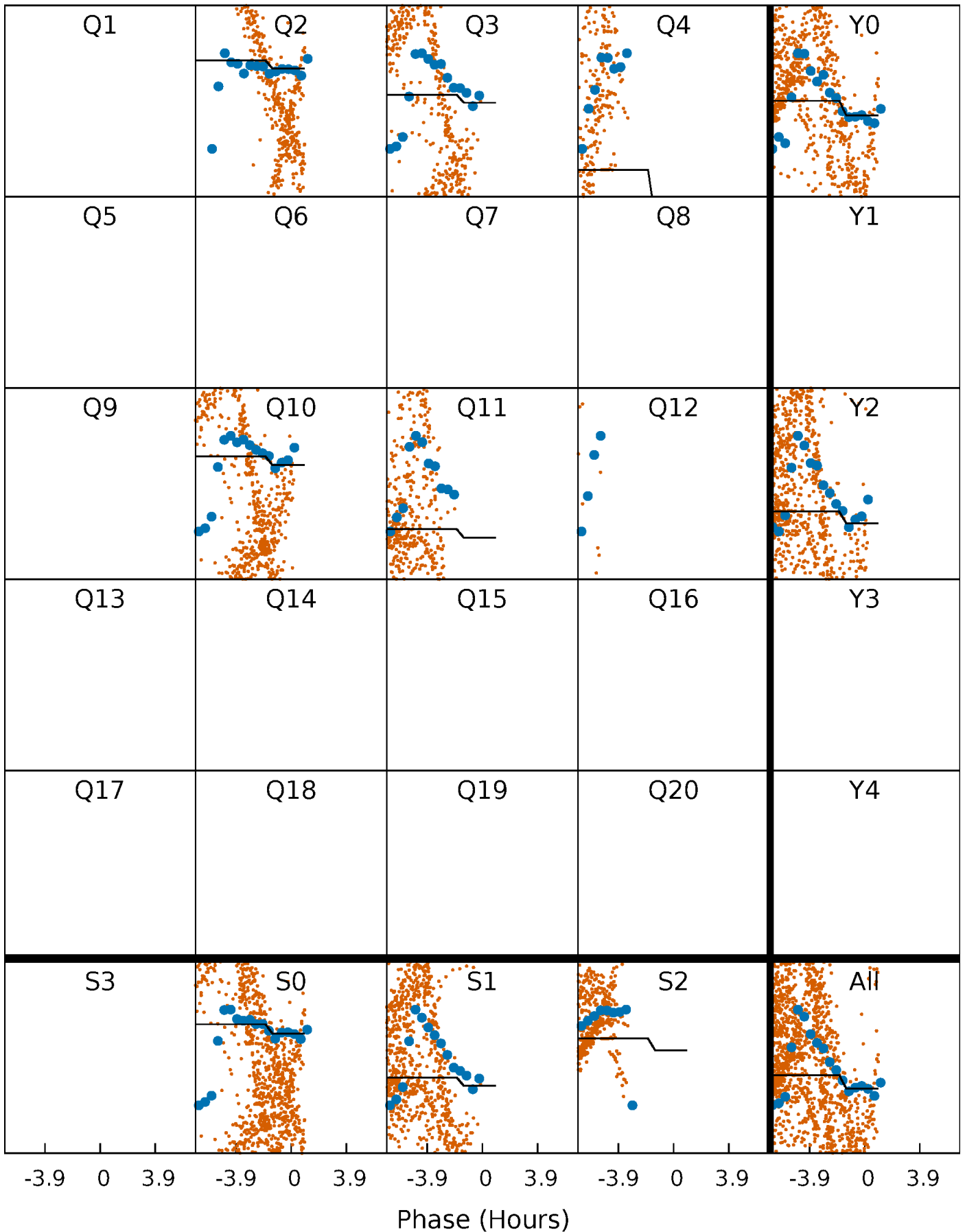
TCE 009958053-07    P= 0.911332 Days     $T_0=131.698494$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

