

# KIC 005888069

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005888069-01	OBS	No	2.623478	132.555154	44.5	7.967	12.1	11.8	1.68	7325	1.29	3692.41
005888069-02	OBS	No	0.874365	132.075953	40.9	5.721	10.8	13.7	1.68	7325	1.25	15979.26
005888069-03	OBS	No	37.059135	138.971343	315.3	4.067	9.7	9.7	1.68	7325	3.33	108.13
005888069-04	OBS	No	53.290743	173.864956	297.0	3.166	9.7	10.5	1.68	7325	2.94	66.62
005888069-05	OBS	No	64.997876	193.320683	181.0	7.070	8.6	6.1	1.68	7325	2.61	51.12
005888069-06	OBS	No	33.114287	163.250495	313.3	2.198	8.4	9.4	1.68	7325	3.34	125.64
005888069-07	OBS	No	41.030170	137.094447	238.6	4.040	8.0	7.5	1.68	7325	2.88	94.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005888069-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005888069-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
005888069-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005888069-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005888069-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

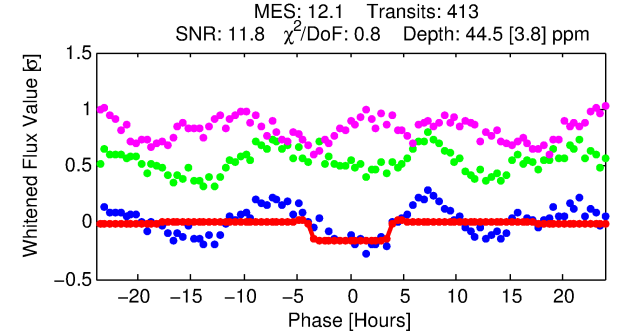
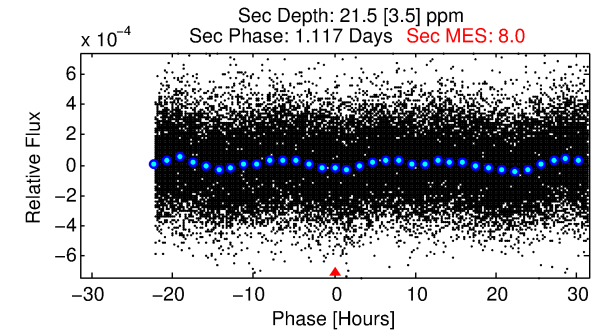
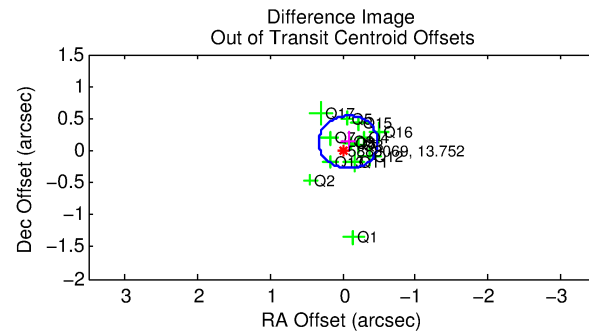
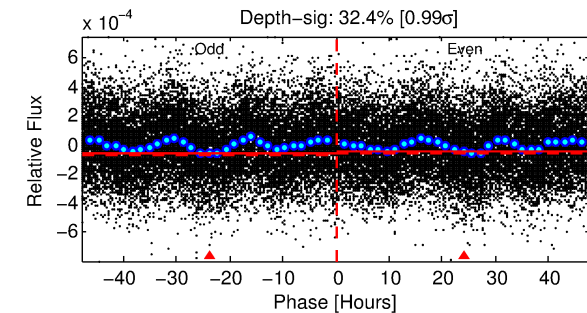
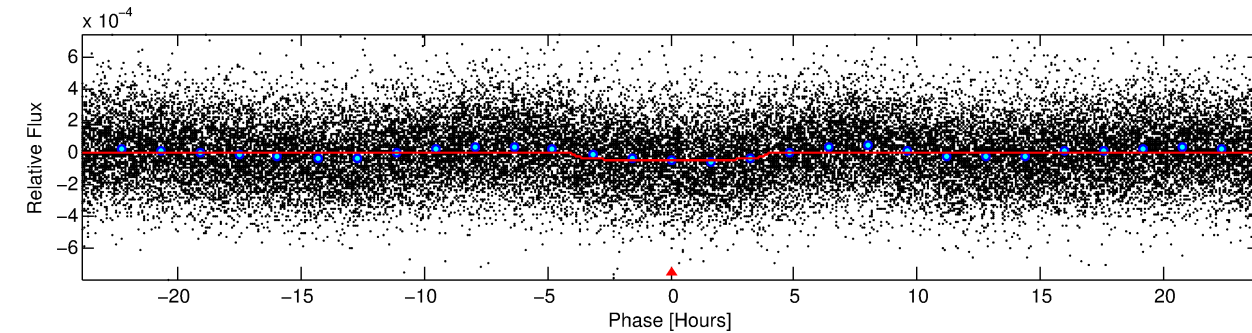
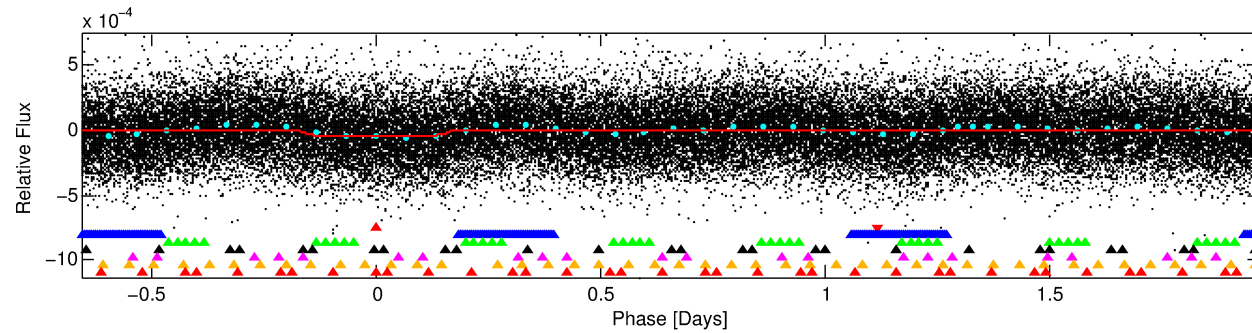
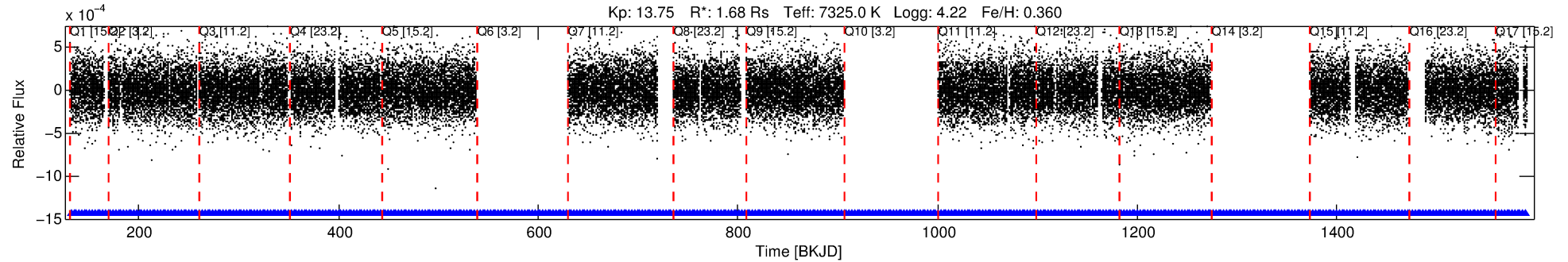
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005888069-01

No Significant Match Found

# DV One-Page Summary

KIC: 5888069 Candidate: 1 of 7 Period: 2.623 d



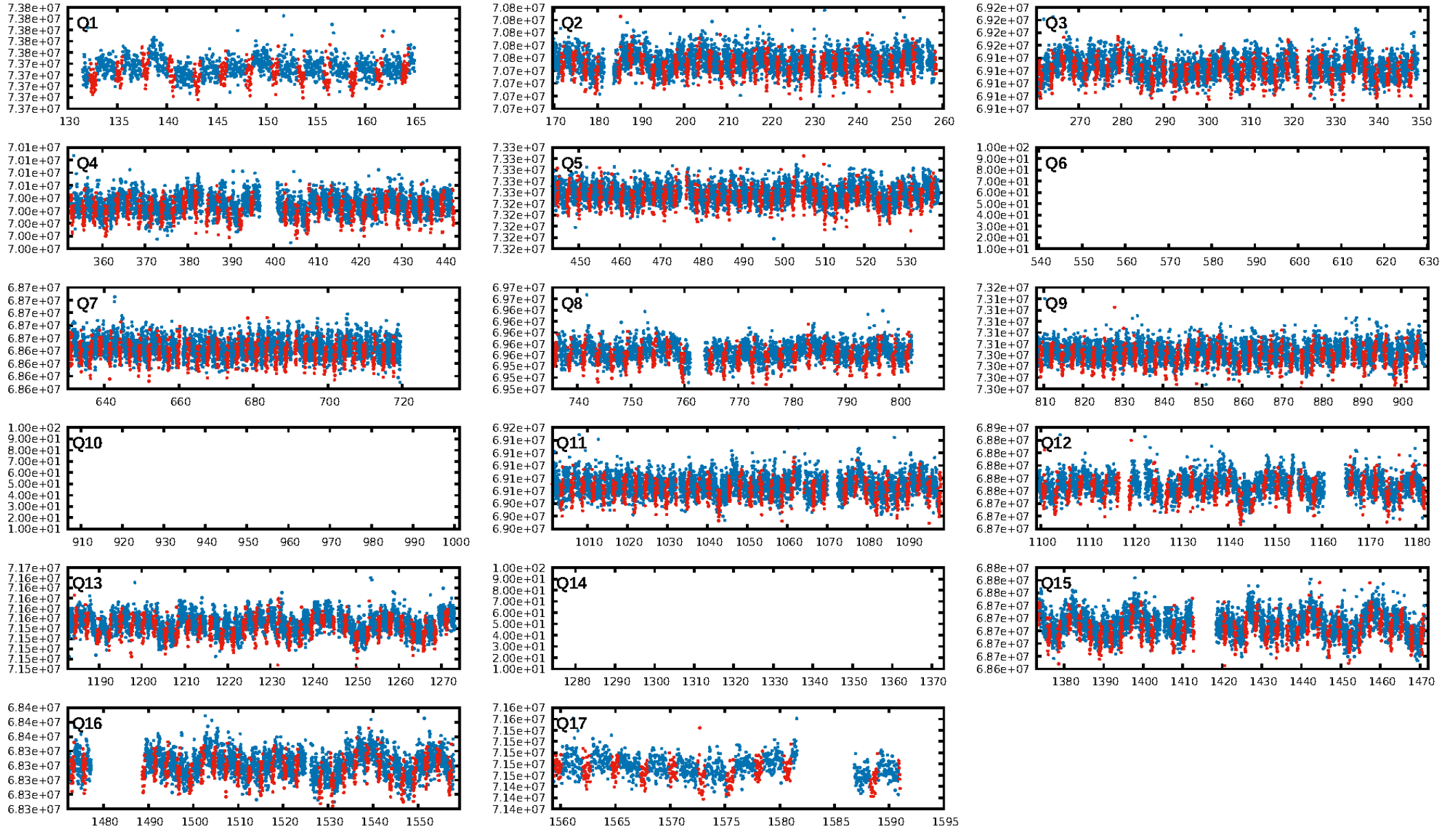
## DV Fit Results:

Period = 2.62348 [0.00003] d  
Epoch = 132.5552 [0.0054] BKJD  
Rp/R\* = 0.0071 [0.0013]  
a/R\* = 1.49 [0.91]  
b = 0.90 [0.25]  
Seff = 3692.41 [1105.83]  
Teff = 1988 [149] K  
Rp = 1.29 [0.39] Re  
a = 0.0443 [0.0089] AU  
Ag = 13.88 [6.88] [1.87 $\sigma$ ]  
Teffp = 5932 [596] K [6.42 $\sigma$ ]

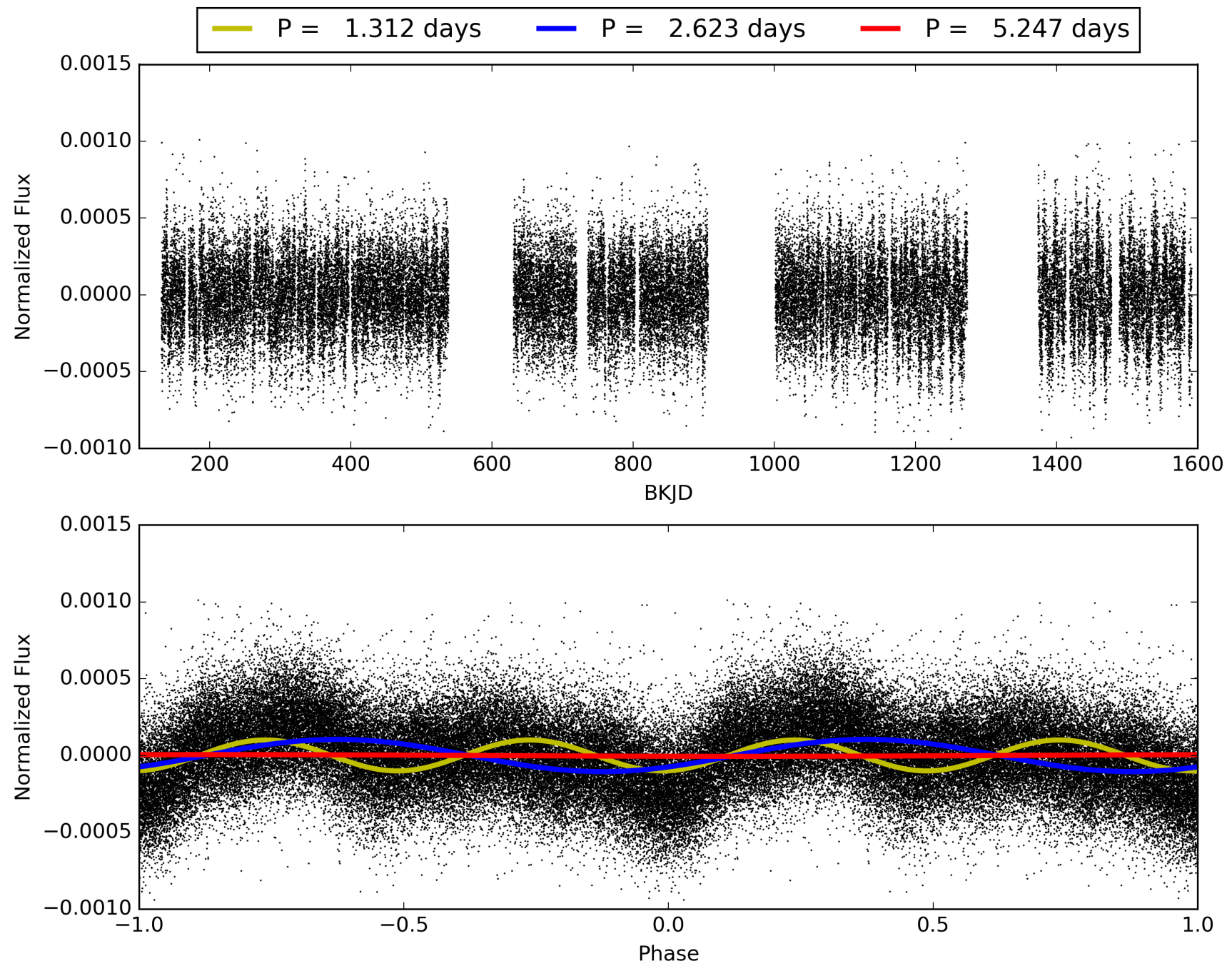
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.28 $\sigma$ ]  
LongPeriod-sig: 100.0% [88.54 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.05e-26  
RollingBand-fgt: 1.00 [390/390]  
GhostDiagnostic-chr: 1.685  
Centroid-sig: 8.6%  
Centroid-so: 1.056 arcsec [1.45 $\sigma$ ]  
OotOffset-rm: 0.153 arcsec [1.12 $\sigma$ ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-rm: 0.190 arcsec [1.72 $\sigma$ ]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 0.00 [0/14]

# TCE 005888069-01, PDC Light Curves



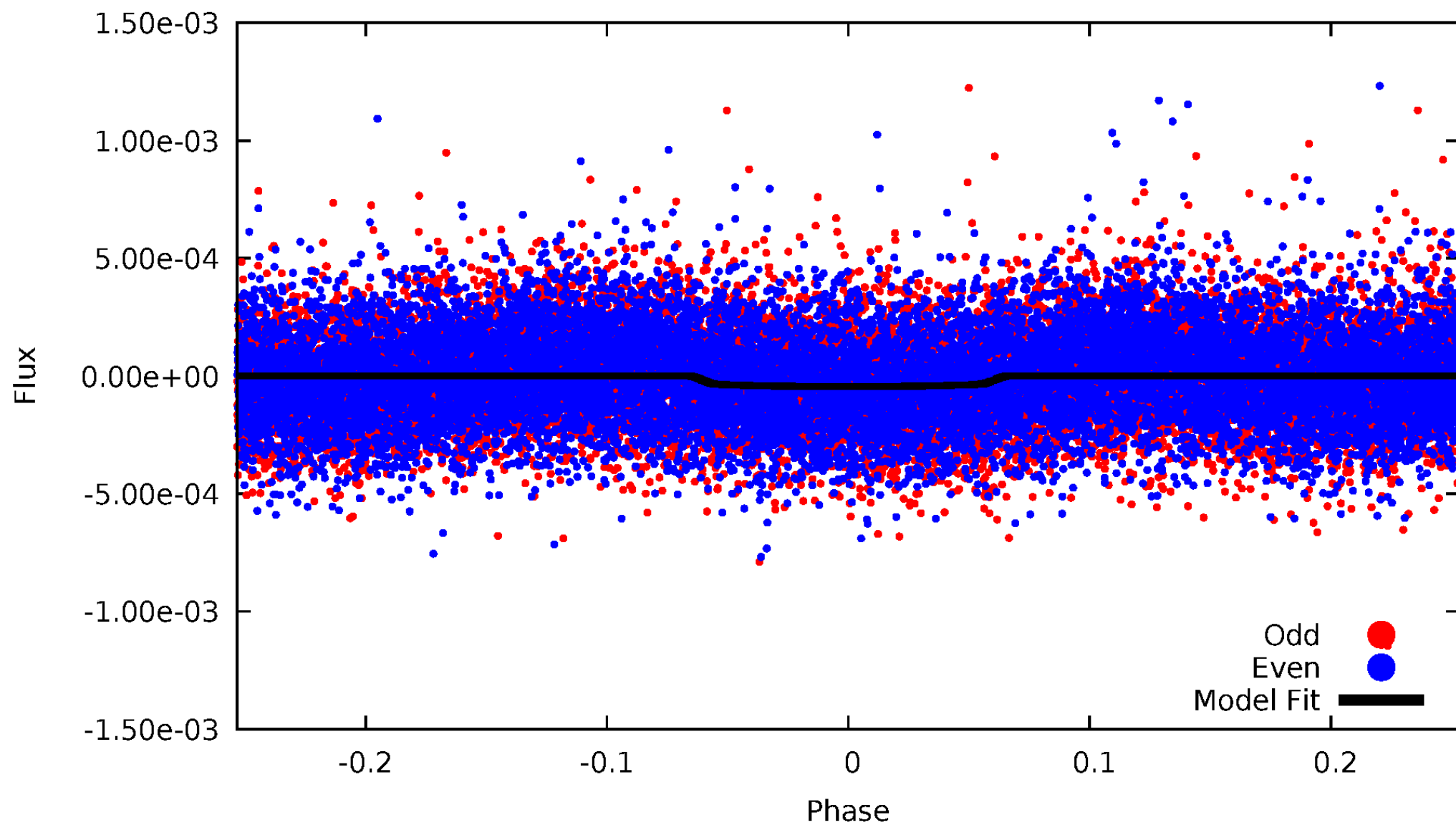
TCE 005888069-01





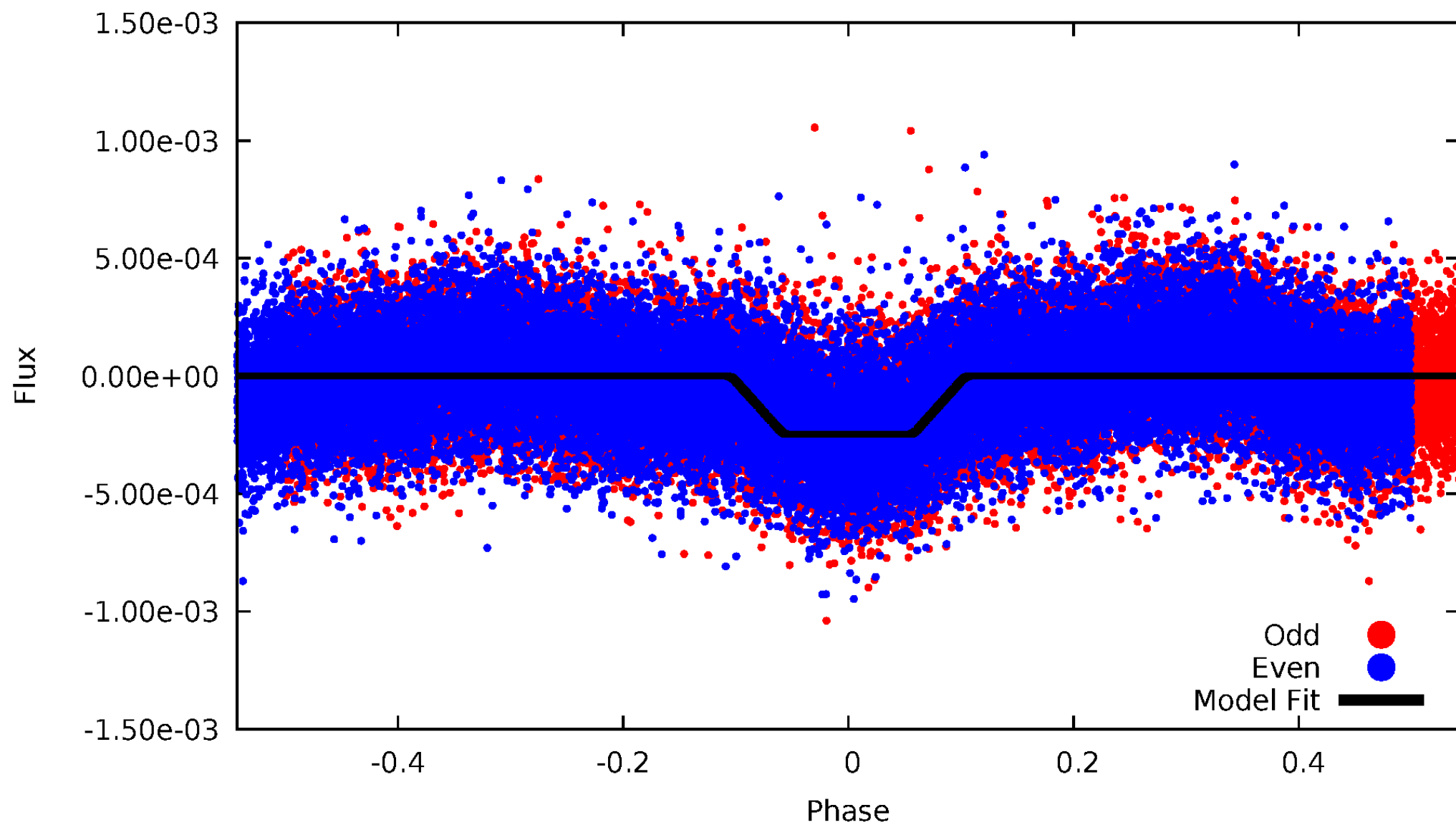
DV Odd/Even

TCE 005888069-01

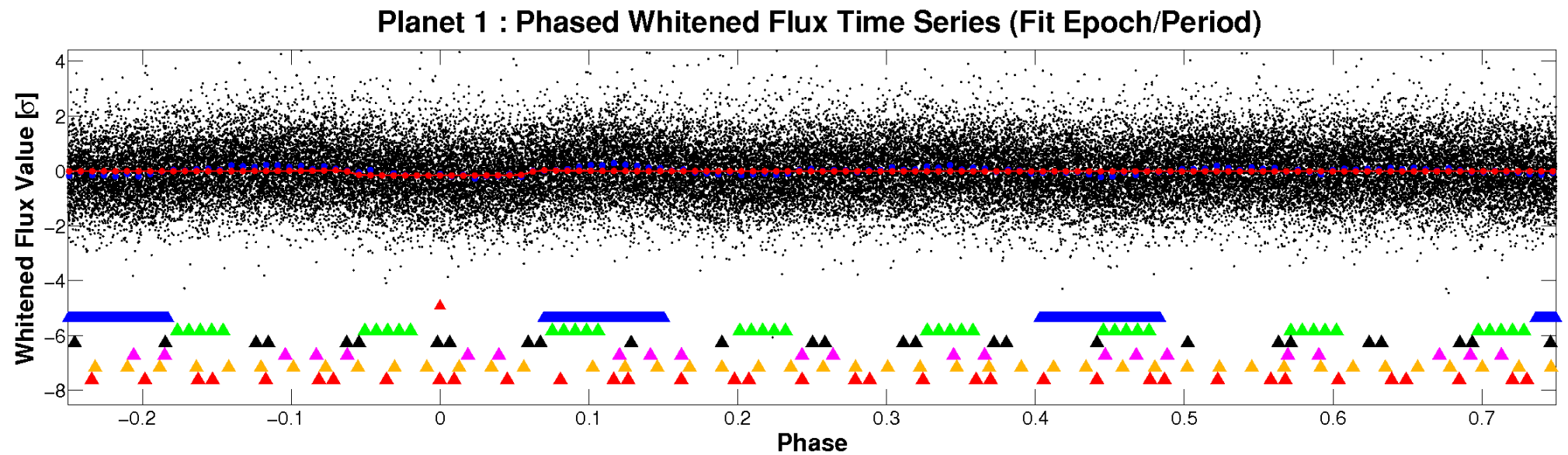
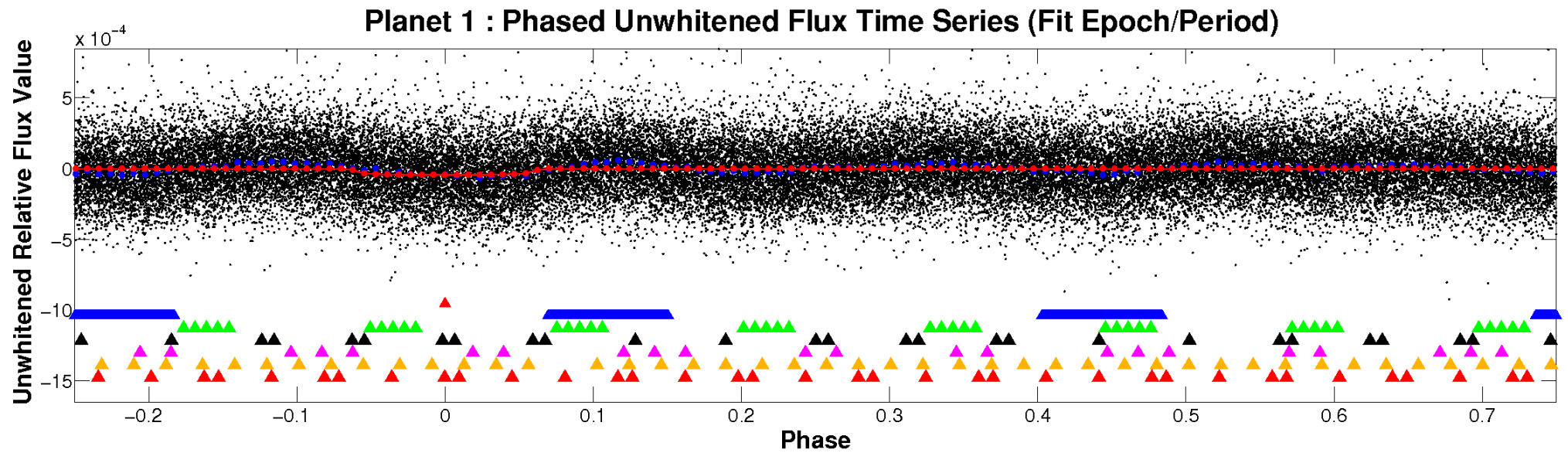


# ALT Odd/Even

TCE 005888069-01

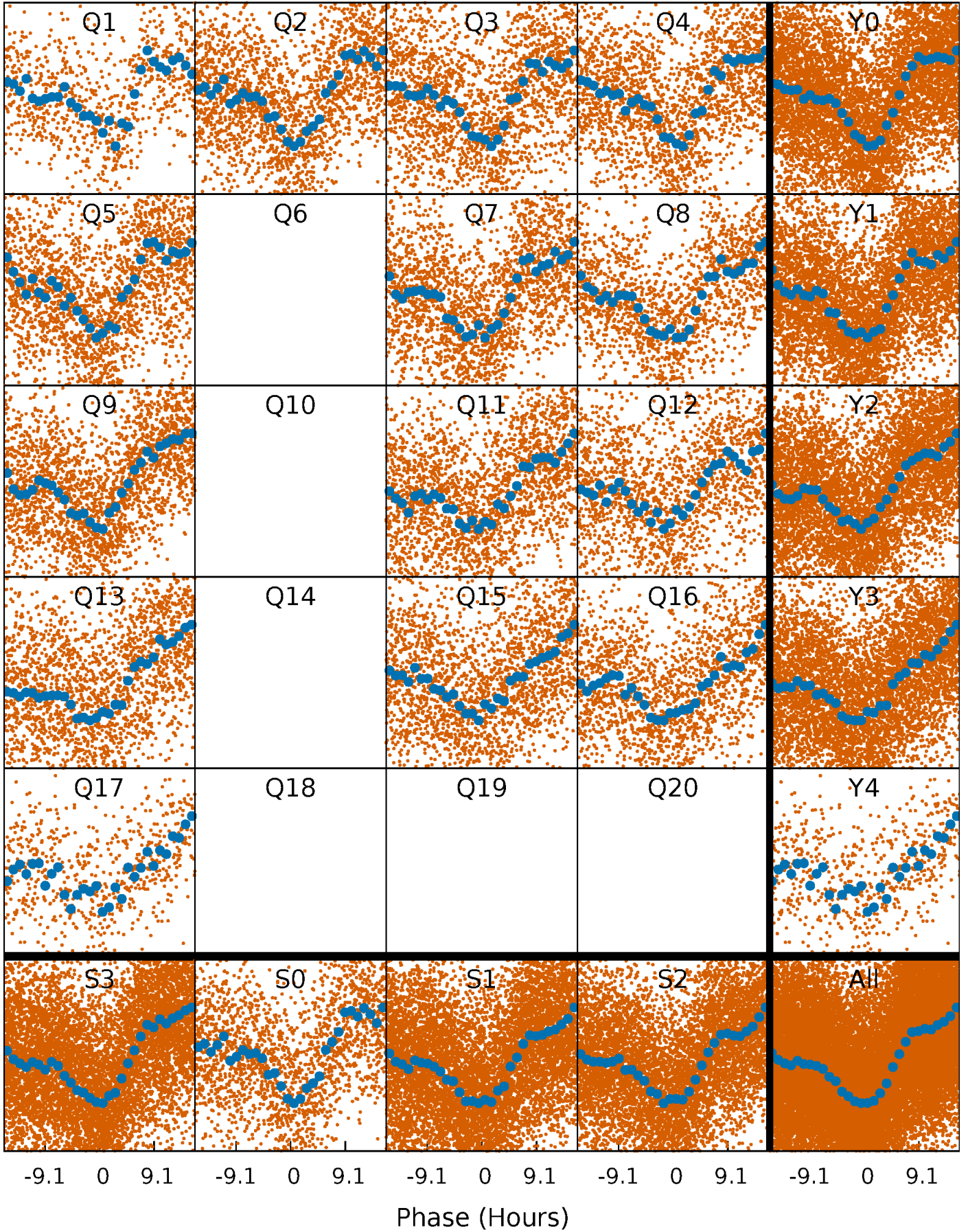


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

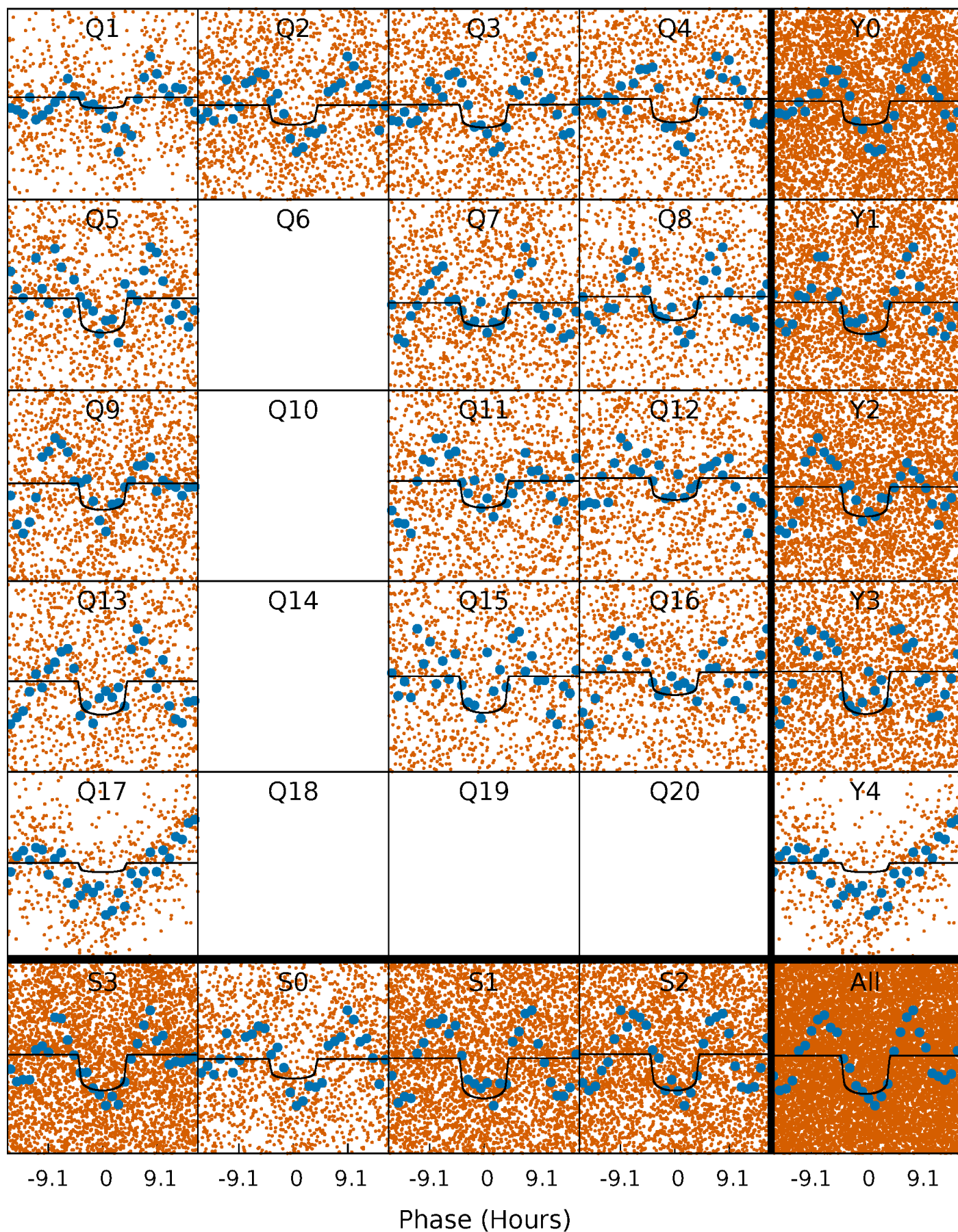
TCE 005888069-01   P= 2.623478 Days    $T_0=132.555154$  (BKJD)





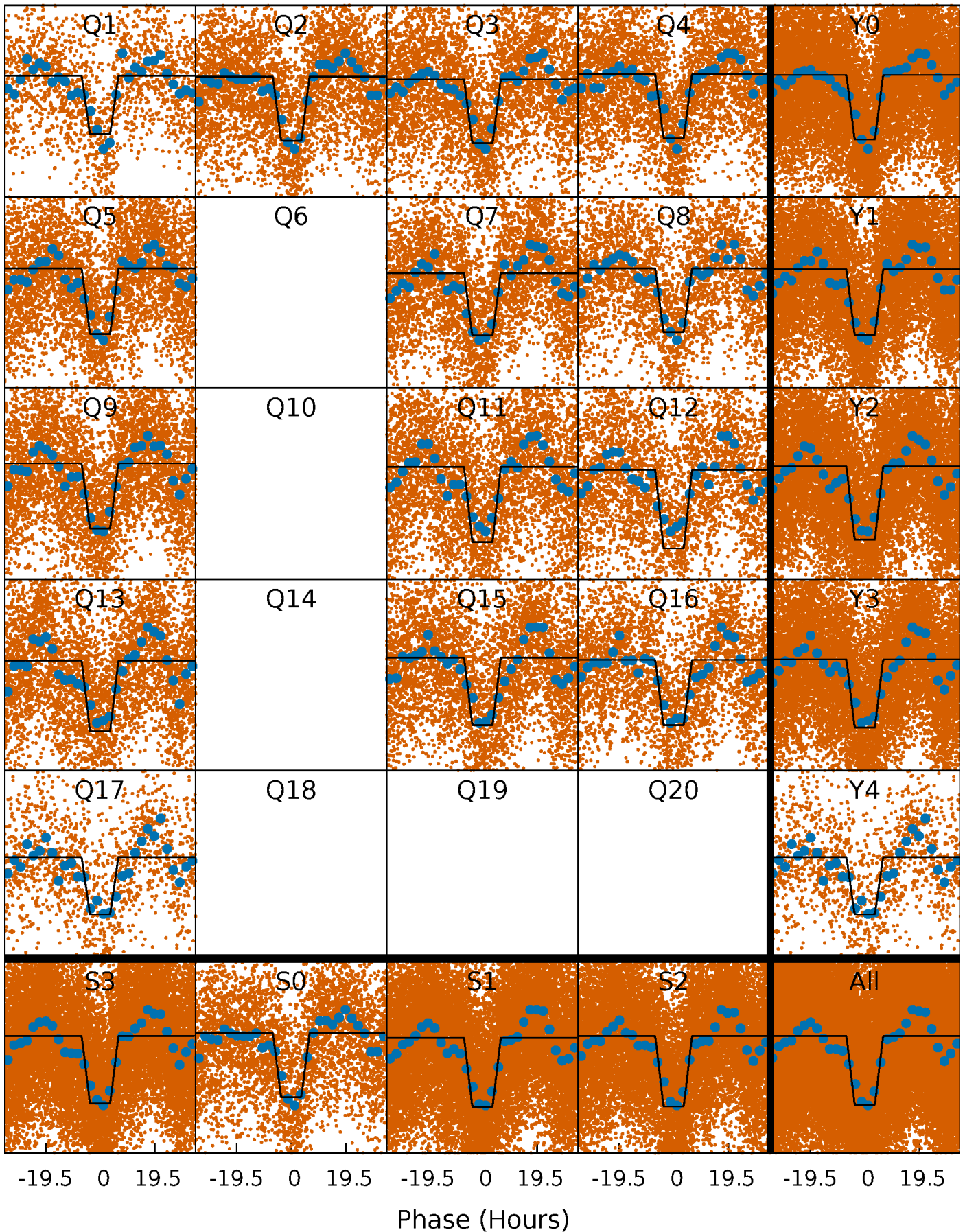
# DV Quarter-Phased Transit Curves

TCE 005888069-01 P= 2.623478 Days  $T_0=132.555154$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005888069-01 P= 2.623340 Days  $T_0=132.577044$  (BKJD)

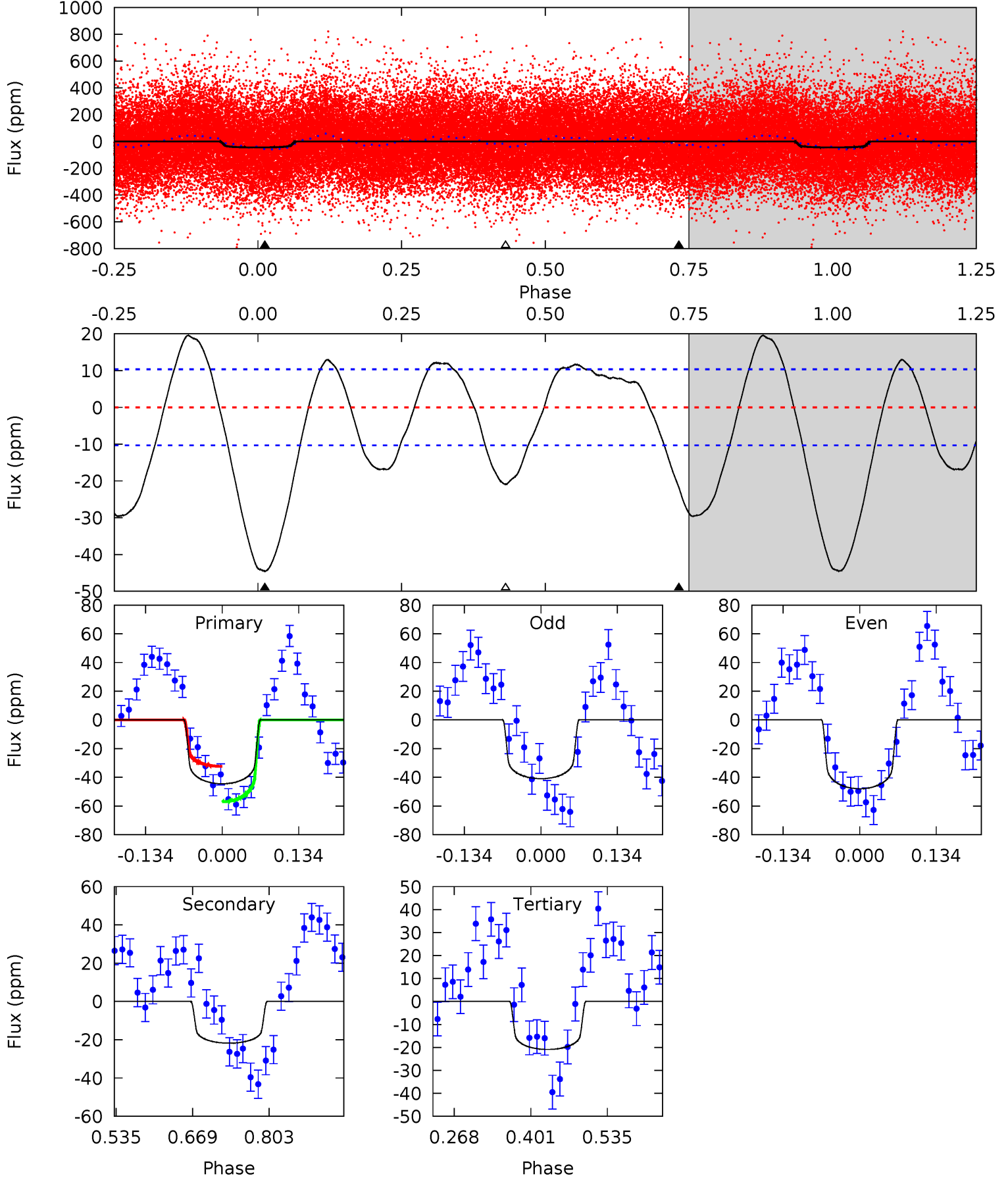




# DV Model-Shift Uniqueness Test

005888069-01, P = 2.623478 Days, E = 129.931676 Days

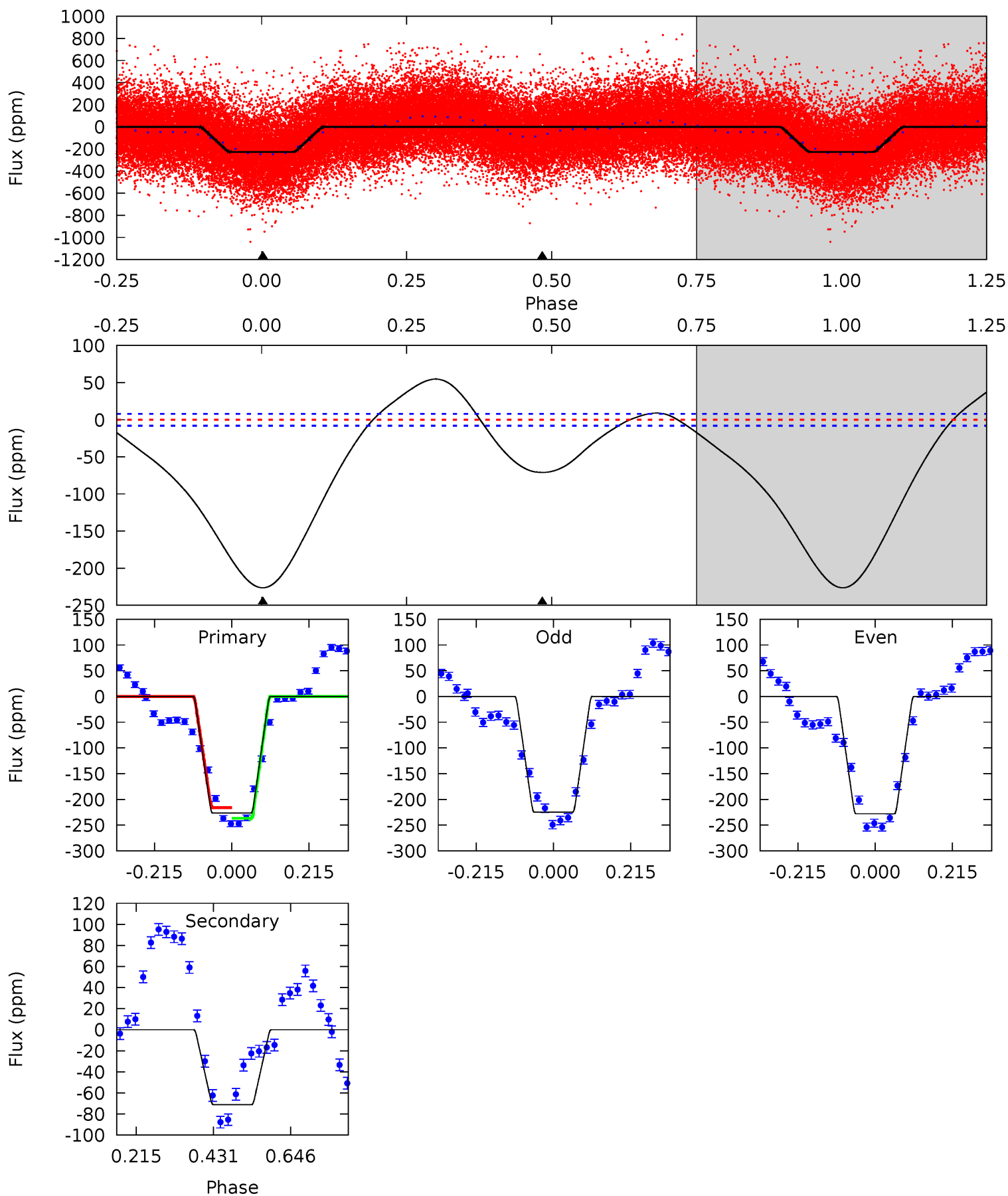
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	9.50	9.11	0	4.50	1.50	5.06	10.3	19.4	0.39	9.50	1.53	0.98	0.31	5.36



# Alt Model-Shift Uniqueness Test

005888069-01, P = 2.623340 Days, E = 129.953704 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
124.8	39.2	0	0	4.40	1.24	14.1	124.8	124.8	39.2	39.2	0.89	0.99	0.19	5.78





### Stellar Parameters For KIC 005888069

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7325^{+73}_{-95}$	$4.216^{+0.018}_{-0.162}$	$0.360^{+0.050}_{-0.150}$	$1.677^{+0.399}_{-0.070}$	$1.687^{+0.139}_{-0.075}$	$0.503^{+0.035}_{-0.227}$
	+1%/-1%	+0%/-4%	+14%/-42%	+24%/-4%	+8%/-4%	+7%/-45%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005888069-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-22 \pm 2$	$1.36^{+0.31}_{-0.25}$	$2823^{+149}_{-67}$	$5857^{+661}_{-503}$	$13^{+7}_{-4}$
Alt.	$-71 \pm 2$	$3.01^{+0.43}_{-0.31}$	$2820^{+153}_{-66}$	$5292^{+232}_{-203}$	$8.377^{+2.094}_{-1.759}$