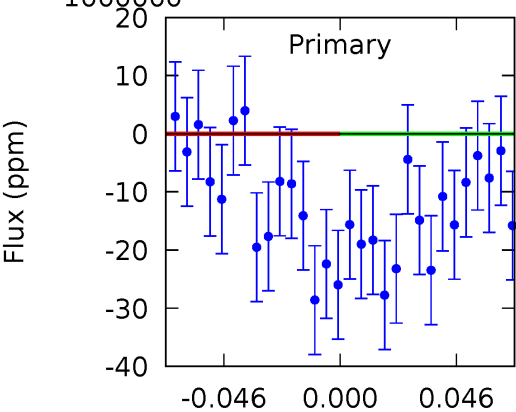
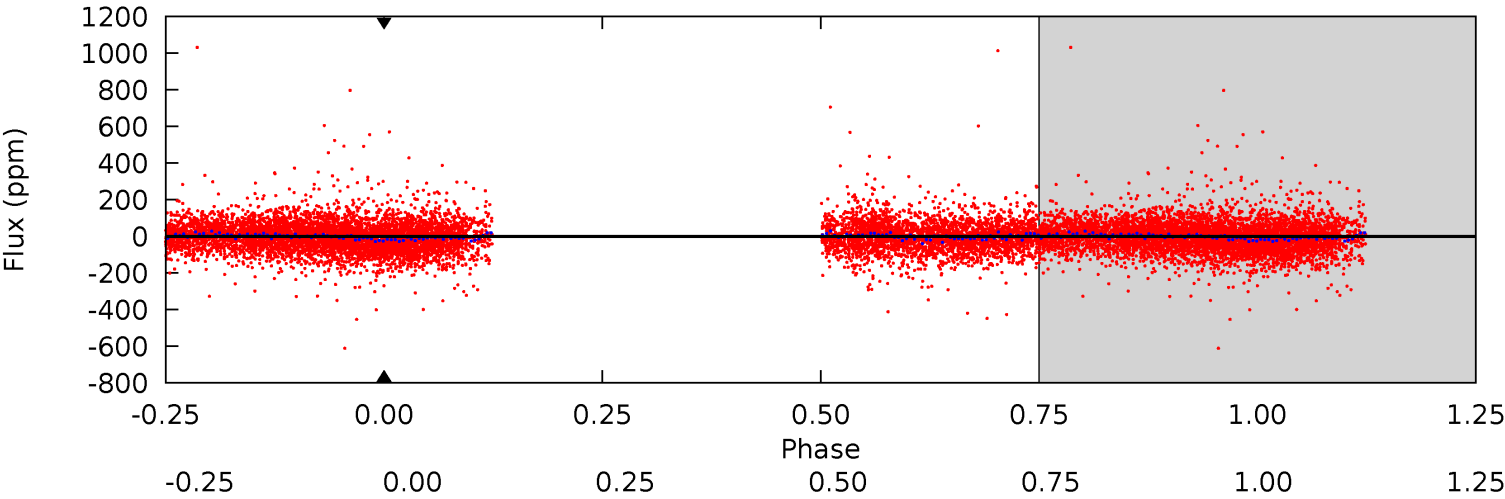
TCE 009958053-07 P= 0.911332 Days  $T_0=131.769396$  (BKJD)



# DV Model-Shift Uniqueness Test

009958053-07, P = 0.911332 Days, E = 130.787162 Days

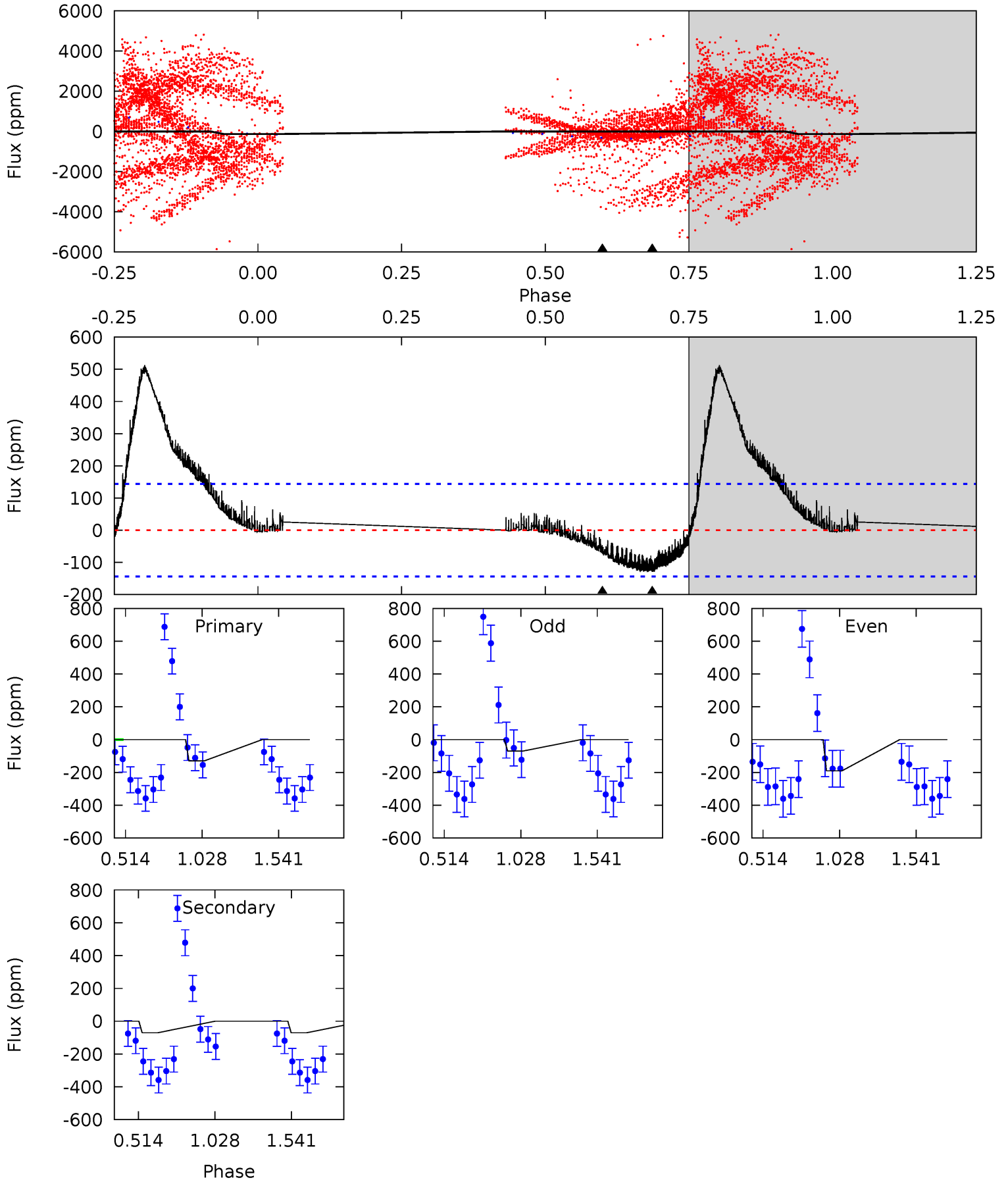
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

009958053-07, P = 0.911332 Days, E = 131.769396 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
3.79	2.08	0	0	4.21	0.65	0.40	3.79	3.79	2.08	2.08	1.70	0.15	0.80	0.39



### Stellar Parameters For KIC 009958053

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10452^{+286}_{-429}$	$4.040^{+0.231}_{-0.189}$	$0.070^{+0.150}_{-0.550}$	$2.593^{+0.838}_{-0.838}$	$2.691^{+0.354}_{-0.658}$	$0.217^{+0.372}_{-0.104}$
	+3%/-4%	+6%/-5%	+214%/-786%	+32%/-32%	+13%/-24%	+171%/-48%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009958053-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$19.43^{+22.70}_{-13.37}$	$6437^{+558}_{-544}$	$9058^{+115055}_{-91592}$	$3.452^{+206.979}_{-137.306}$
Alt.	$-71 \pm 34$	$21.08^{+22.01}_{-15.07}$	$6416^{+542}_{-507}$	$-4579^{+9615}_{-461}$	$0.057^{+0.604}_{-0.046}$