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

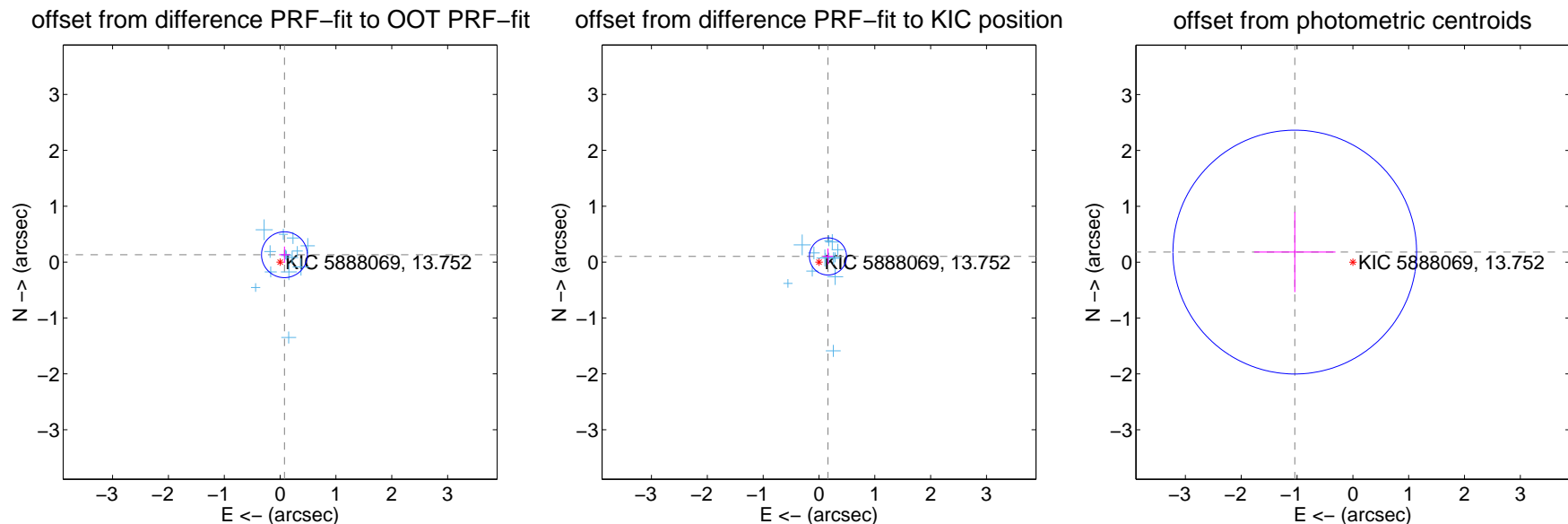
## DV Centroid Data

Supplemental centroid analysis for 005888069-01. Kepler magnitude: 13.75. Transit SNR 11.77

There are 14 quarters with good PRF difference image offsets

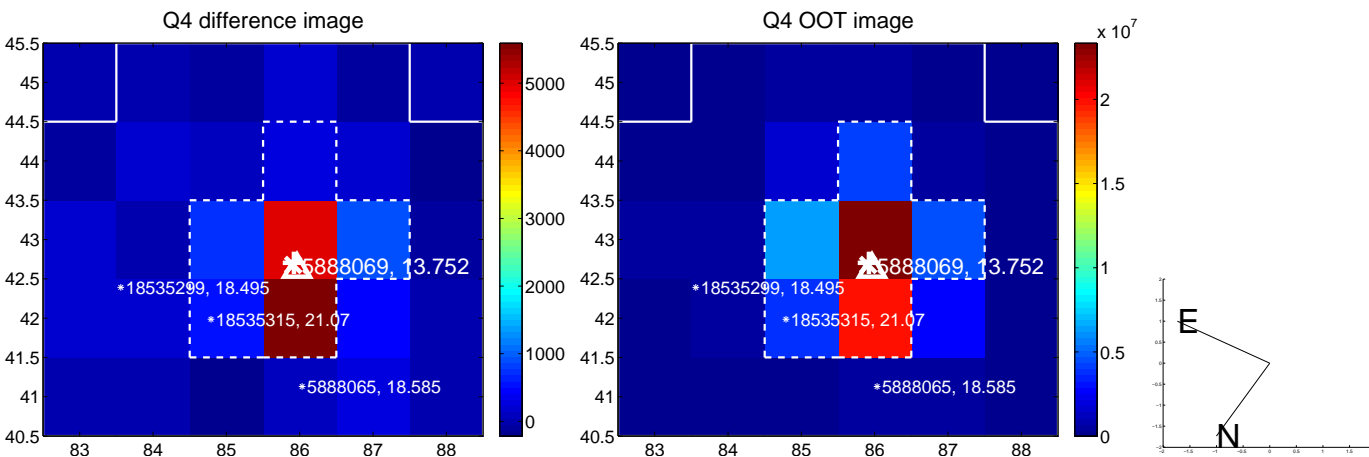
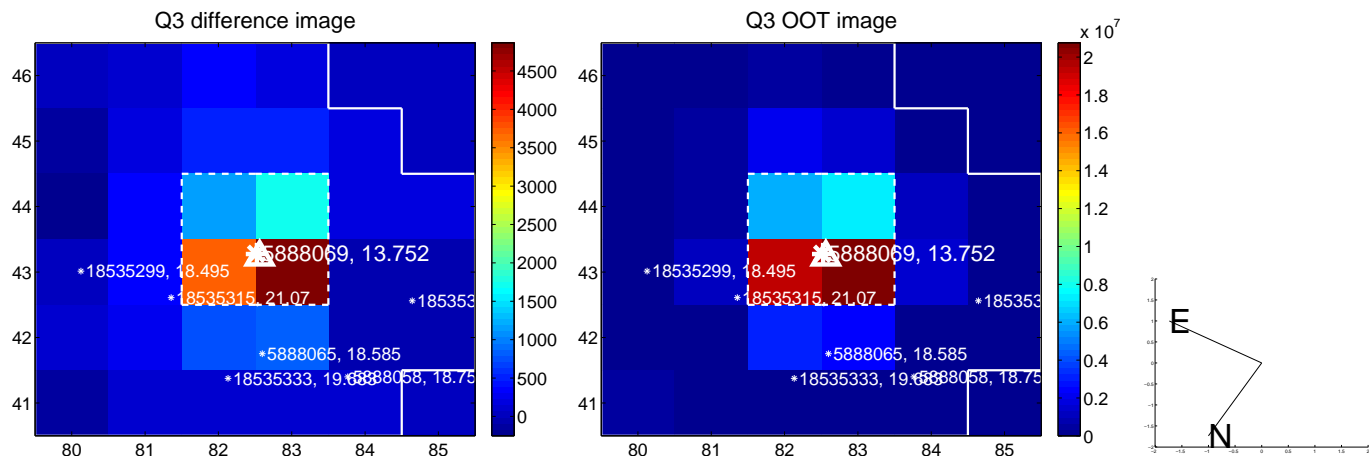
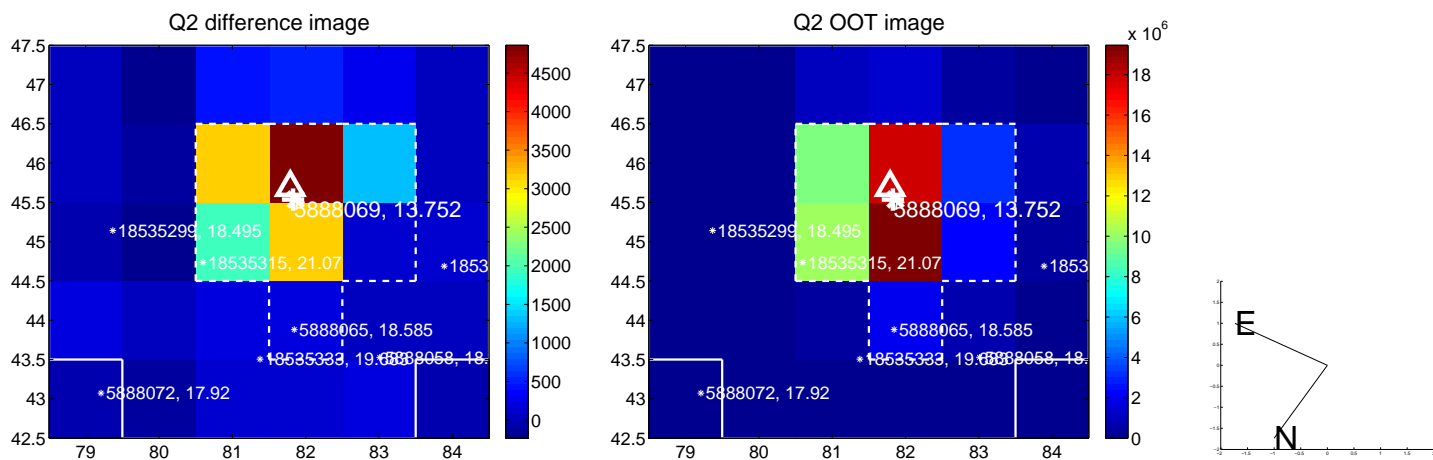
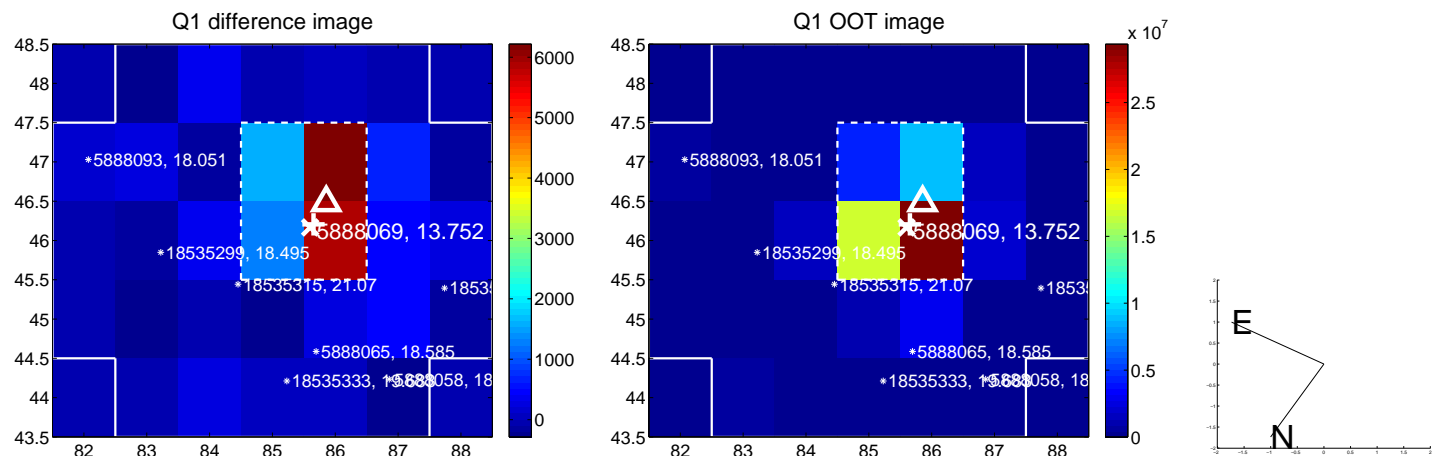
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.153 \pm 0.137$	1.12	$-0.077 \pm 0.095$	$0.132 \pm 0.147$
PRF-fit source offset from KIC position	$0.190 \pm 0.111$	1.72	$-0.161 \pm 0.093$	$0.101 \pm 0.142$
photometric centroid source offset	$1.06 \pm 0.73$	1.45	$1.04 \pm 0.73$	$0.18 \pm 0.72$

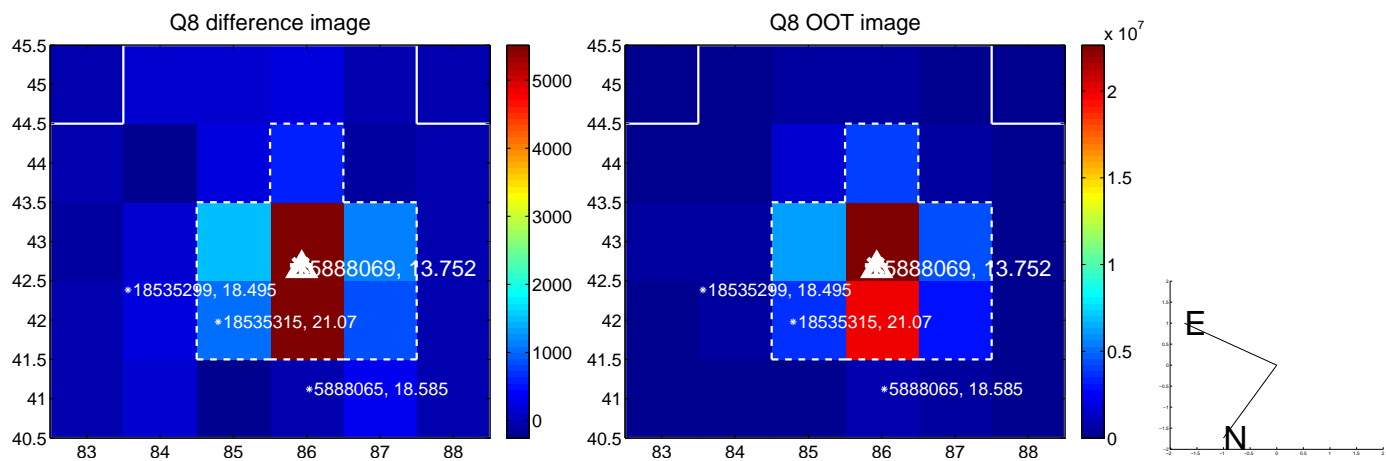
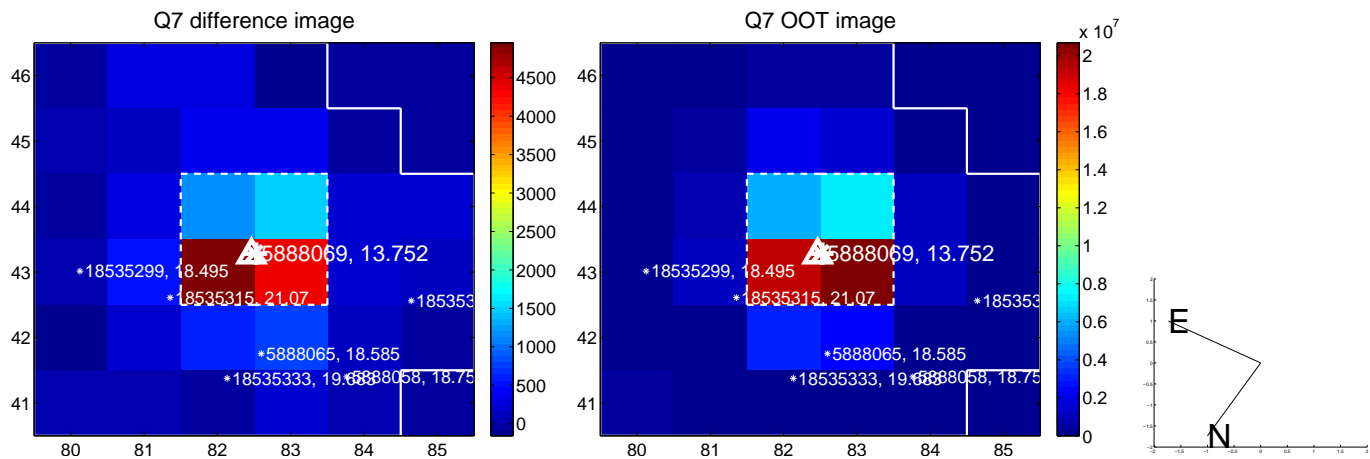
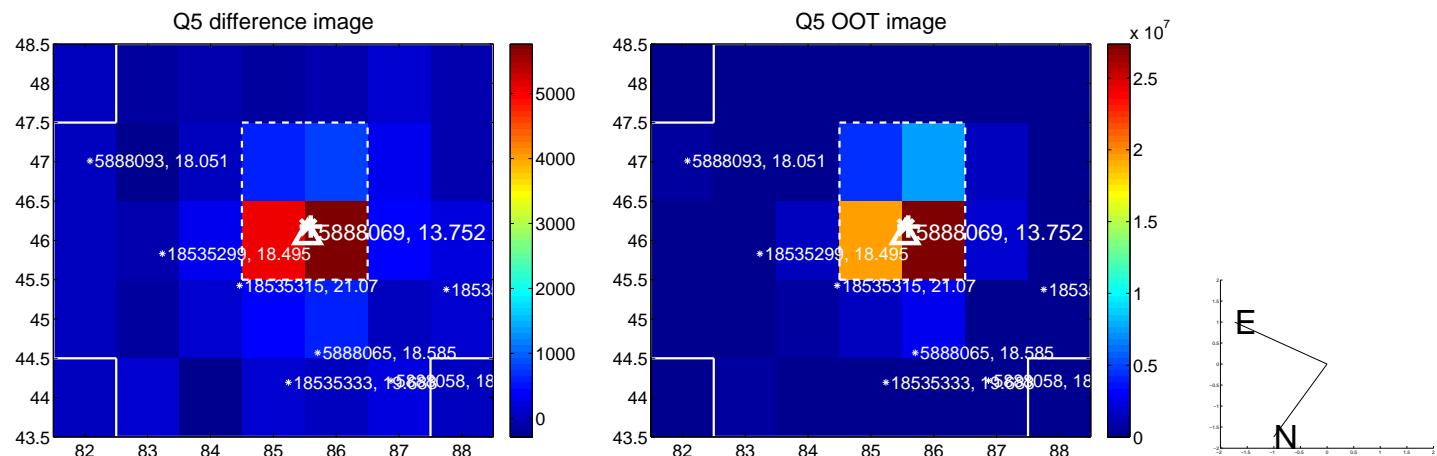


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

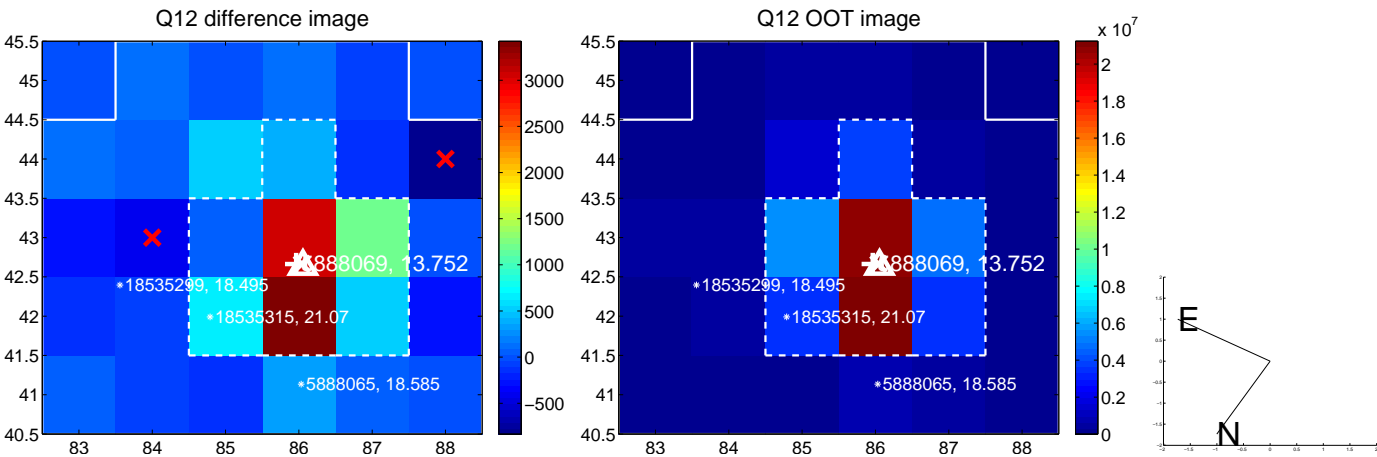
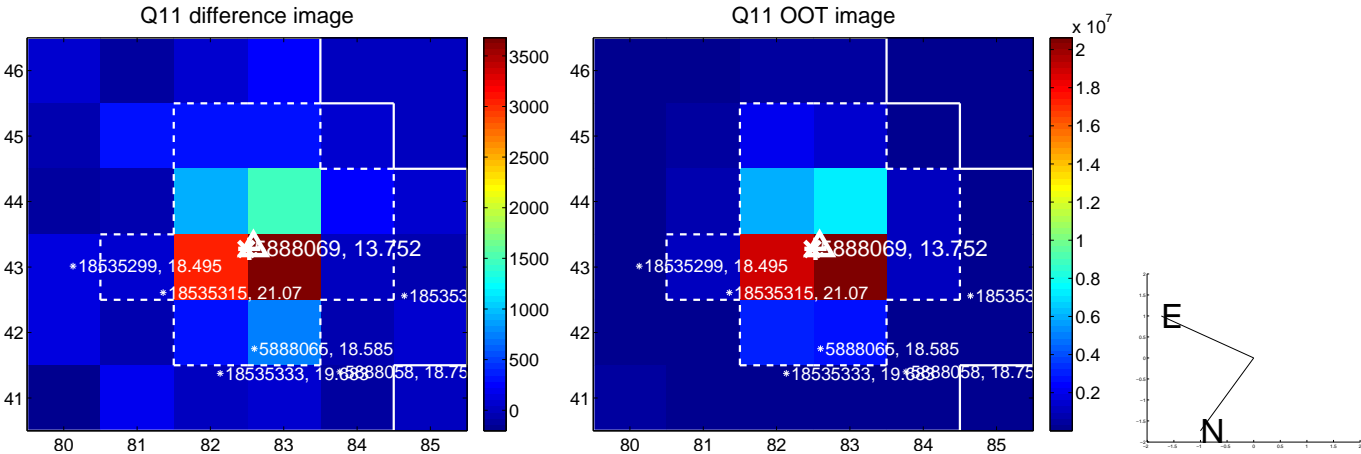
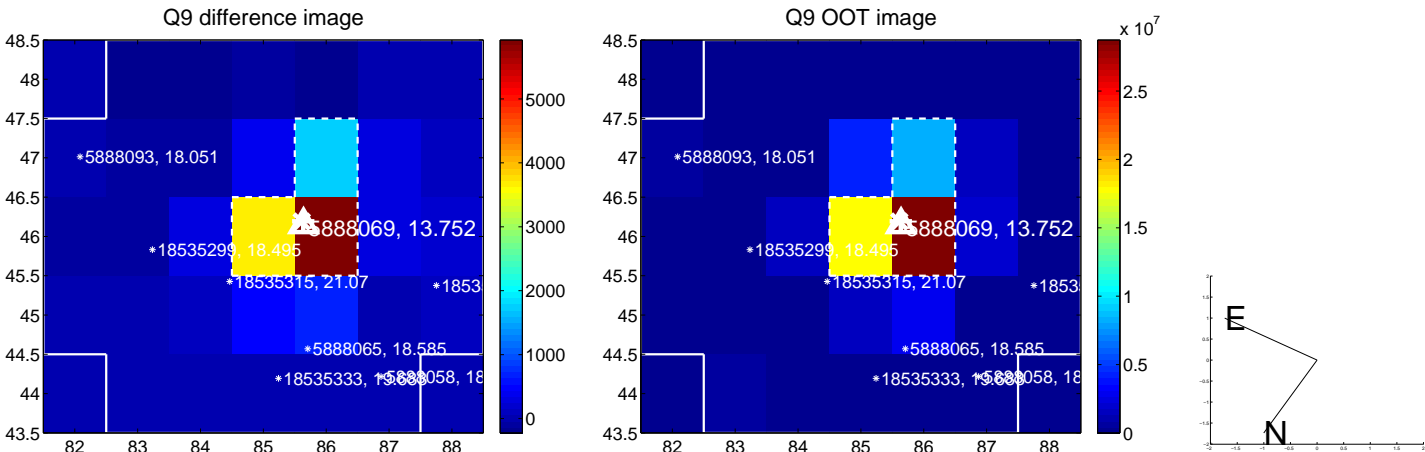


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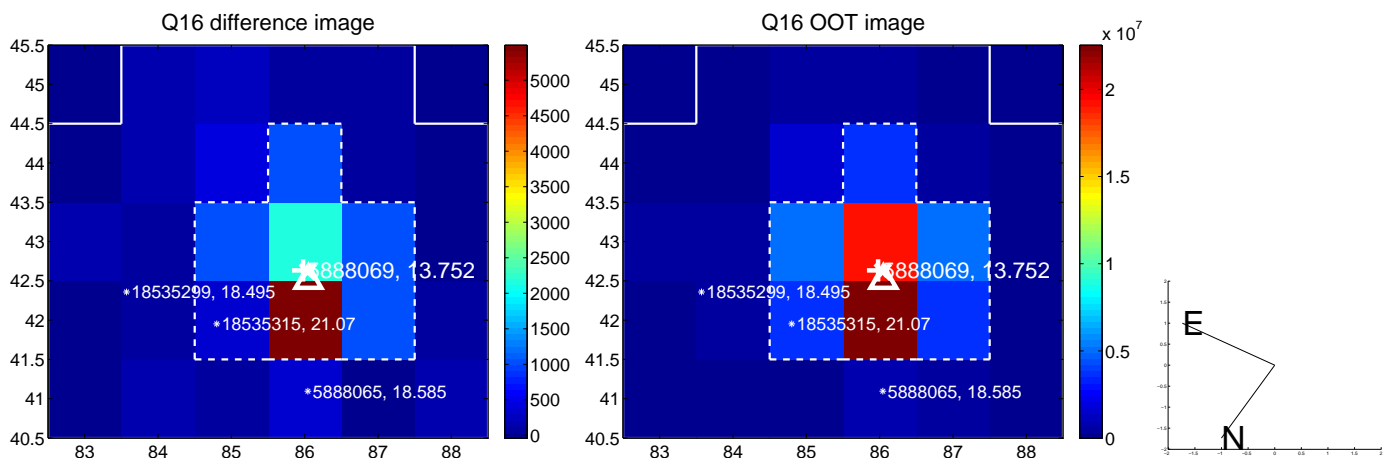
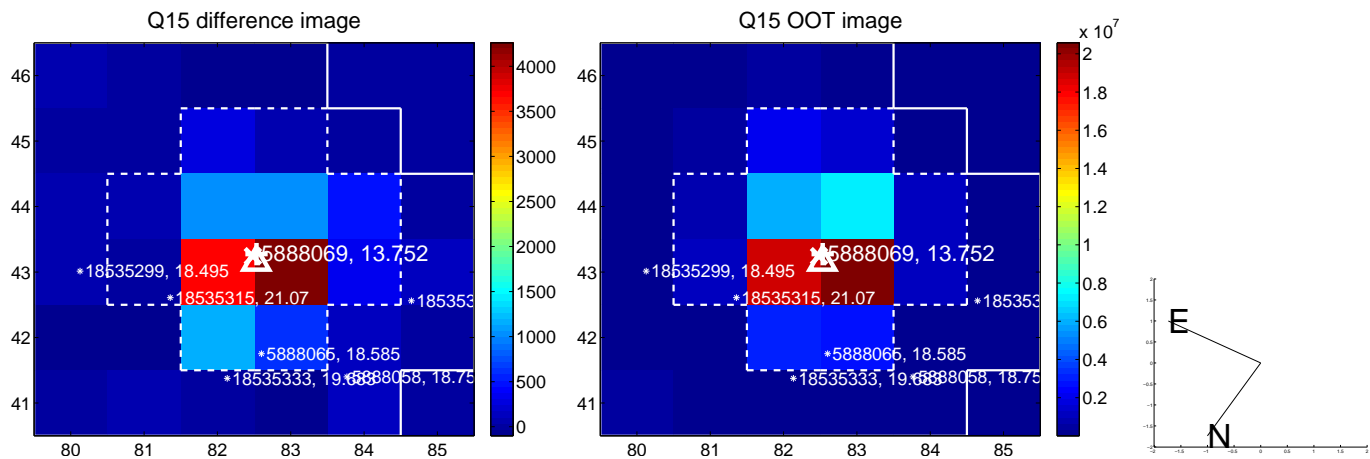
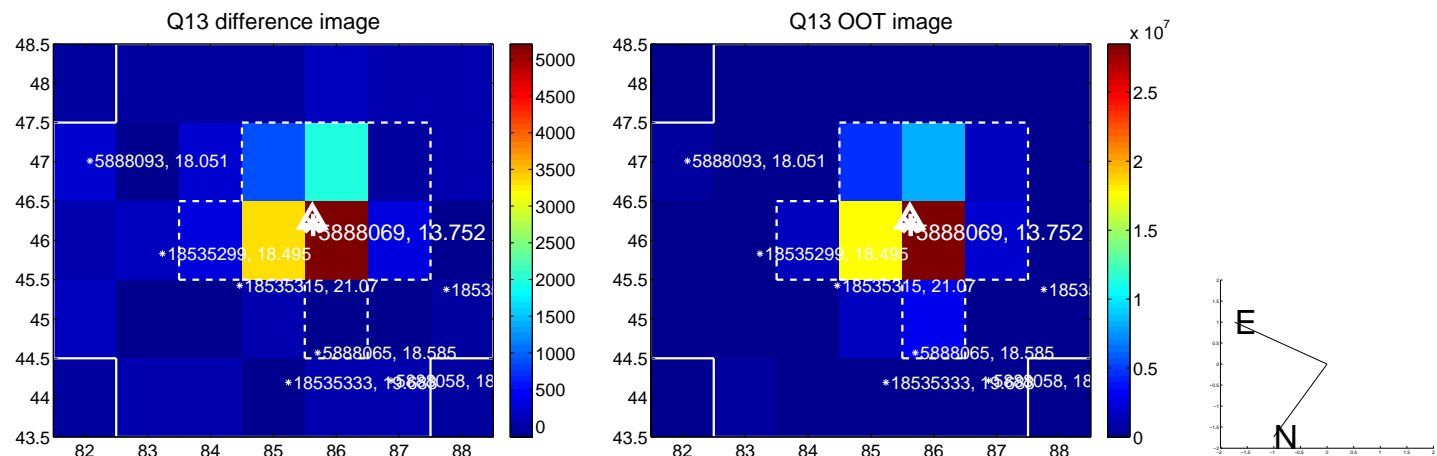




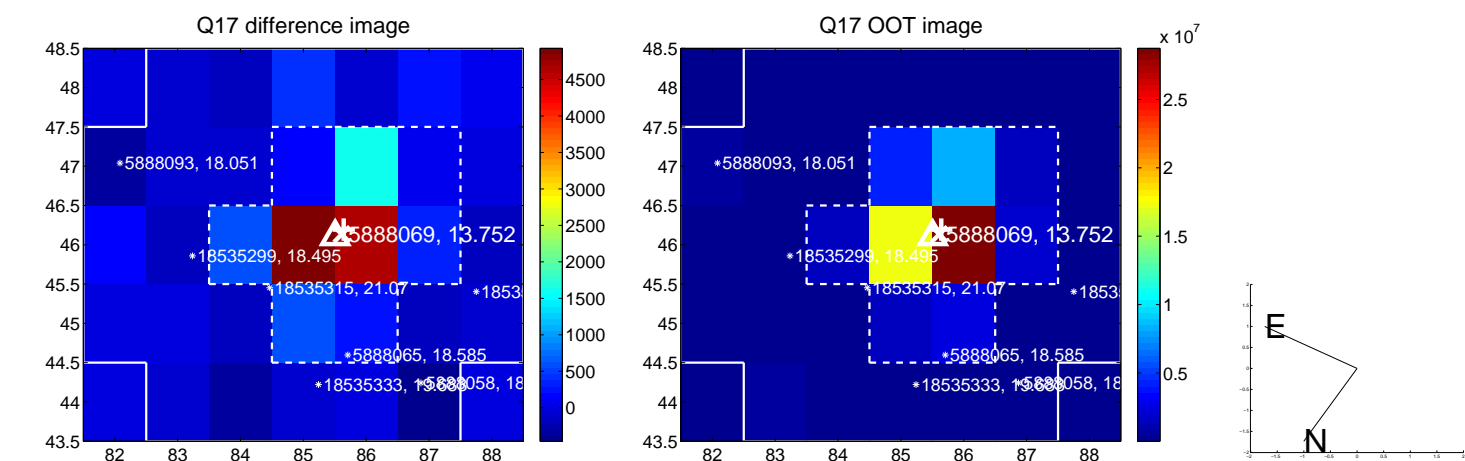
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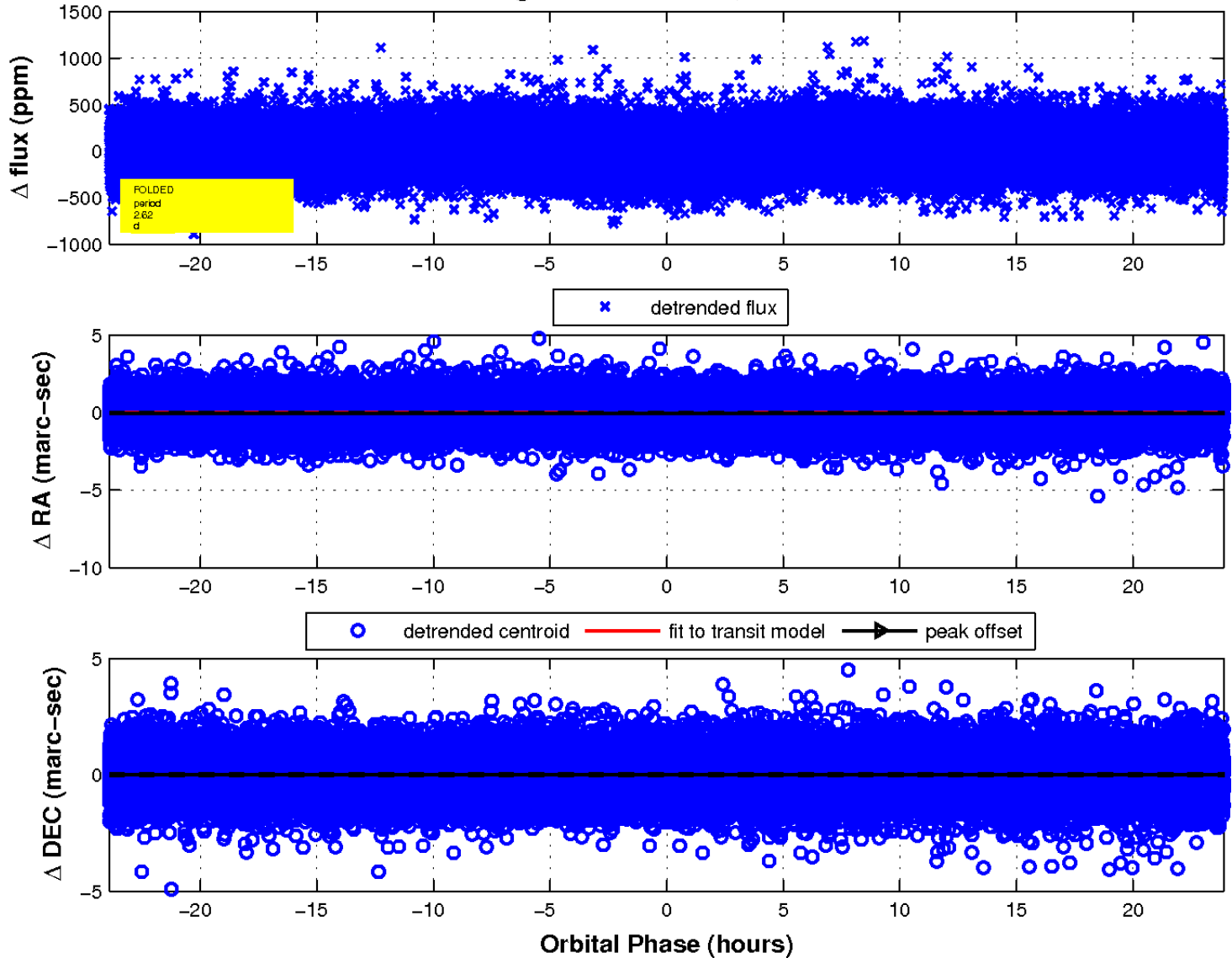
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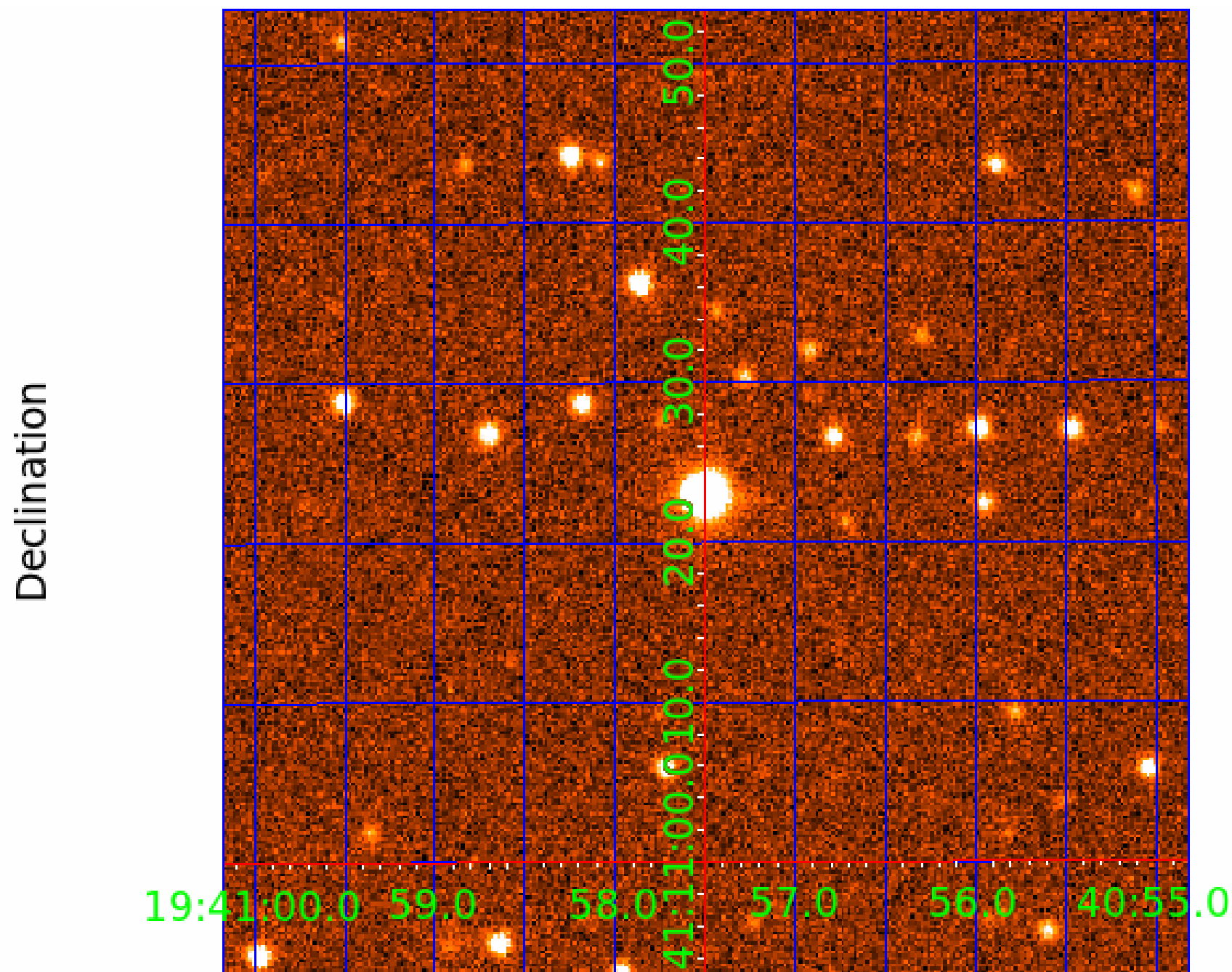
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fluxWeightedCentroids, Planet 1 of 7



UKIRT Image





# KIC 005888069

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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005888069-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005888069-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005888069-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

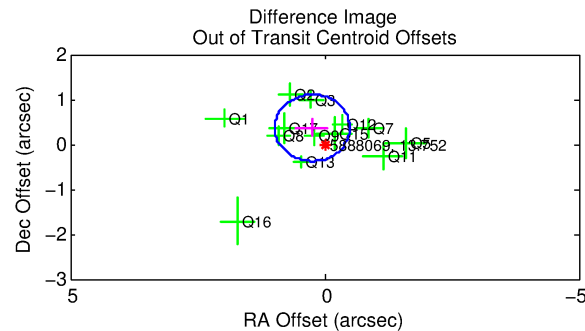
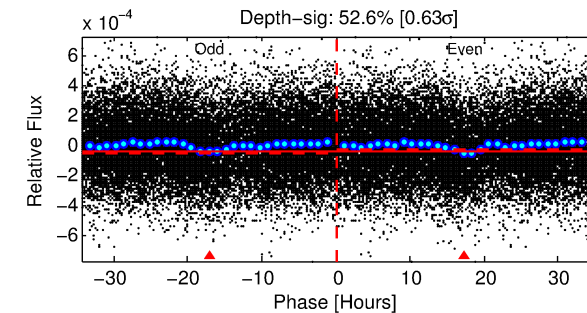
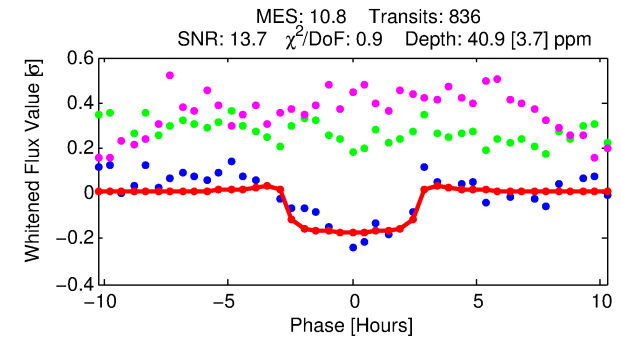
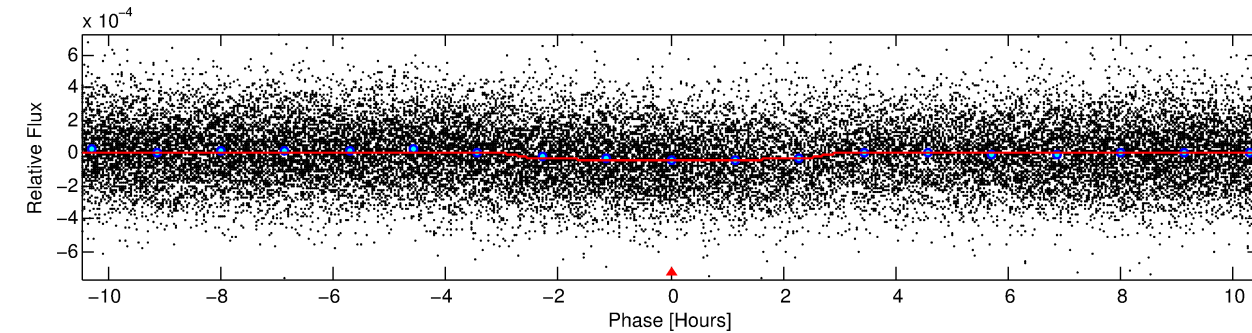
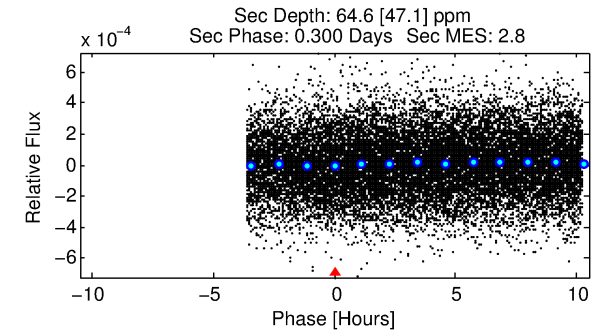
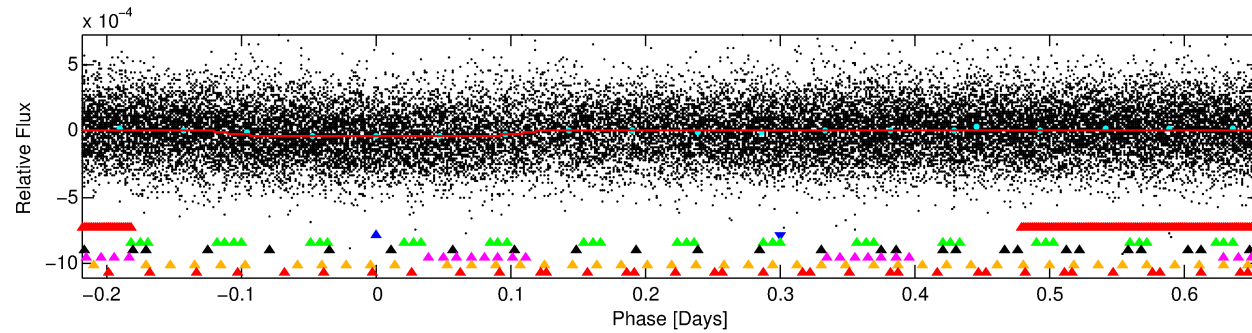
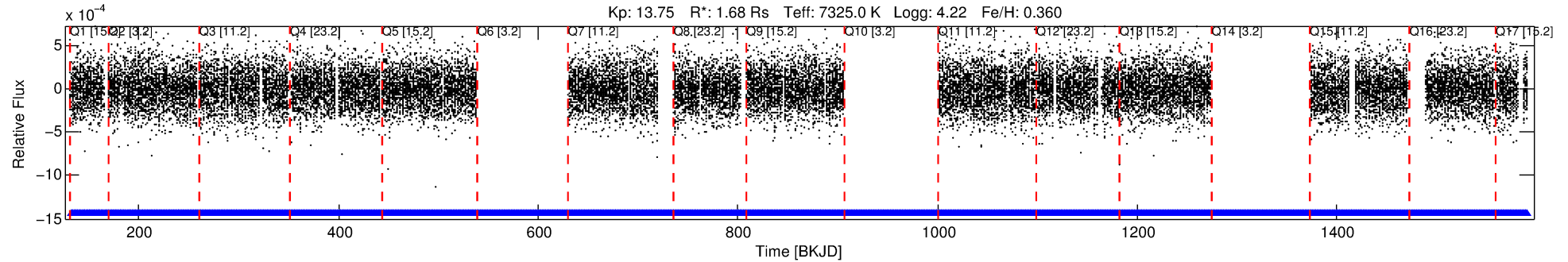
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005888069-02

No Significant Match Found

# DV One-Page Summary

KIC: 5888069 Candidate: 2 of 7 Period: 0.874 d



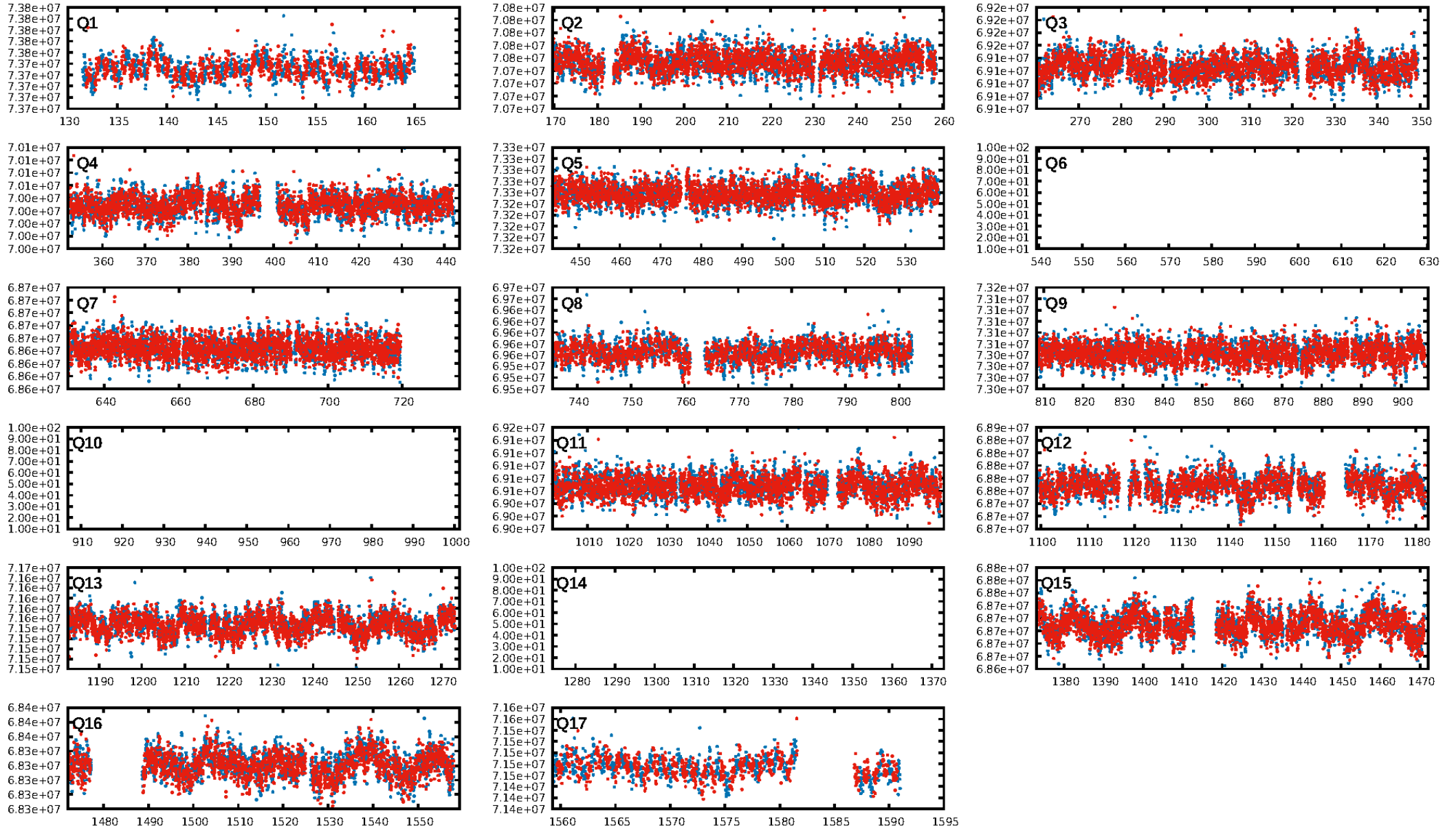
## DV Fit Results:

Period = 0.87436 [0.00001] d  
Epoch = 132.0760 [0.0039] BKJD  
Rp/R\* = 0.0068 [0.0019]  
a/R\* = 1.08 [0.26]  
b = 0.90 [0.35]  
Seff = 15979.26 [4785.56]  
Teff = 2867 [215] K  
Rp = 1.25 [0.45] Re  
a = 0.0213 [0.0043] AU  
Ag = 10.37 [9.94] [0.94σ]  
Teffp = 7954 [1816] K [2.78σ]

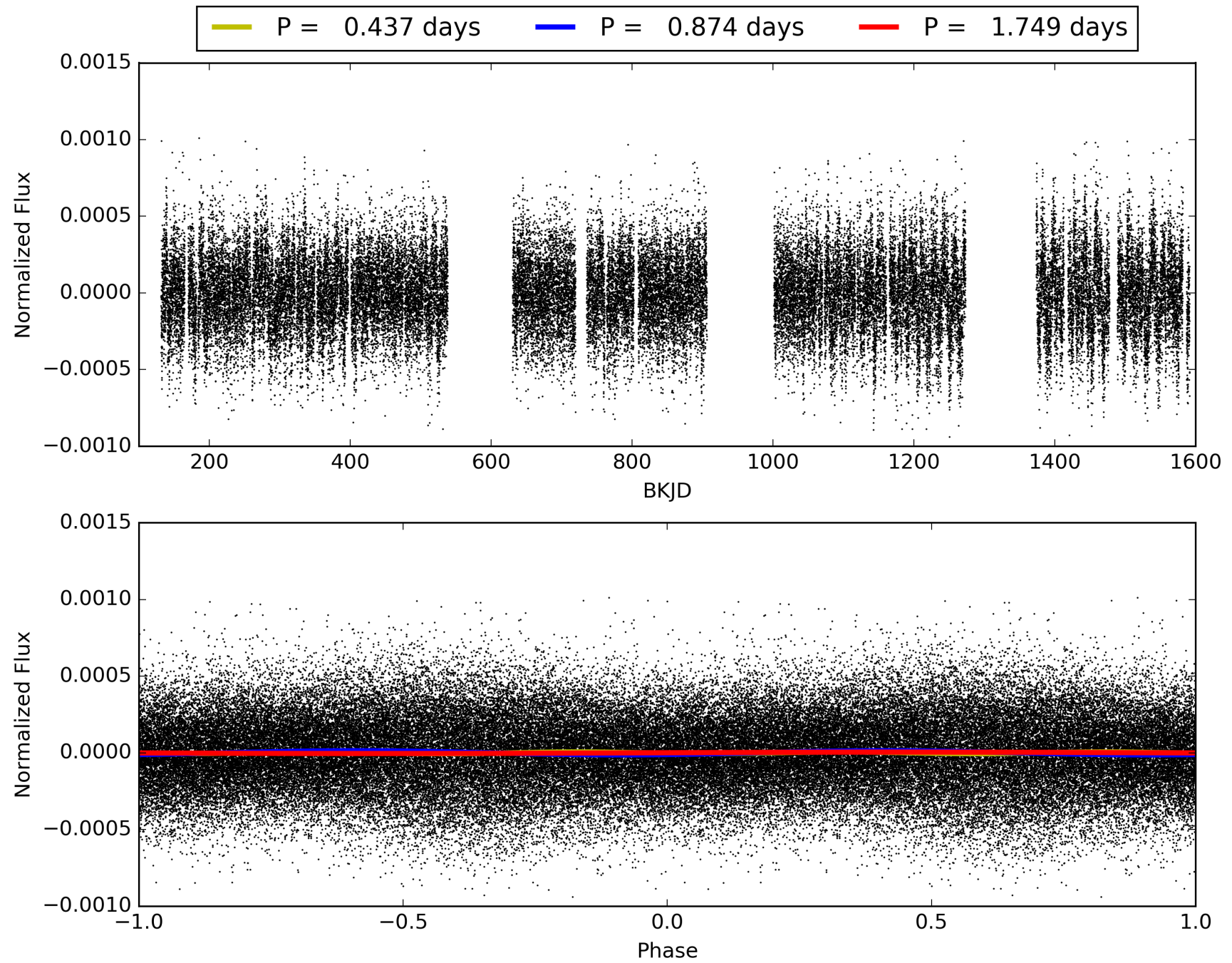
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [4.28σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.17e-21  
RollingBand-fgt: 1.00 [781/781]  
**GhostDiagnostic-chr: 0.8997**  
Centroid-sig: 76.8%  
Centroid-so: 0.325 arcsec [0.61σ]  
OotOffset-rm: 0.439 arcsec [1.78σ]  
KicOffset-rm: 0.365 arcsec [1.48σ]  
OotOffset-st: 1/4/3/5 [13]  
KicOffset-st: 1/4/3/5 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 005888069-02, PDC Light Curves



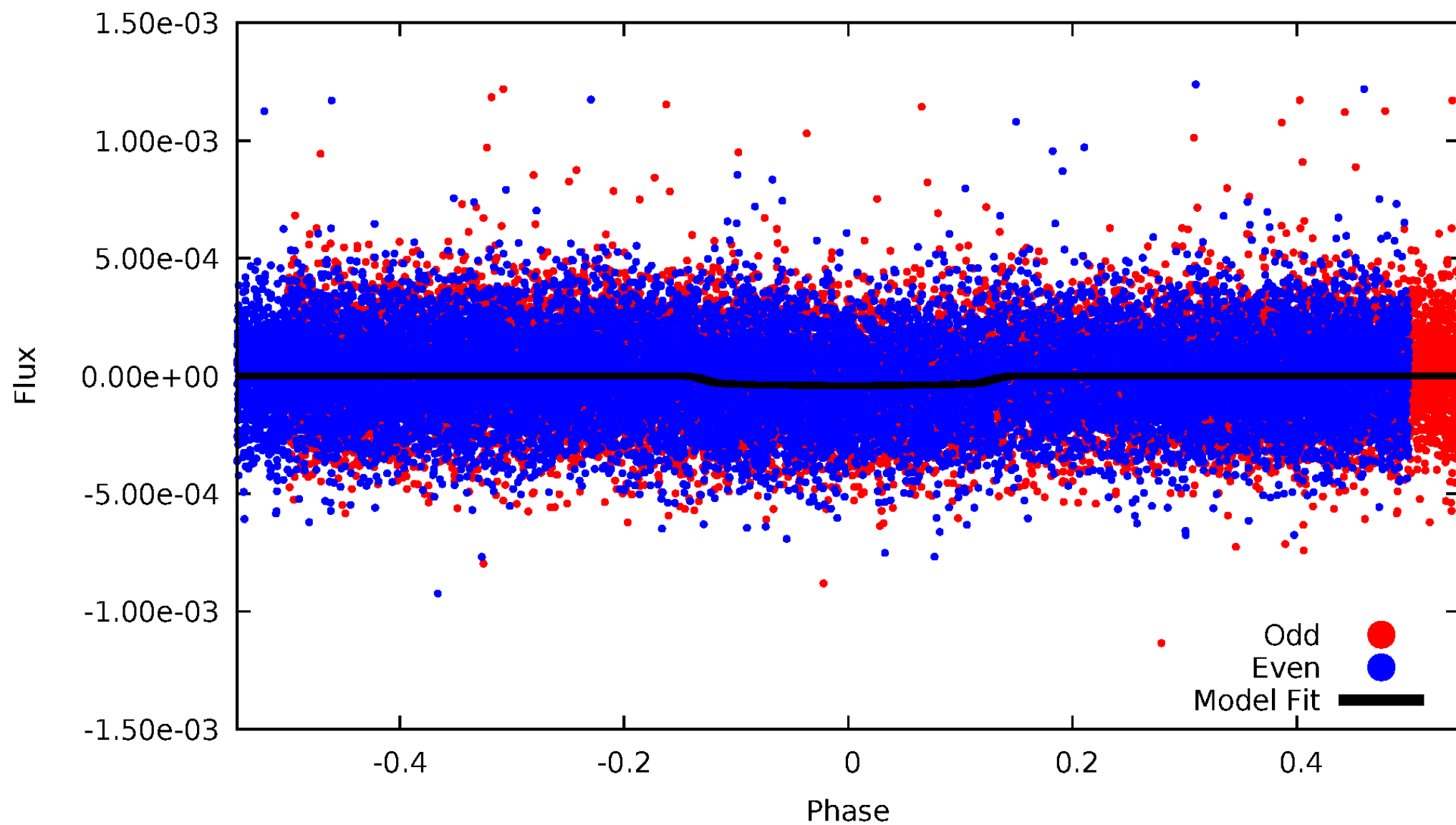
TCE 005888069-02





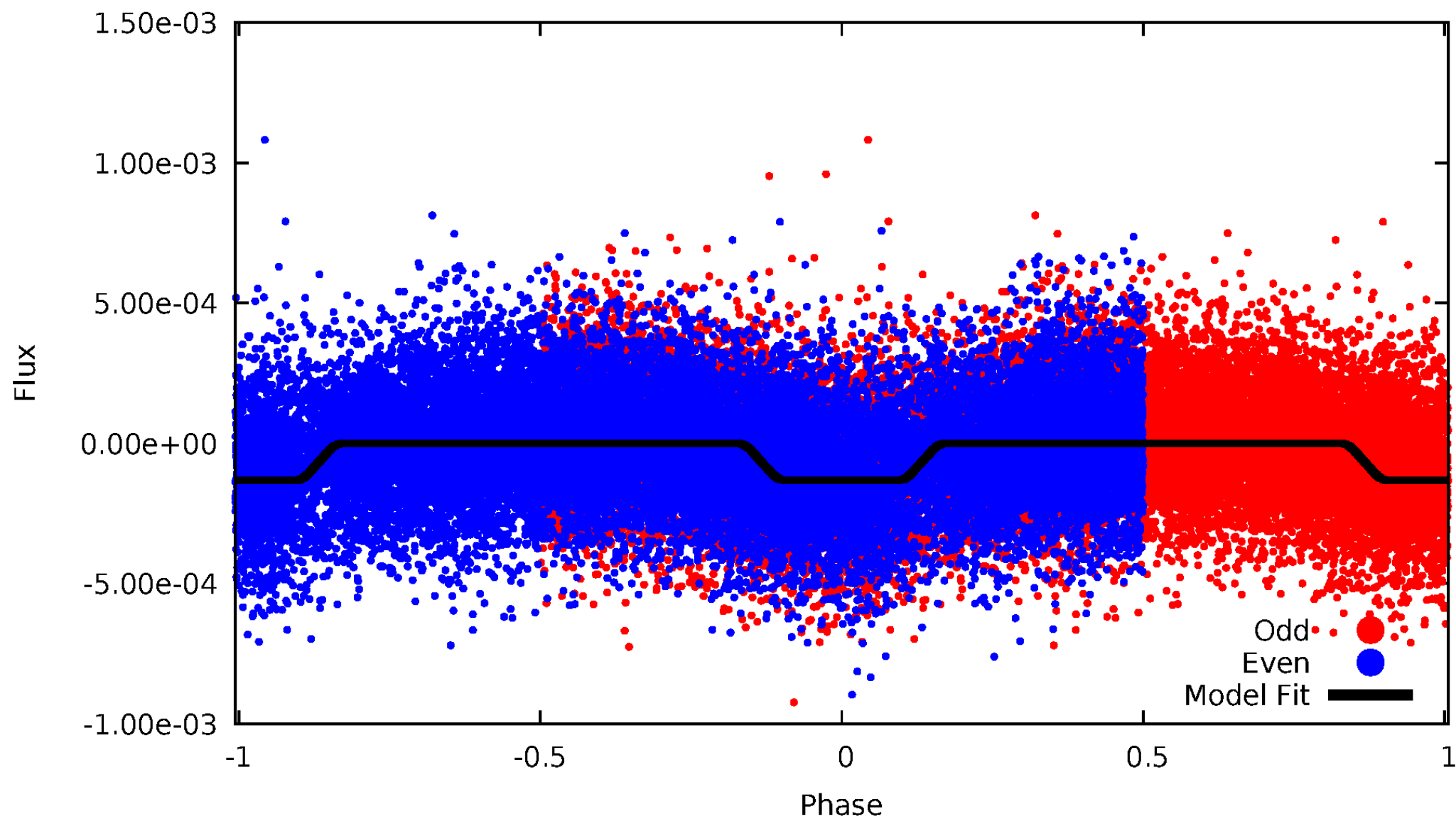
DV Odd/Even

TCE 005888069-02



# ALT Odd/Even

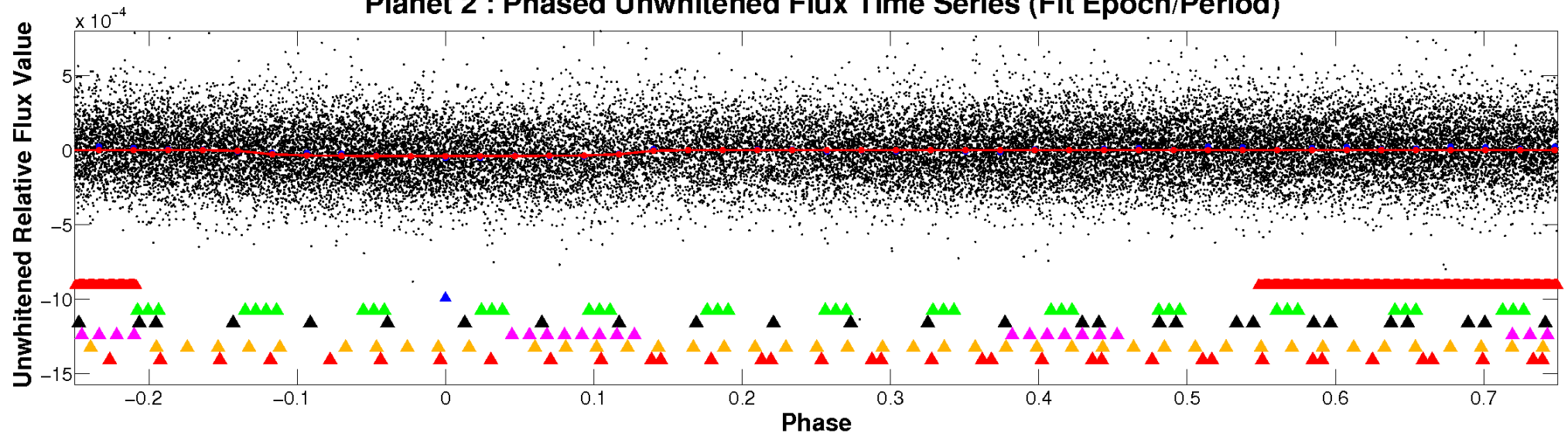
TCE 005888069-02



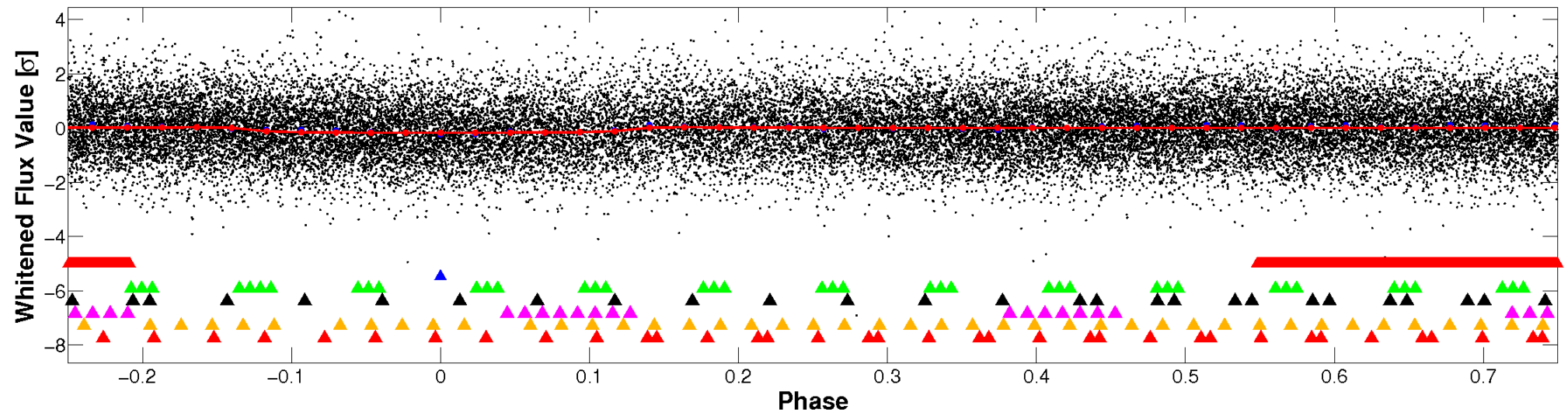


# Non-Whitened Vs. Whitened Light Curve

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

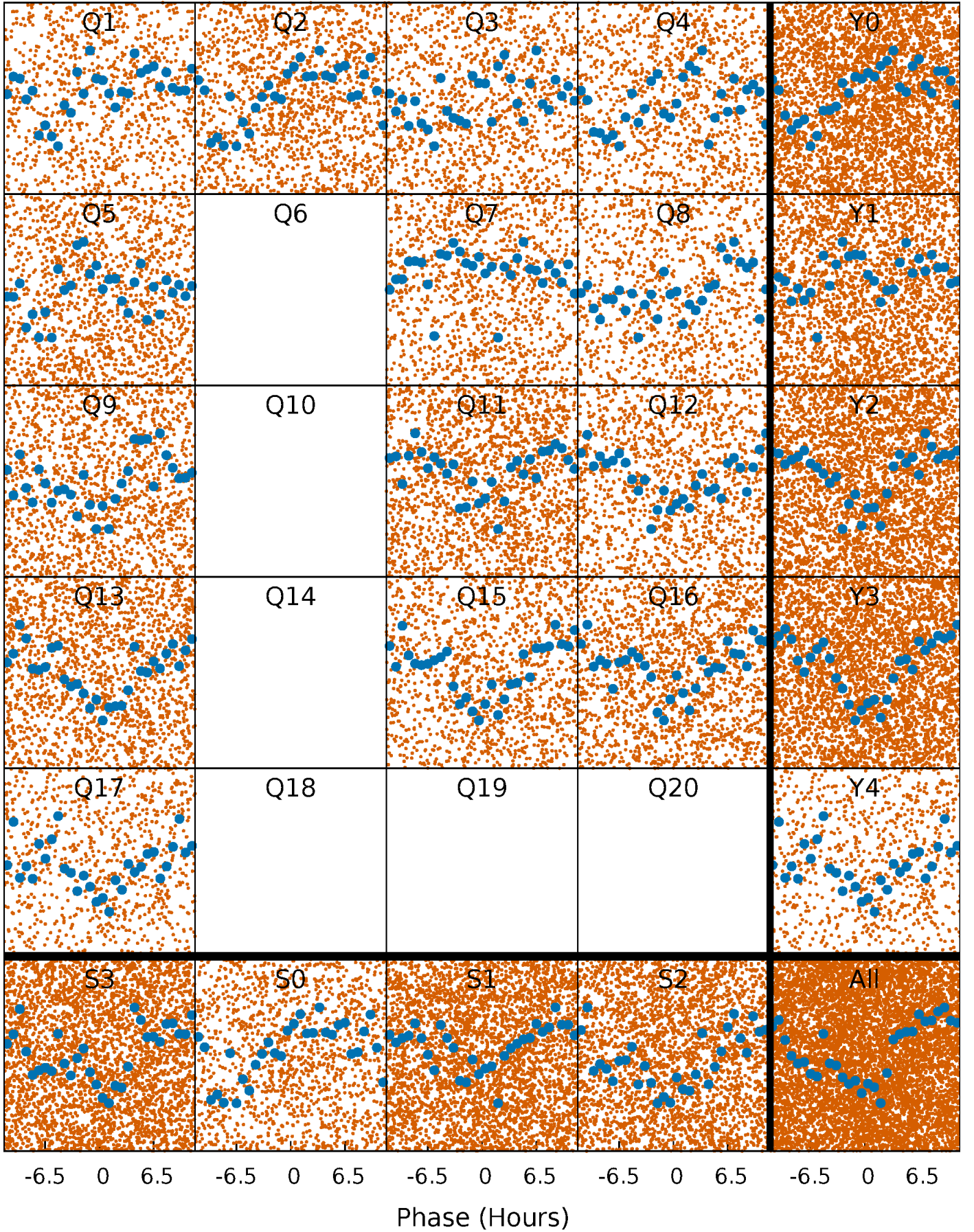


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

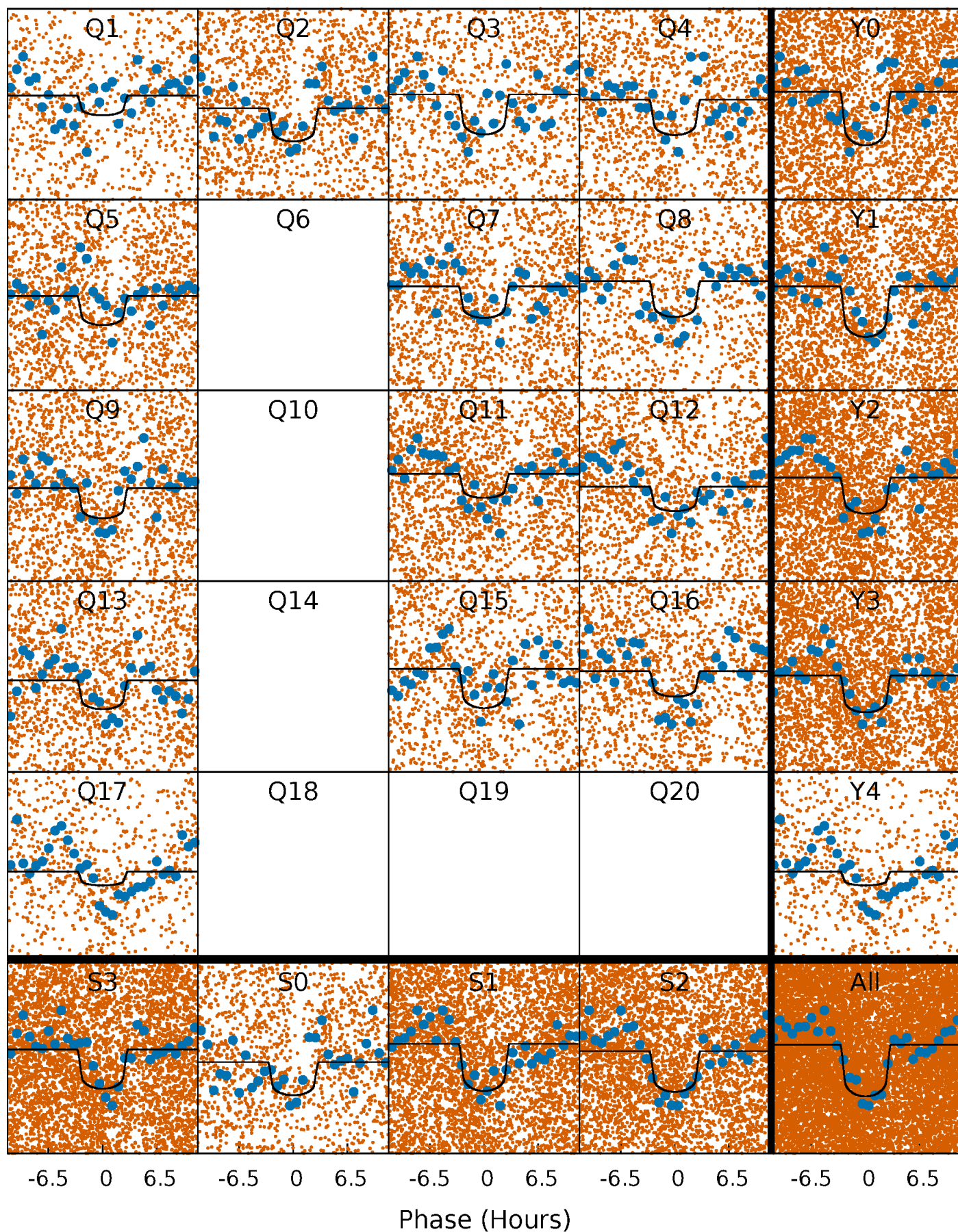
TCE 005888069-02   P= 0.874365 Days    $T_0=132.075953$  (BKJD)





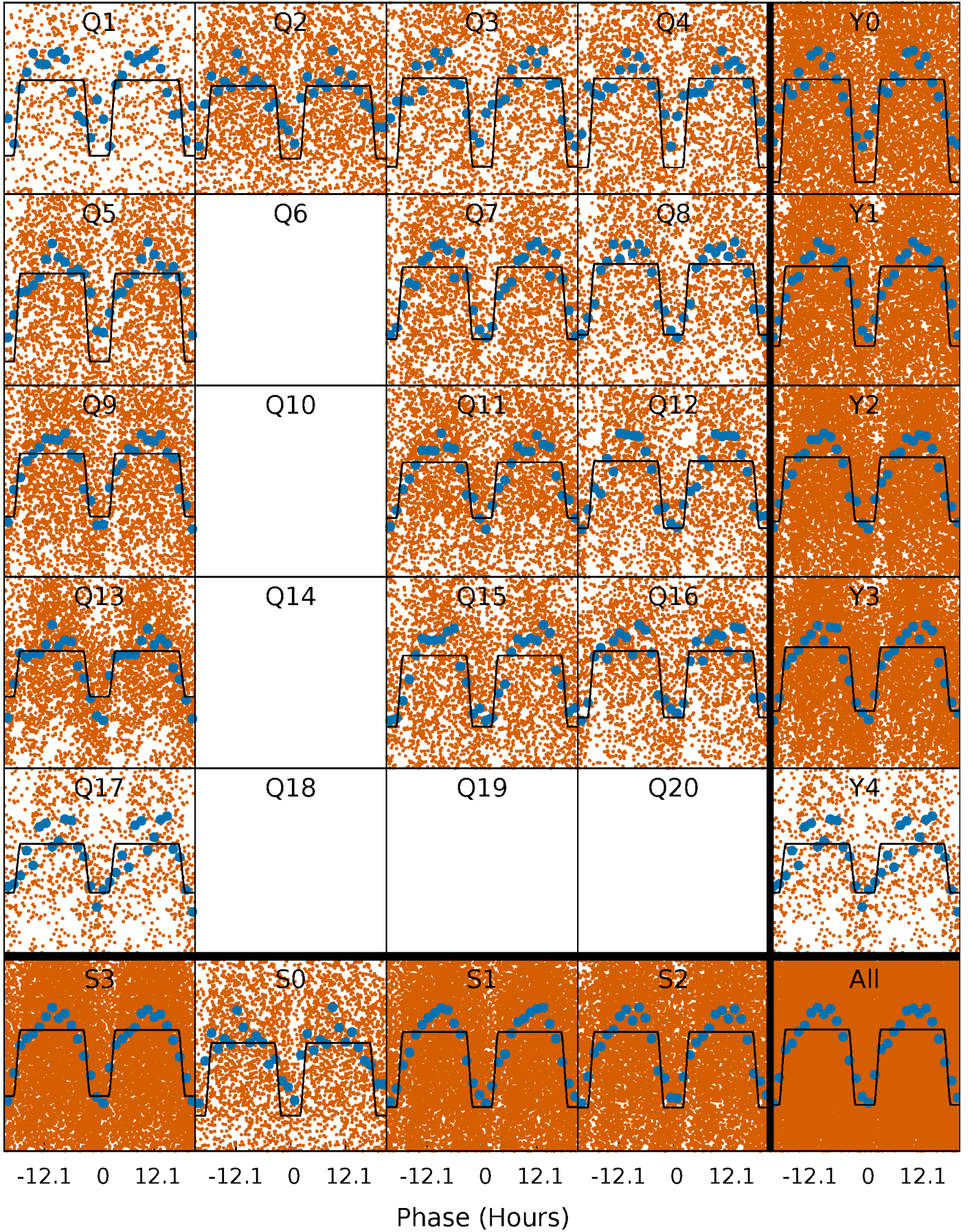
# DV Quarter-Phased Transit Curves

TCE 005888069-02     $P = 0.874365$  Days     $T_0 = 132.075953$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005888069-02   P= 0.874414 Days    $T_0=132.066177$  (BKJD)

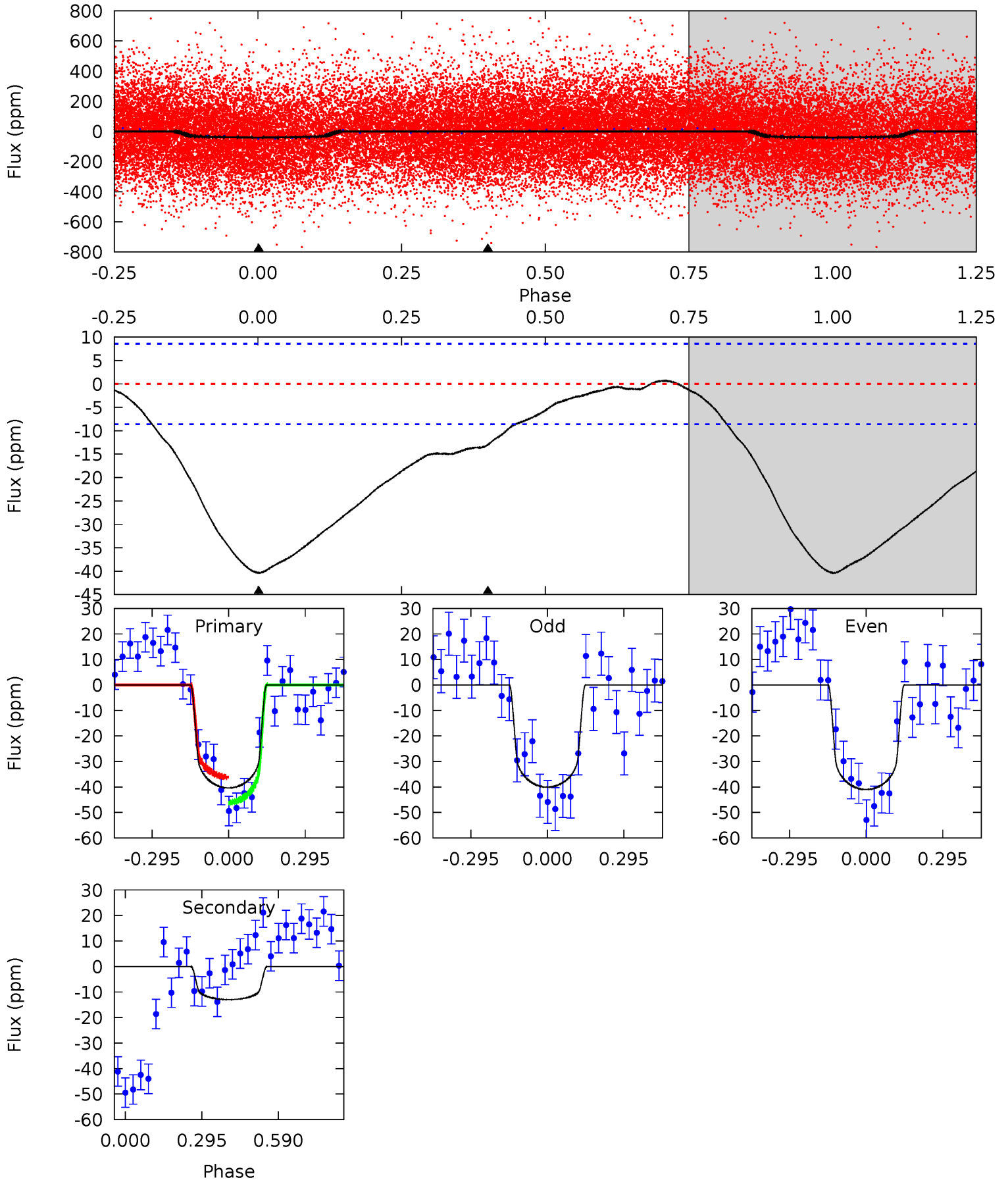




# DV Model-Shift Uniqueness Test

005888069-02, P = 0.874365 Days, E = 131.201588 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	6.54	0	0	4.33	1.05	0.33	20.3	20.3	6.54	6.54	0.24	0.94	0.02	2.53

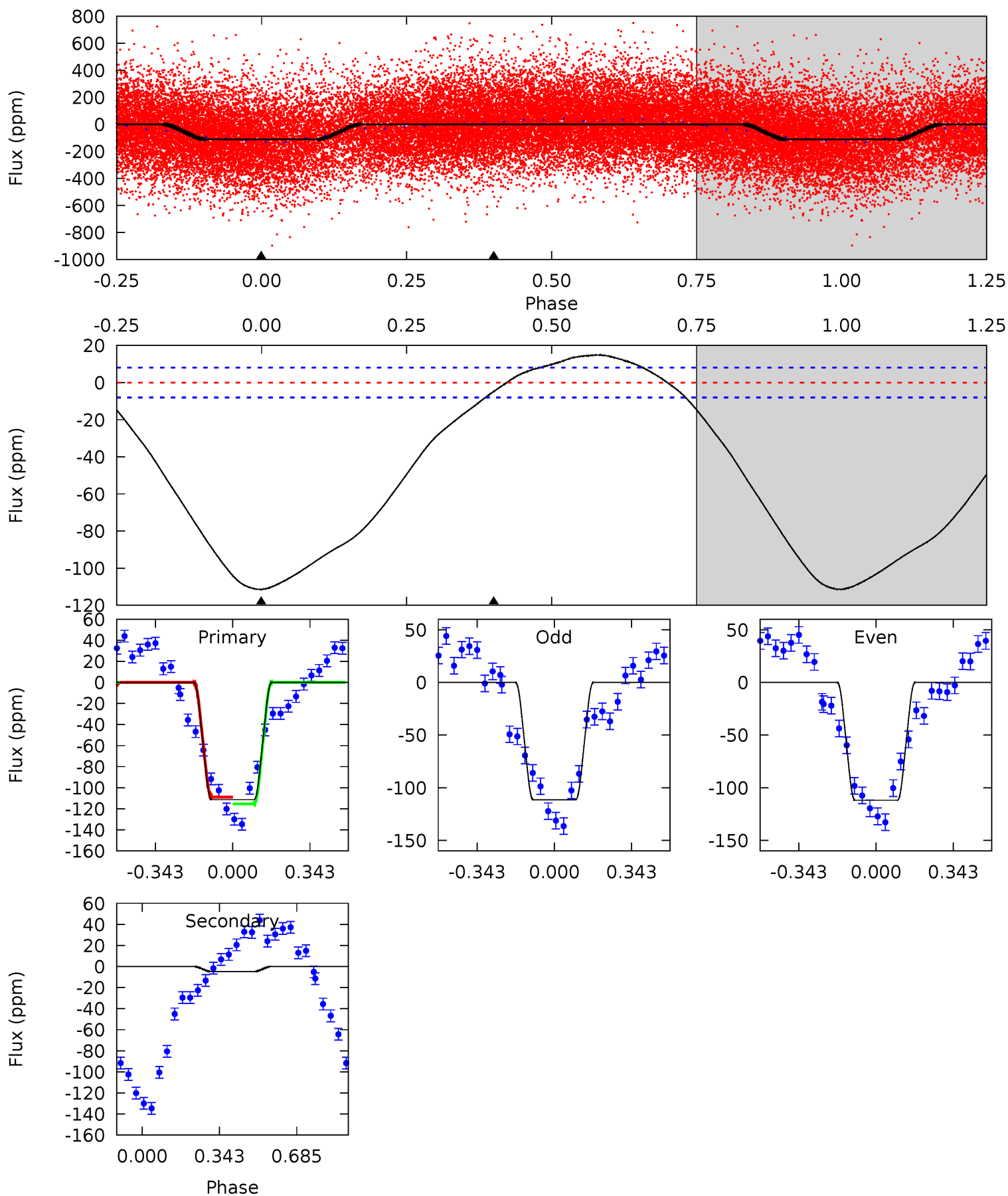




# Alt Model-Shift Uniqueness Test

005888069-02, P = 0.874414 Days, E = 131.191763 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
59.4	2.57	0	0	4.30	0.95	3.27	59.4	59.4	2.57	2.57	0.12	1.01	0.12	1.70



### Stellar Parameters For KIC 005888069

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7325^{+73}_{-95}$	$4.216^{+0.018}_{-0.162}$	$0.360^{+0.050}_{-0.150}$	$1.677^{+0.399}_{-0.070}$	$1.687^{+0.139}_{-0.075}$	$0.503^{+0.035}_{-0.227}$
	+1%/-1%	+0%/-4%	+14%/-42%	+24%/-4%	+8%/-4%	+7%/-45%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005888069-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-13 \pm 2$	$1.32^{+0.36}_{-0.37}$	$4065^{+216}_{-85}$	$5080^{+931}_{-605}$	$1.827^{+1.717}_{-0.704}$
Alt.	$-5 \pm 2$	$2.19^{+0.45}_{-0.39}$	$4071^{+203}_{-103}$	$-2904^{+6063}_{-517}$	$0.243^{+0.161}_{-0.110}$

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

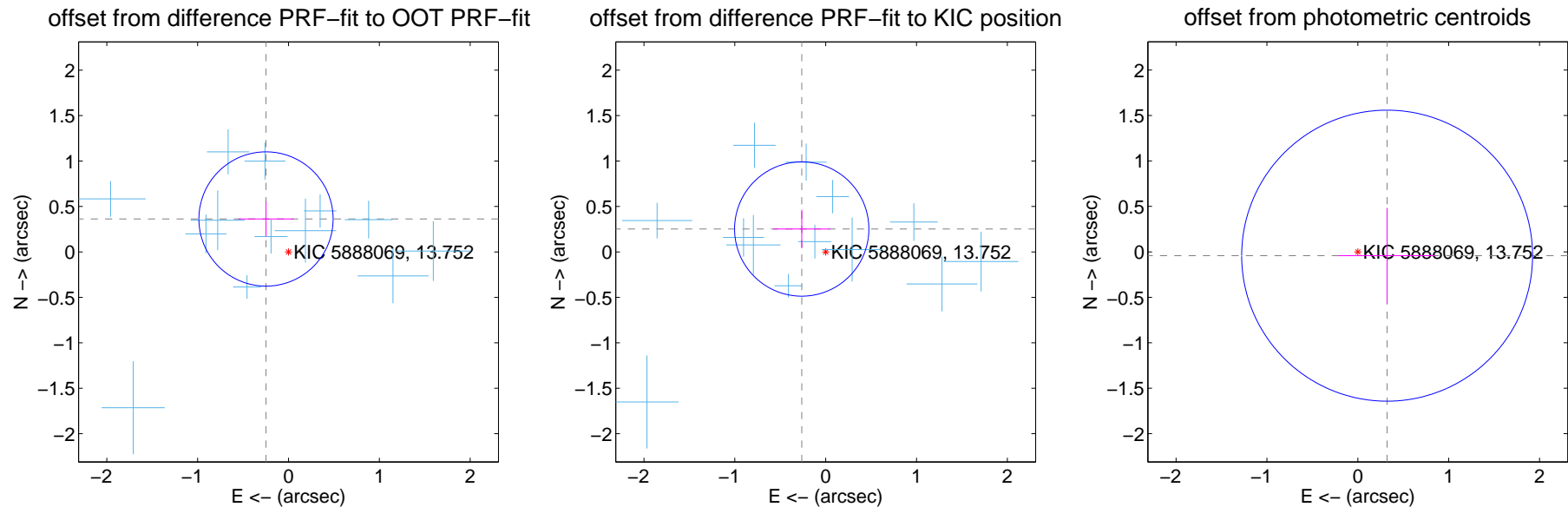
## DV Centroid Data

Supplemental centroid analysis for 005888069-02. Kepler magnitude: 13.75. Transit SNR 13.74

There are 13 quarters with good PRF difference image offsets

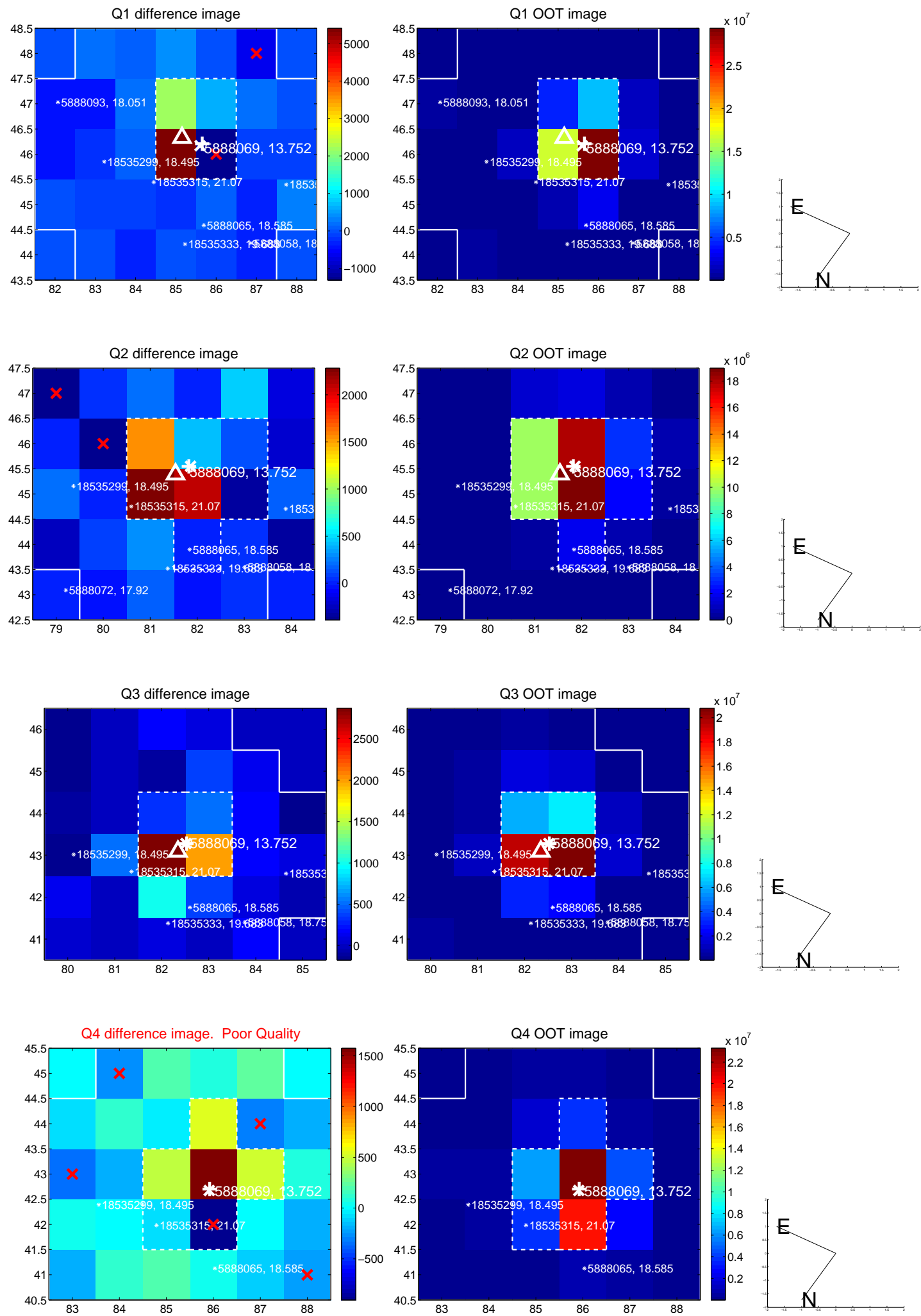
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.439 \pm 0.246$	1.78	$0.248 \pm 0.304$	$0.362 \pm 0.193$
PRF-fit source offset from KIC position	$0.365 \pm 0.246$	1.48	$0.264 \pm 0.313$	$0.252 \pm 0.212$
photometric centroid source offset	$0.33 \pm 0.53$	0.61	$-0.32 \pm 0.53$	$-0.04 \pm 0.53$

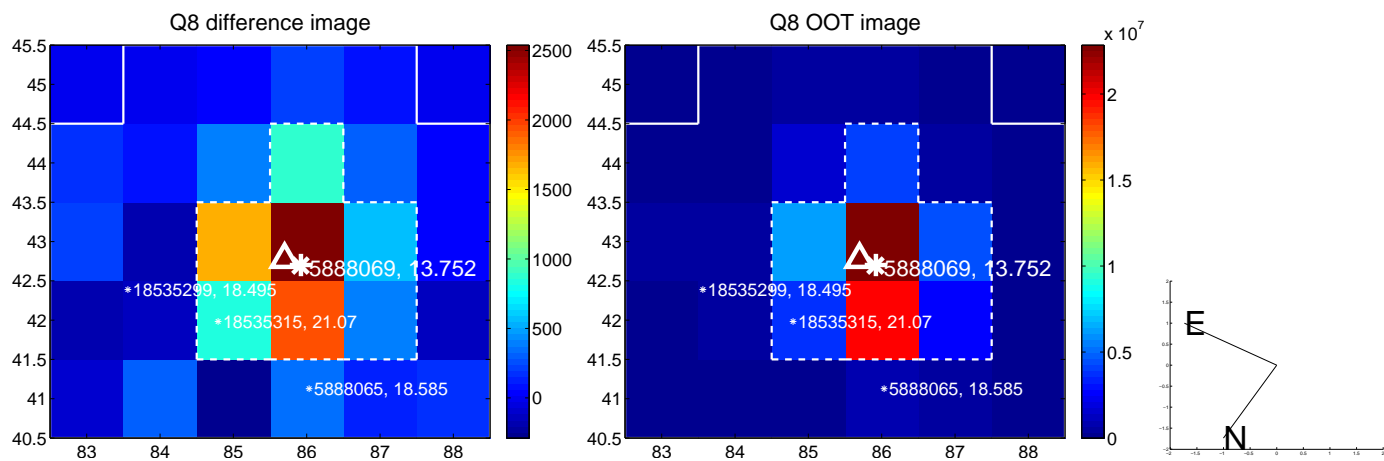
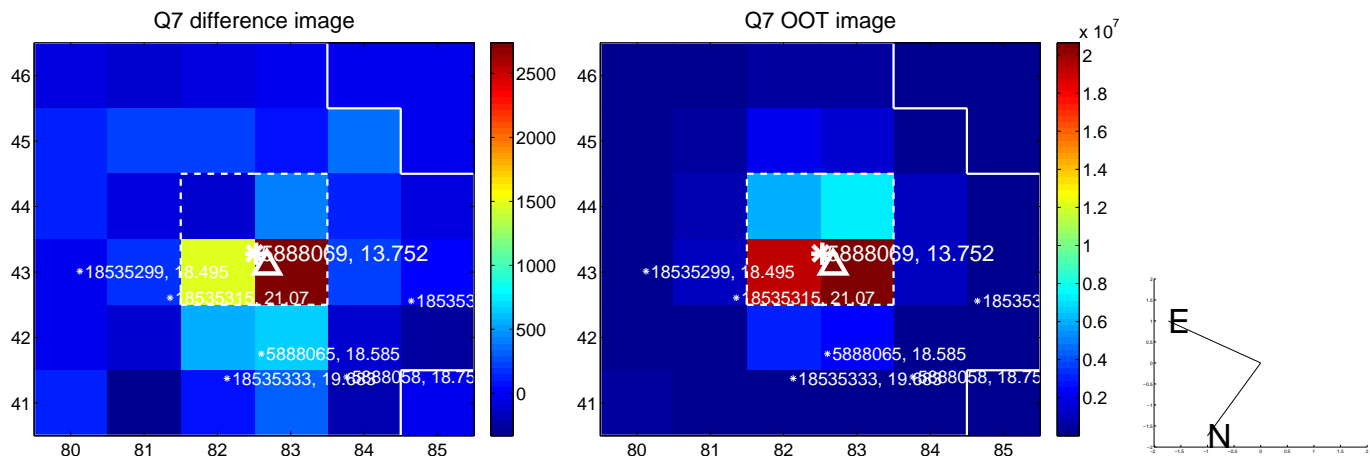
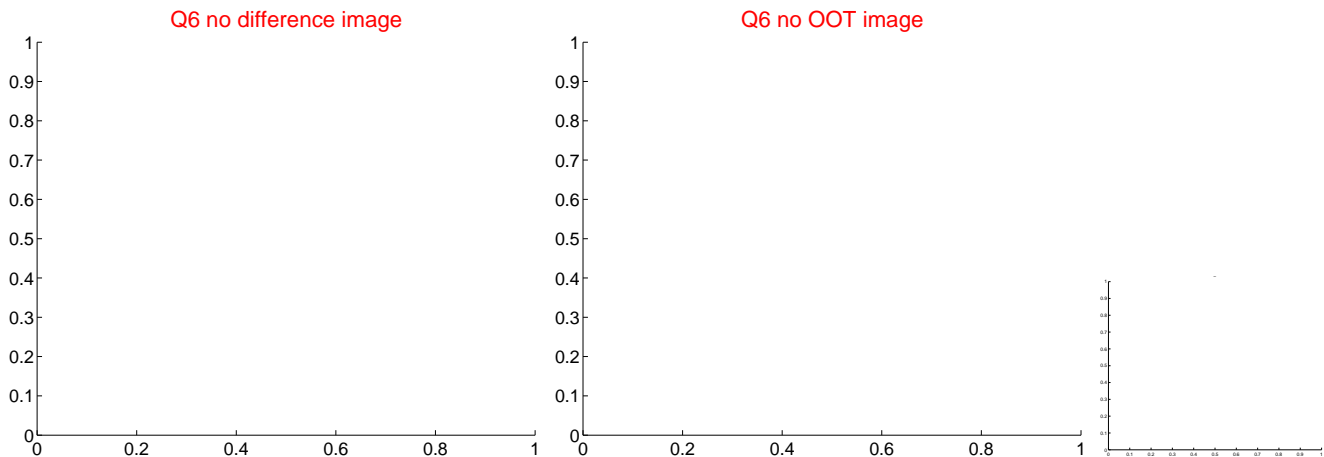
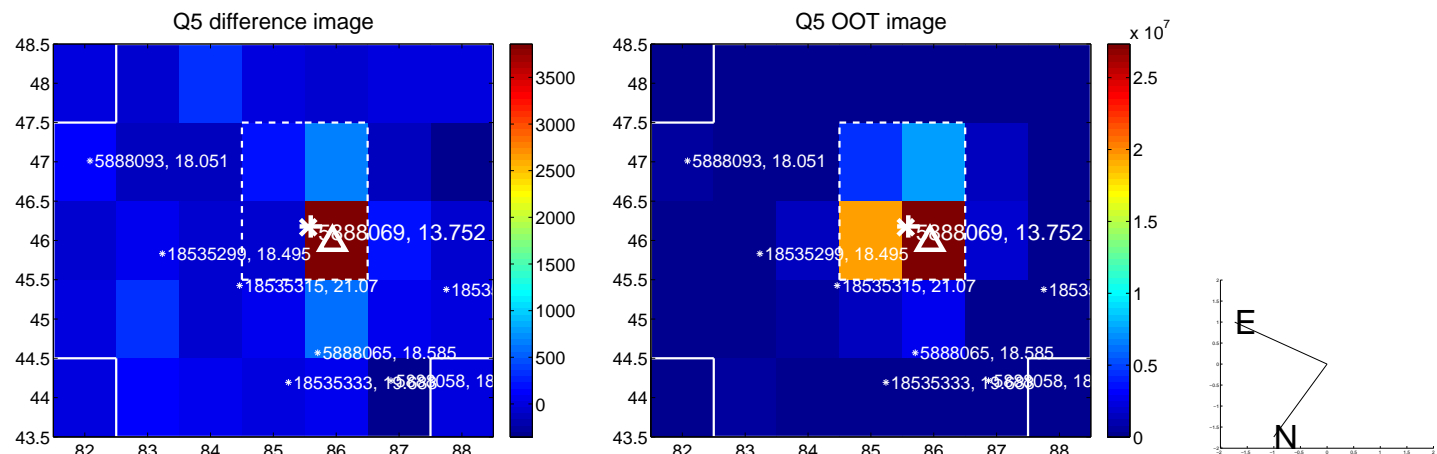