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

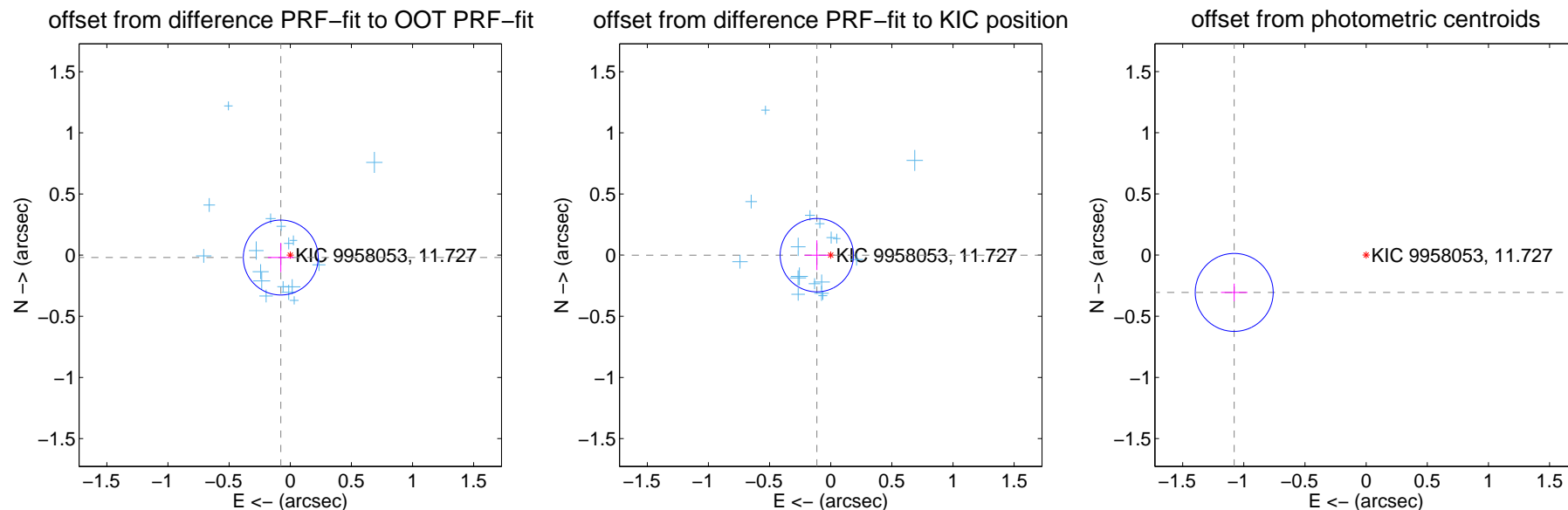
## DV Centroid Data

Supplemental centroid analysis for 009958053-07. **Kepler magnitude: 11.73.** Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

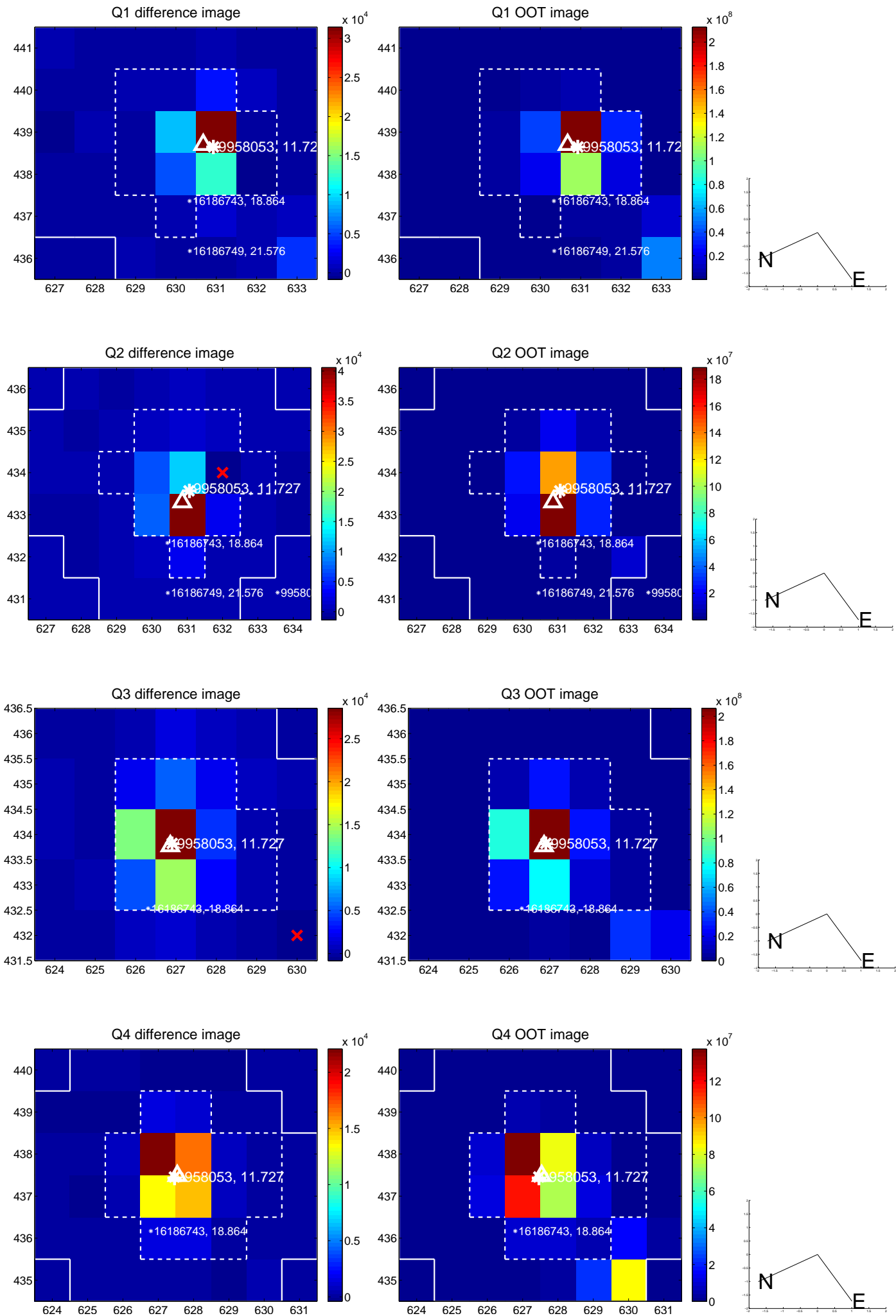
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.080 \pm 0.102$	0.78	$0.078 \pm 0.105$	$-0.020 \pm 0.119$
PRF-fit source offset from KIC position	$0.114 \pm 0.100$	1.14	$0.114 \pm 0.100$	$-0.000 \pm 0.122$
photometric centroid source offset	<b><math>1.12 \pm 0.11</math></b>	<b>10.55</b>	$1.08 \pm 0.11$	$-0.31 \pm 0.07$

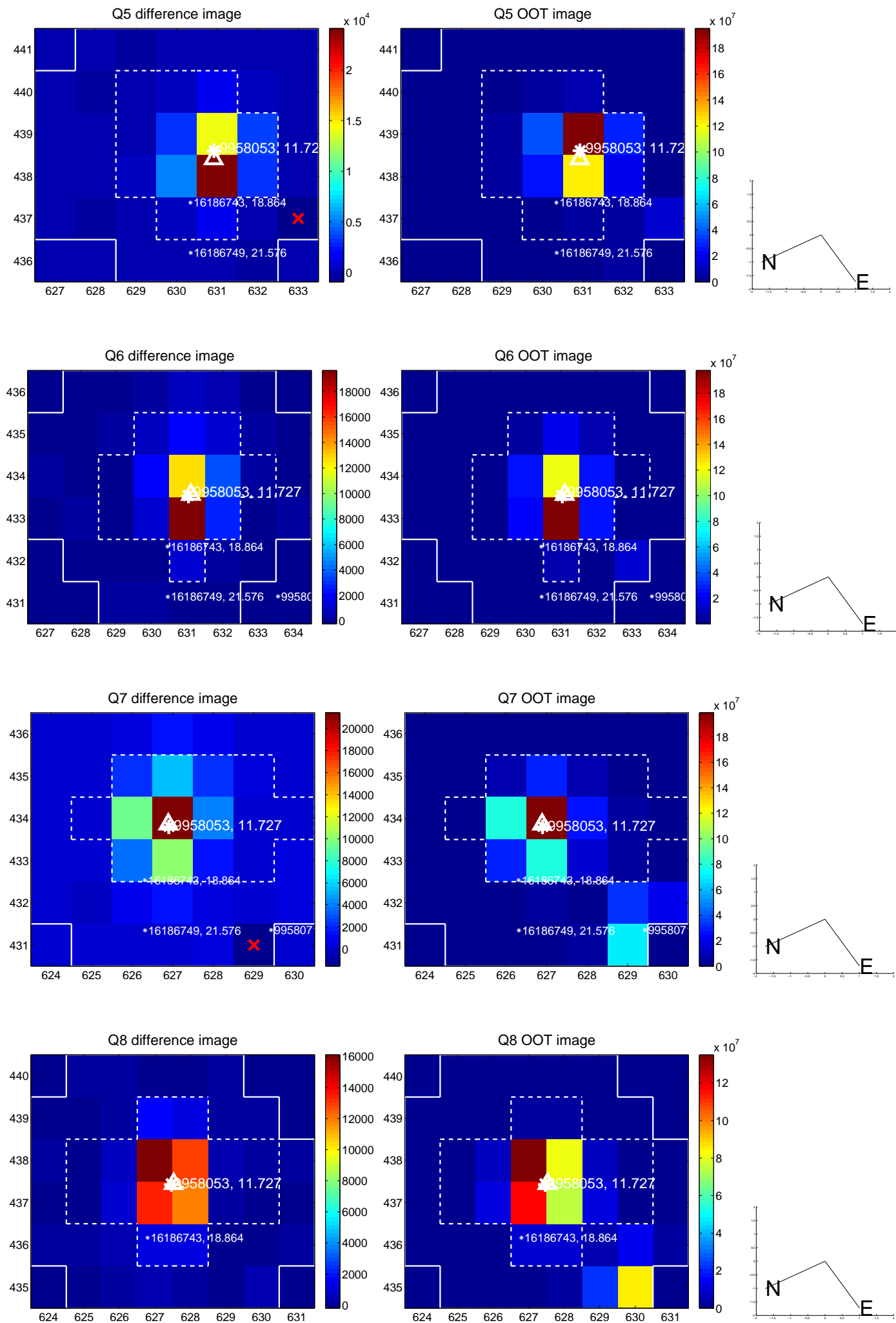


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