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

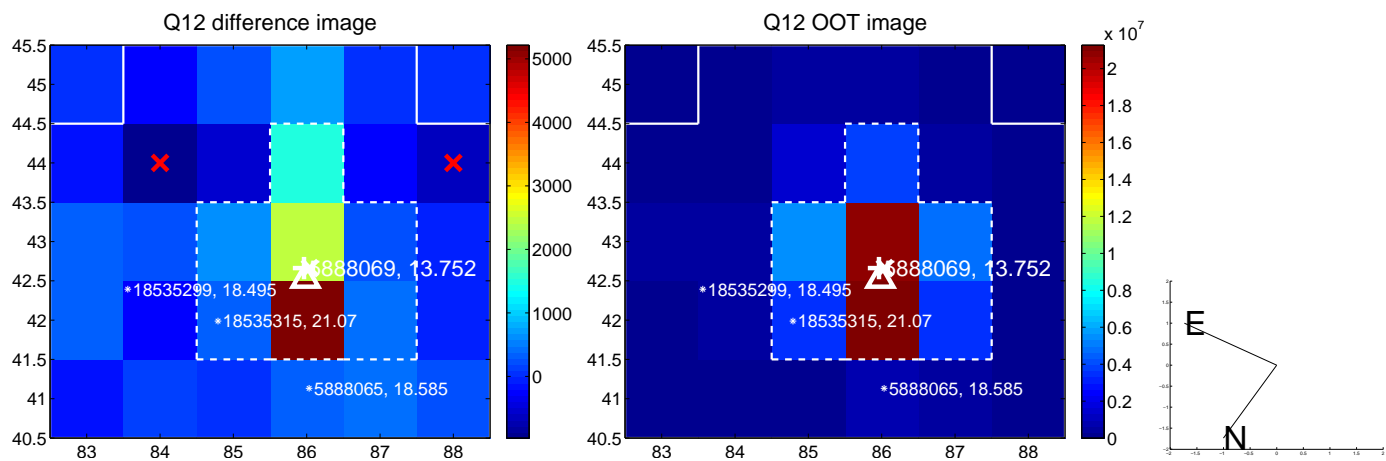
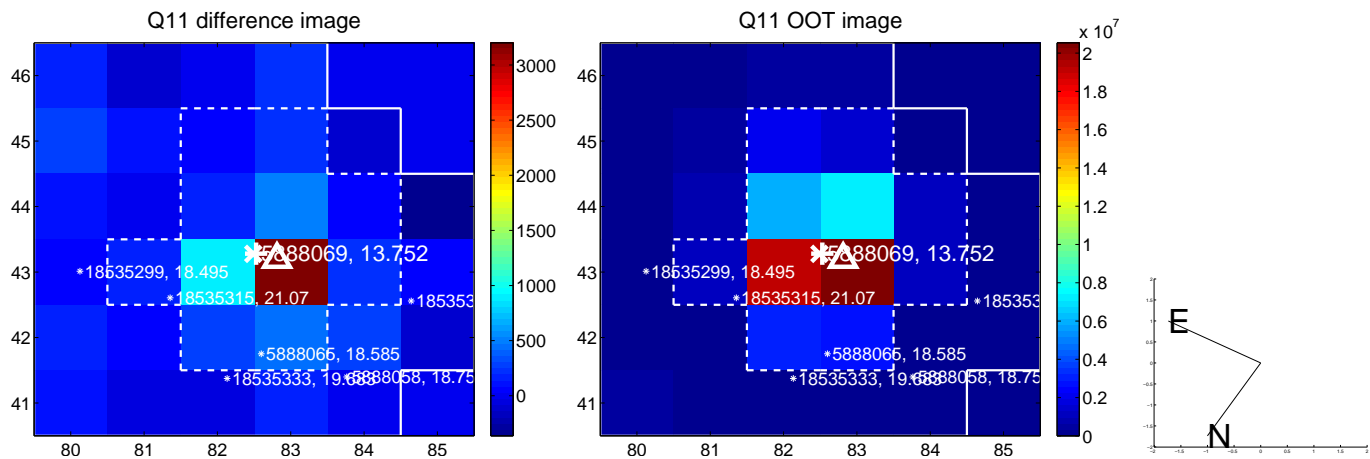
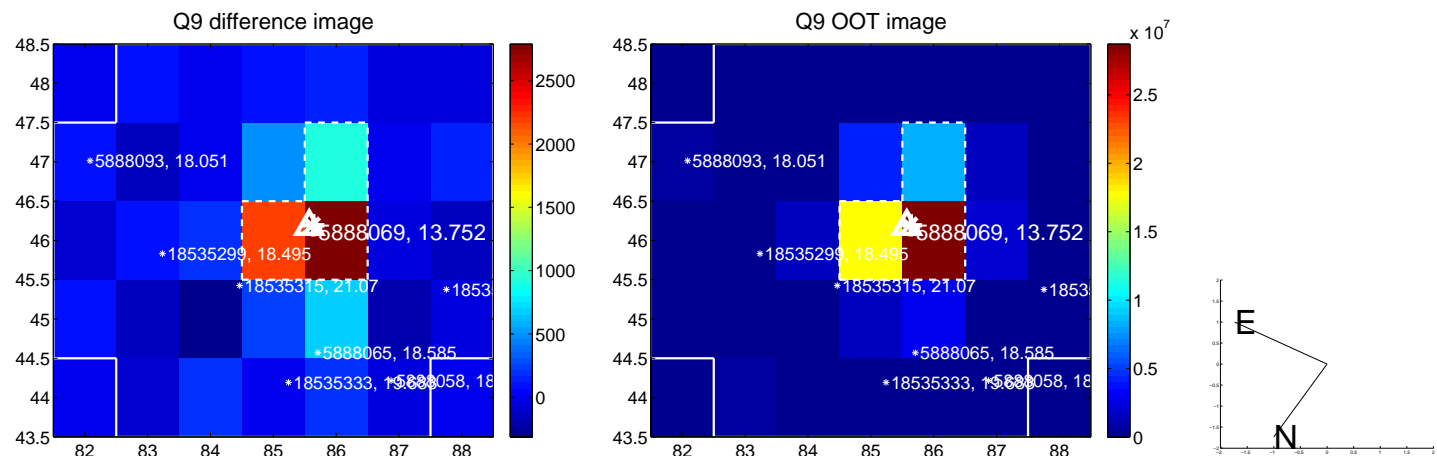


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

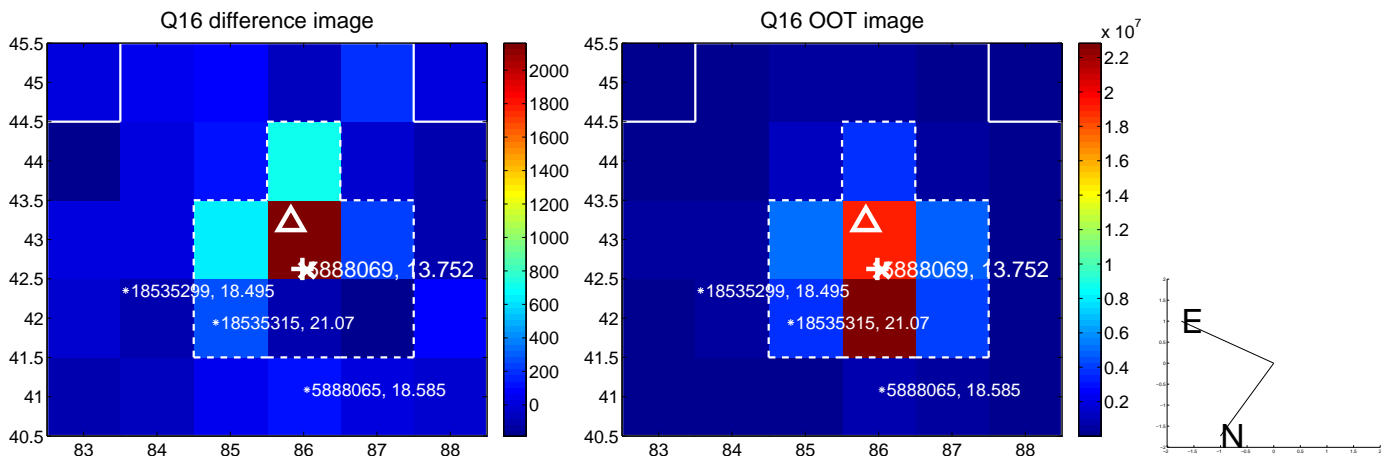
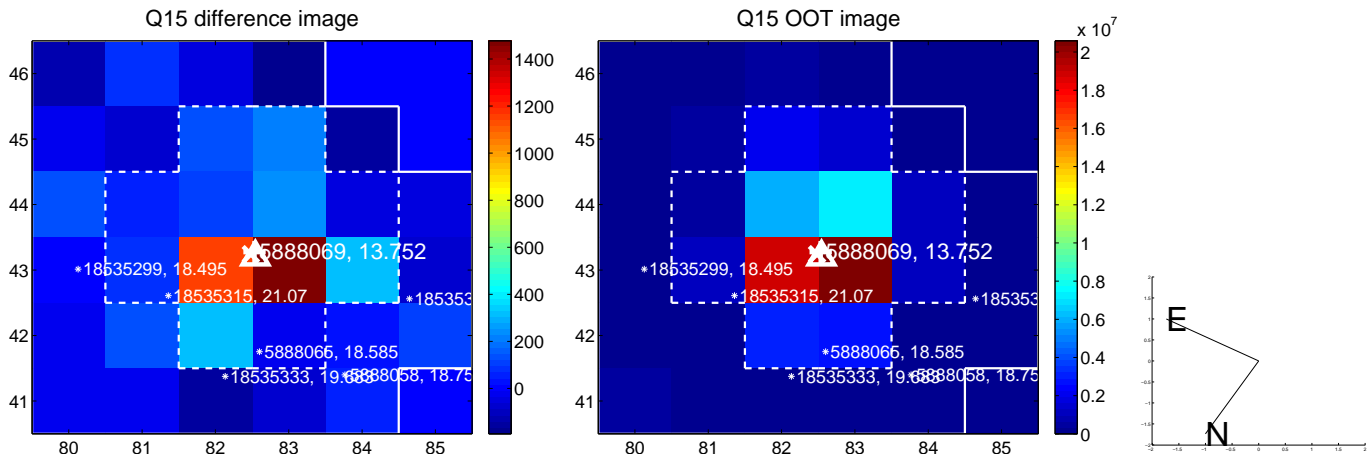
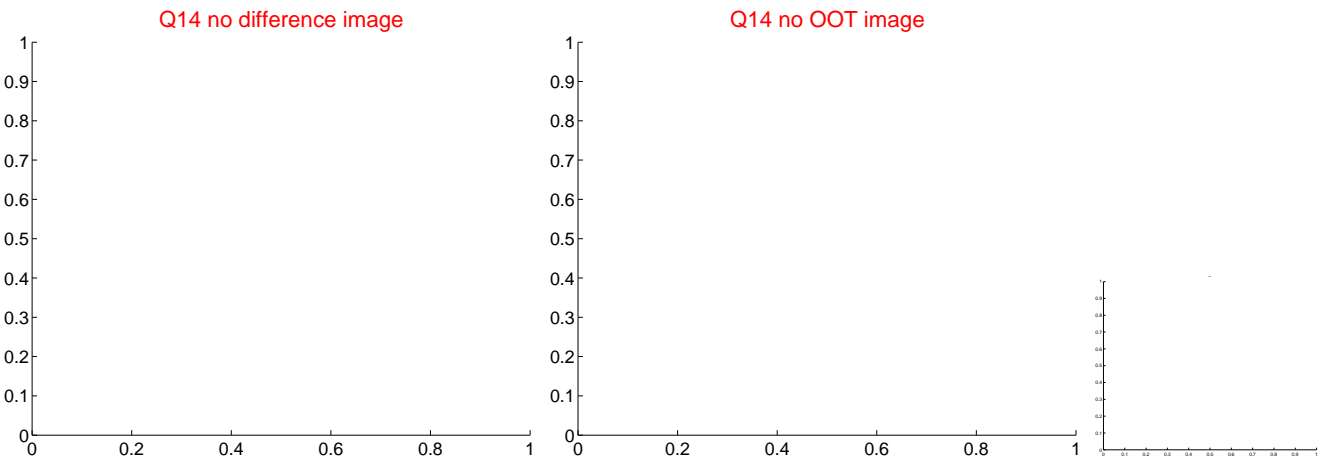
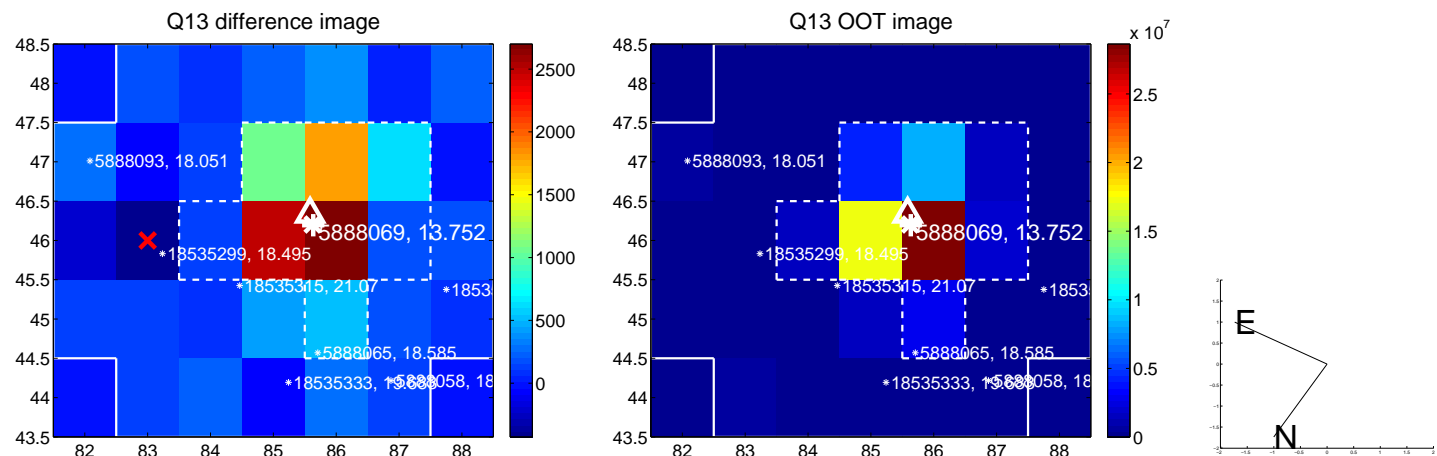




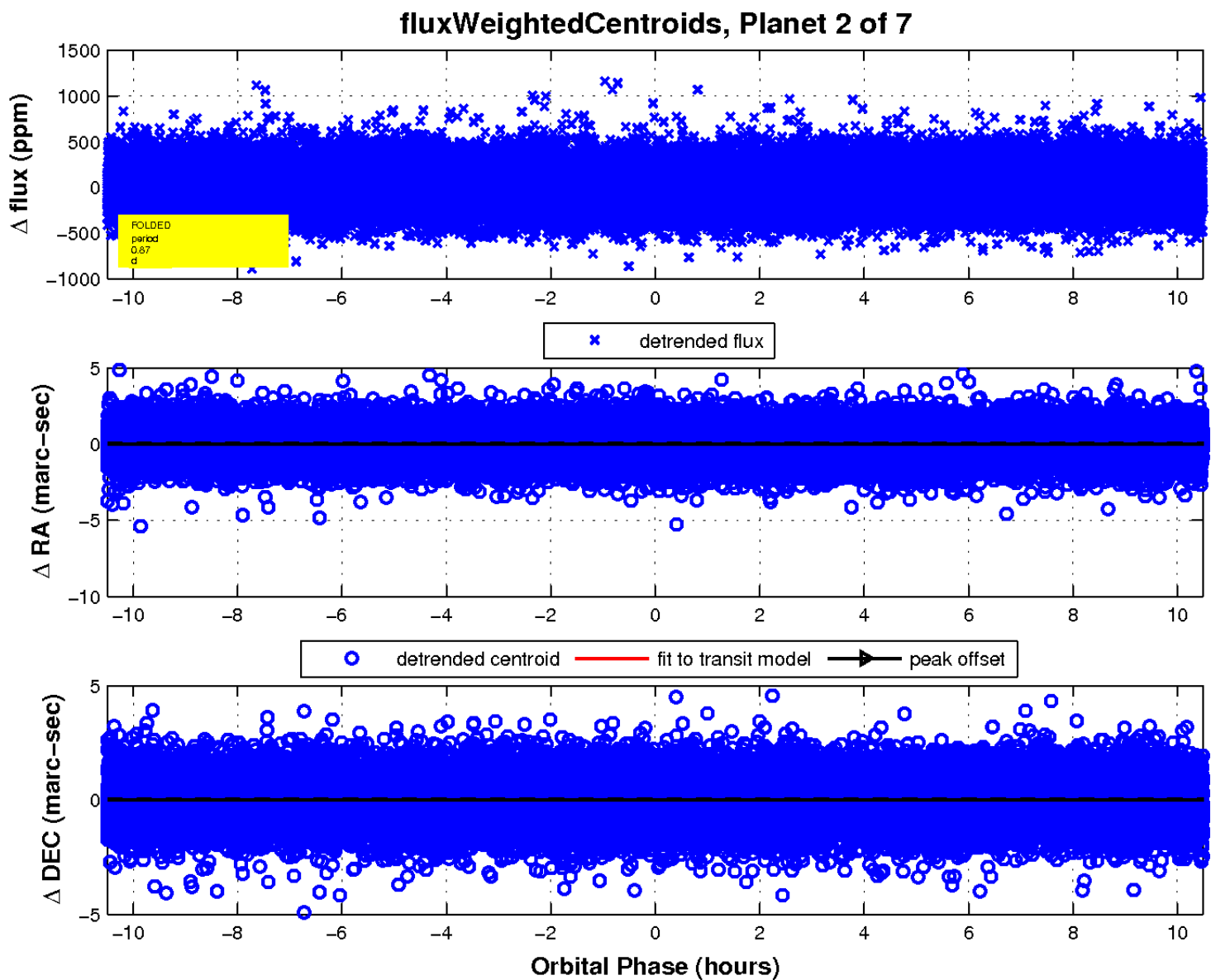
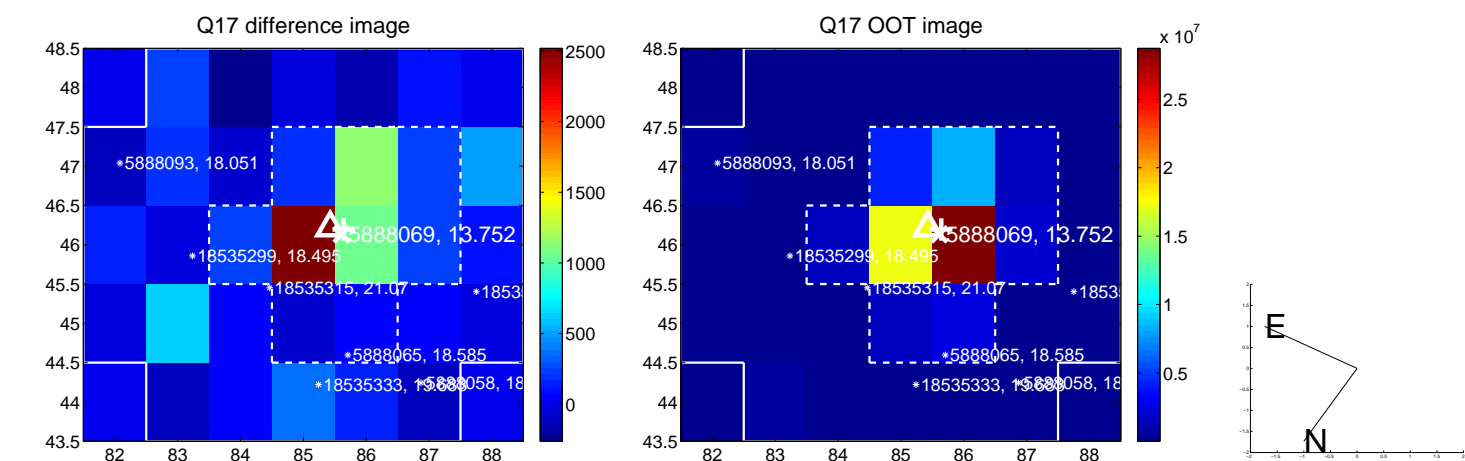
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



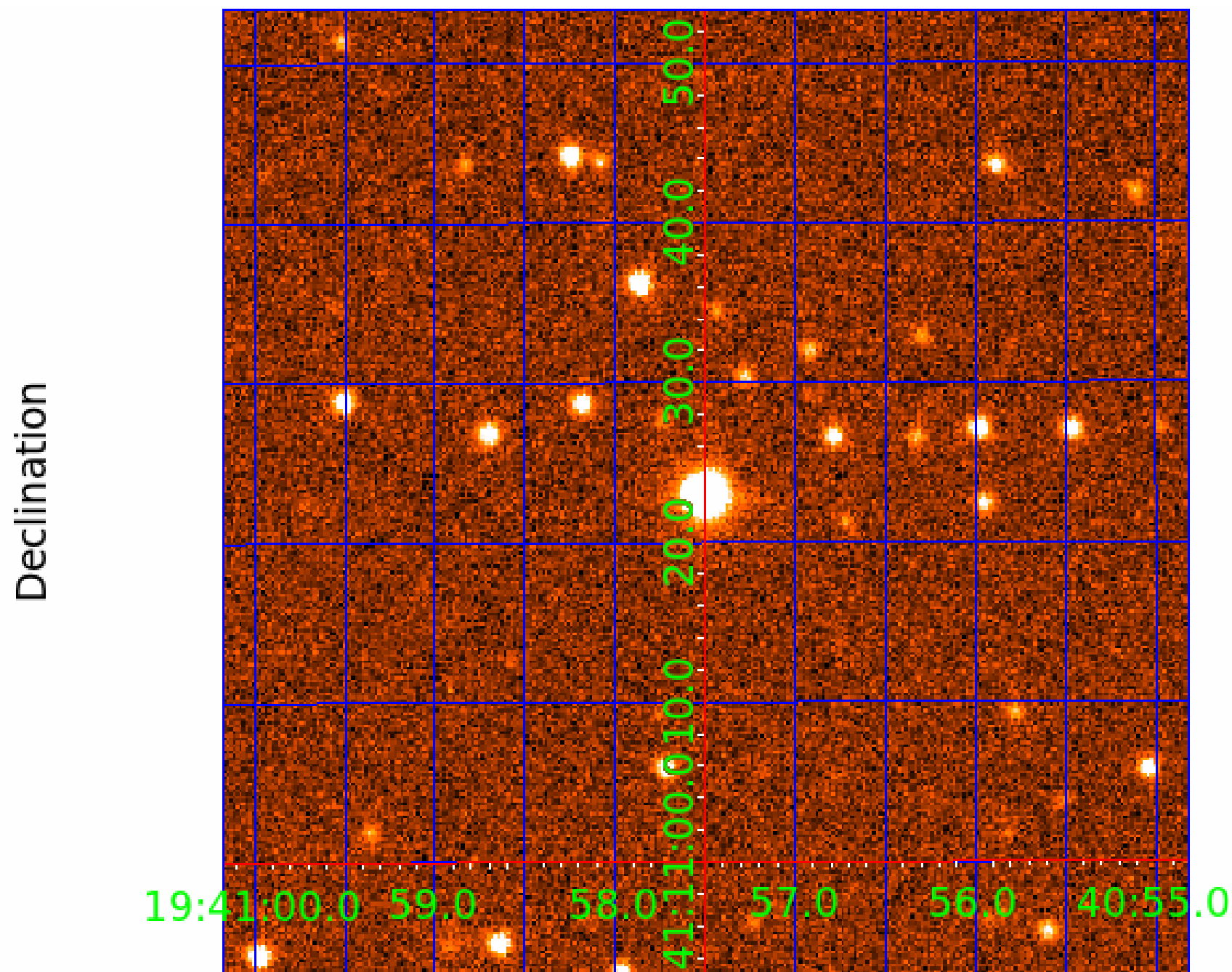
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 005888069

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005888069-01	OBS	No	2.623478	132.555154	44.5	7.967	12.1	11.8	1.68	7325	1.29	3692.41
005888069-02	OBS	No	0.874365	132.075953	40.9	5.721	10.8	13.7	1.68	7325	1.25	15979.26
005888069-03	OBS	No	37.059135	138.971343	315.3	4.067	9.7	9.7	1.68	7325	3.33	108.13
005888069-04	OBS	No	53.290743	173.864956	297.0	3.166	9.7	10.5	1.68	7325	2.94	66.62
005888069-05	OBS	No	64.997876	193.320683	181.0	7.070	8.6	6.1	1.68	7325	2.61	51.12
005888069-06	OBS	No	33.114287	163.250495	313.3	2.198	8.4	9.4	1.68	7325	3.34	125.64
005888069-07	OBS	No	41.030170	137.094447	238.6	4.040	8.0	7.5	1.68	7325	2.88	94.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005888069-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005888069-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
005888069-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005888069-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005888069-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

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

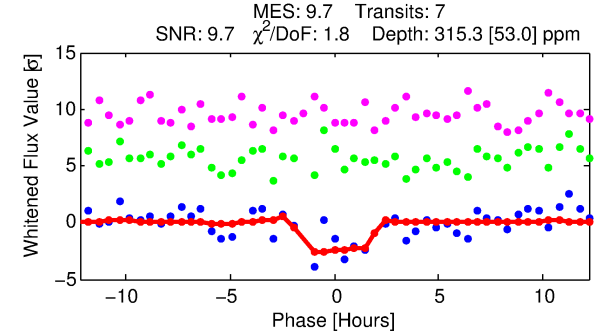
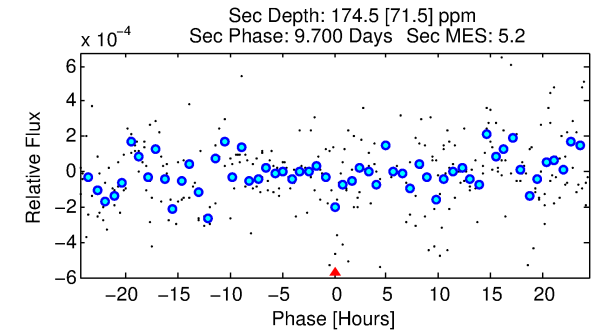
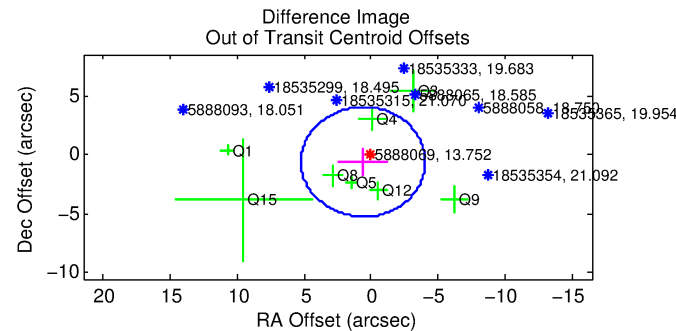
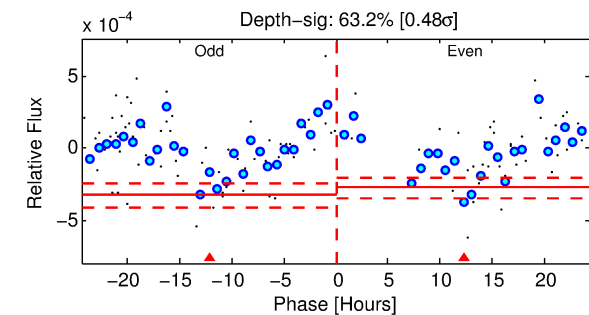
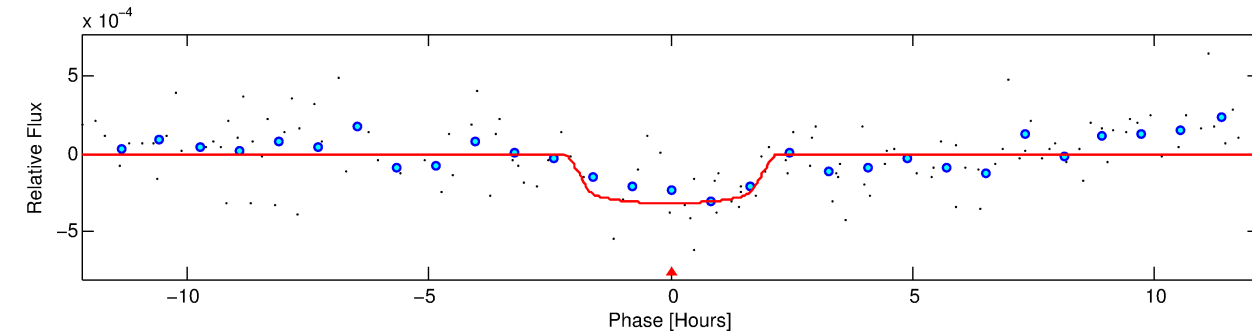
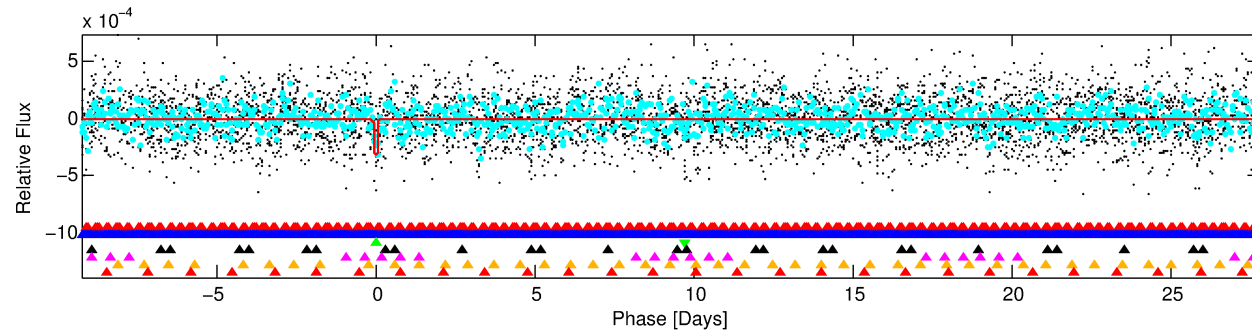
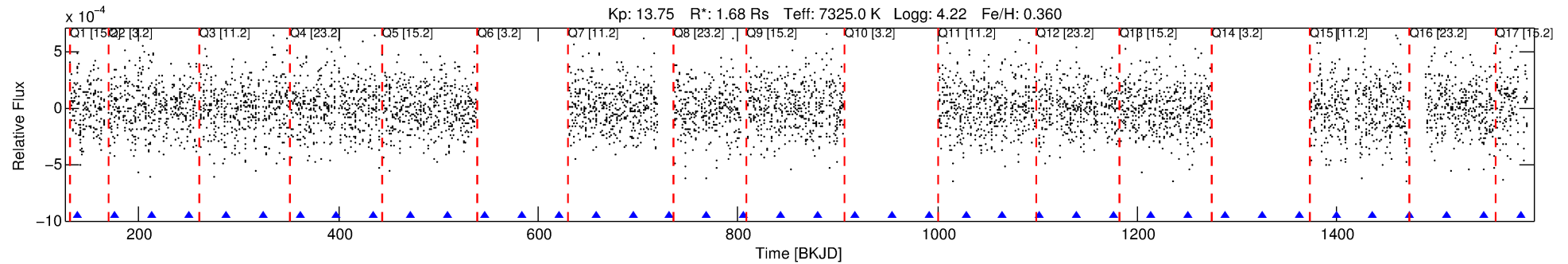
Ephemeris Match Information For 005888069-03

No Significant Match Found



# DV One-Page Summary

KIC: 5888069 Candidate: 3 of 7 Period: 37.059 d



## DV Fit Results:

Period = 37.05913 [0.00064] d  
Epoch = 138.9713 [0.0172] BKJD  
Rp/R\* = 0.0182 [0.0538]  
a/R\* = 40.36 [748.72]  
b = 0.84 [6.69]  
Seff = 108.13 [32.38]  
Teq = 822 [62] K  
Rp = 3.33 [9.87] Re  
a = 0.2590 [0.0522] AU  
Ag = 580.86 [3444.38] [0.17 $\sigma$ ]  
Teffp = 6241 [9241] K [0.59 $\sigma$ ]

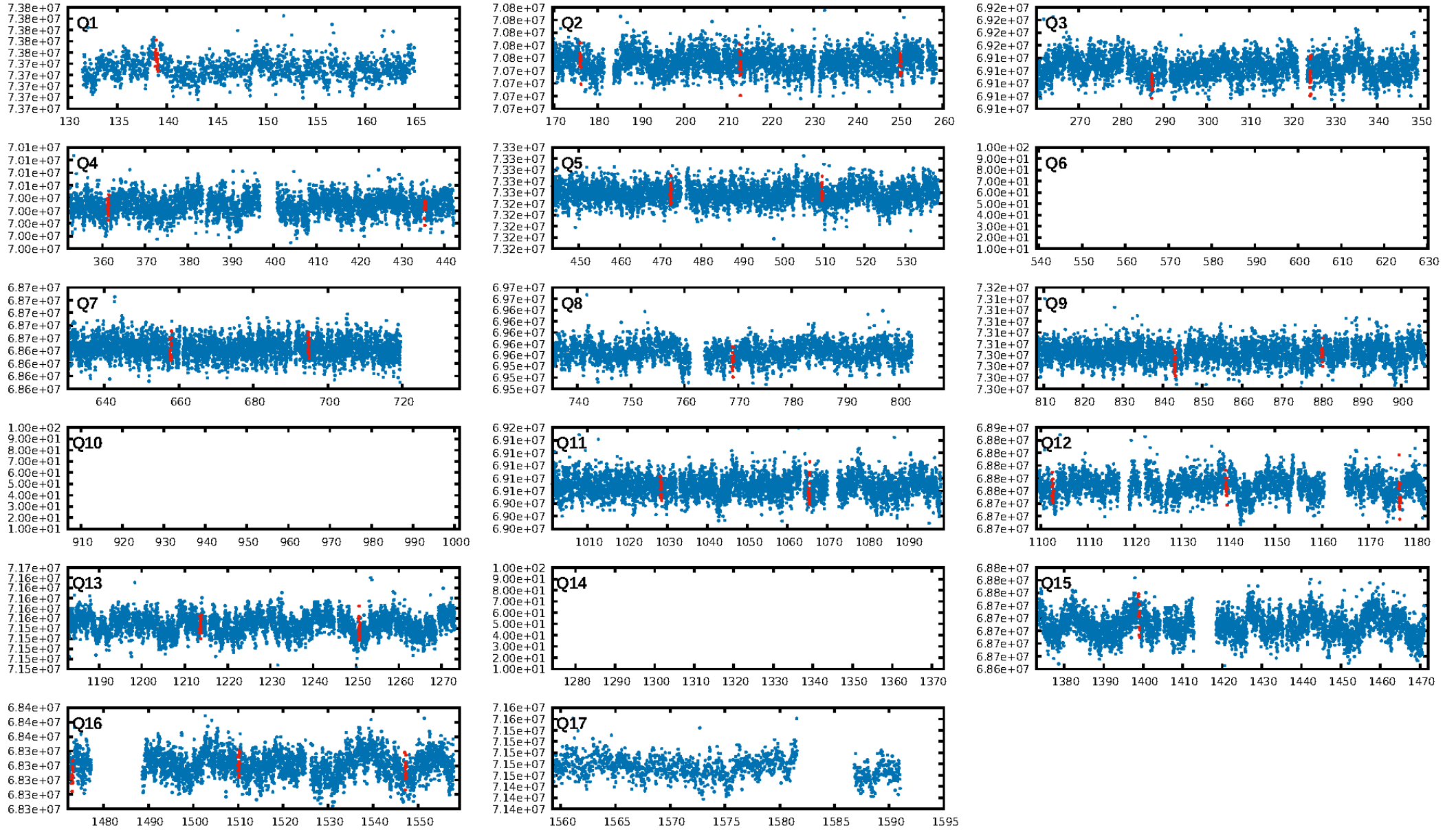
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.48 $\sigma$ ]  
LongPeriod-sig: 100.0% [16.62 $\sigma$ ]  
ModelChiSquare2-sig: 43.0%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 5.89e-11**  
RollingBand-fgt: 1.00 [7/7]  
**GhostDiagnostic-chr: 0.06636**  
Centroid-sig: 18.5%  
Centroid-so: 0.687 arcsec [1.20 $\sigma$ ]  
OotOffset-rm: 0.849 arcsec [0.55 $\sigma$ ]  
OotOffset-st: 0.2/3/3 [8]  
KicOffset-rm: 0.957 arcsec [0.55 $\sigma$ ]  
KicOffset-st: 0.2/3/3 [8]  
DiffImageQuality-fgm: 0.12 [1/8]  
DiffImageOverlap-fno: 0.00 [0/13]

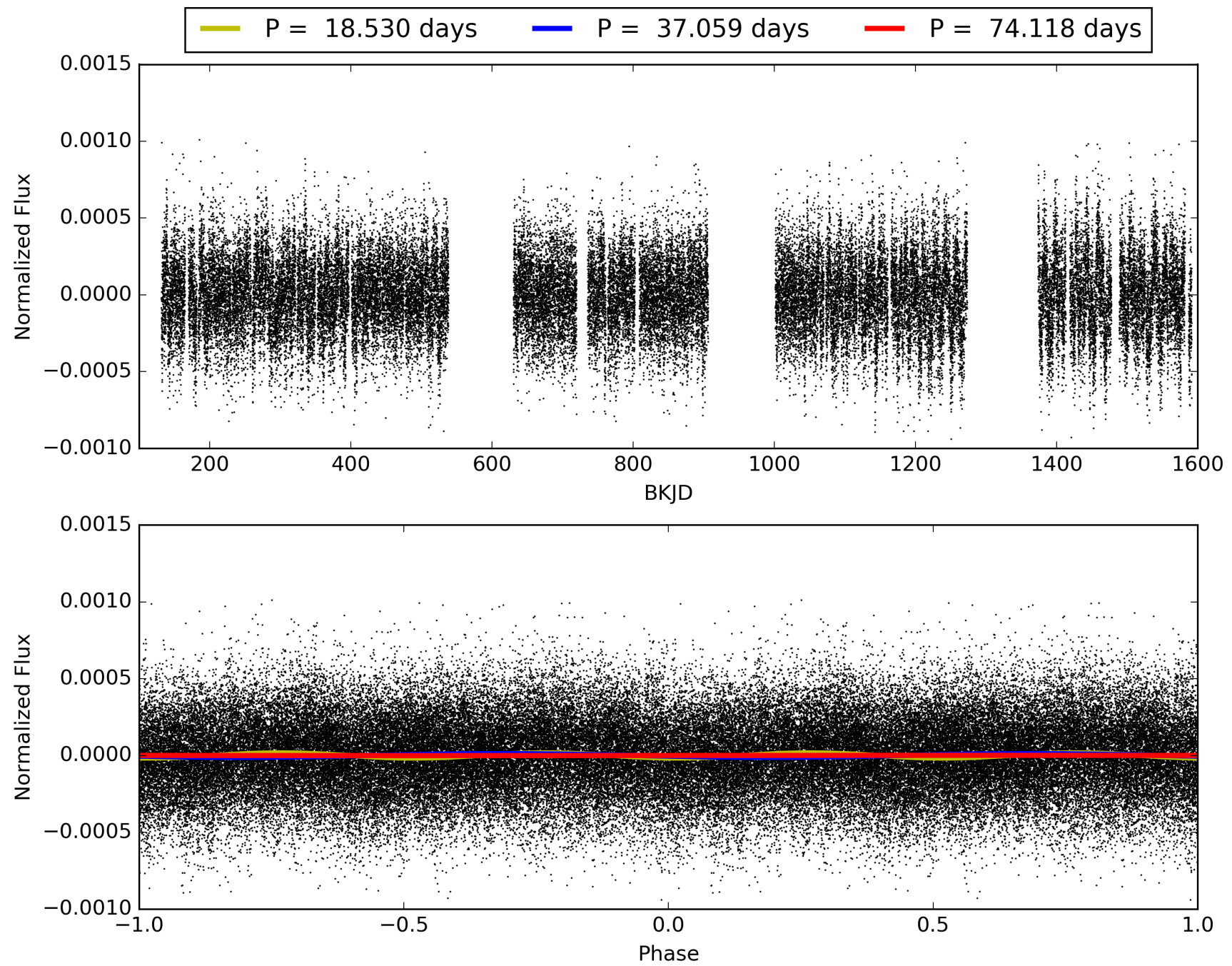
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:50:15 Z

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

# TCE 005888069-03, PDC Light Curves

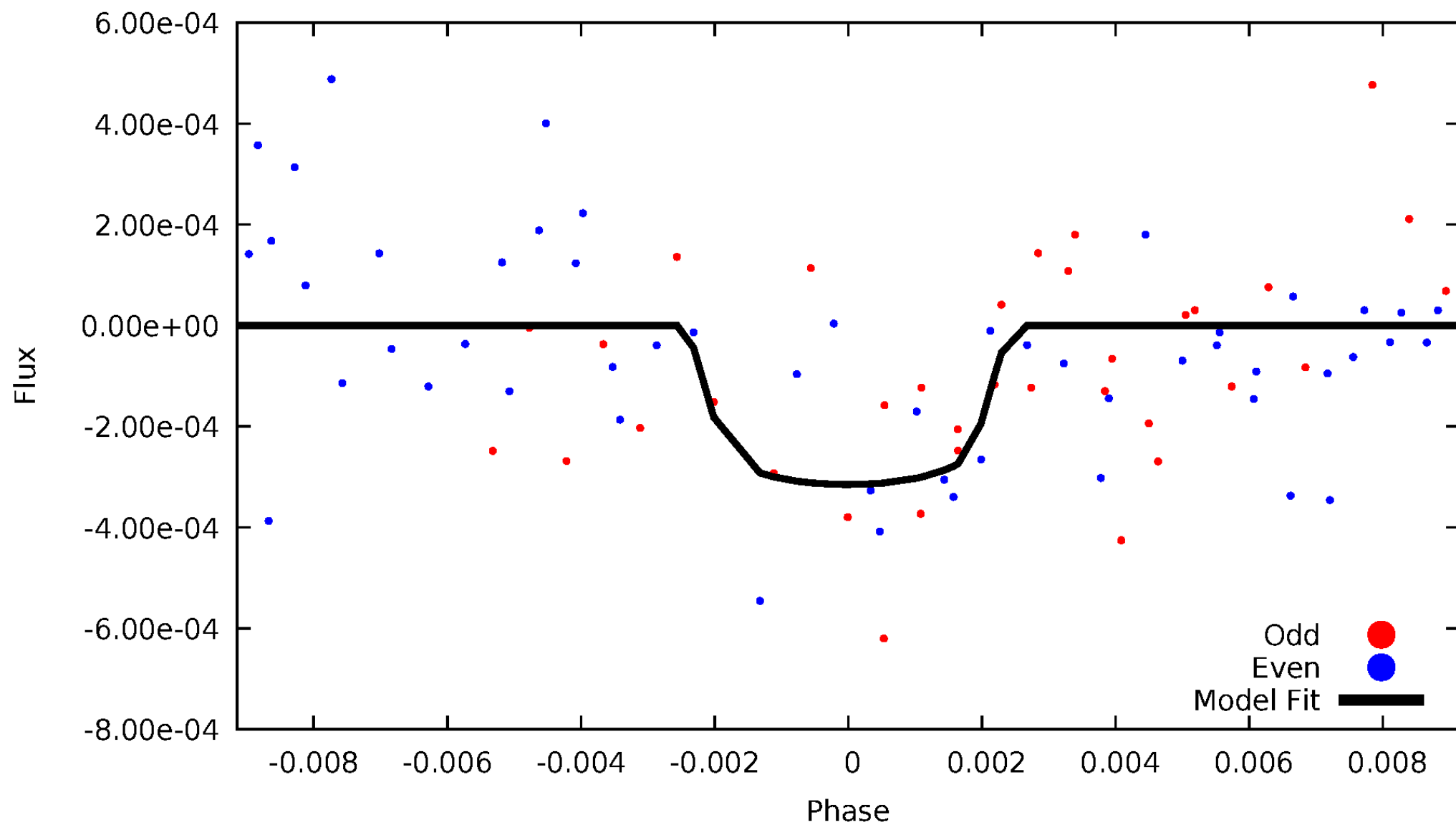


TCE 005888069-03



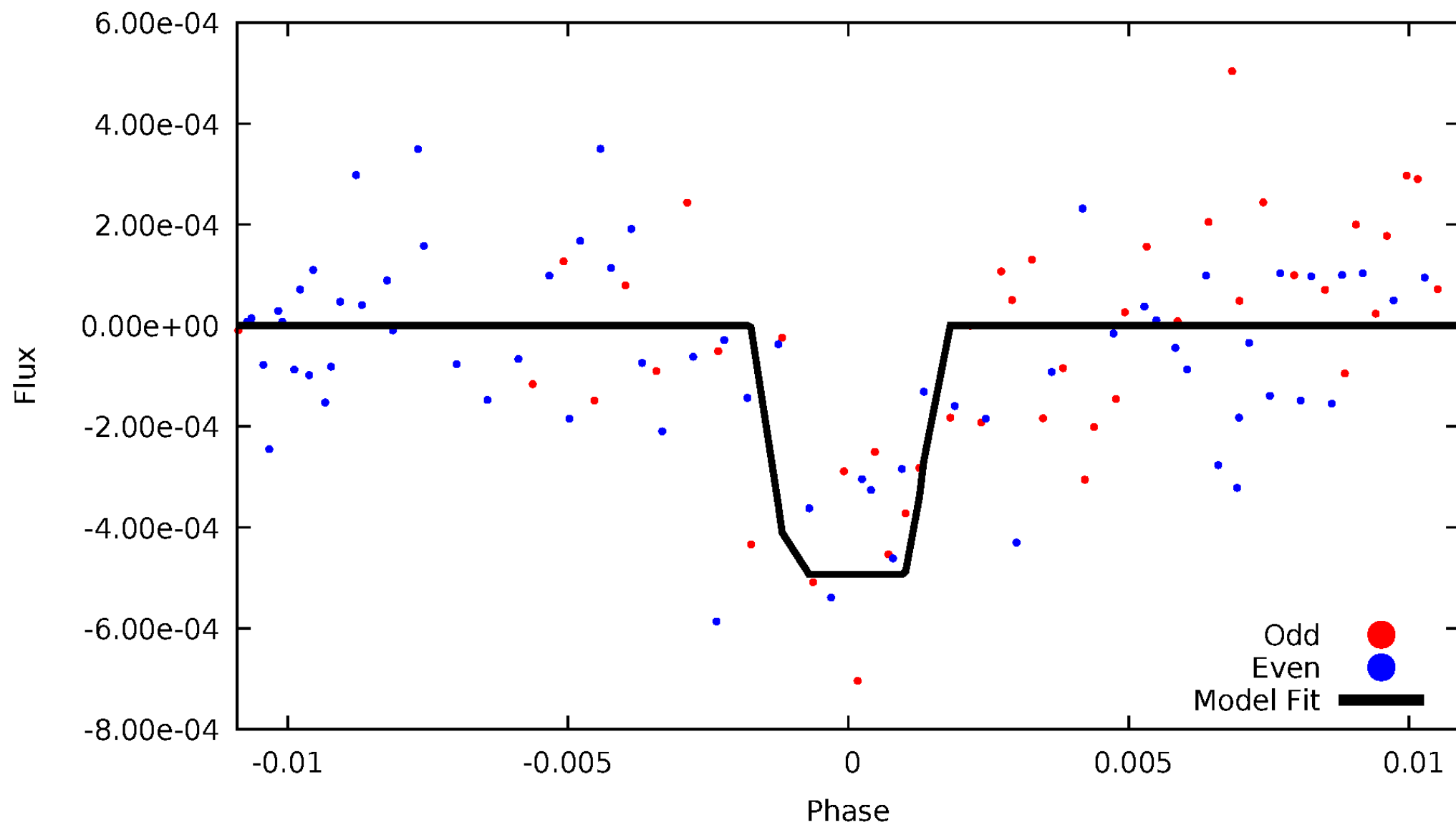
# DV Odd/Even

TCE 005888069-03



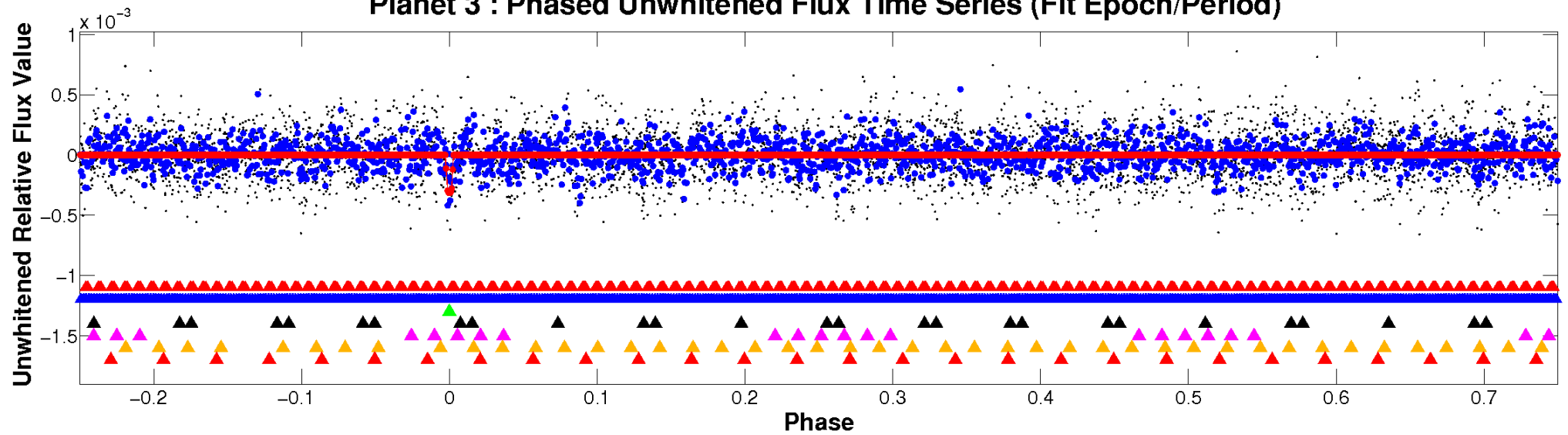
# ALT Odd/Even

TCE 005888069-03

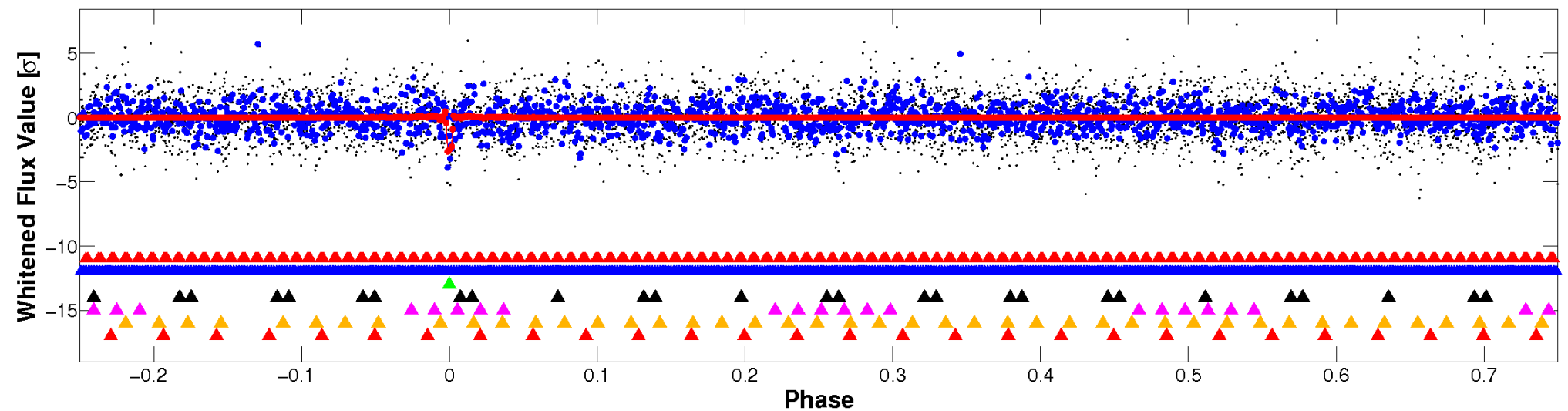


# Non-Whitened Vs. Whitened Light Curve

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



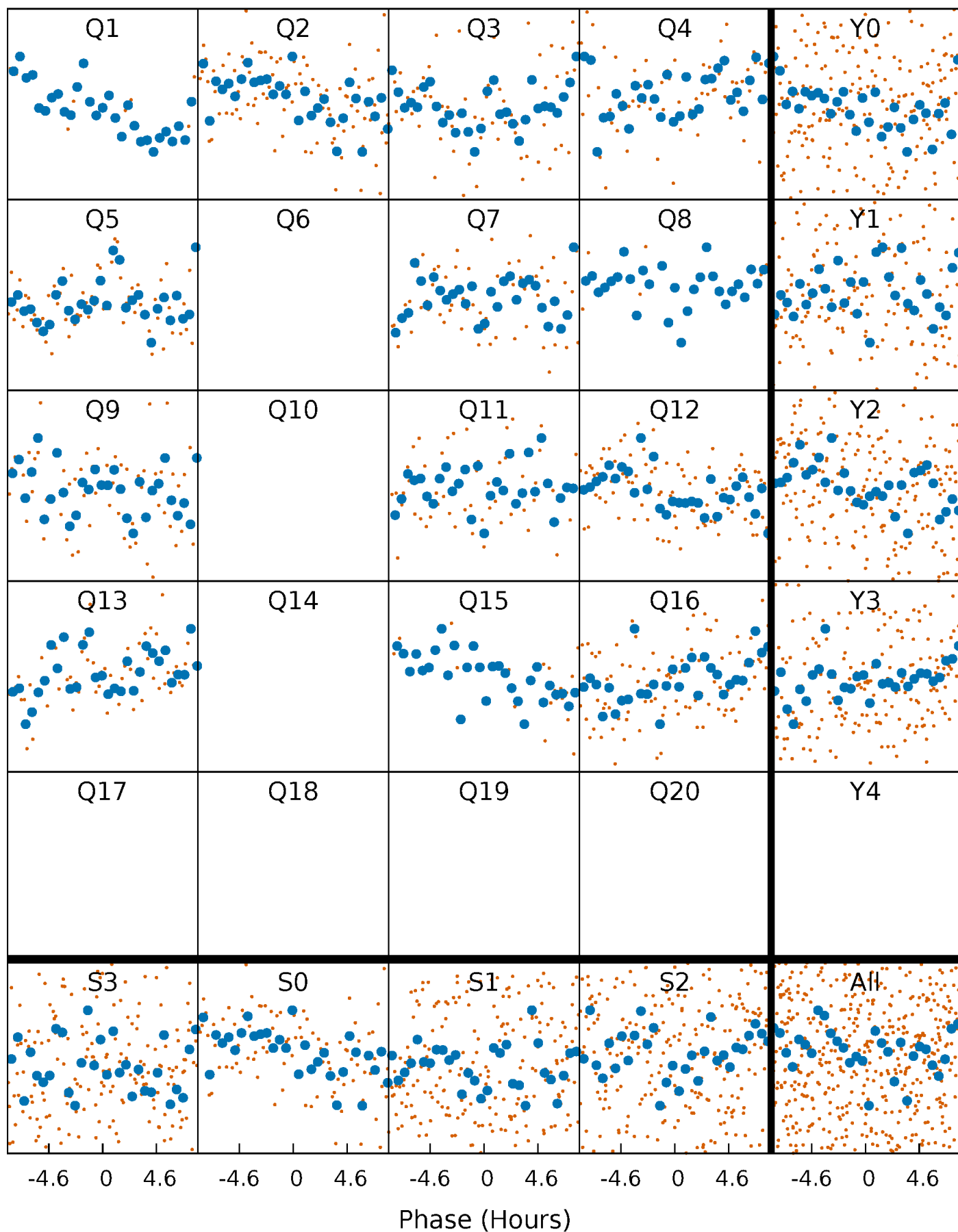
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





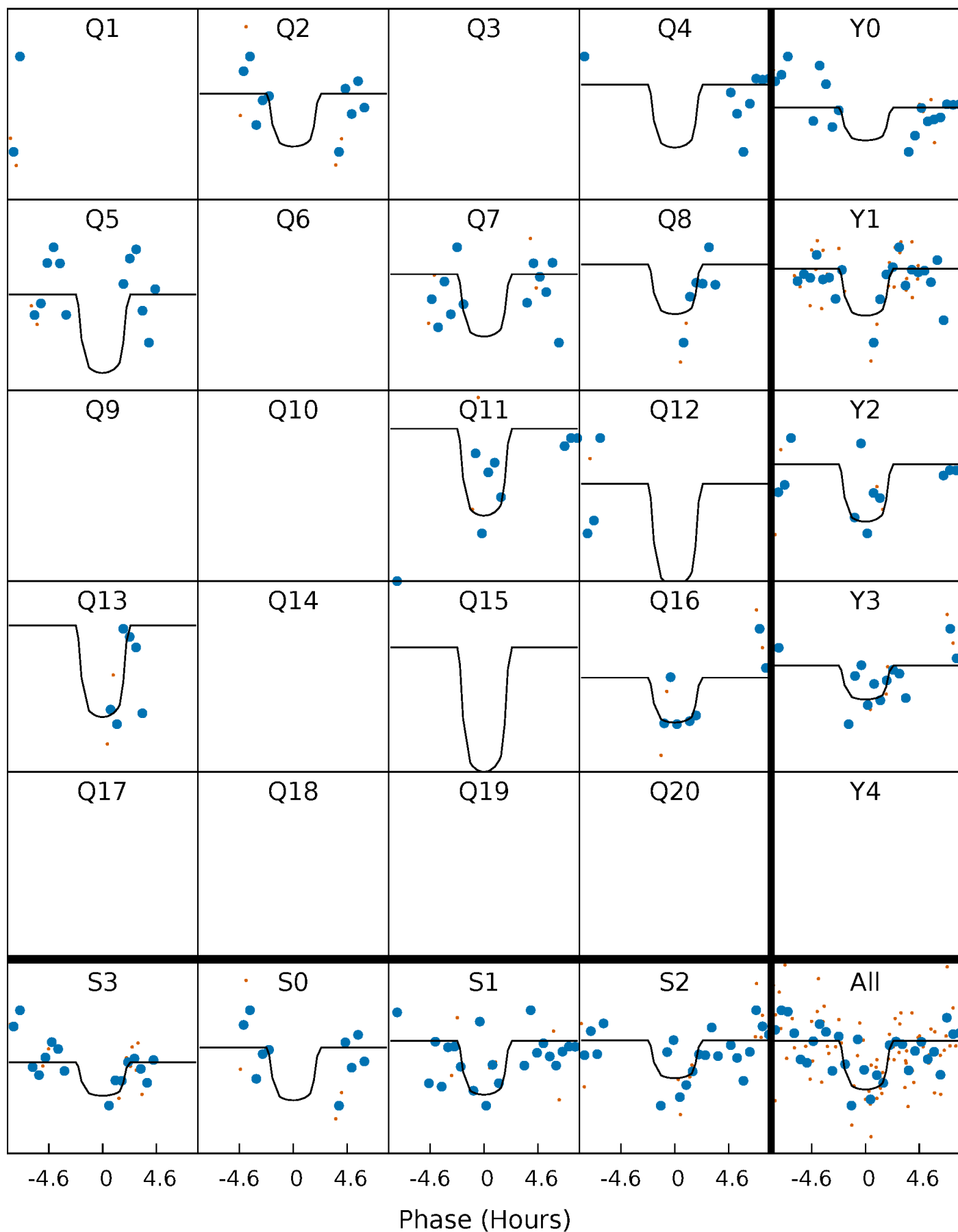
# PDC Quarter-Phased Transit Curves

TCE 005888069-03 P= 37.059135 Days  $T_0=138.971343$  (BKJD)



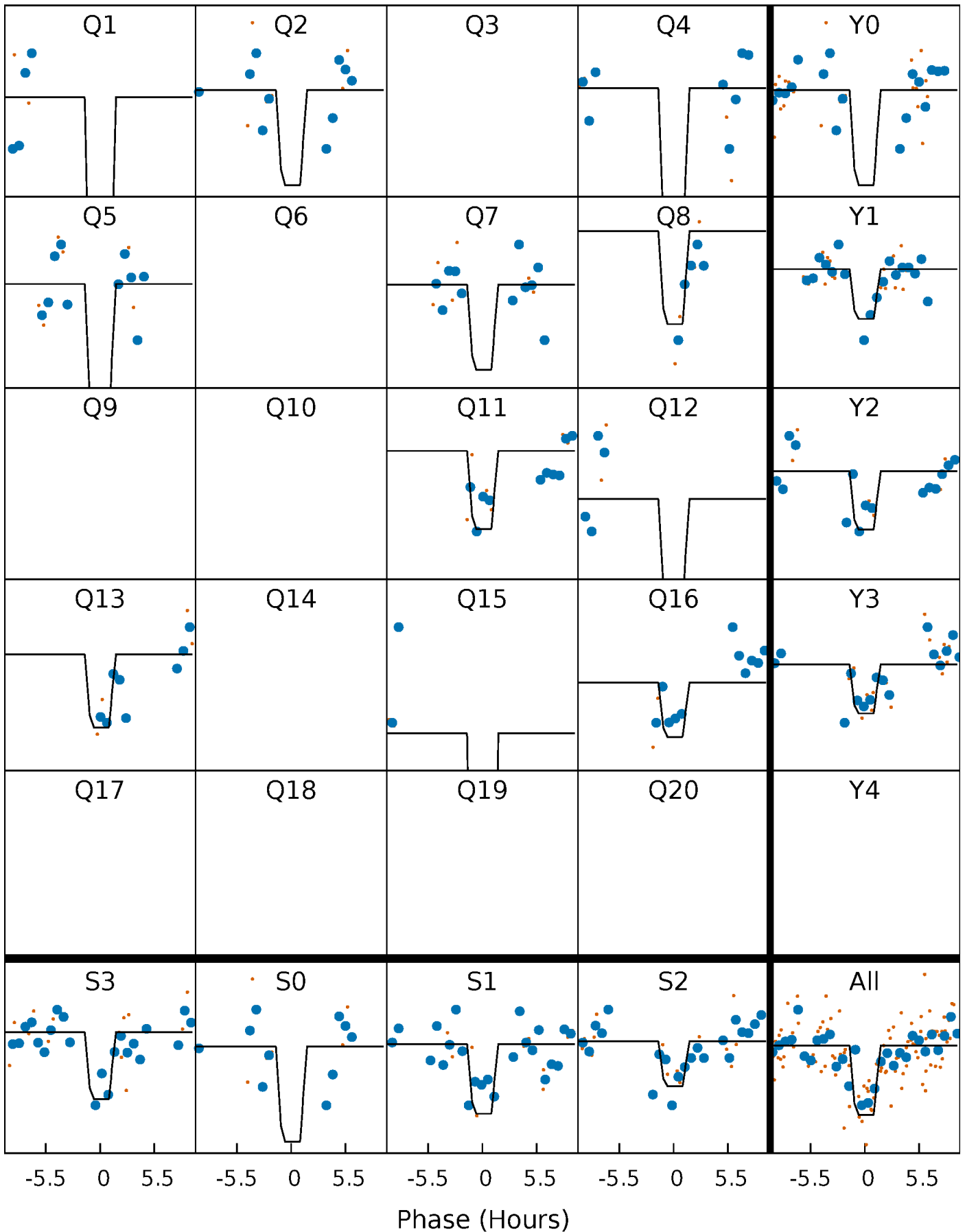
# DV Quarter-Phased Transit Curves

TCE 005888069-03   P= 37.059135 Days    $T_0=138.971343$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

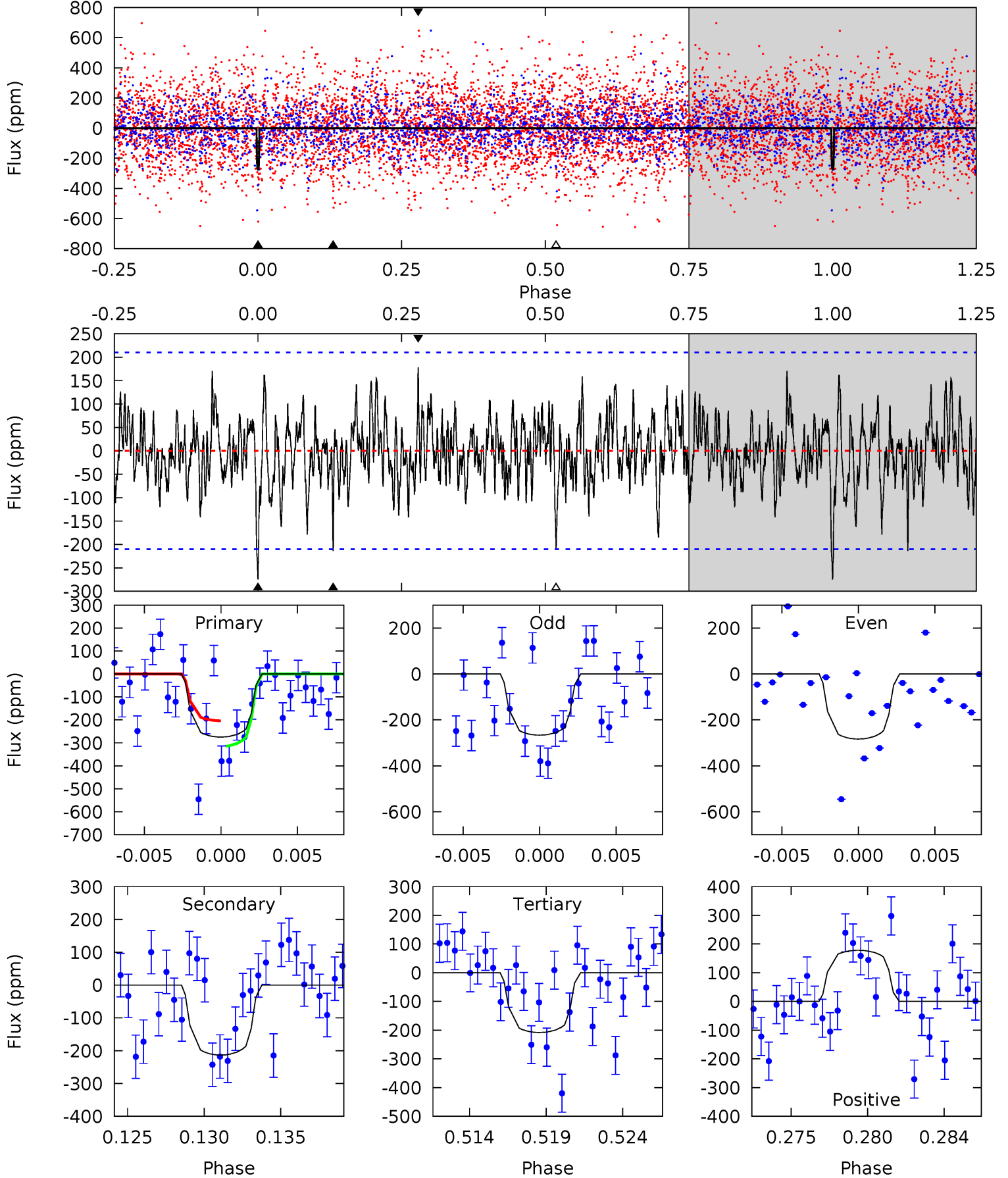
TCE 005888069-03   P= 37.060300 Days    $T_0=138.965223$  (BKJD)



# DV Model-Shift Uniqueness Test

005888069-03, P = 37.059135 Days, E = 101.912208 Days

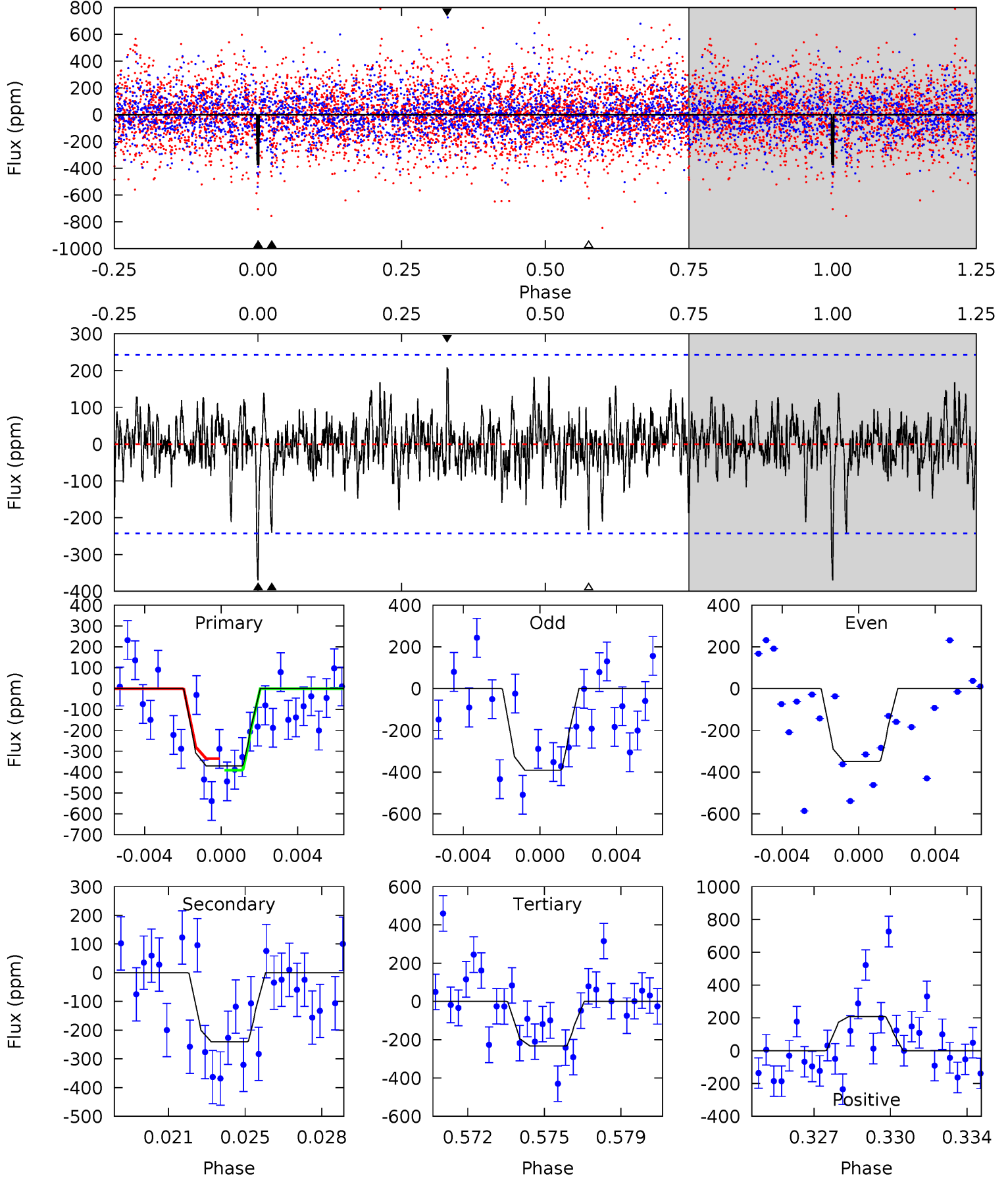
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.74	5.24	5.11	4.37	5.16	2.81	1.45	1.63	2.37	0.13	0.87	0.21	1.04	0.39	1.26



# Alt Model-Shift Uniqueness Test

005888069-03, P = 37.060300 Days, E = 101.904923 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.96	5.18	5.02	4.48	5.22	2.92	1.22	2.95	3.49	0.16	0.70	0.46	1.07	0.36	0.57



### Stellar Parameters For KIC 005888069

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7325^{+73}_{-95}$	$4.216^{+0.018}_{-0.162}$	$0.360^{+0.050}_{-0.150}$	$1.677^{+0.399}_{-0.070}$	$1.687^{+0.139}_{-0.075}$	$0.503^{+0.035}_{-0.227}$
	+1%/-1%	+0%/-4%	+14%/-42%	+24%/-4%	+8%/-4%	+7%/-45%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005888069-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-214 \pm 41$	$8.64^{+8.29}_{-6.02}$	$1167^{+66}_{-28}$	$4322^{+3236}_{-885}$	$102^{+915}_{-76}$
Alt.	$-241 \pm 47$	$9.09^{+8.80}_{-5.88}$	$1169^{+64}_{-29}$	$4336^{+2701}_{-893}$	$105^{+701}_{-78}$

$T_{\text{max}}$  = 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

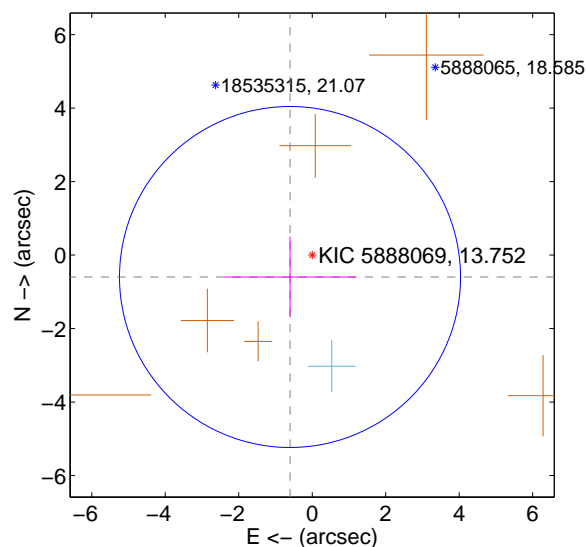
Supplemental centroid analysis for 005888069-03. Kepler magnitude: 13.75. Transit SNR 9.72

There are 1 quarters with good PRF difference image offsets

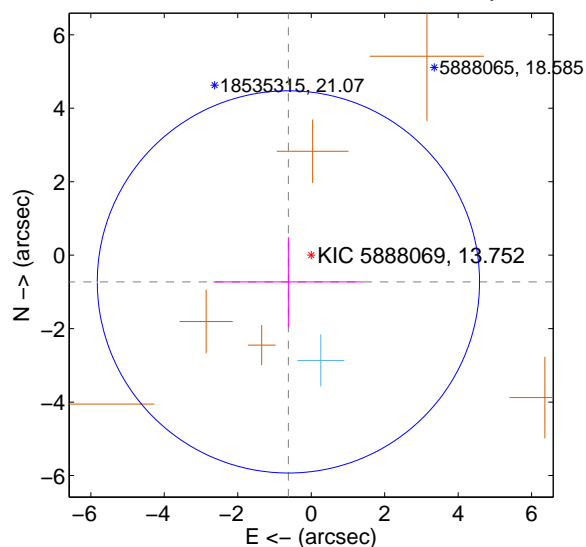
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.849 \pm 1.547$	0.55	$0.604 \pm 1.799$	$-0.596 \pm 1.099$
PRF-fit source offset from KIC position	$0.957 \pm 1.734$	0.55	$0.621 \pm 2.043$	$-0.728 \pm 1.220$
photometric centroid source offset	$0.69 \pm 0.57$	1.20	$-0.50 \pm 0.58$	$0.47 \pm 0.57$

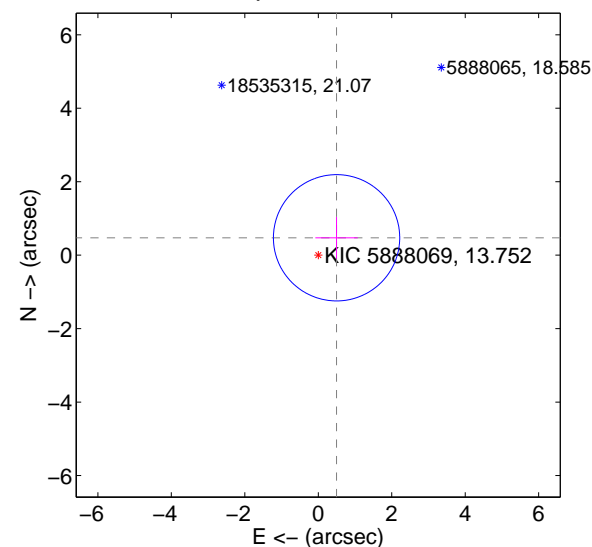
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

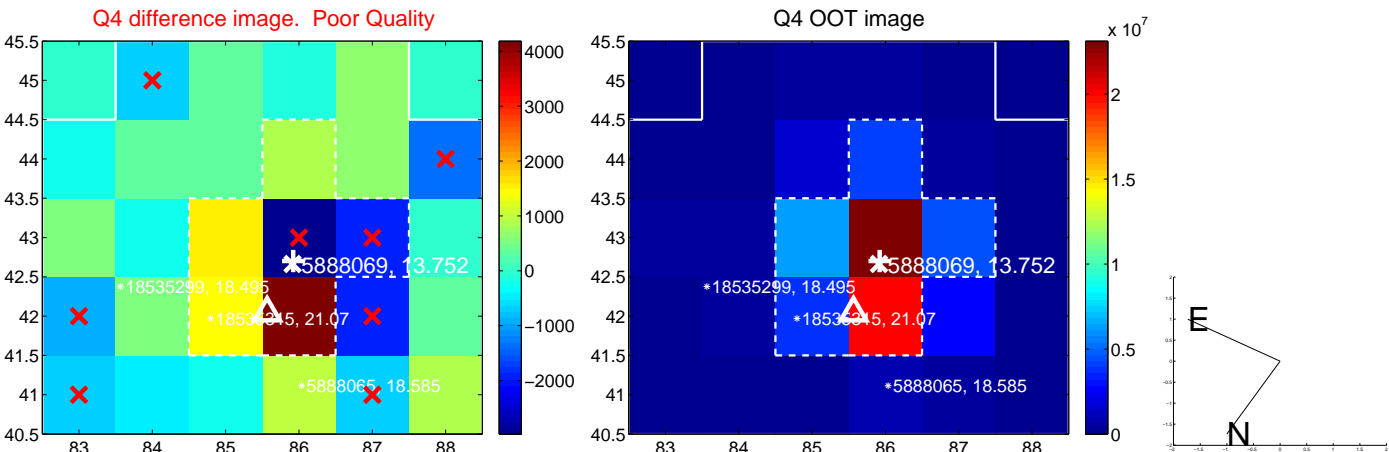
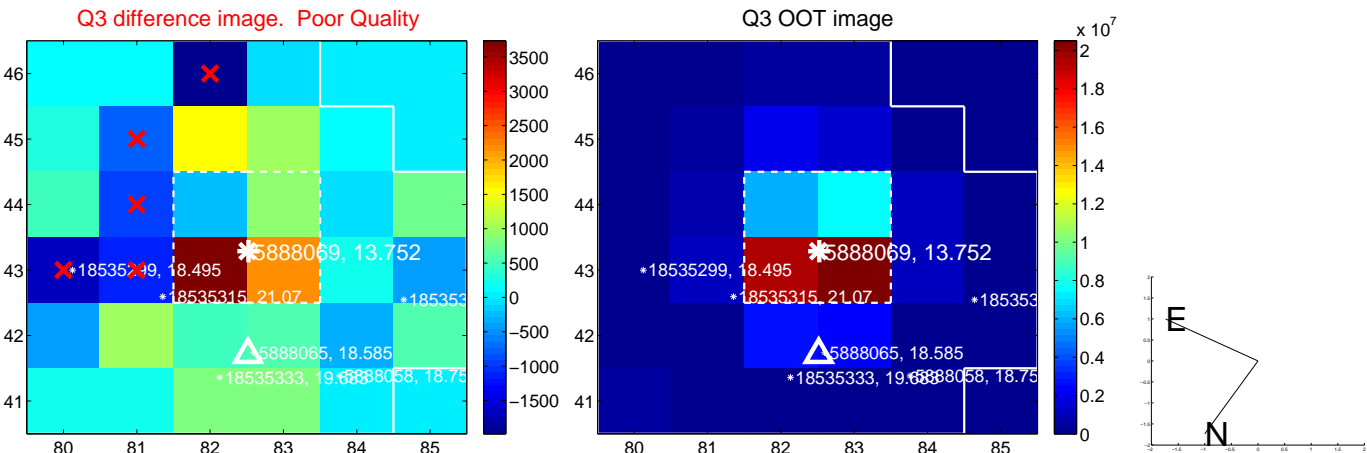
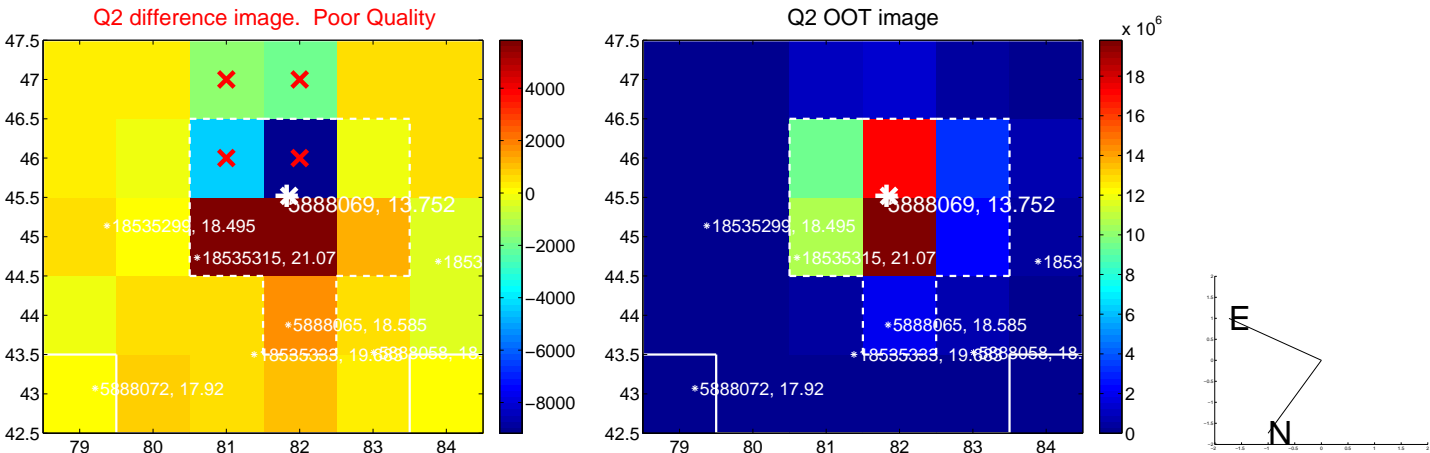
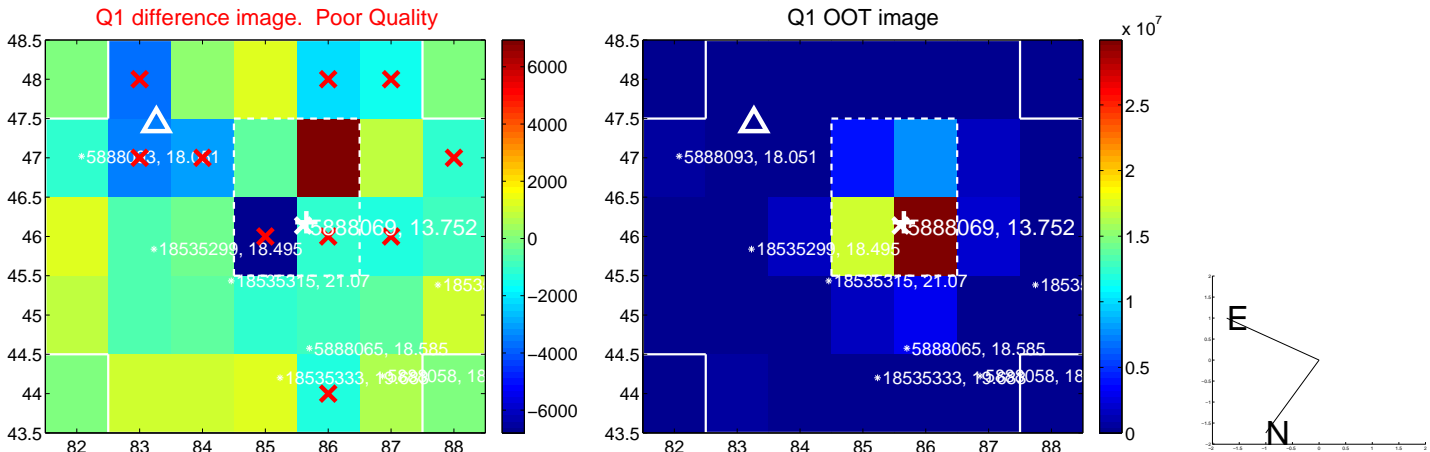


offset from photometric centroids

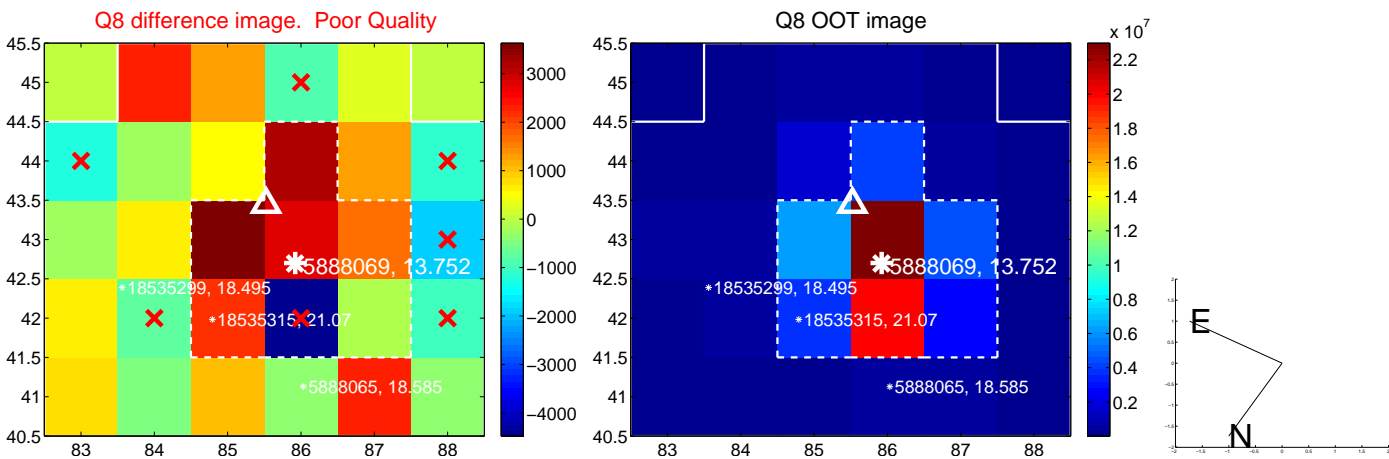
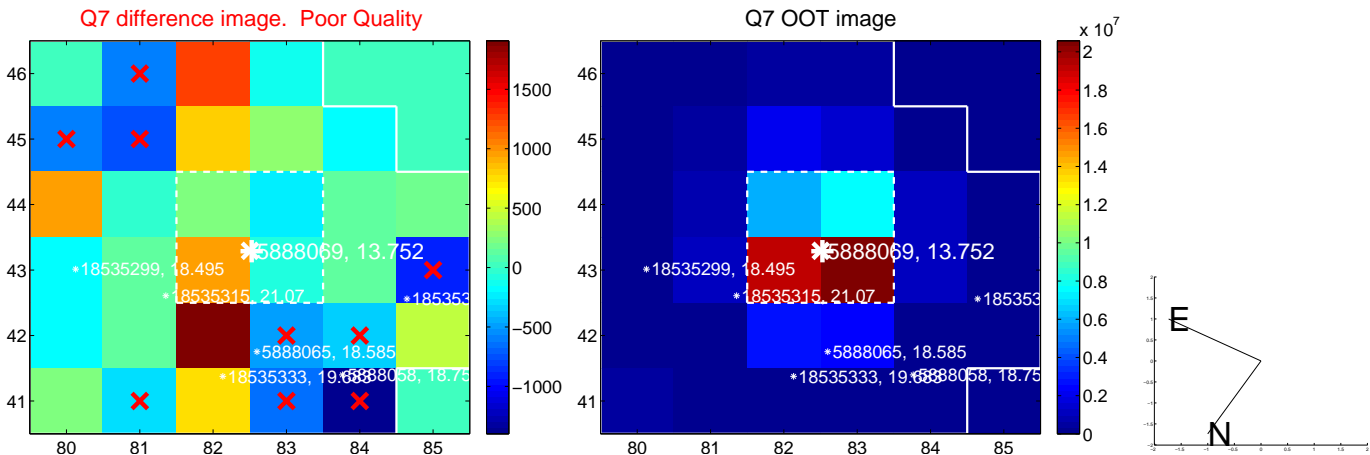
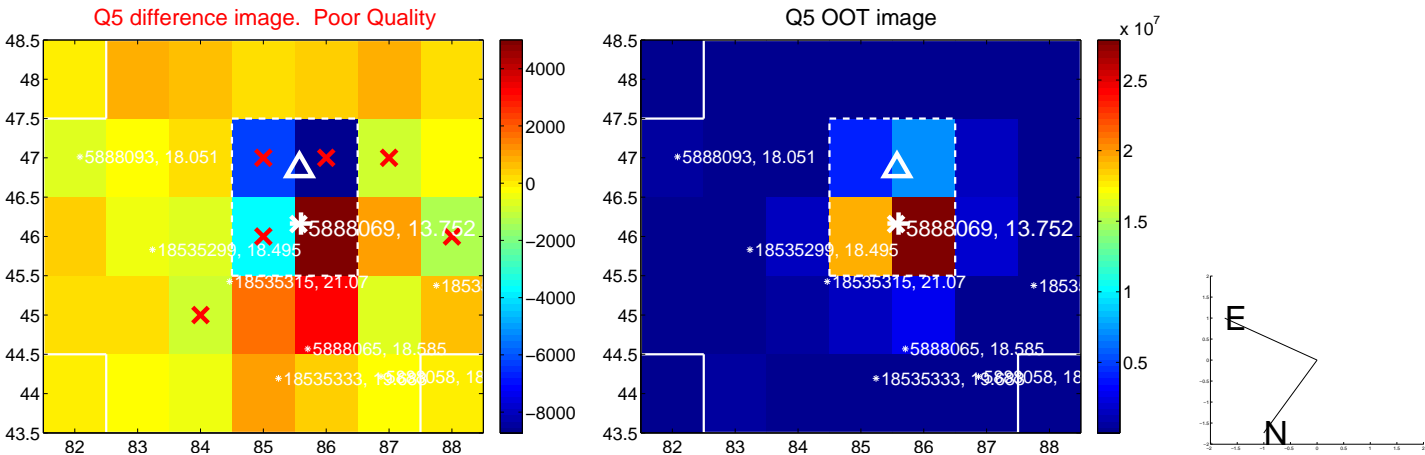


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

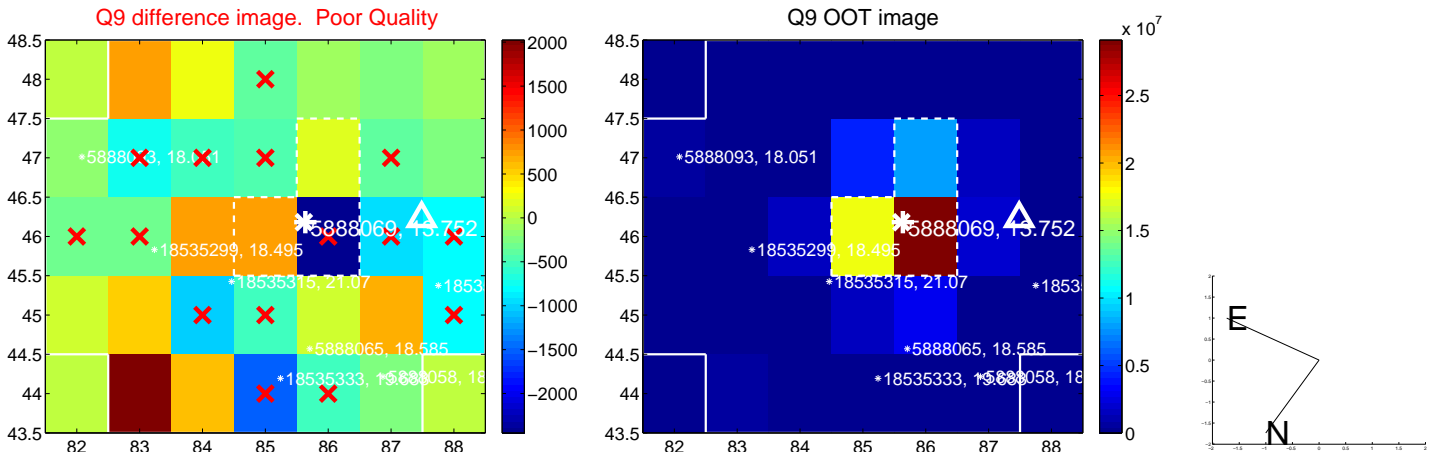
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