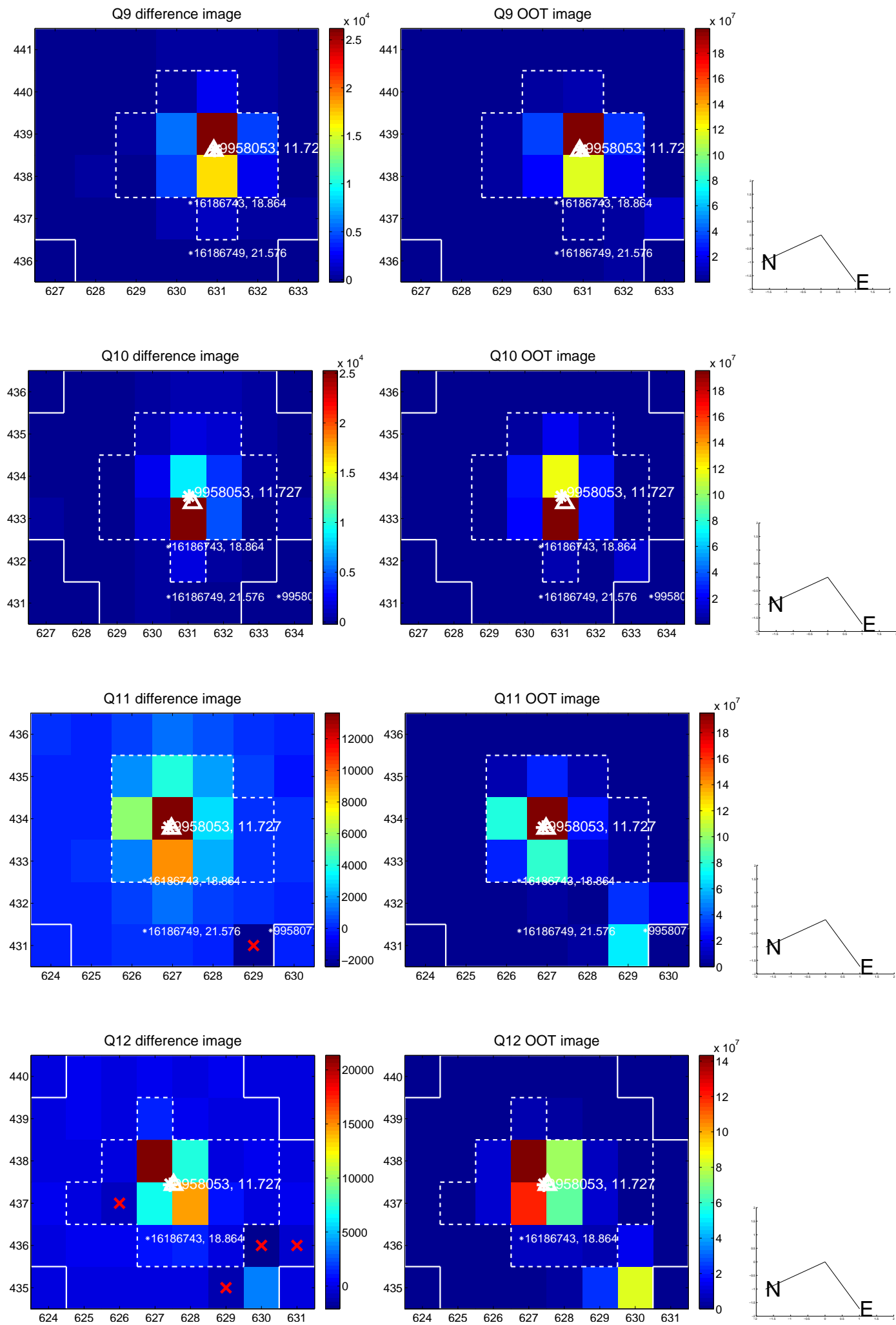


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

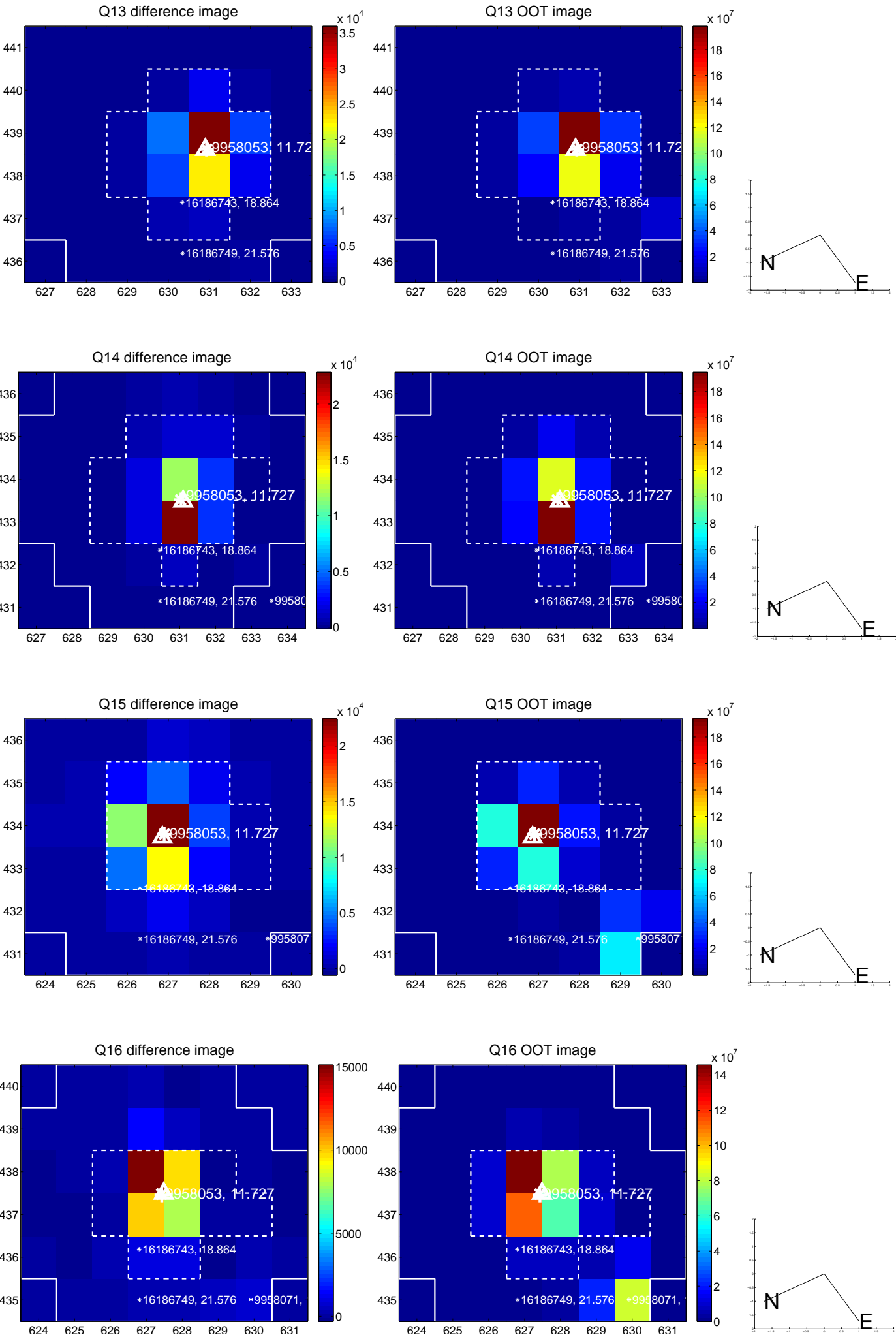