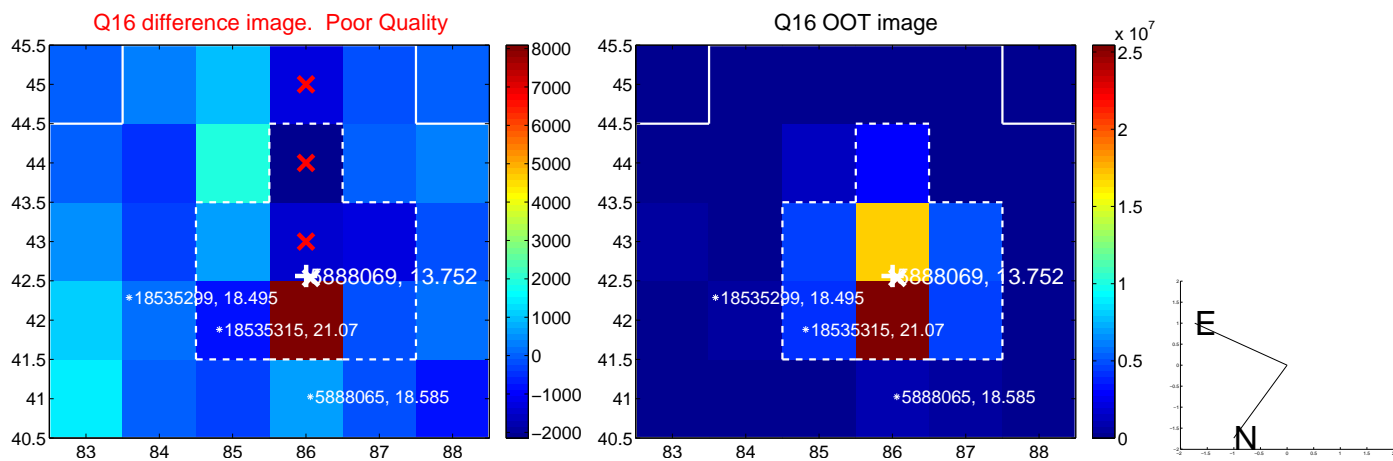
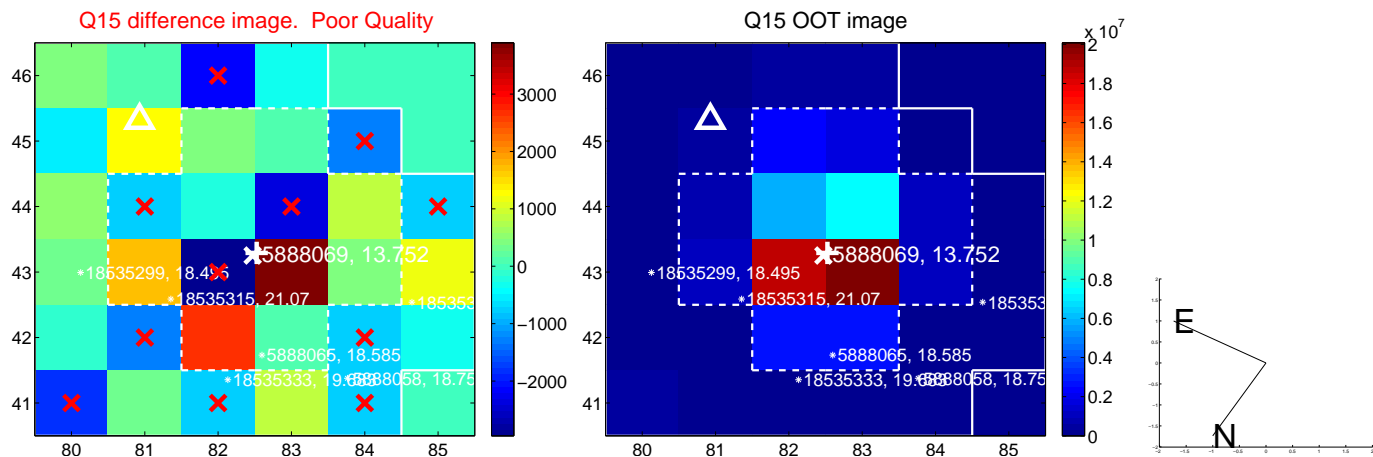
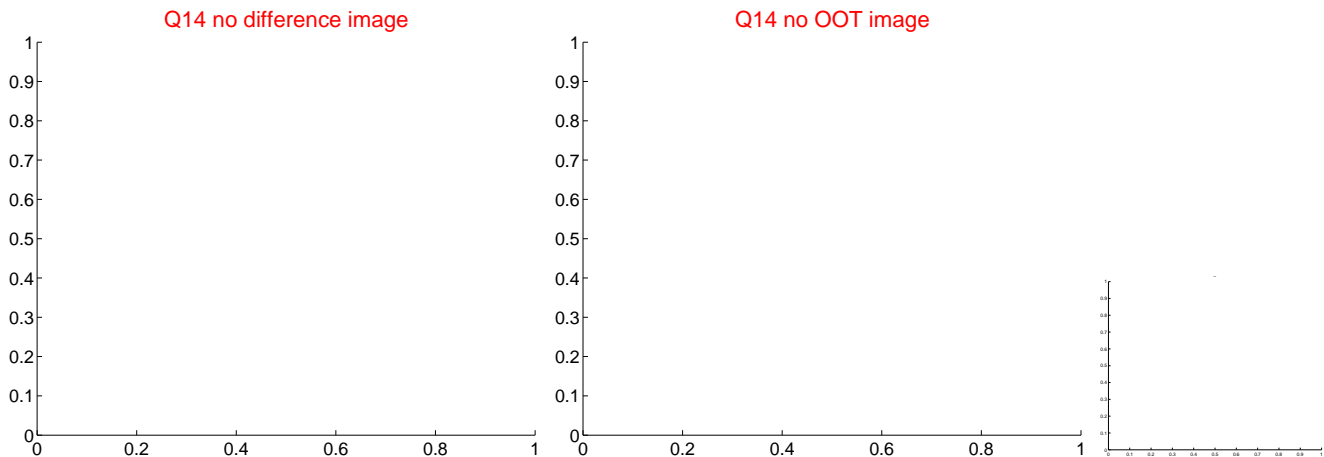
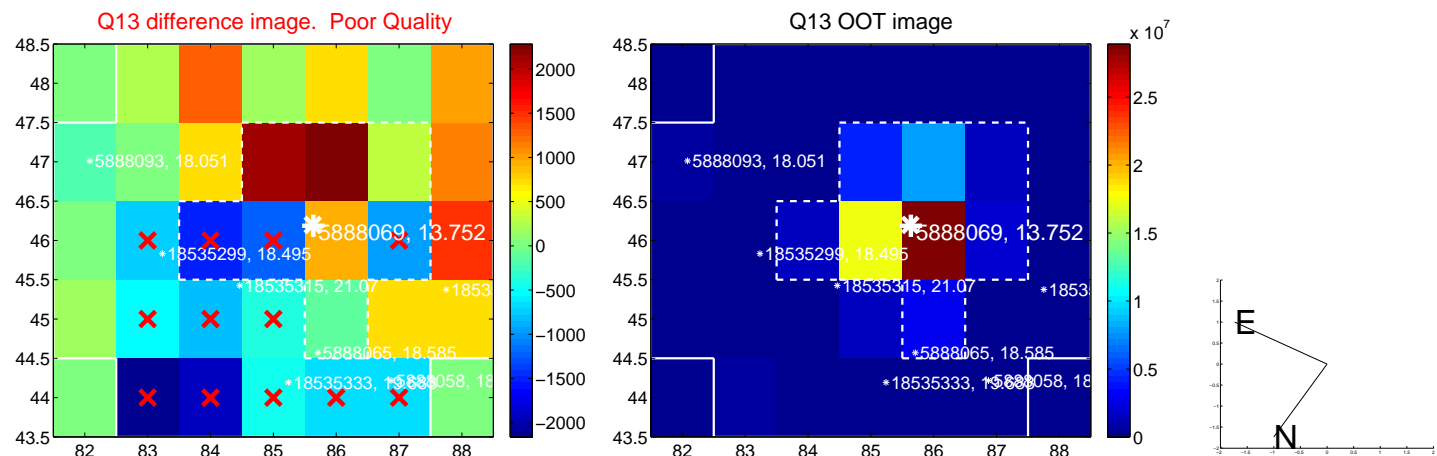
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



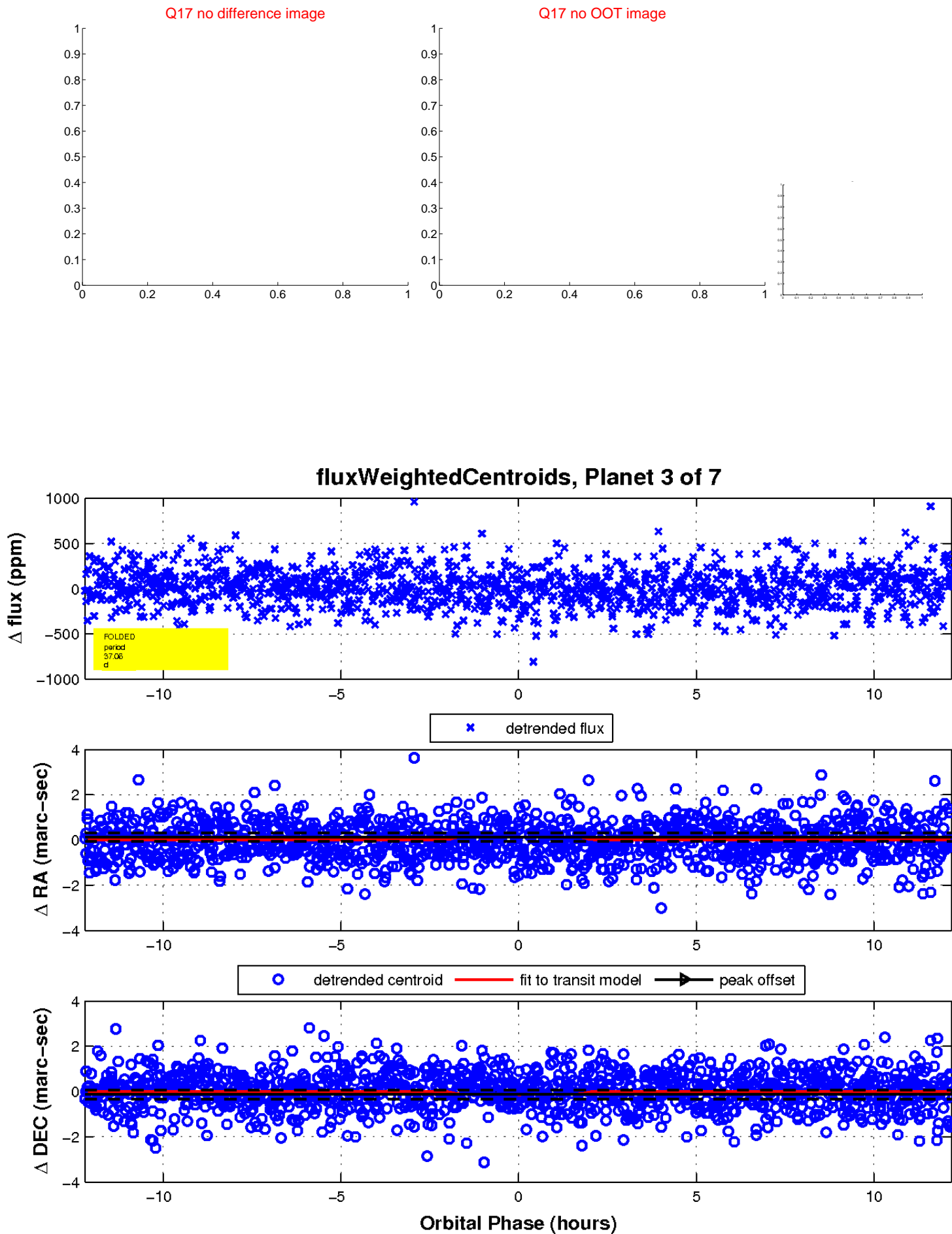
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

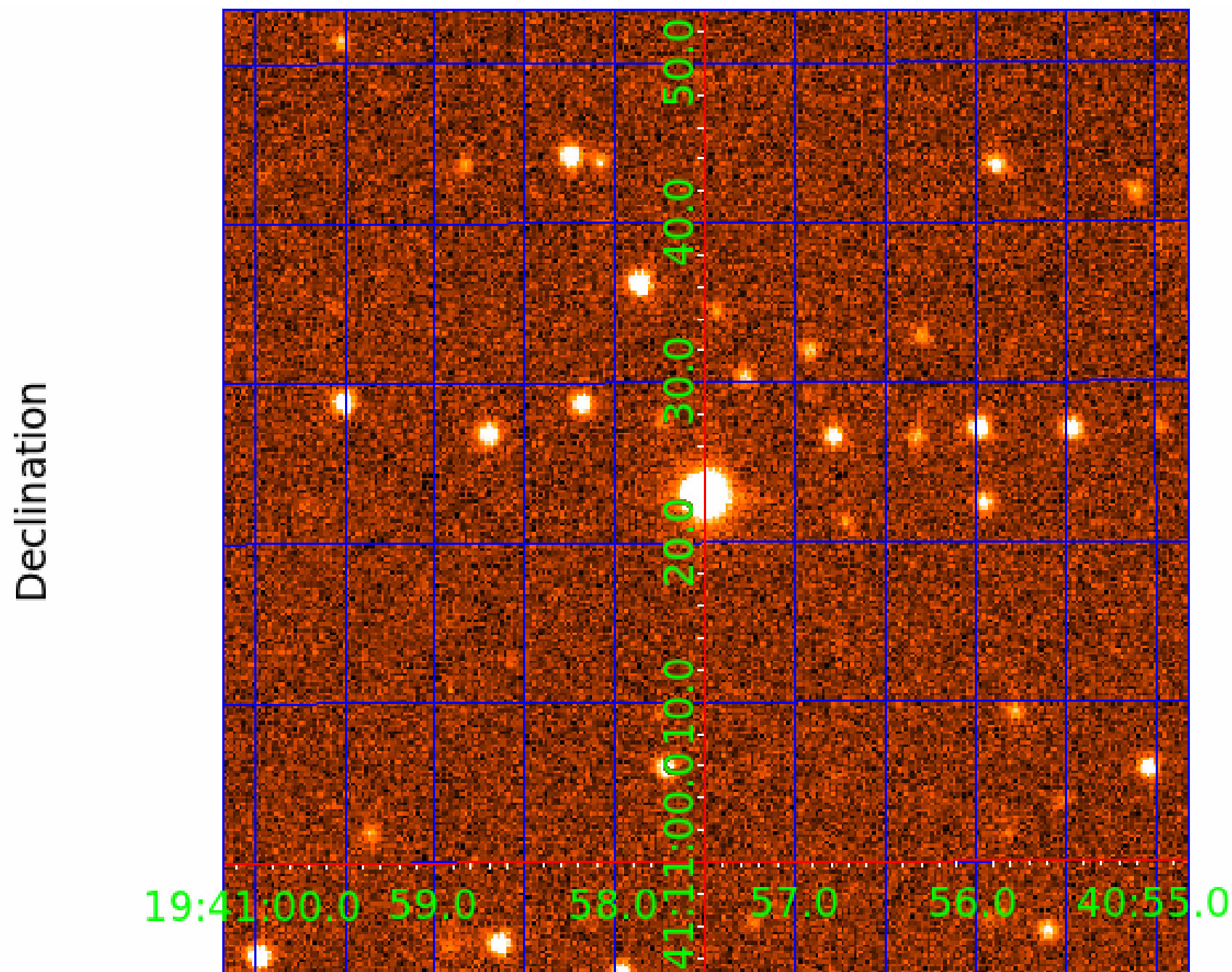


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image



# KIC 005888069

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005888069-01	OBS	No	2.623478	132.555154	44.5	7.967	12.1	11.8	1.68	7325	1.29	3692.41
005888069-02	OBS	No	0.874365	132.075953	40.9	5.721	10.8	13.7	1.68	7325	1.25	15979.26
005888069-03	OBS	No	37.059135	138.971343	315.3	4.067	9.7	9.7	1.68	7325	3.33	108.13
005888069-04	OBS	No	53.290743	173.864956	297.0	3.166	9.7	10.5	1.68	7325	2.94	66.62
005888069-05	OBS	No	64.997876	193.320683	181.0	7.070	8.6	6.1	1.68	7325	2.61	51.12
005888069-06	OBS	No	33.114287	163.250495	313.3	2.198	8.4	9.4	1.68	7325	3.34	125.64
005888069-07	OBS	No	41.030170	137.094447	238.6	4.040	8.0	7.5	1.68	7325	2.88	94.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005888069-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005888069-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
005888069-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005888069-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005888069-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

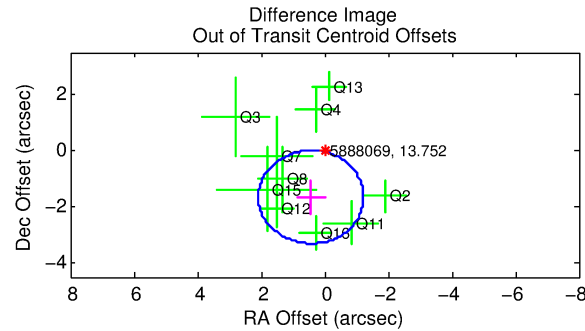
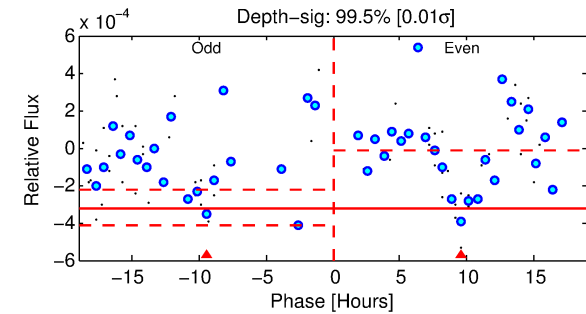
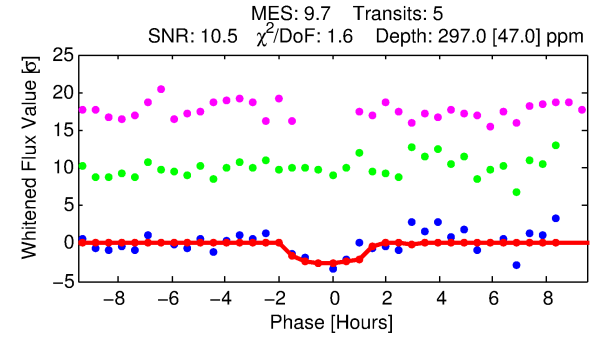
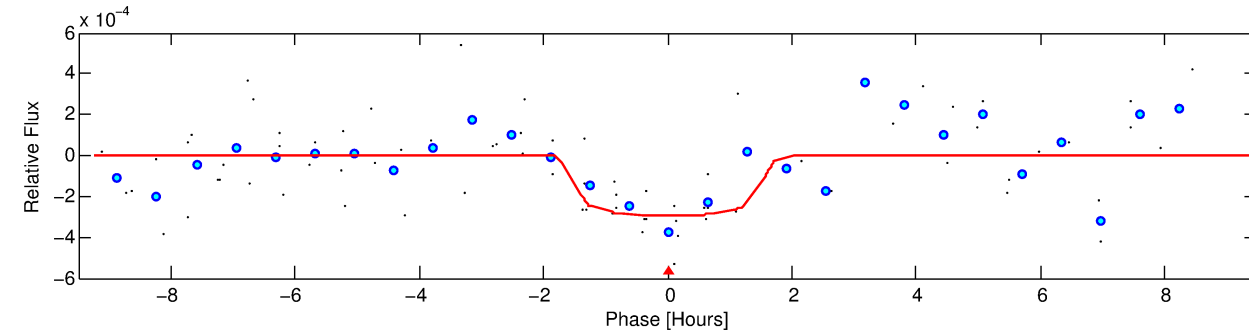
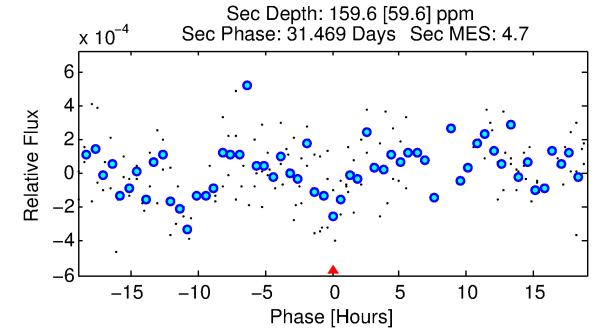
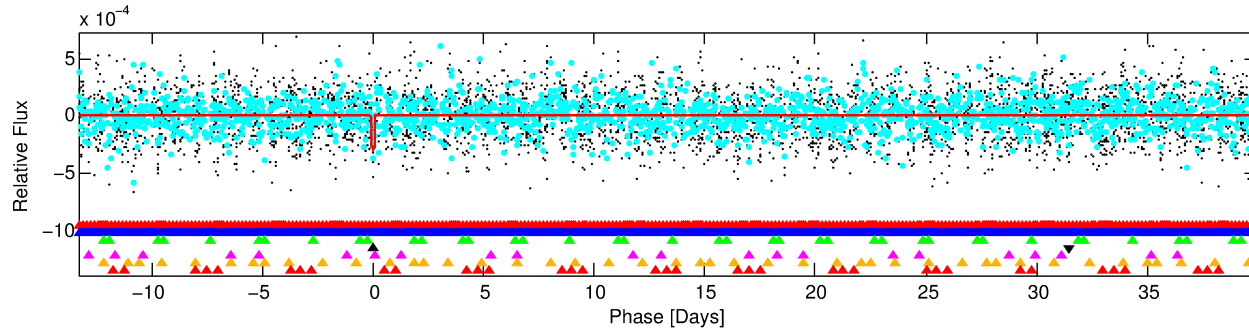
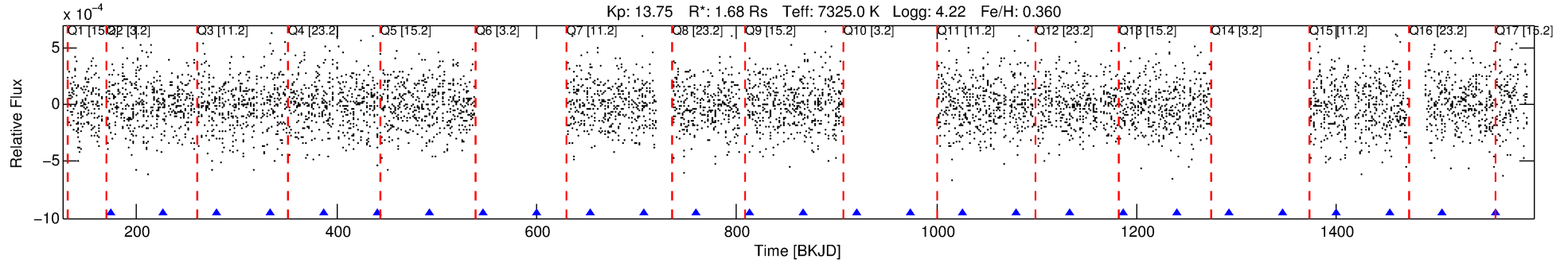
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005888069-04

No Significant Match Found

# DV One-Page Summary

KIC: 5888069 Candidate: 4 of 7 Period: 53.291 d



## DV Fit Results:

Period = 53.29074 [0.00056] d  
Epoch = 173.8650 [0.0108] BKJD  
Rp/R\* = 0.0161 [0.0387]  
a/R\* = 126.83 [1816.11]  
b = 0.24 [55.22]  
Seff = 66.62 [19.95]  
Teff = 728 [55] K  
Rp = 2.94 [7.12] Re  
a = 0.3300 [0.0665] AU  
Ag = 1102.52 [5328.95] [0.21σ]  
Teffp = 6490 [7828] K [0.74σ]

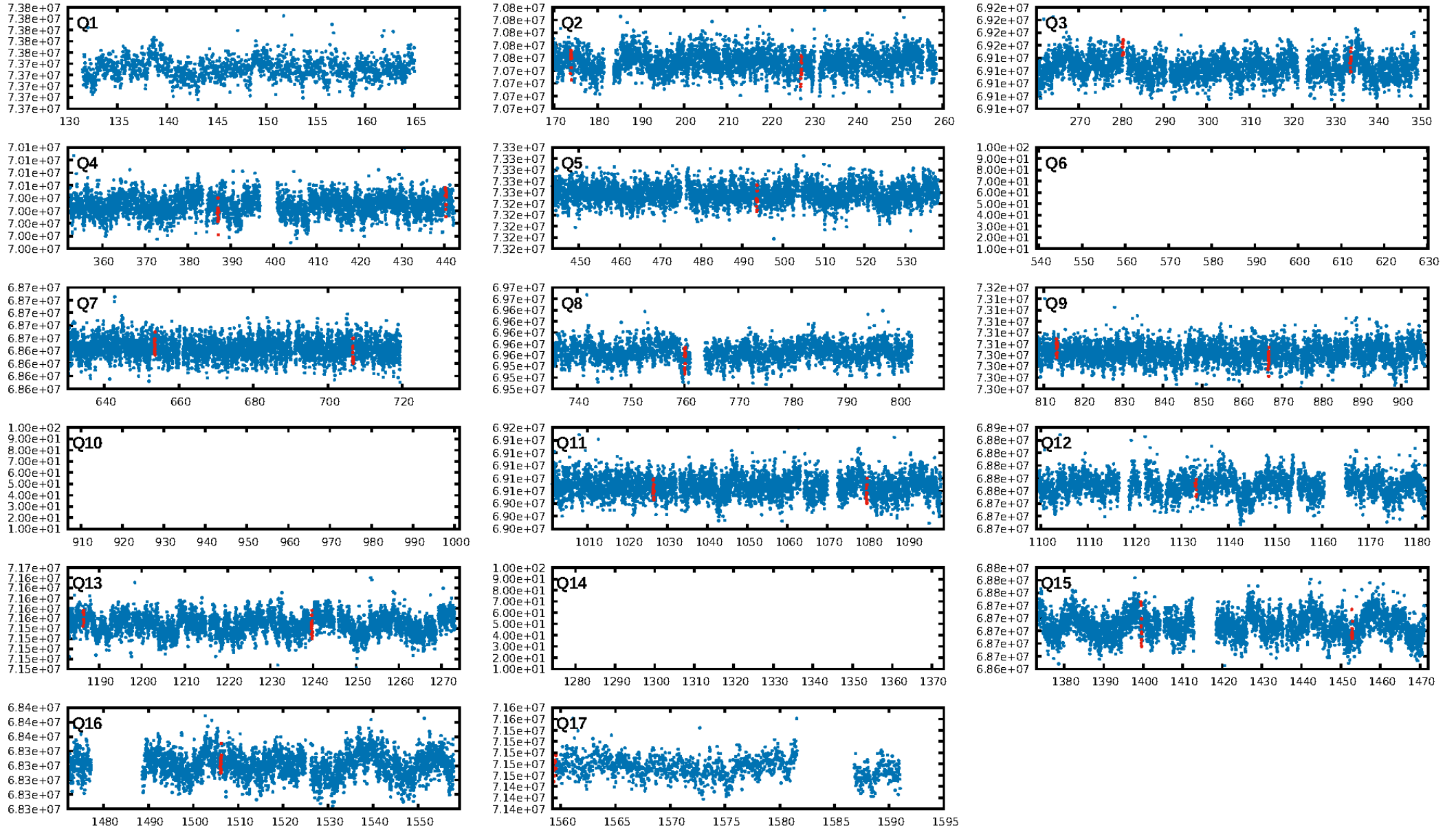
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [57.33σ]  
LongPeriod-sig: 100.0% [36.27σ]  
ModelChiSquare2-sig: 45.1%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.13e-11**  
RollingBand-fgt: 1.00 [5/5]  
**GhostDiagnostic-chr: 0.8775**  
Centroid-sig: 93.8%  
Centroid-so: 0.090 arcsec [0.12σ]  
**OotOffset-rm: 1.711 arcsec [3.10σ]**  
**KicOffset-rm: 1.667 arcsec [3.26σ]**  
OotOffset-st: 1/4/4/1 [10]  
KicOffset-st: 1/4/4/1 [10]  
DiffImageQuality-fgm: 0.50 [5/10]  
DiffImageOverlap-fno: 0.00 [0/12]

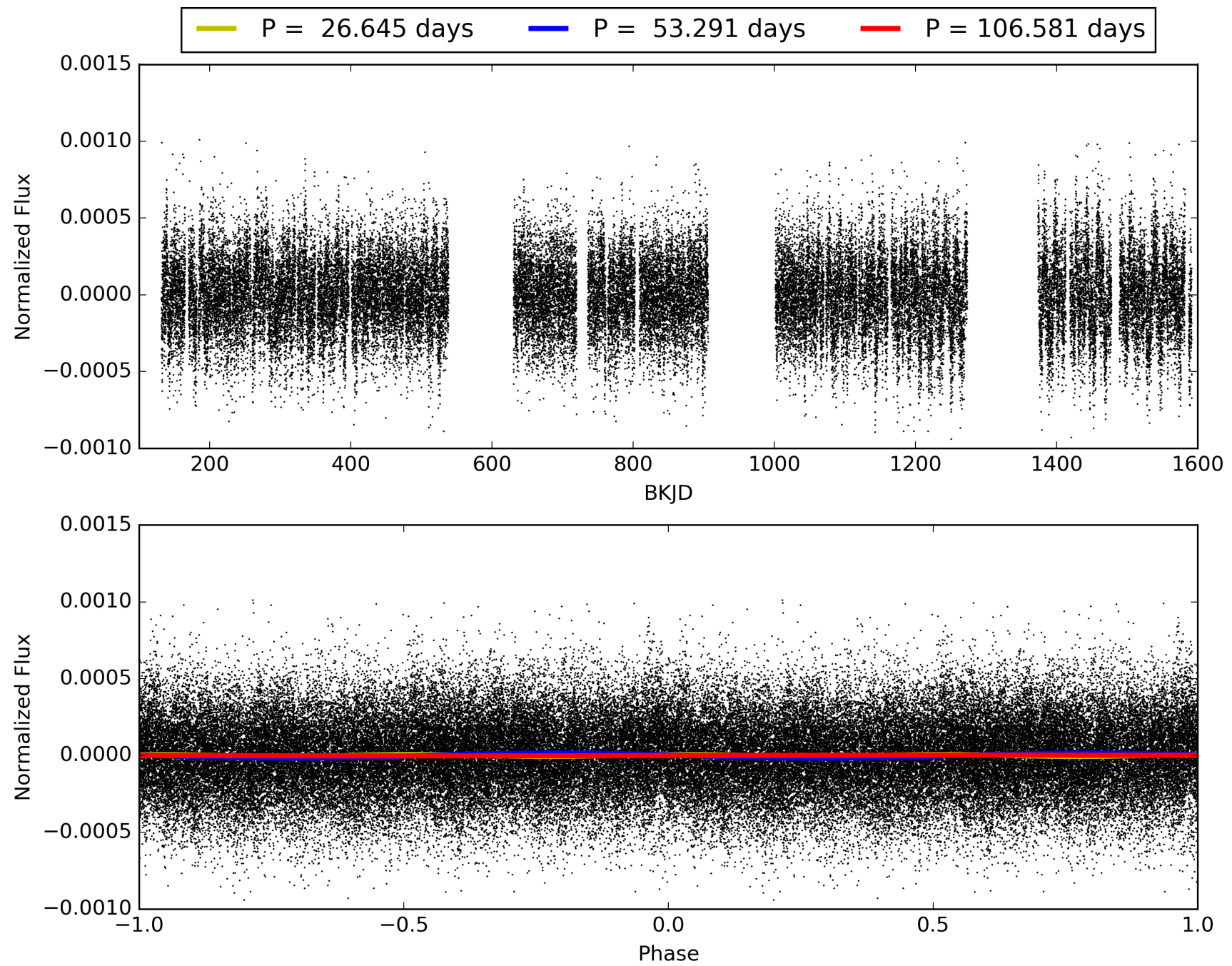
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:50:18 Z

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

# TCE 005888069-04, PDC Light Curves



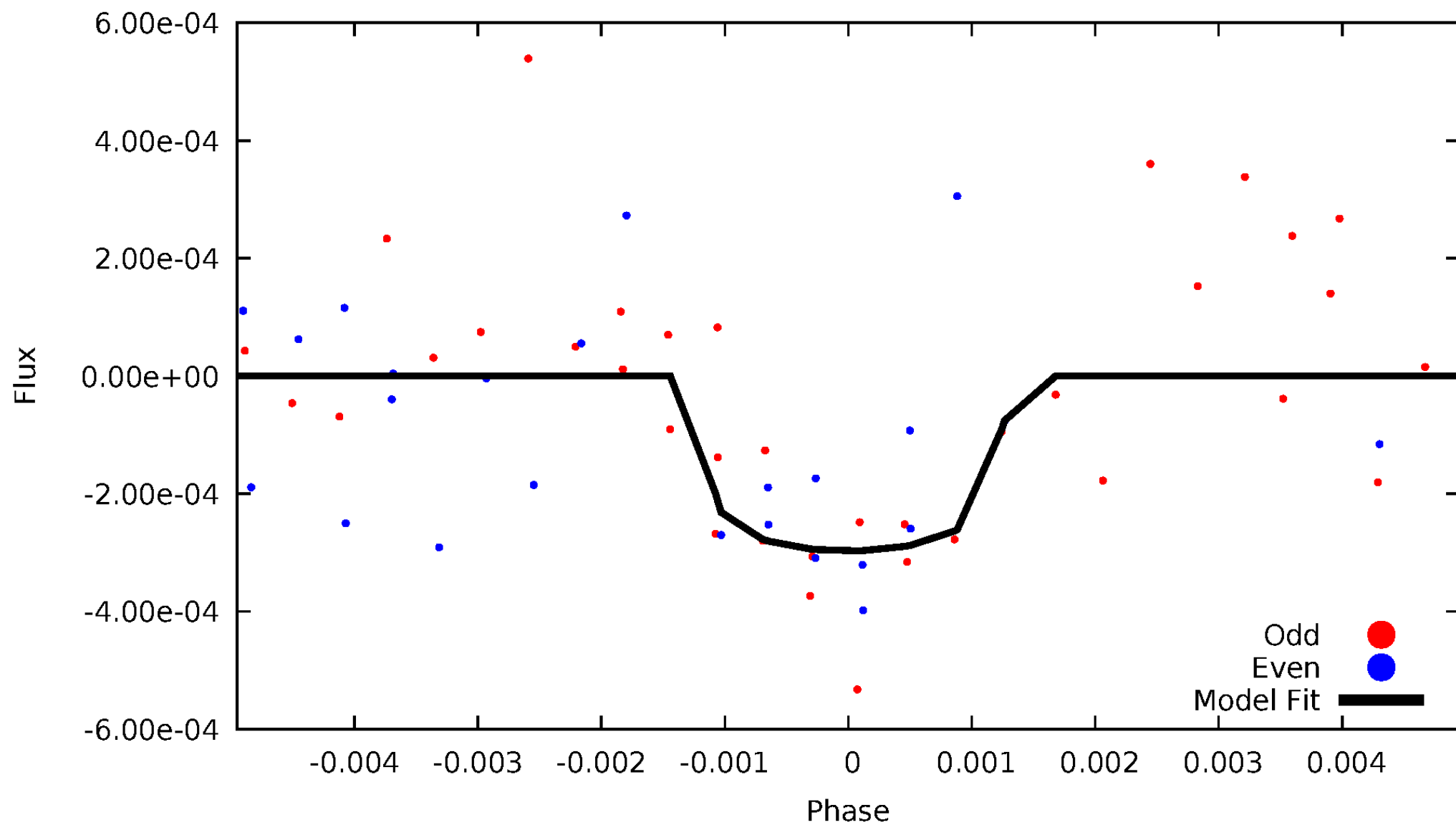
TCE 005888069-04





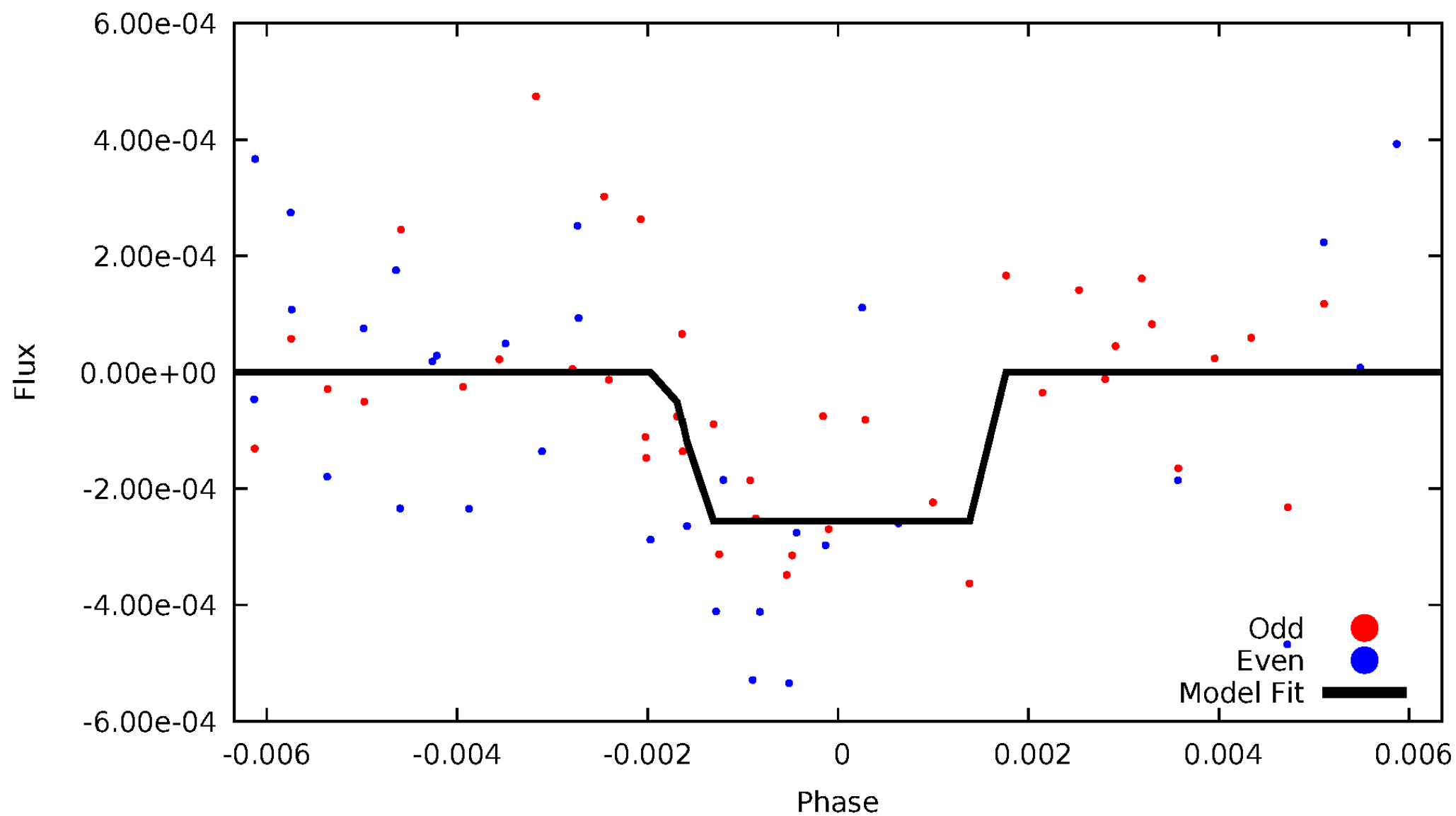
# DV Odd/Even

TCE 005888069-04



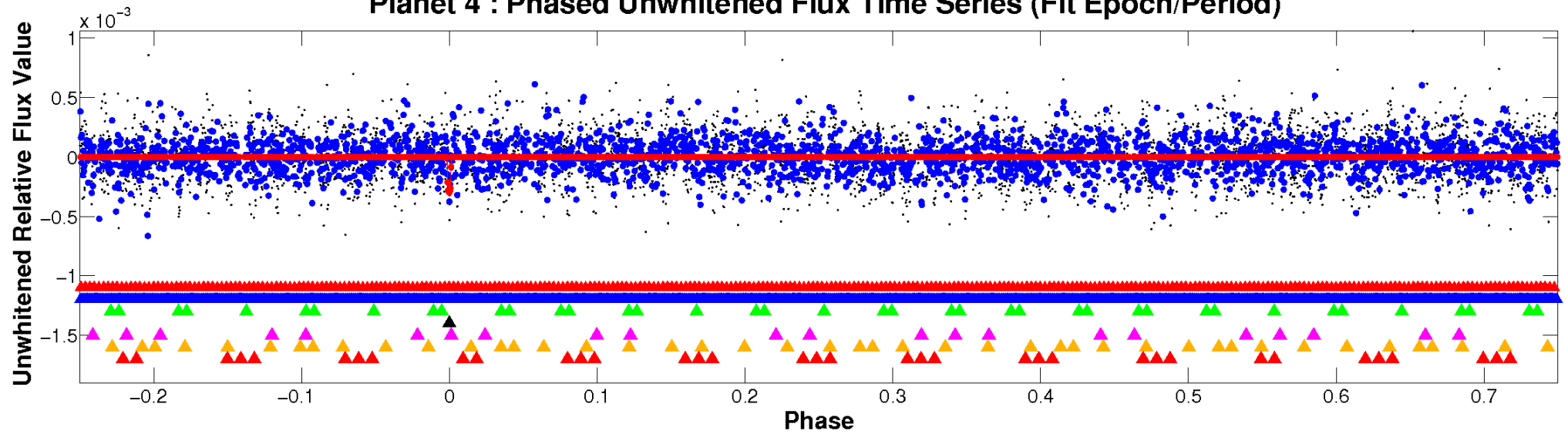
# ALT Odd/Even

TCE 005888069-04

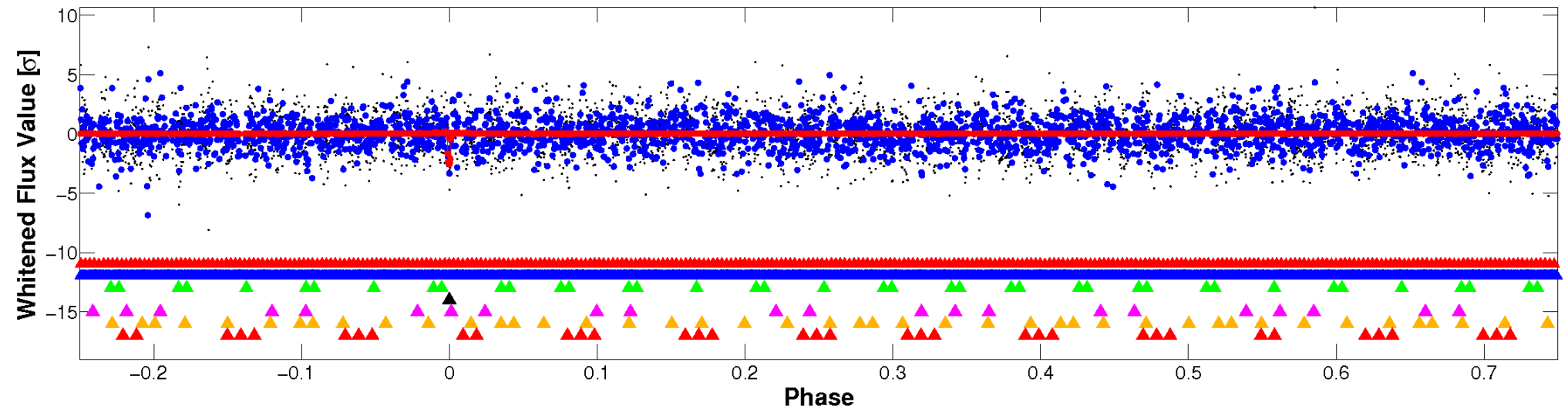


# Non-Whitened Vs. Whitened Light Curve

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

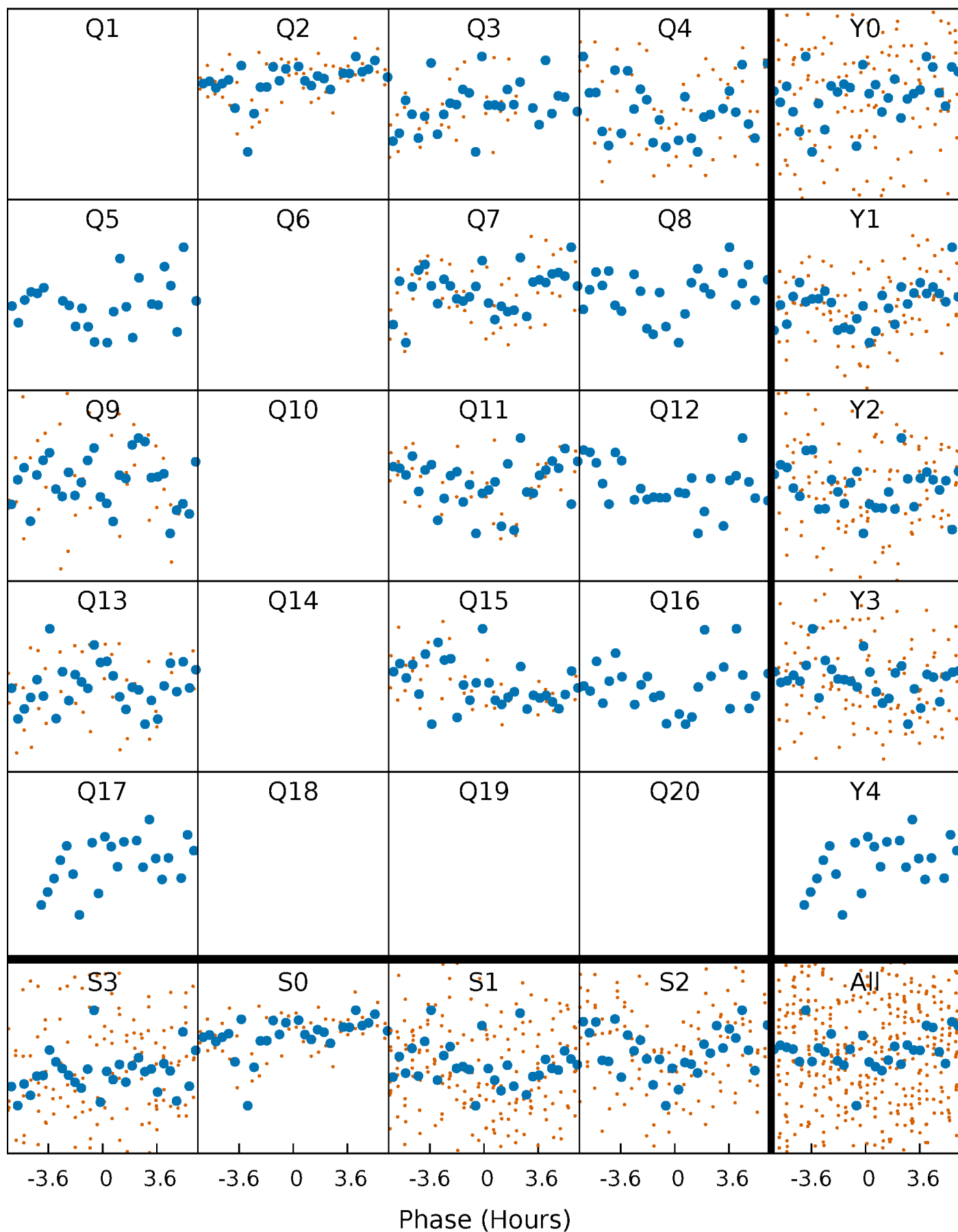


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



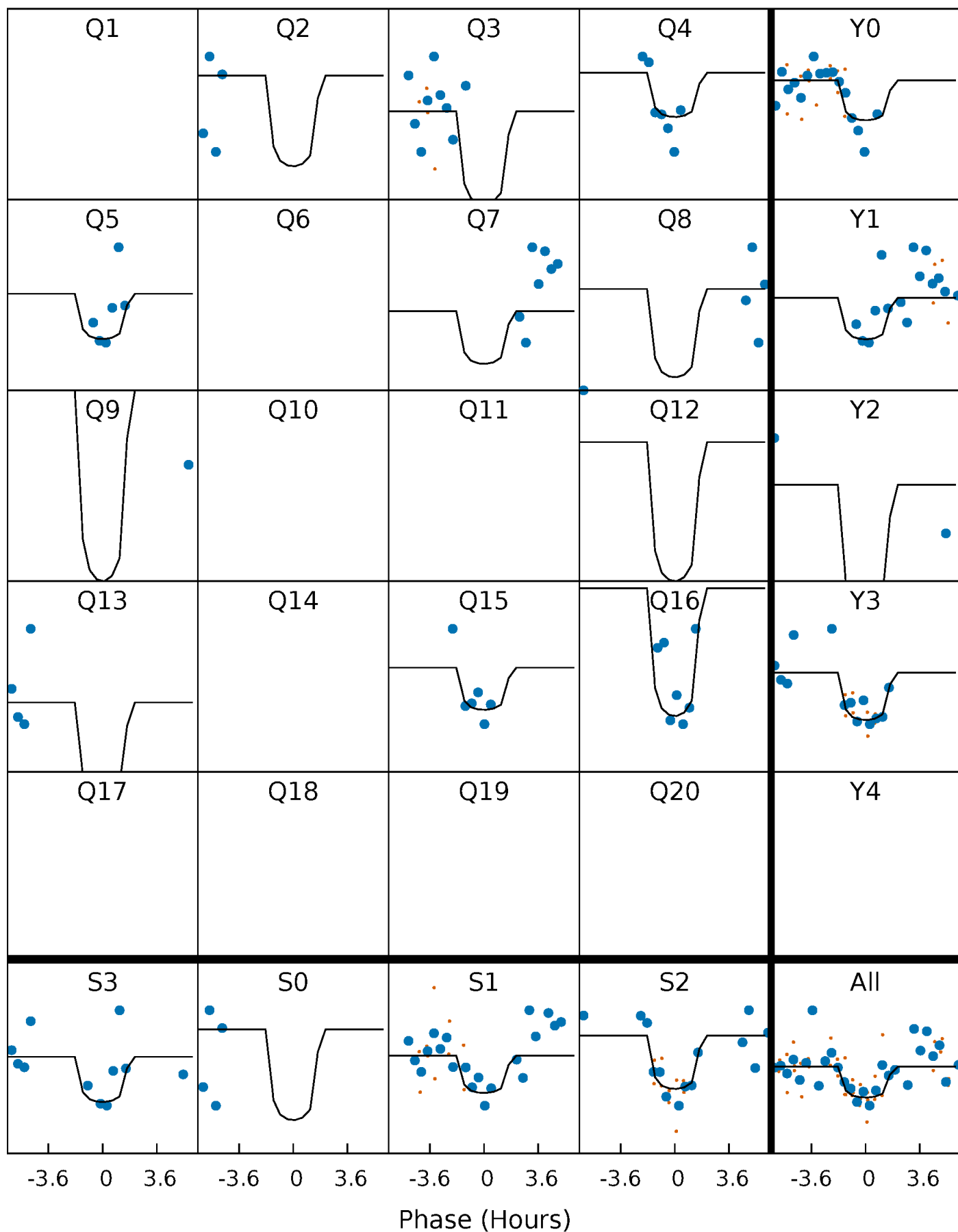
# PDC Quarter-Phased Transit Curves

TCE 005888069-04   P= 53.290743 Days    $T_0=173.864957$  (BKJD)



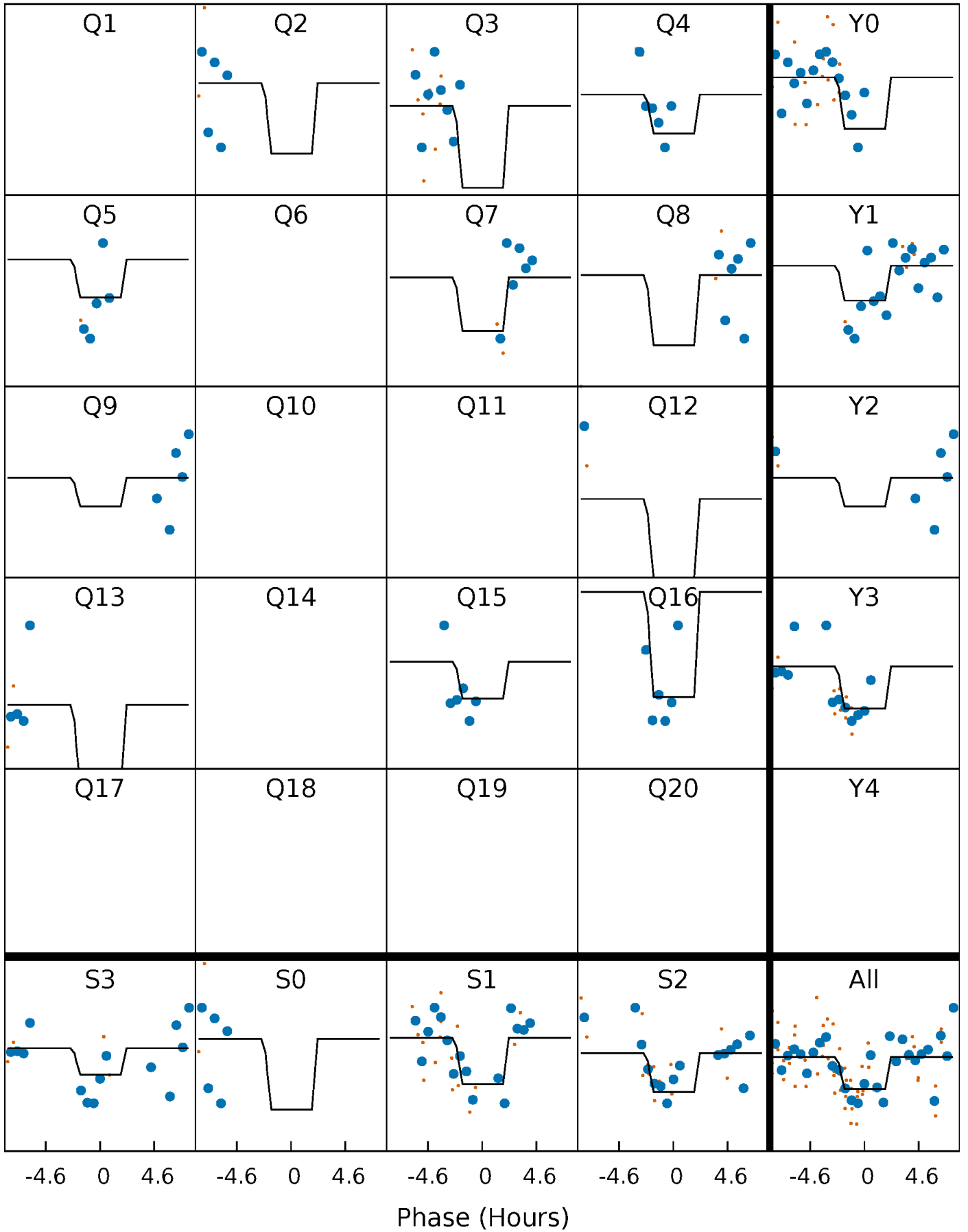
# DV Quarter-Phased Transit Curves

TCE 005888069-04   P= 53.290743 Days    $T_0=173.864957$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005888069-04   P= 53.291660 Days    $T_0=173.893057$  (BKJD)

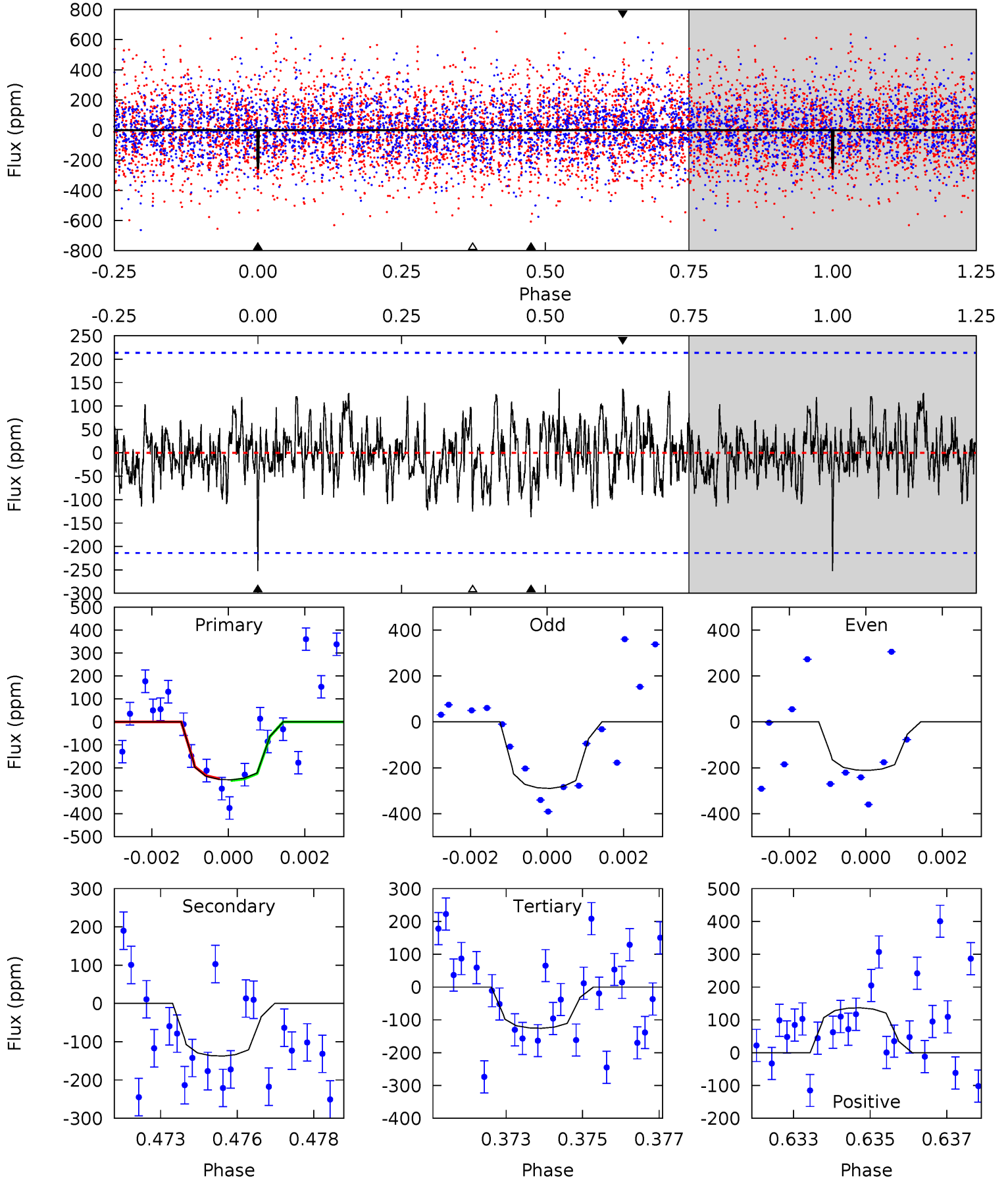




# DV Model-Shift Uniqueness Test

005888069-04, P = 53.290743 Days, E = 120.574214 Days

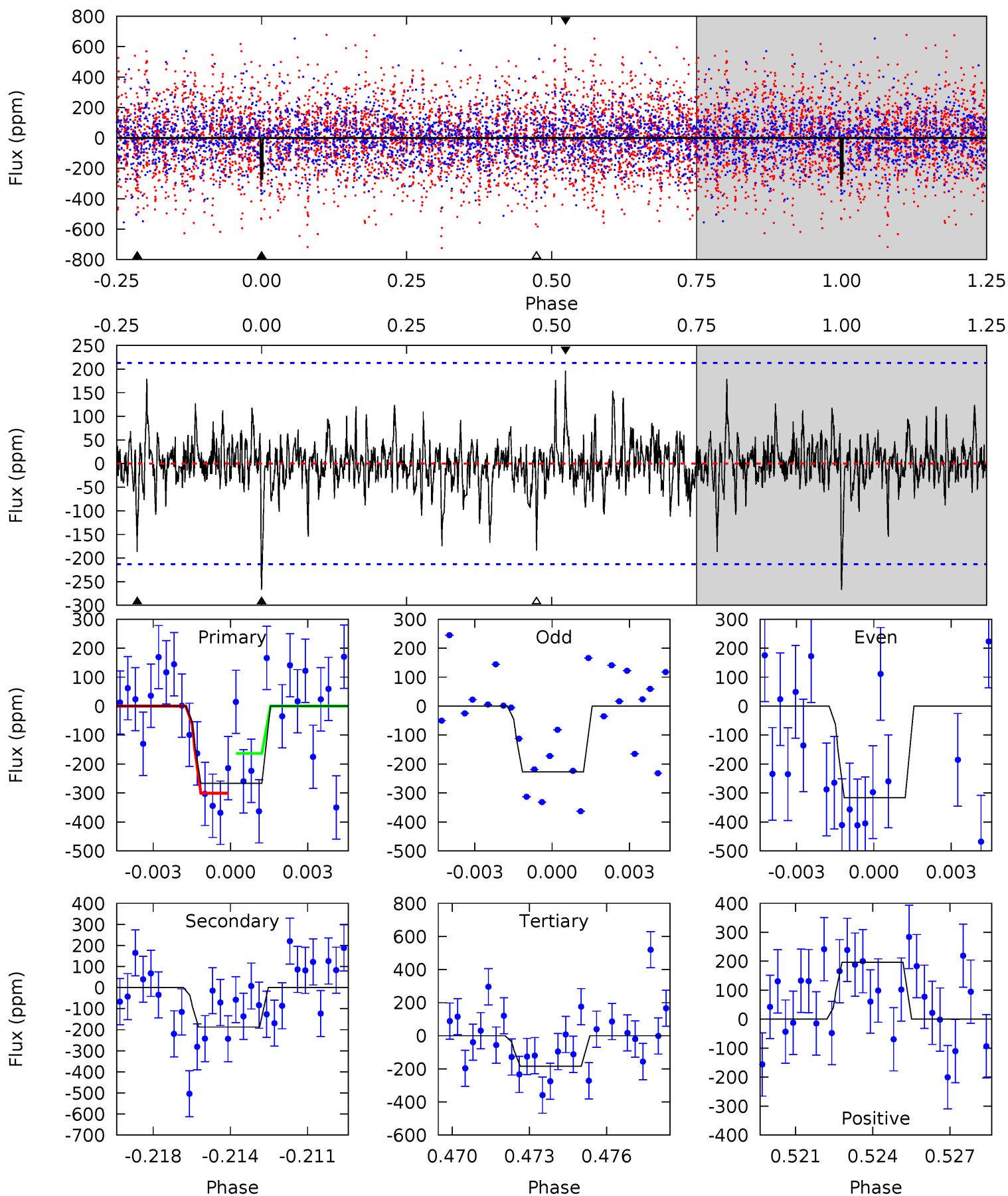
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.25	3.41	3.11	3.39	5.30	3.04	1.18	3.14	2.87	0.30	0.02	0.99	0.97	0.35	0.09



# Alt Model-Shift Uniqueness Test

005888069-04, P = 53.291660 Days, E = 120.601397 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.55	4.59	4.52	4.82	5.23	2.93	1.10	2.03	1.74	0.07	-0.22	1.09	0.92	0.42	1.44



### Stellar Parameters For KIC 005888069

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7325^{+73}_{-95}$	$4.216^{+0.018}_{-0.162}$	$0.360^{+0.050}_{-0.150}$	$1.677^{+0.399}_{-0.070}$	$1.687^{+0.139}_{-0.075}$	$0.503^{+0.035}_{-0.227}$
	+1%/-1%	+0%/-4%	+14%/-42%	+24%/-4%	+8%/-4%	+7%/-45%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005888069-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-137 \pm 40$	$5.92^{+6.41}_{-4.09}$	$1035^{+58}_{-25}$	$4623^{+3521}_{-1101}$	$233^{+1981}_{-182}$
Alt.	$-187 \pm 41$	$6.37^{+6.35}_{-4.42}$	$1036^{+56}_{-26}$	$4778^{+3947}_{-1053}$	$277^{+2787}_{-208}$

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

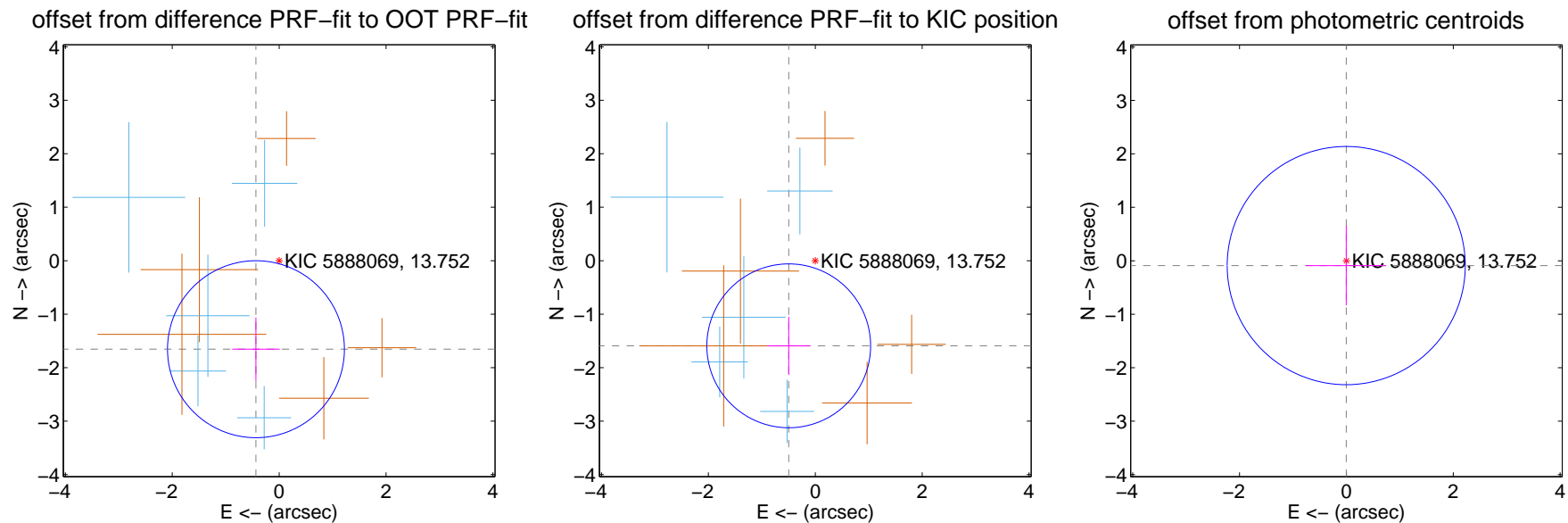
## DV Centroid Data

Supplemental centroid analysis for 005888069-04. Kepler magnitude: 13.75. Transit SNR 10.53

There are 5 quarters with good PRF difference image offsets

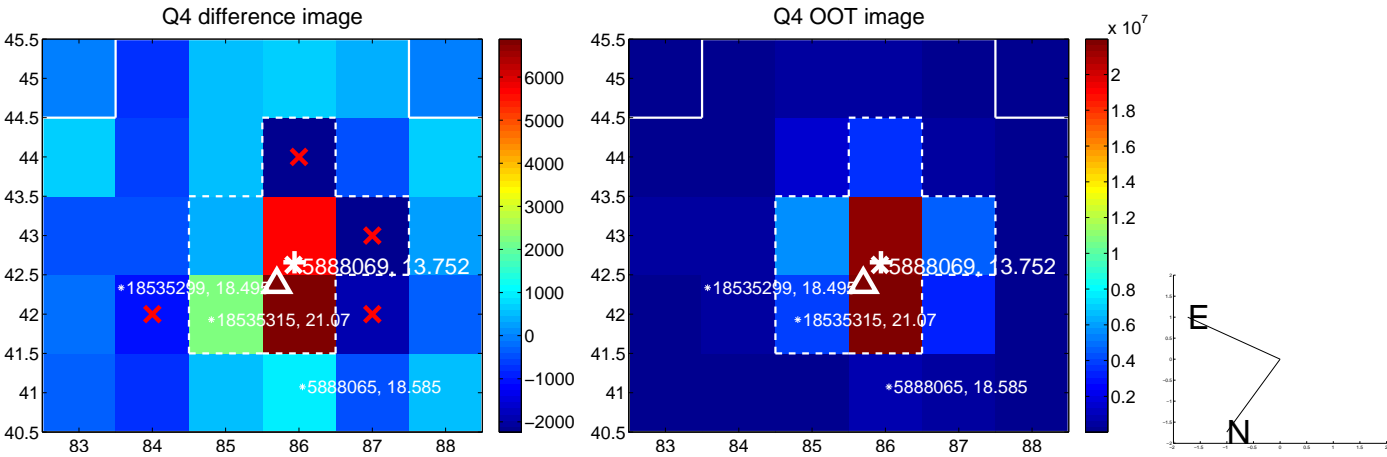
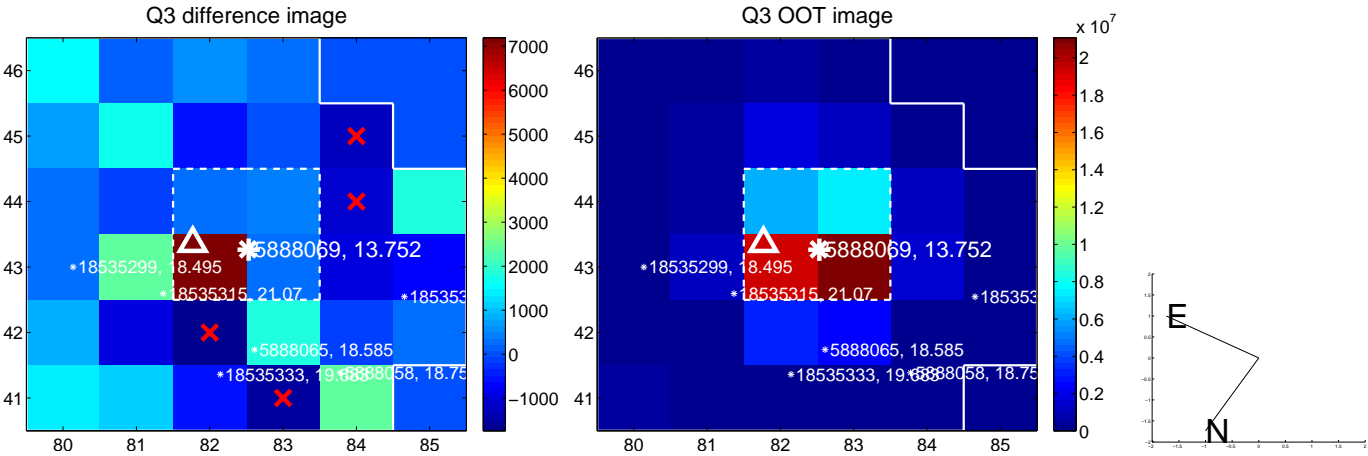
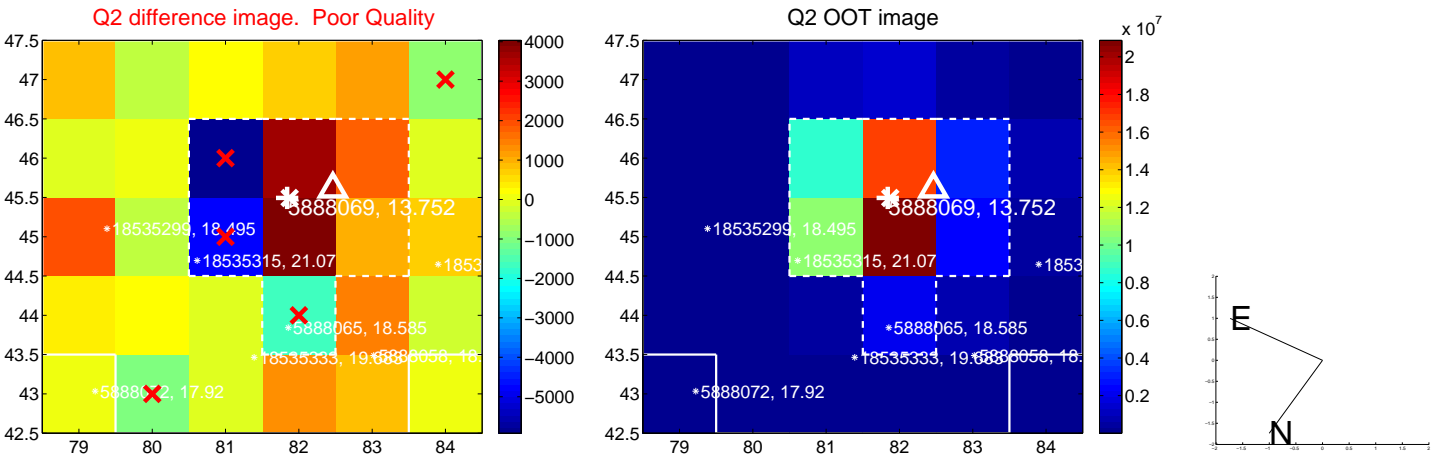
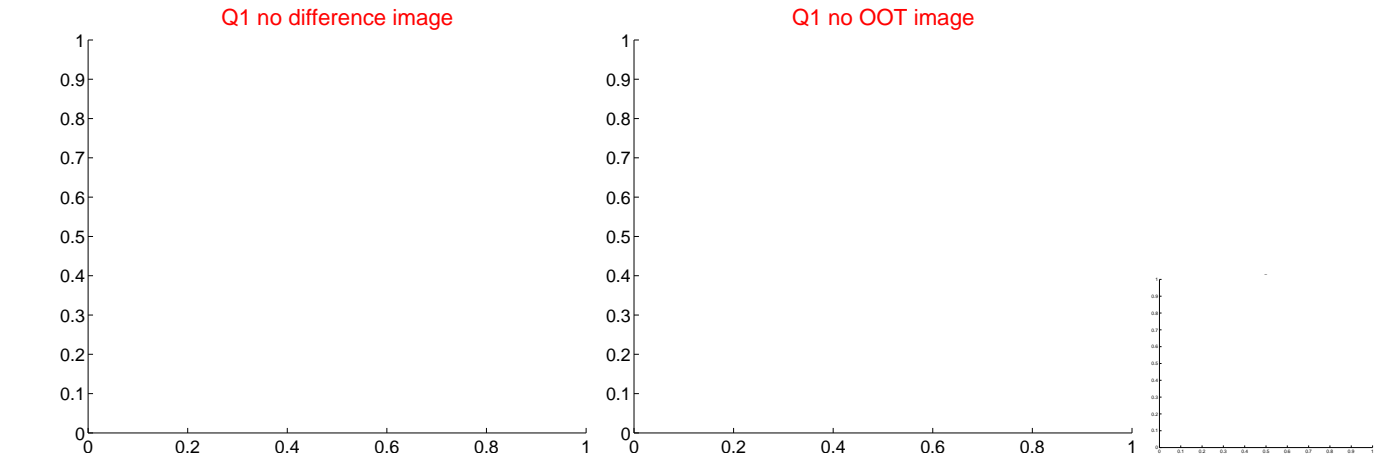
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.711 \pm 0.552$	<b>3.10</b>	$0.434 \pm 0.444$	$-1.655 \pm 0.593$
PRF-fit source offset from KIC position	$1.667 \pm 0.511$	<b>3.26</b>	$0.497 \pm 0.407$	$-1.591 \pm 0.543$
photometric centroid source offset	$0.09 \pm 0.74$	0.12	$0.00 \pm 0.75$	$-0.09 \pm 0.74$

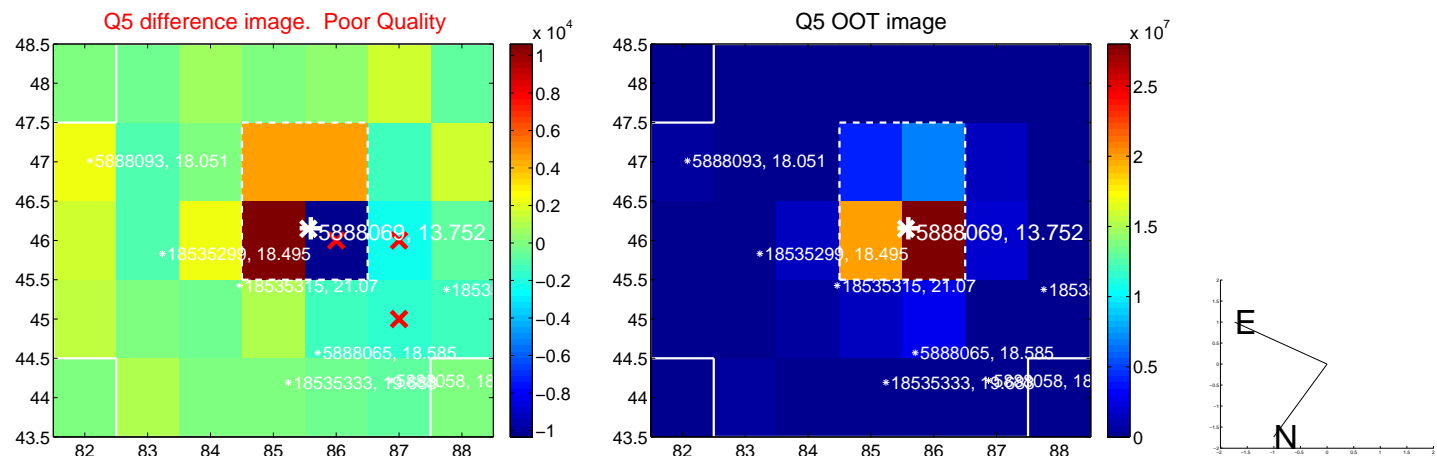


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

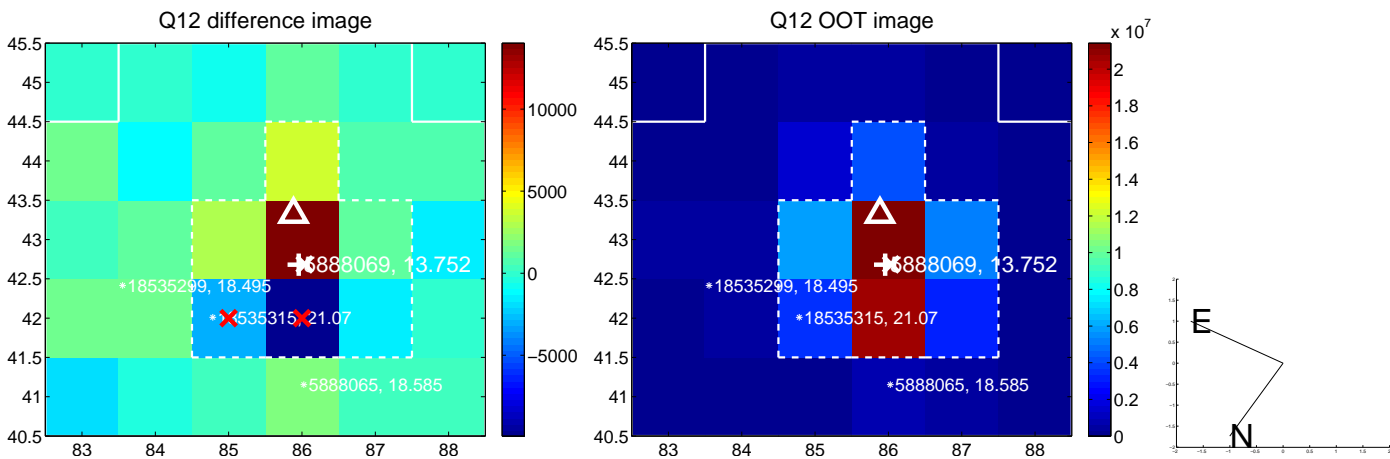
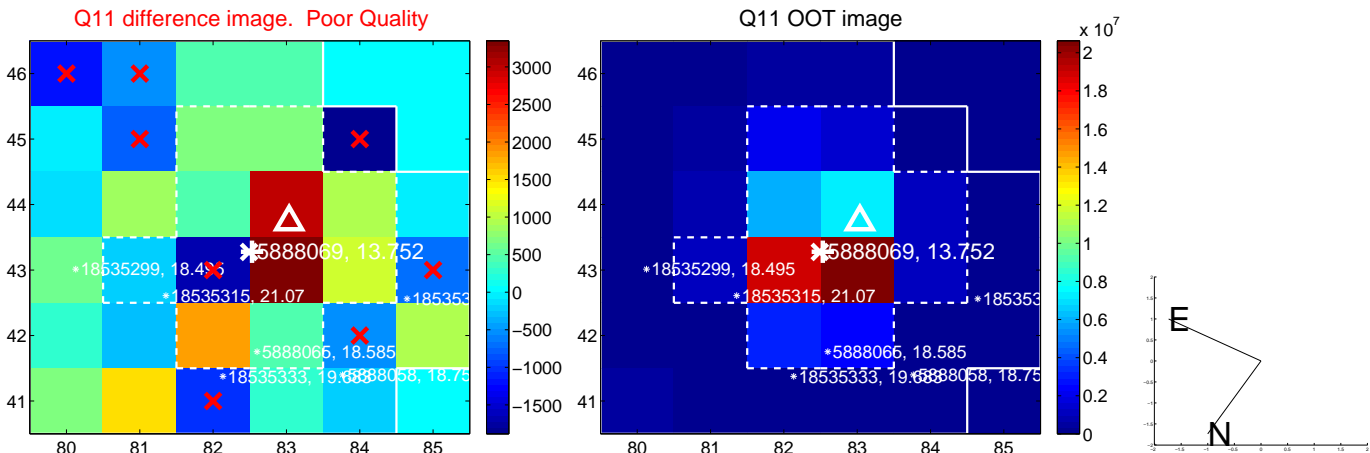
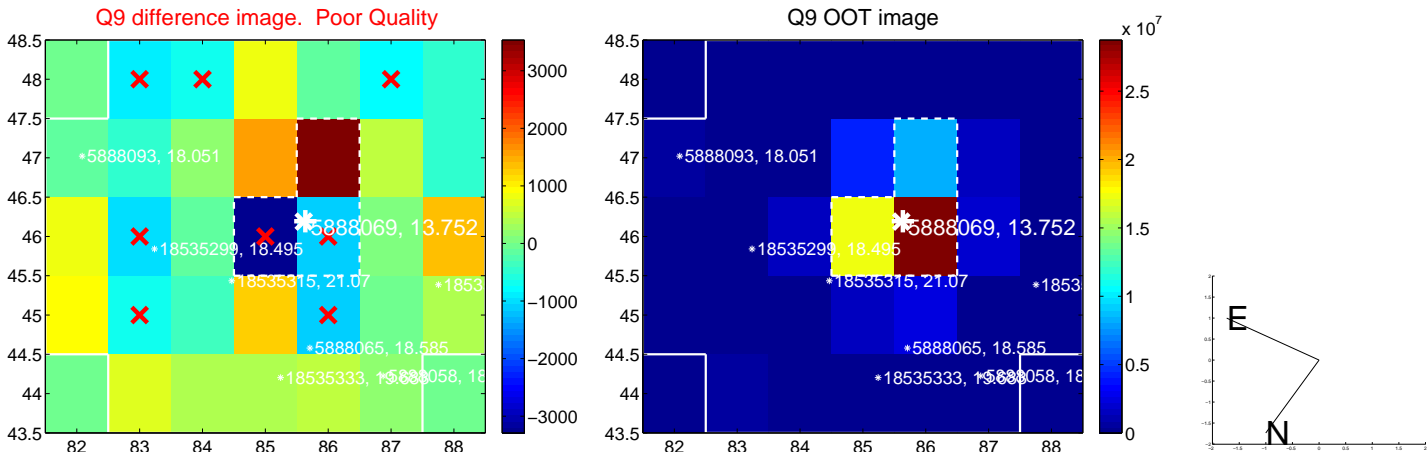


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

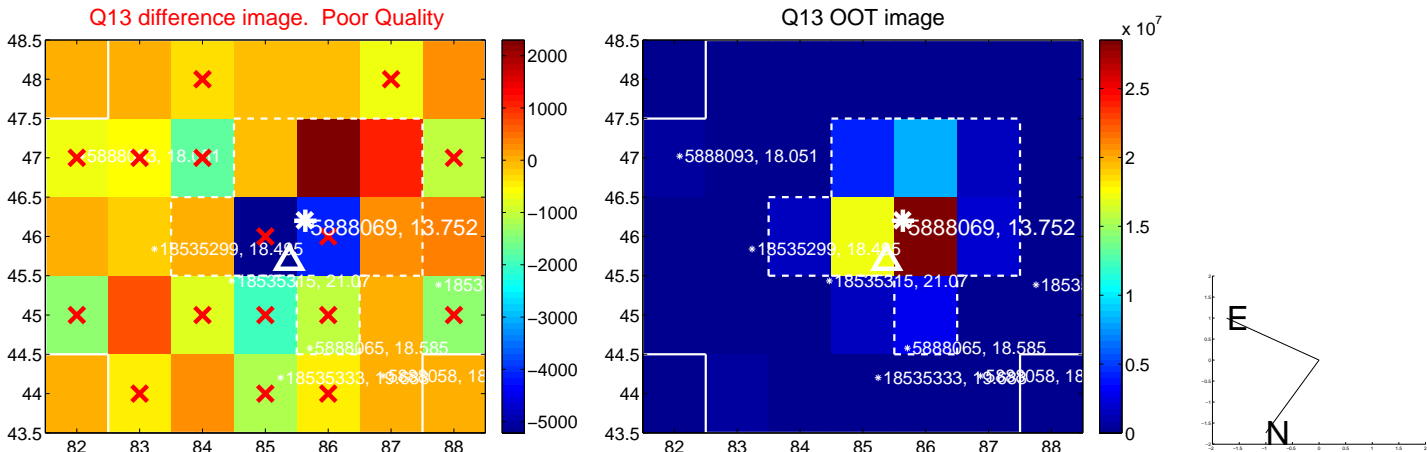




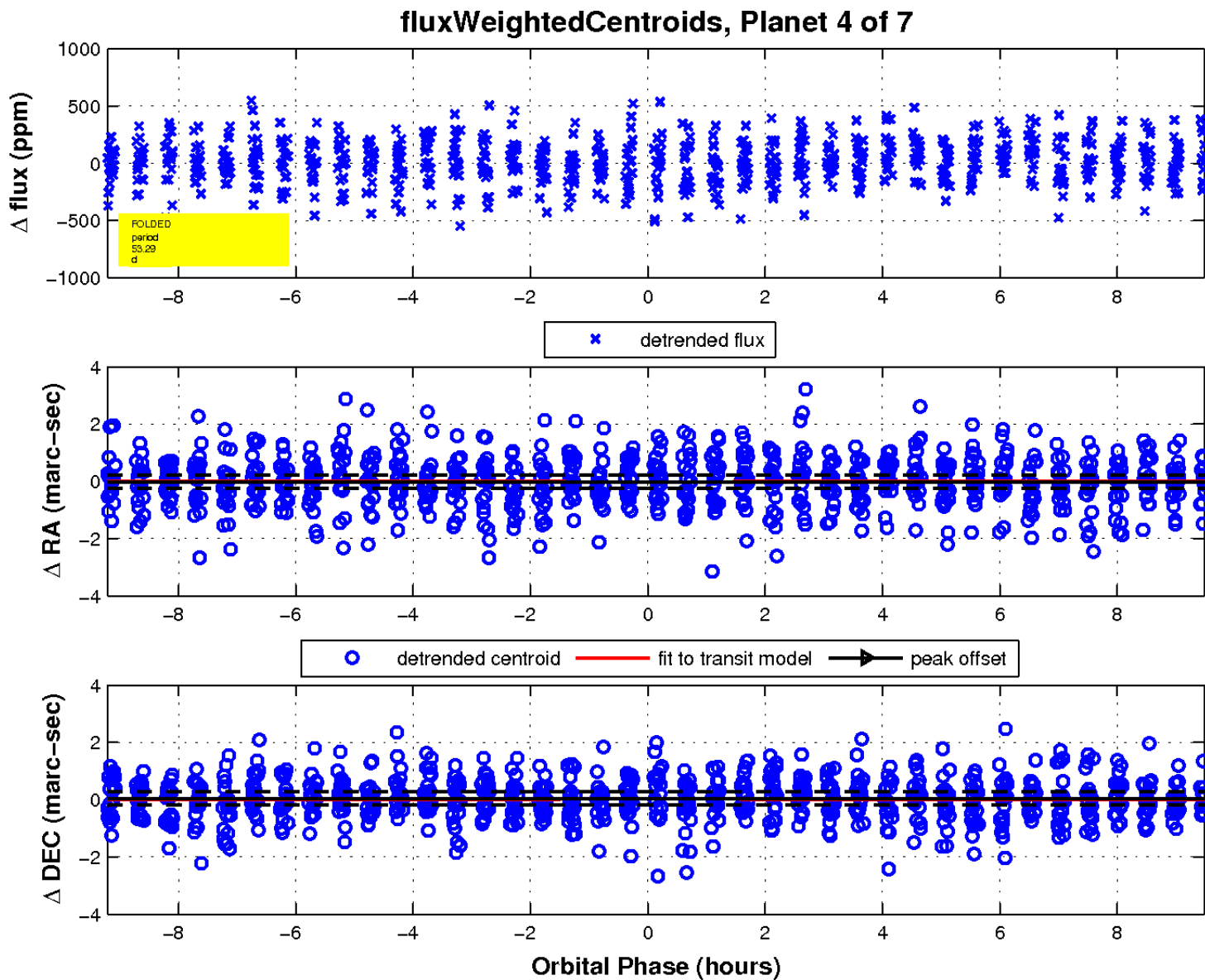
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



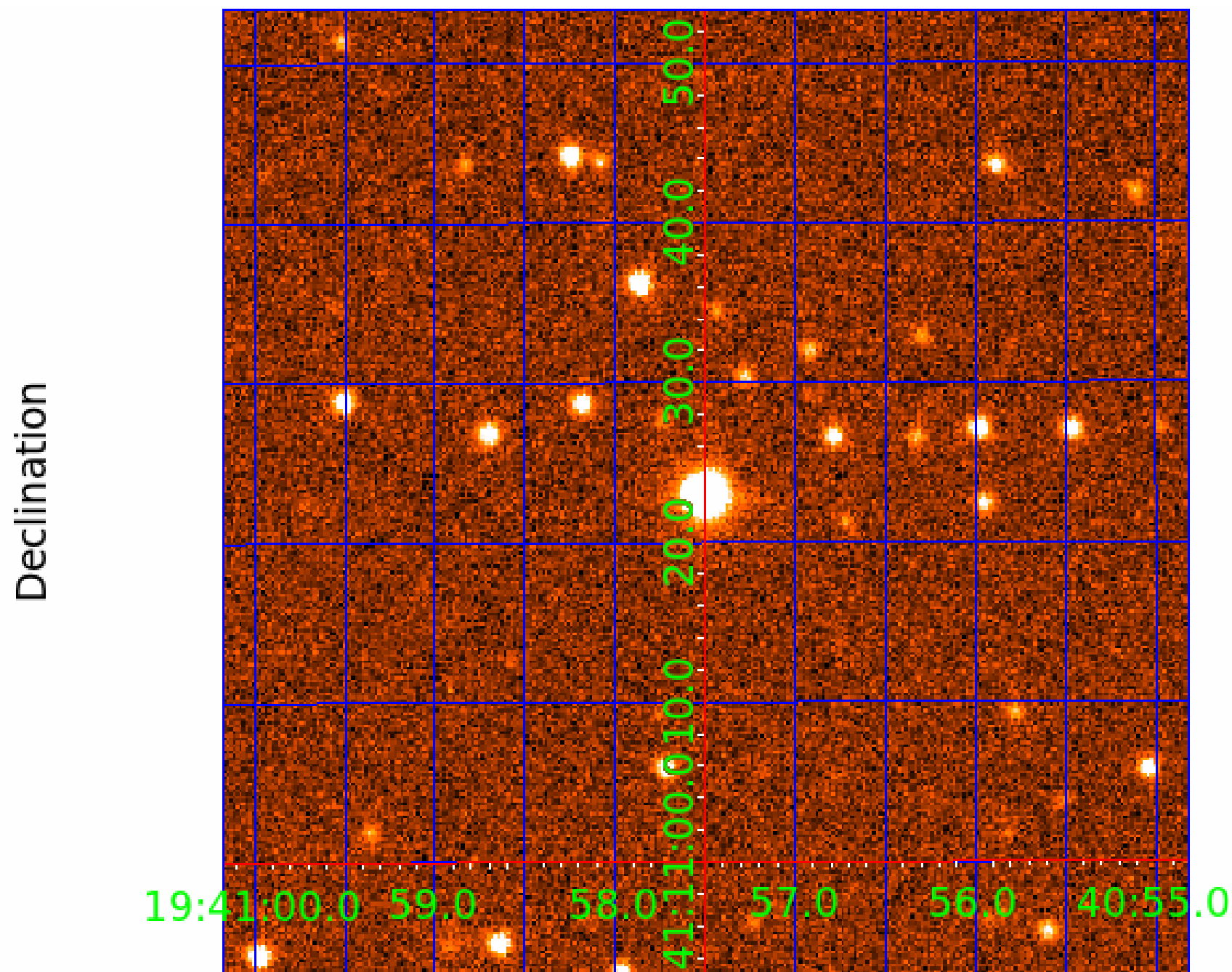
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 005888069

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005888069-01	OBS	No	2.623478	132.555154	44.5	7.967	12.1	11.8	1.68	7325	1.29	3692.41
005888069-02	OBS	No	0.874365	132.075953	40.9	5.721	10.8	13.7	1.68	7325	1.25	15979.26
005888069-03	OBS	No	37.059135	138.971343	315.3	4.067	9.7	9.7	1.68	7325	3.33	108.13
005888069-04	OBS	No	53.290743	173.864956	297.0	3.166	9.7	10.5	1.68	7325	2.94	66.62
005888069-05	OBS	No	64.997876	193.320683	181.0	7.070	8.6	6.1	1.68	7325	2.61	51.12
005888069-06	OBS	No	33.114287	163.250495	313.3	2.198	8.4	9.4	1.68	7325	3.34	125.64
005888069-07	OBS	No	41.030170	137.094447	238.6	4.040	8.0	7.5	1.68	7325	2.88	94.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005888069-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005888069-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
005888069-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005888069-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005888069-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

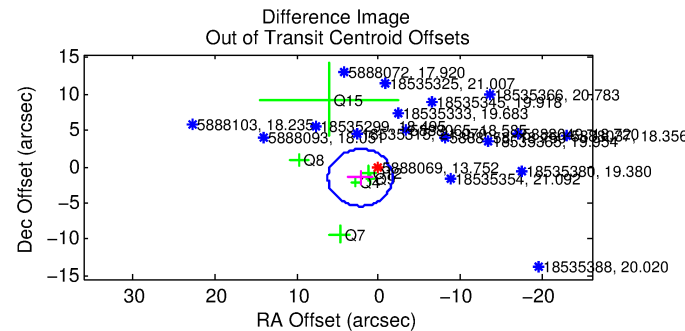
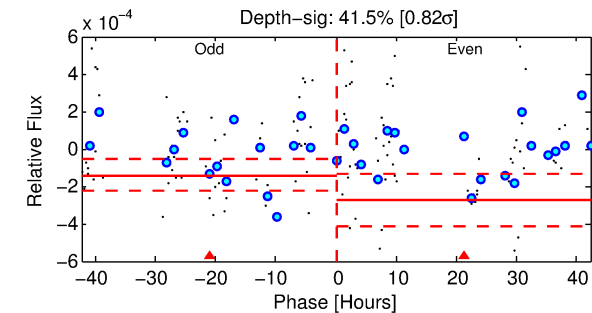
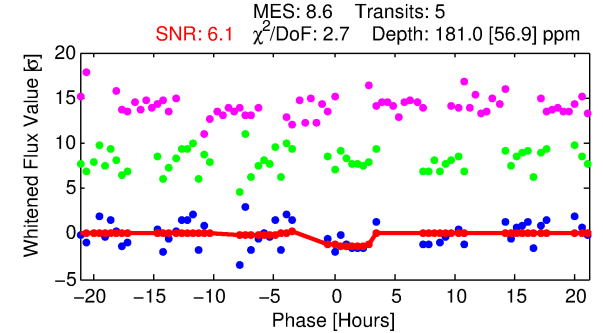
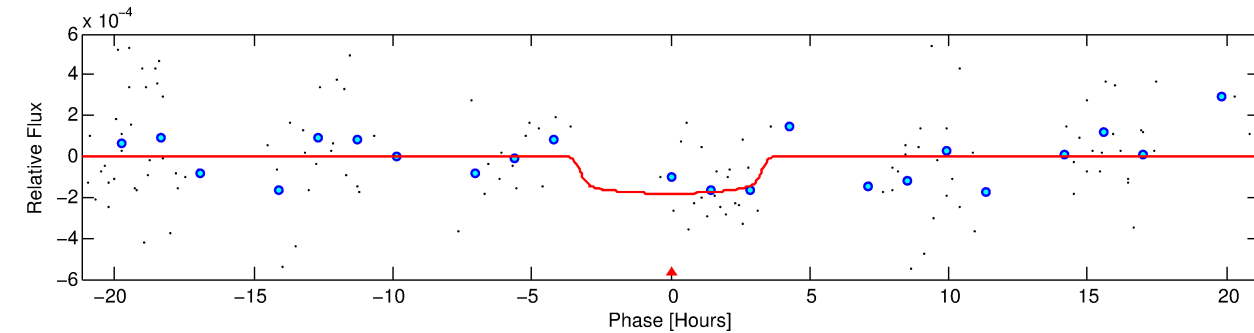
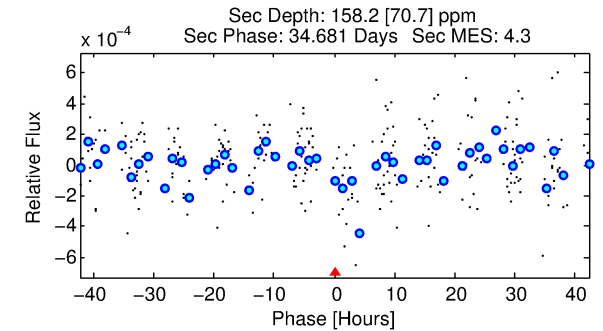
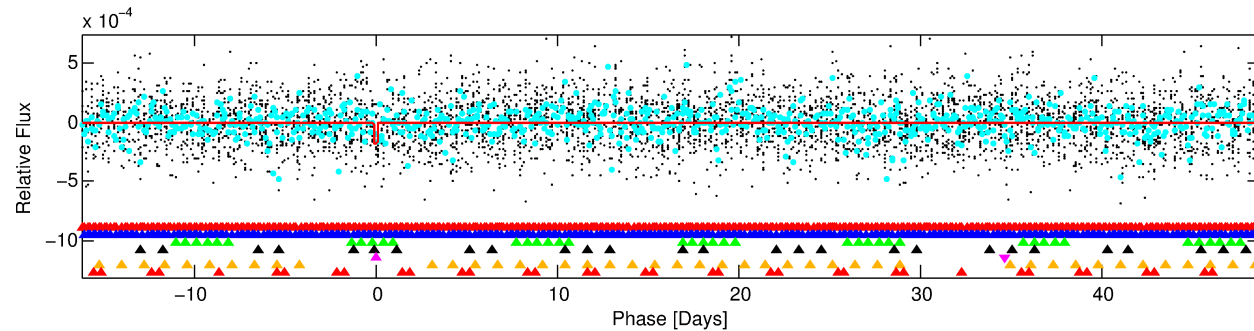
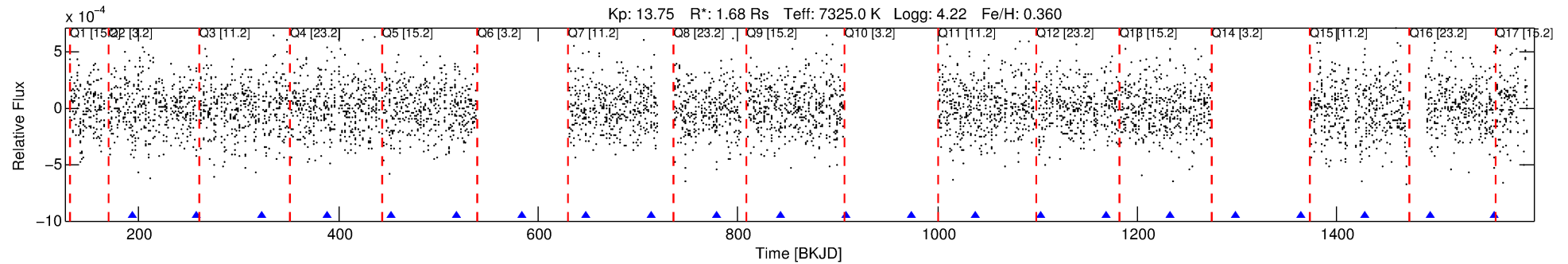
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005888069-05