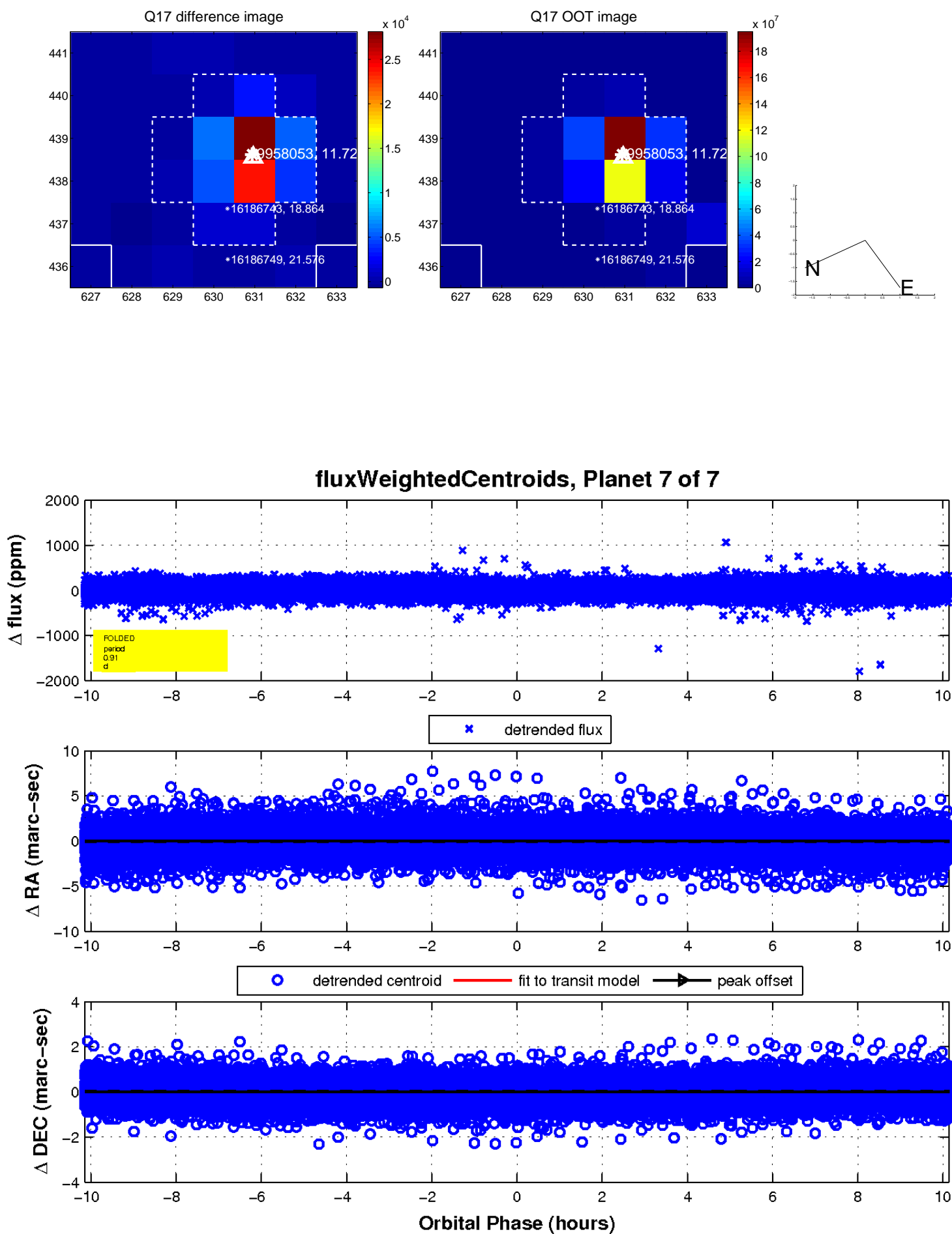
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