No Significant Match Found

# DV One-Page Summary

KIC: 5888069 Candidate: 5 of 7 Period: 64.998 d



## DV Fit Results:

Period = 64.99788 [0.00987] d  
Epoch = 193.3207 [0.0899] BKJD  
Rp/R\* = 0.0142 [0.0105]  
a/R\* = 33.46 [156.86]  
b = 0.90 [1.06]  
Seff = 51.12 [15.31]  
Teq = 682 [51] K  
Rp = 2.61 [2.01] Re  
a = 0.3767 [0.0759] AU  
Ag = 1818.48 [2844.48] [0.64σ]  
Teffp = 6884 [2645] K [2.34σ]

## DV Diagnostic Results:

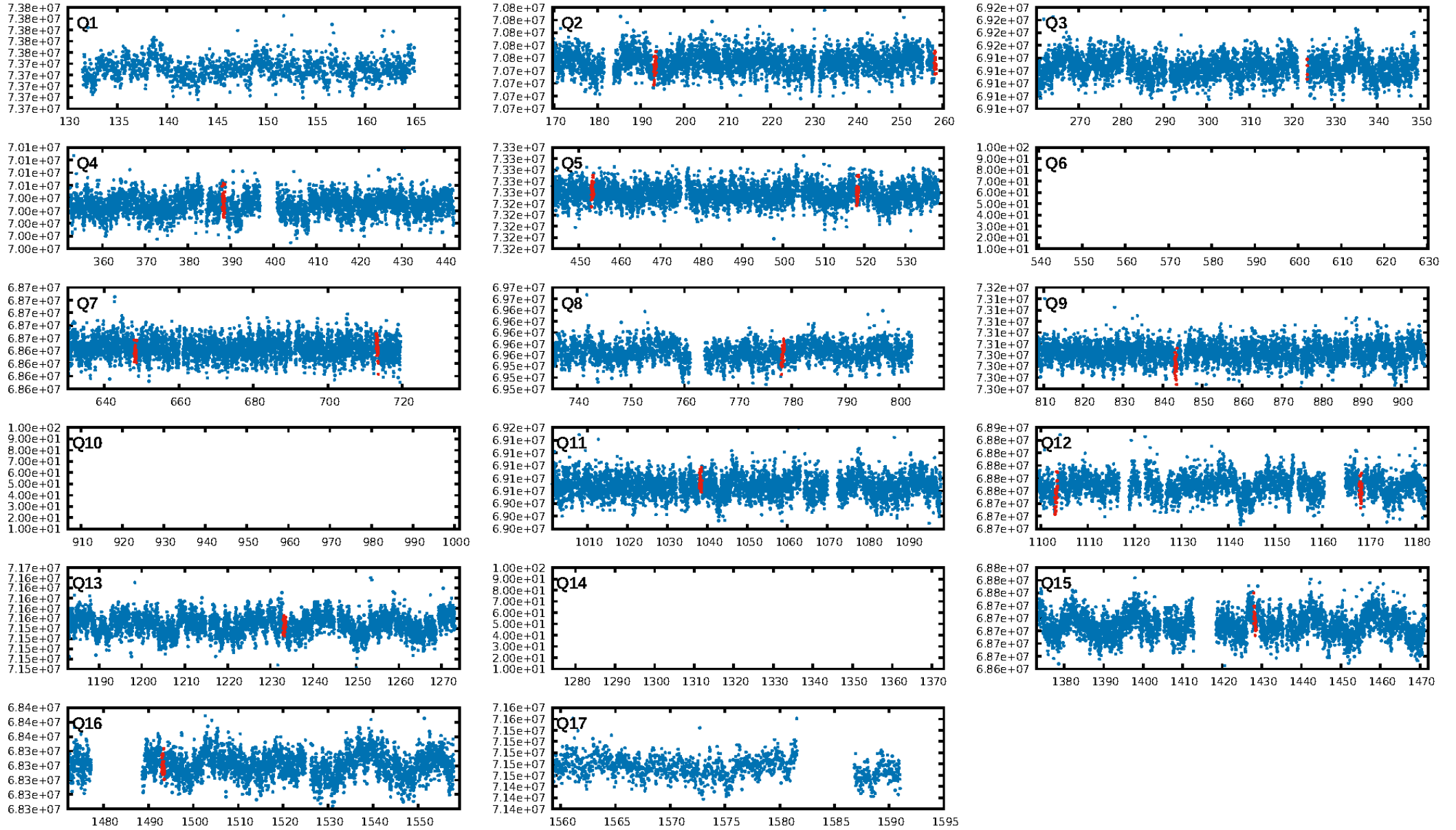
ShortPeriod-sig: 100.0% [36.27σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 4.8%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 1.87e-09**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -0.1962  
Centroid-sig: 1.1%  
Centroid-so: 2.146 arcsec [2.05σ]  
OotOffset-rm: 2.704 arcsec [2.07σ]  
KicOffset-rm: 2.737 arcsec [2.10σ]  
OotOffset-st: 0.2/3/1 [6]  
KicOffset-st: 0.2/3/1 [6]  
DiffImageQuality-fgm: 0.50 [3/6]  
DiffImageOverlap-fno: 0.00 [0/10]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:50:21 Z

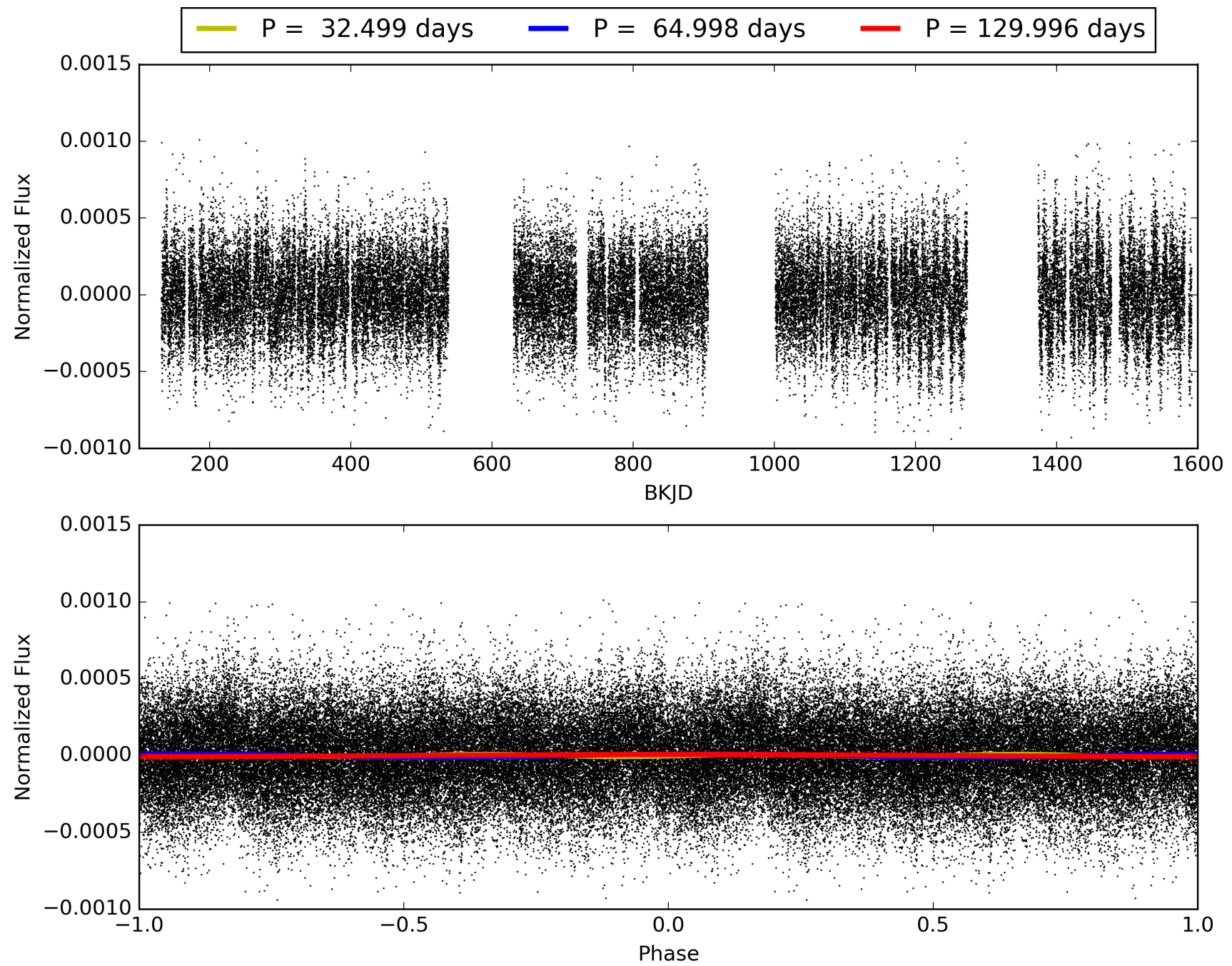
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 005888069-05, PDC Light Curves

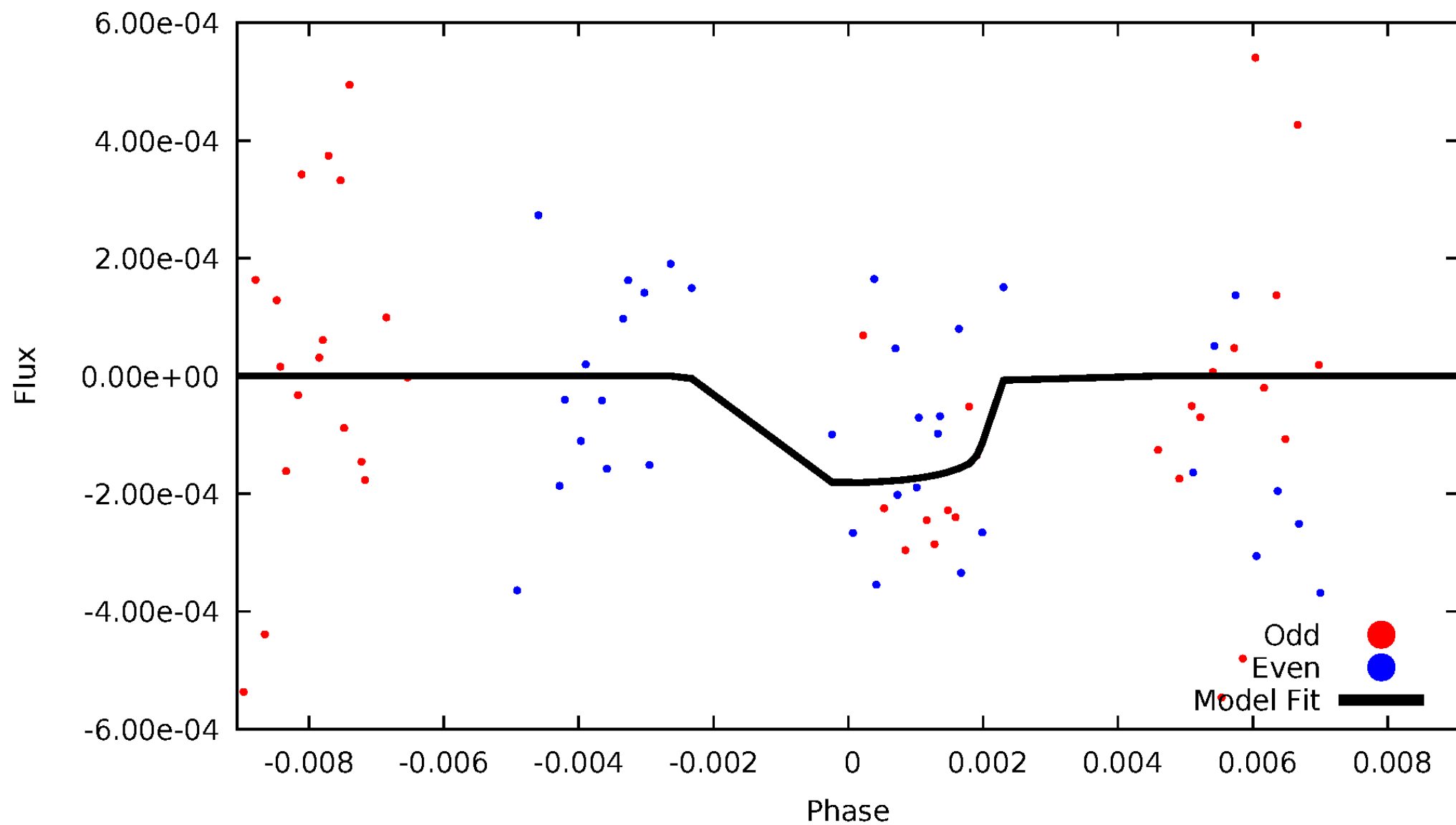


TCE 005888069-05



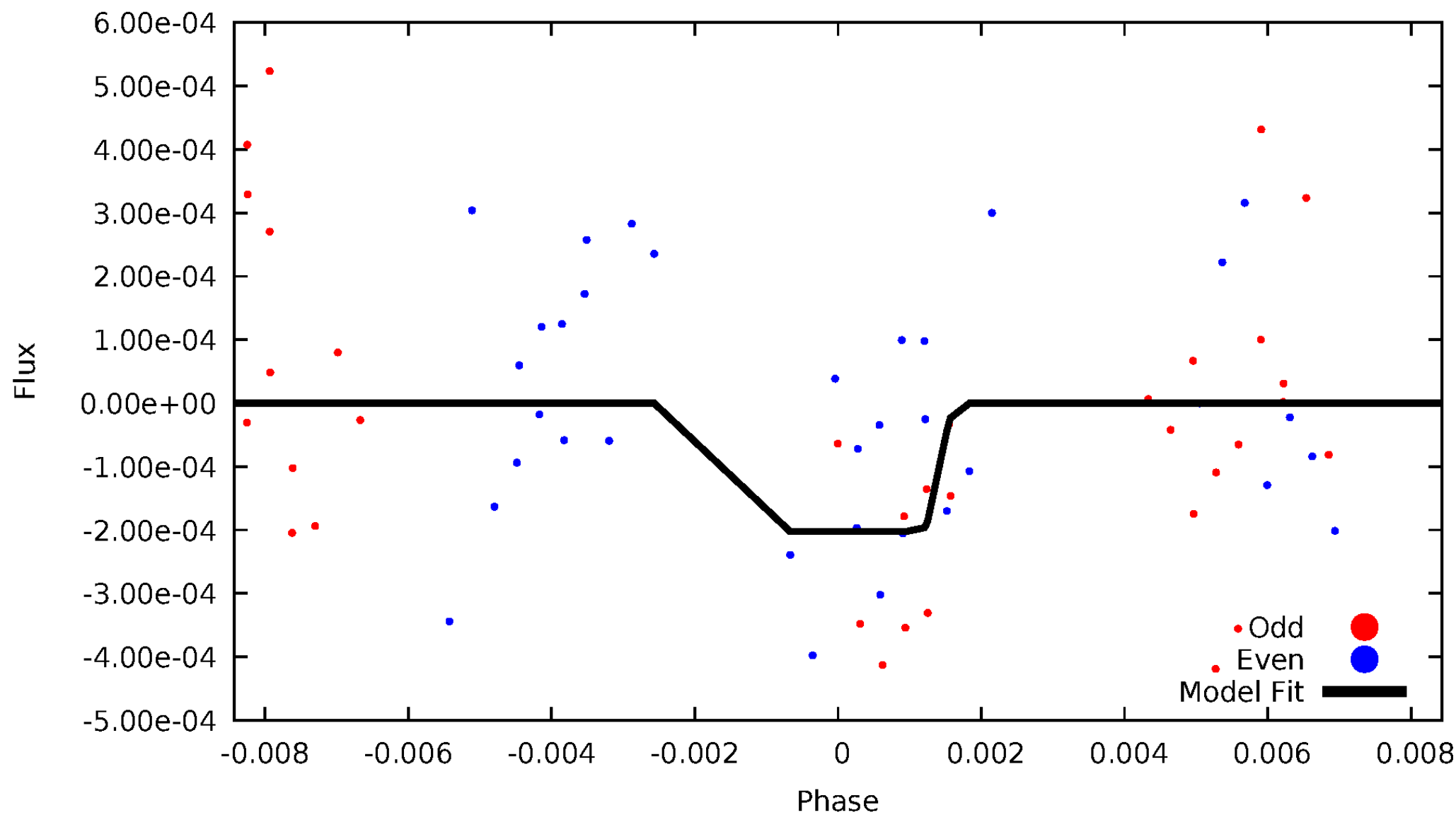
# DV Odd/Even

TCE 005888069-05



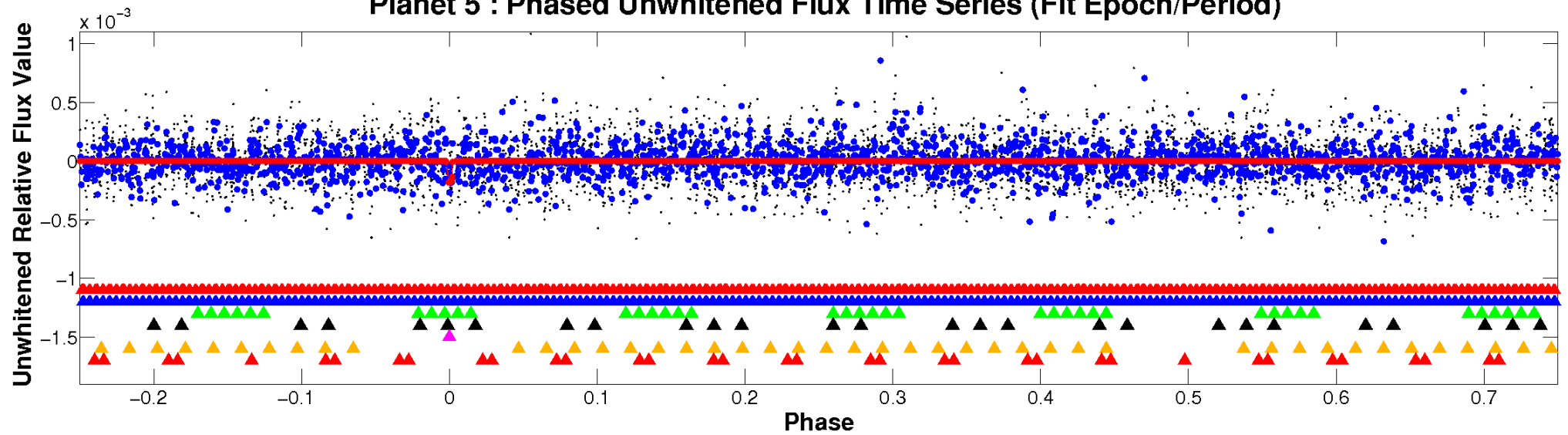
# ALT Odd/Even

TCE 005888069-05

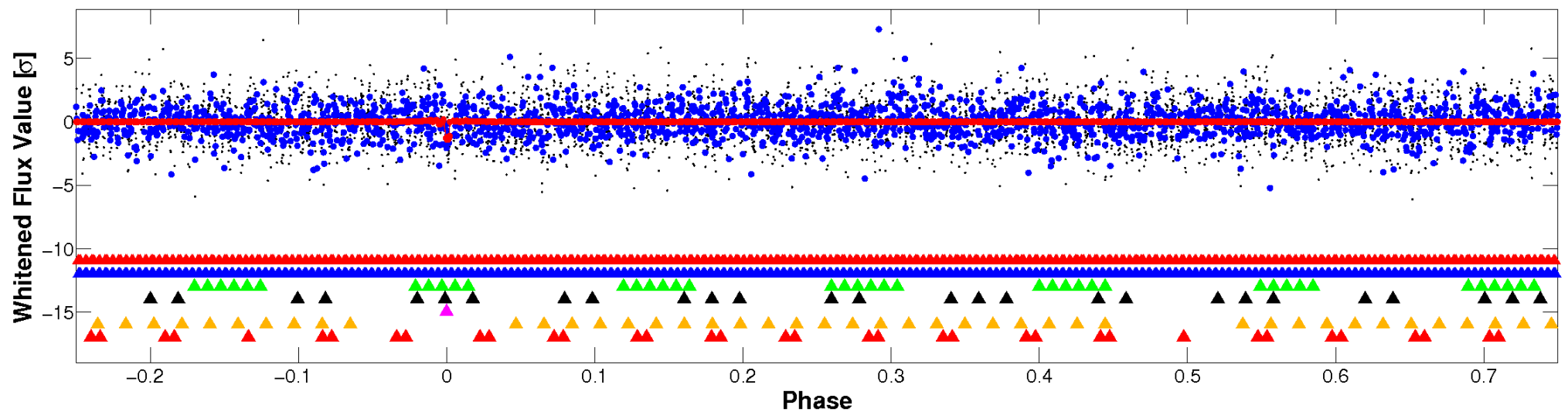


# Non-Whitened Vs. Whitened Light Curve

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



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



# PDC Quarter-Phased Transit Curves

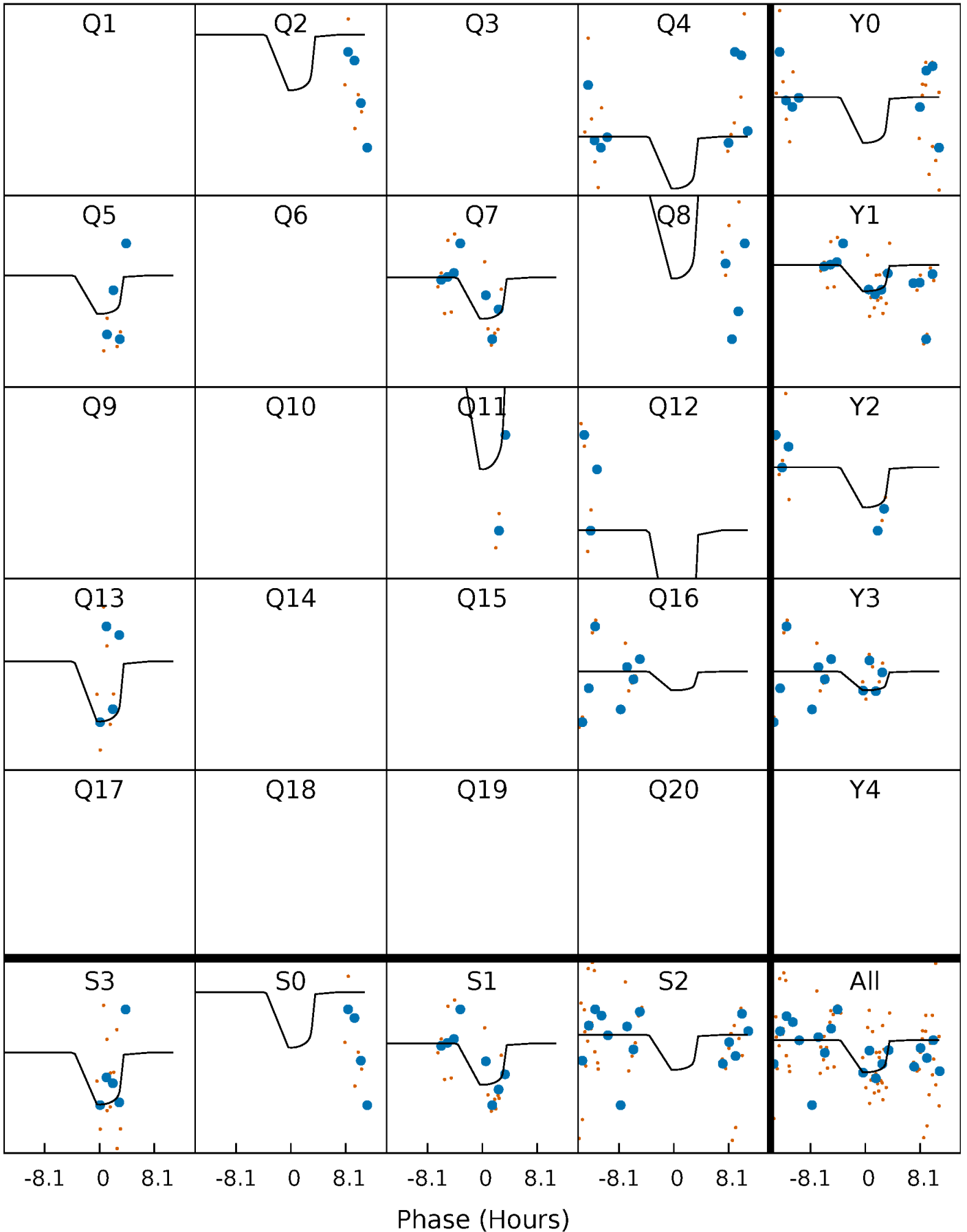
TCE 005888069-05     $P = 64.997876$  Days     $T_0 = 193.320683$  (BKJD)





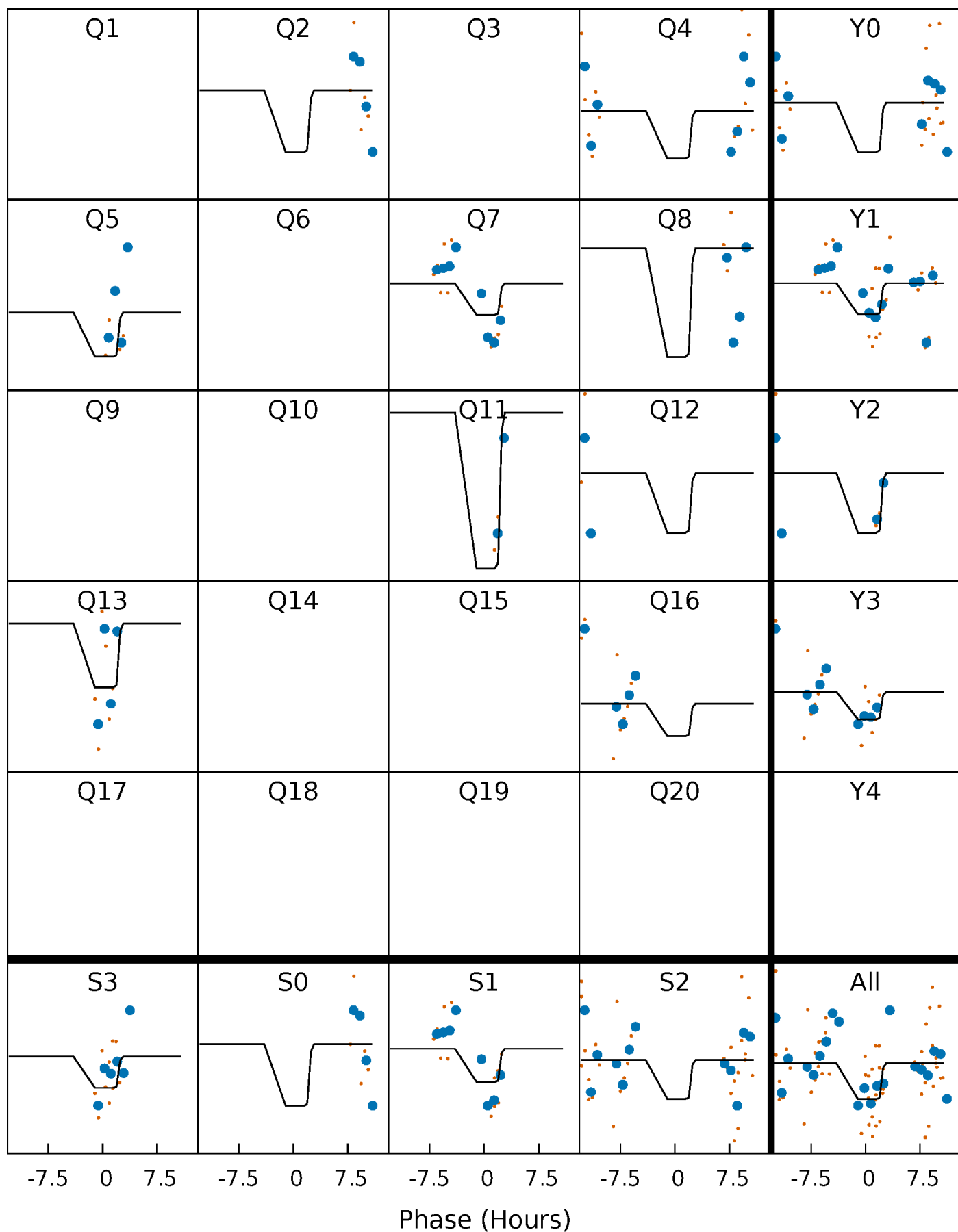
# DV Quarter-Phased Transit Curves

TCE 005888069-05     $P = 64.997876$  Days     $T_0 = 193.320683$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

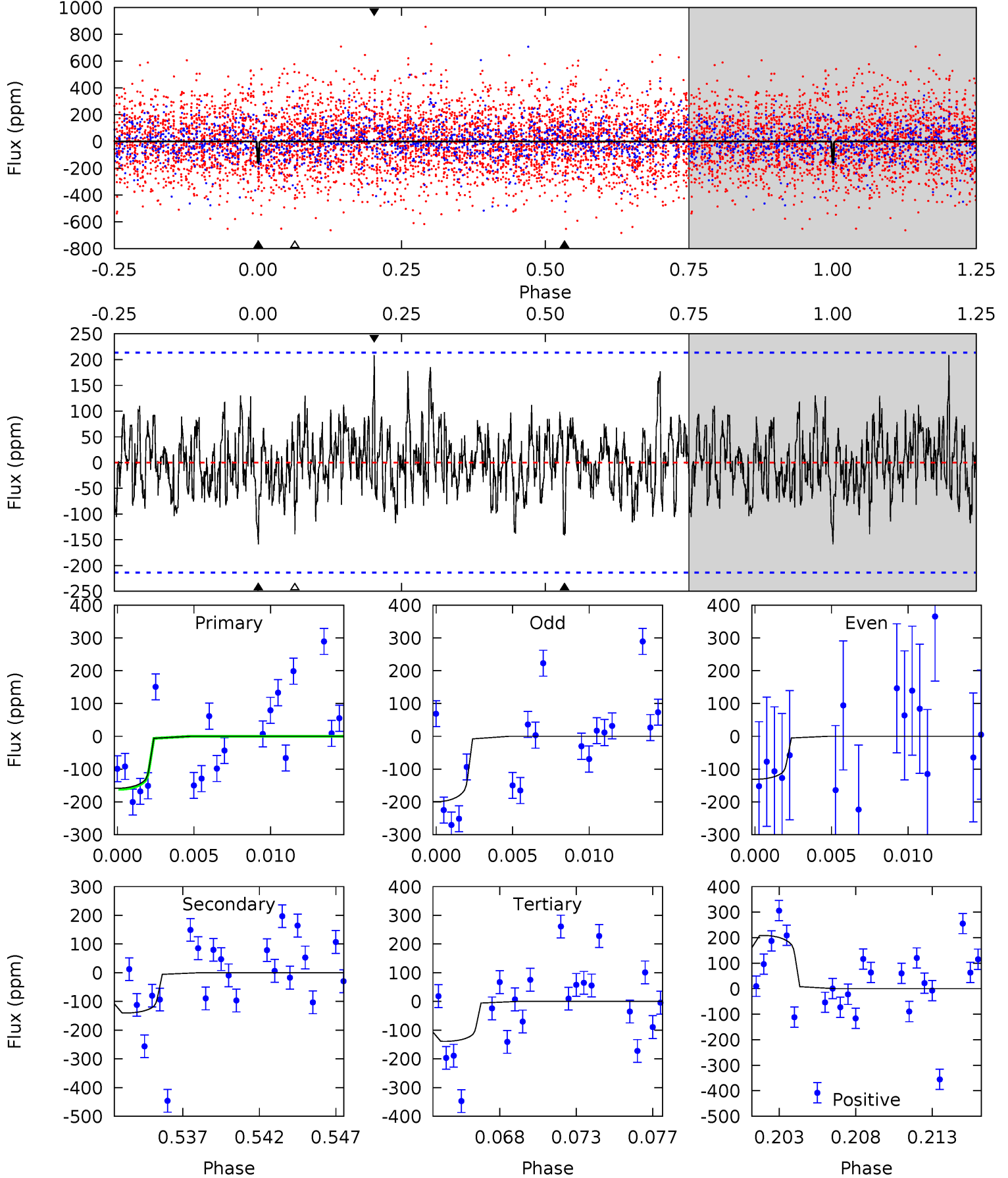
TCE 005888069-05 P= 64.999341 Days  $T_0=193.324797$  (BKJD)



# DV Model-Shift Uniqueness Test

005888069-05, P = 64.997876 Days, E = 128.322807 Days

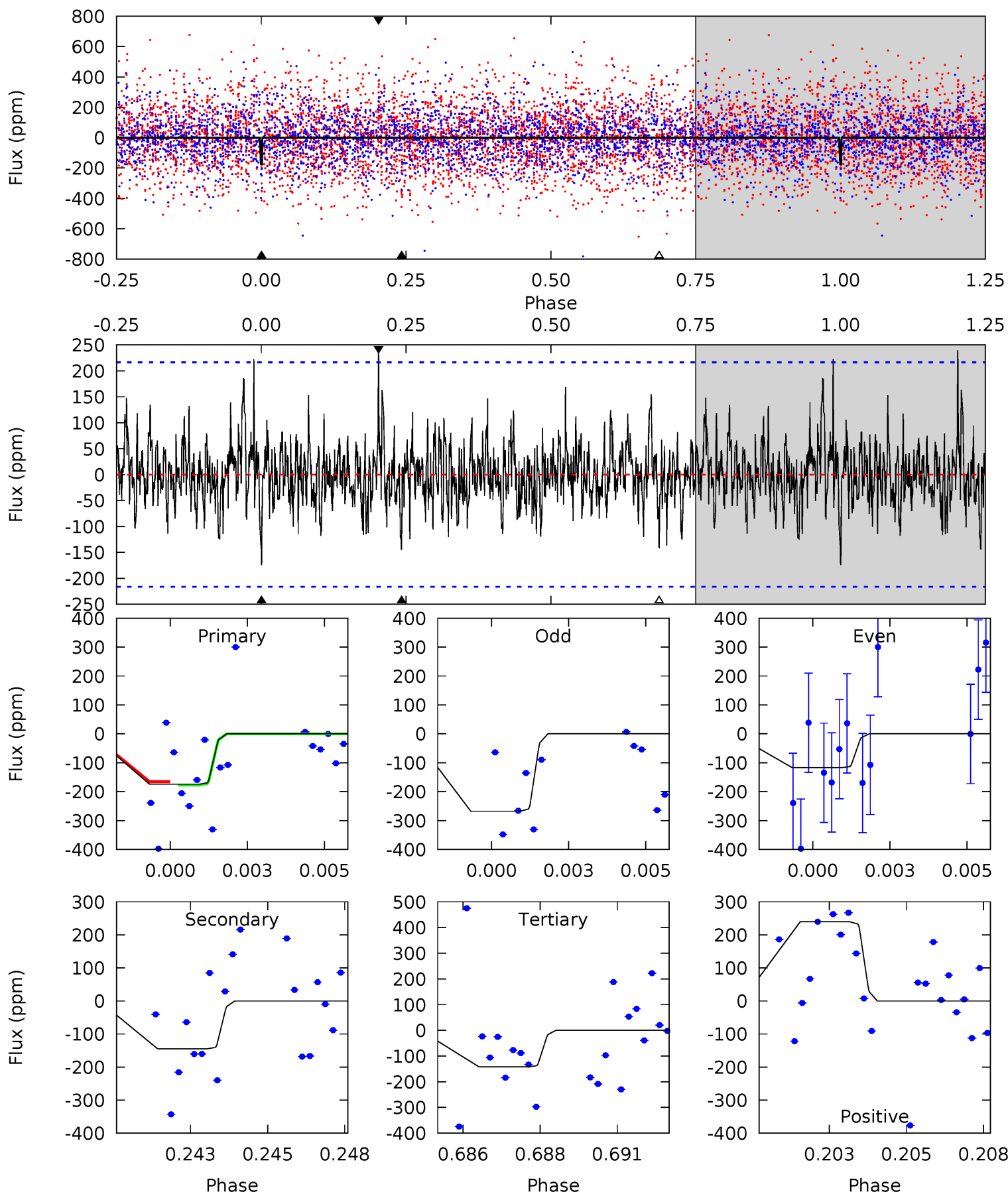
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.83	3.39	3.36	5.04	5.16	2.82	1.21	0.47	-1.21	0.02	-1.65	0.81	0.89	0.57	0.00



# Alt Model-Shift Uniqueness Test

005888069-05, P = 64.999341 Days, E = 128.325456 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.27	3.54	3.47	5.85	5.29	3.02	1.21	0.80	-1.59	0.07	-2.32	1.84	0.99	0.58	0.10



### Stellar Parameters For KIC 005888069

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7325^{+73}_{-95}$	$4.216^{+0.018}_{-0.162}$	$0.360^{+0.050}_{-0.150}$	$1.677^{+0.399}_{-0.070}$	$1.687^{+0.139}_{-0.075}$	$0.503^{+0.035}_{-0.227}$
	+1%/-1%	+0%/-4%	+14%/-42%	+24%/-4%	+8%/-4%	+7%/-45%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005888069-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-140 \pm 41$	$2.99^{+2.05}_{-1.59}$	$967^{+48}_{-24}$	$6295^{+3670}_{-1380}$	$1177^{+4454}_{-771}$
Alt.	$-145 \pm 41$	$2.89^{+1.86}_{-1.57}$	$968^{+49}_{-23}$	$6451^{+4426}_{-1384}$	$1353^{+5544}_{-891}$

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

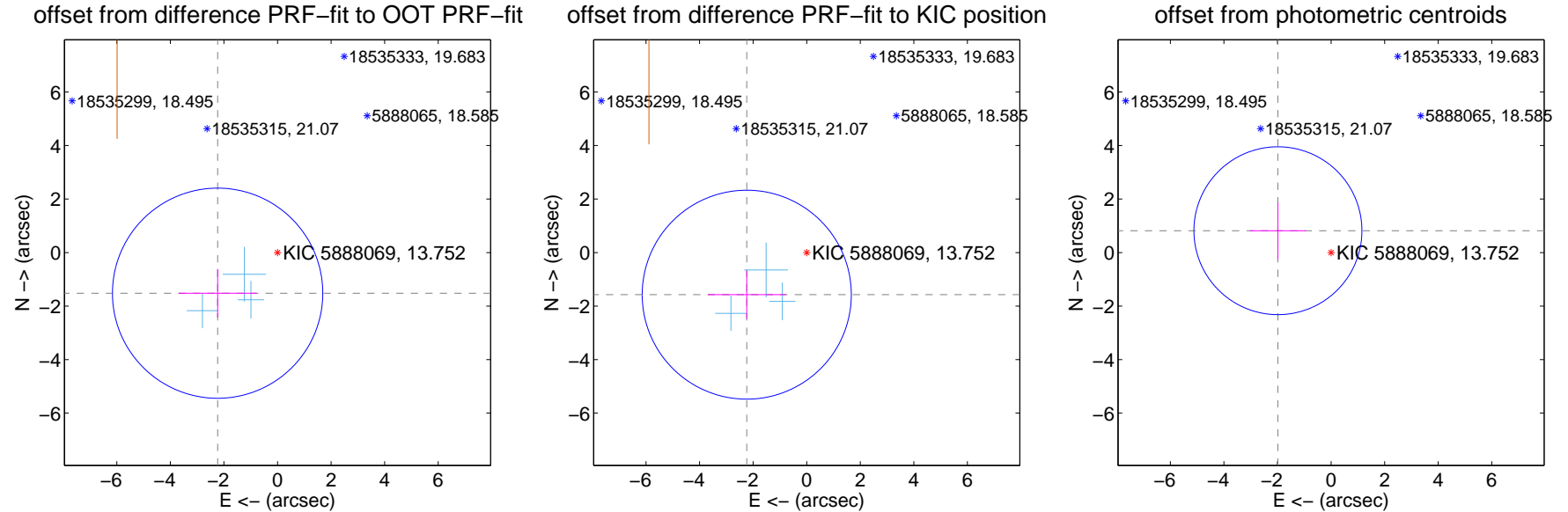
## DV Centroid Data

Supplemental centroid analysis for 005888069-05. Kepler magnitude: 13.75. Transit SNR 6.14

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.704 \pm 1.309$	2.07	$2.236 \pm 1.459$	$-1.519 \pm 0.904$
PRF-fit source offset from KIC position	$2.737 \pm 1.302$	2.10	$2.239 \pm 1.459$	$-1.574 \pm 0.904$
photometric centroid source offset	$2.15 \pm 1.05$	2.05	$1.98 \pm 1.04$	$0.82 \pm 1.06$



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

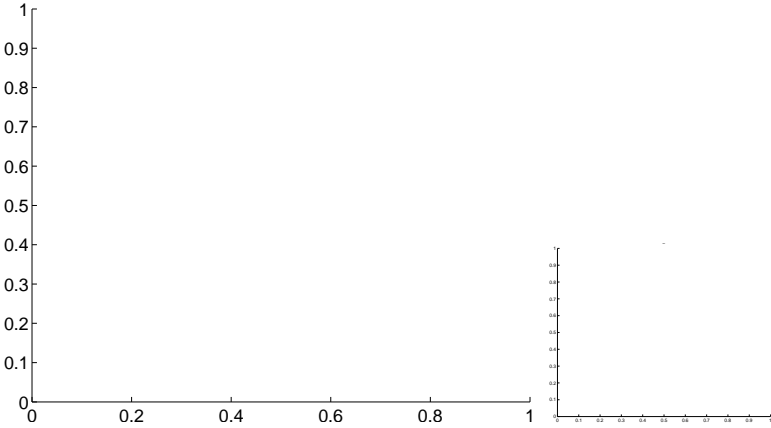


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

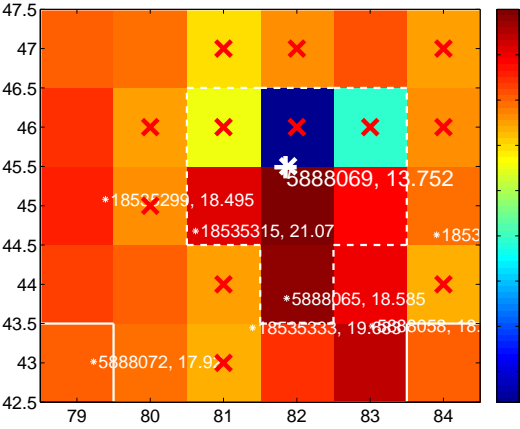
Q1 no difference image



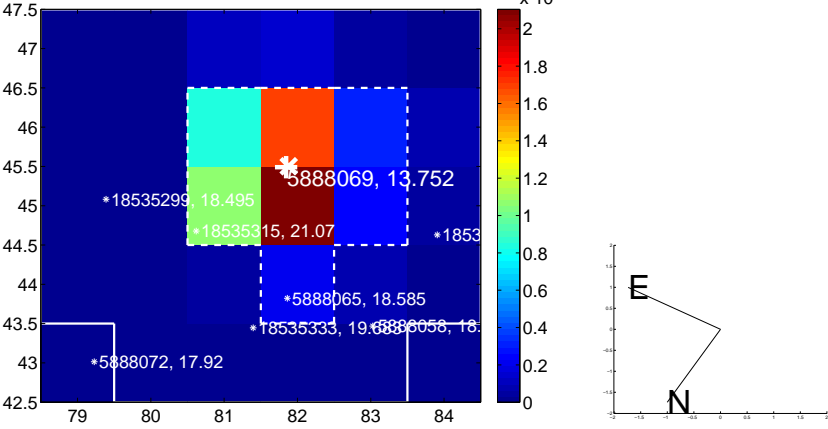
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



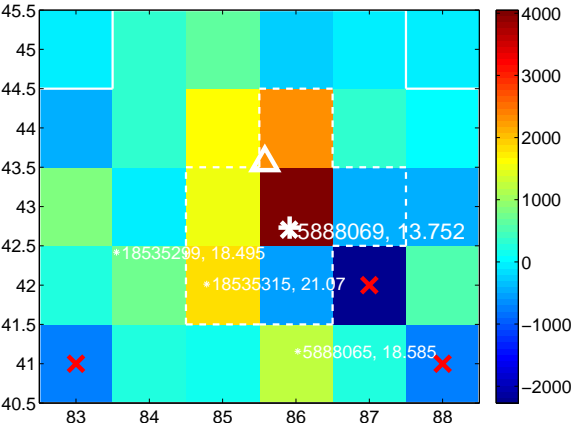
Q3 no difference image



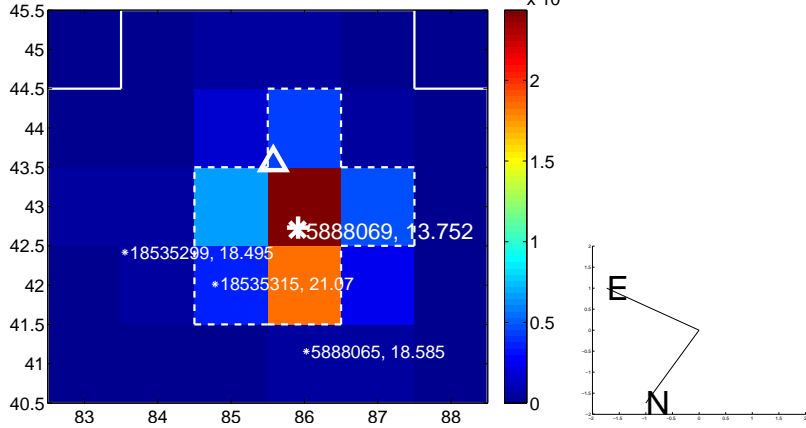
Q3 no OOT image



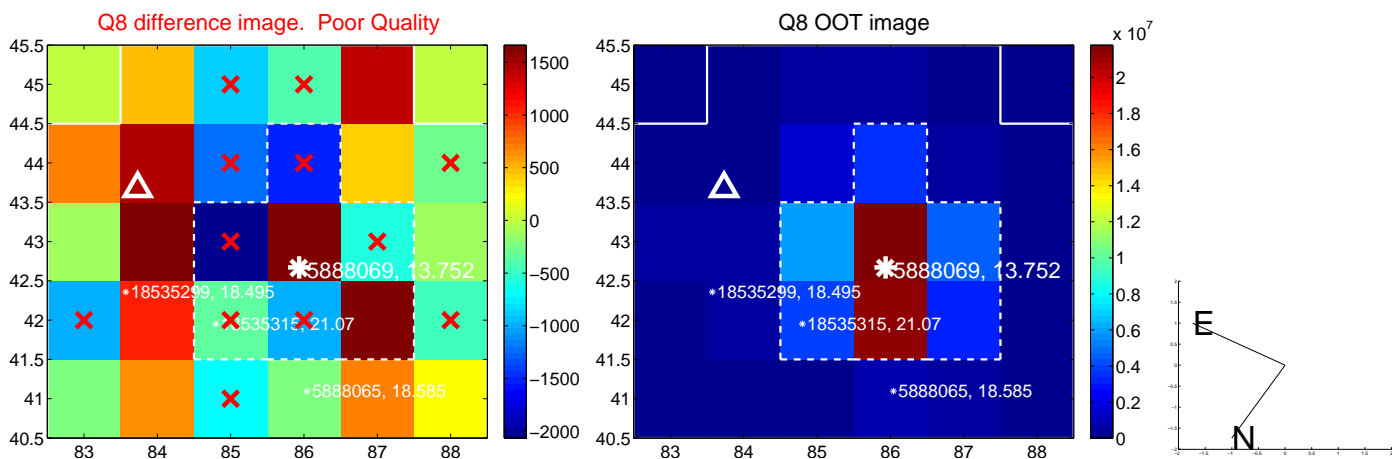
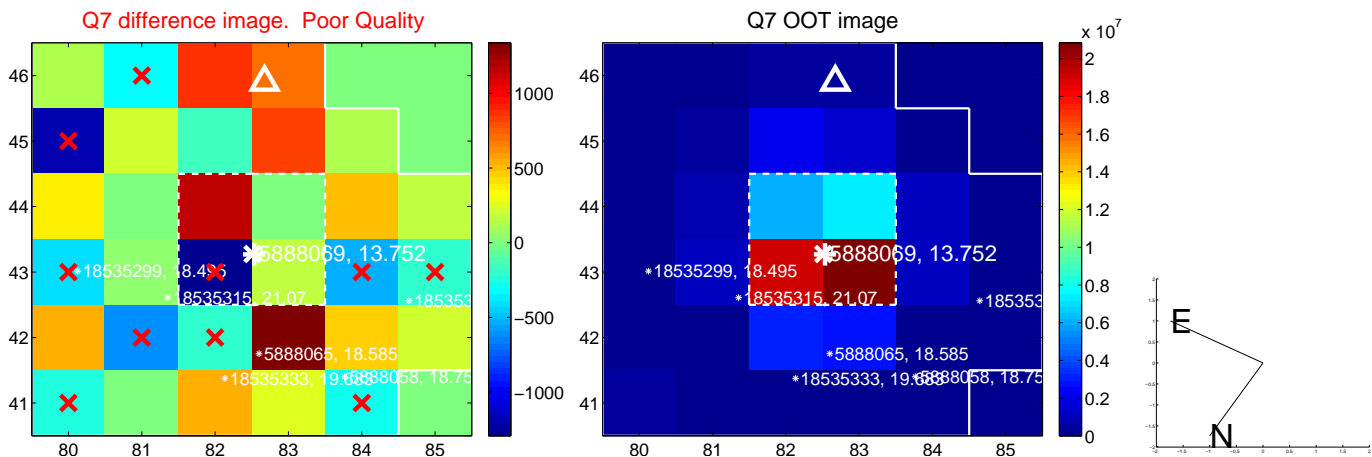
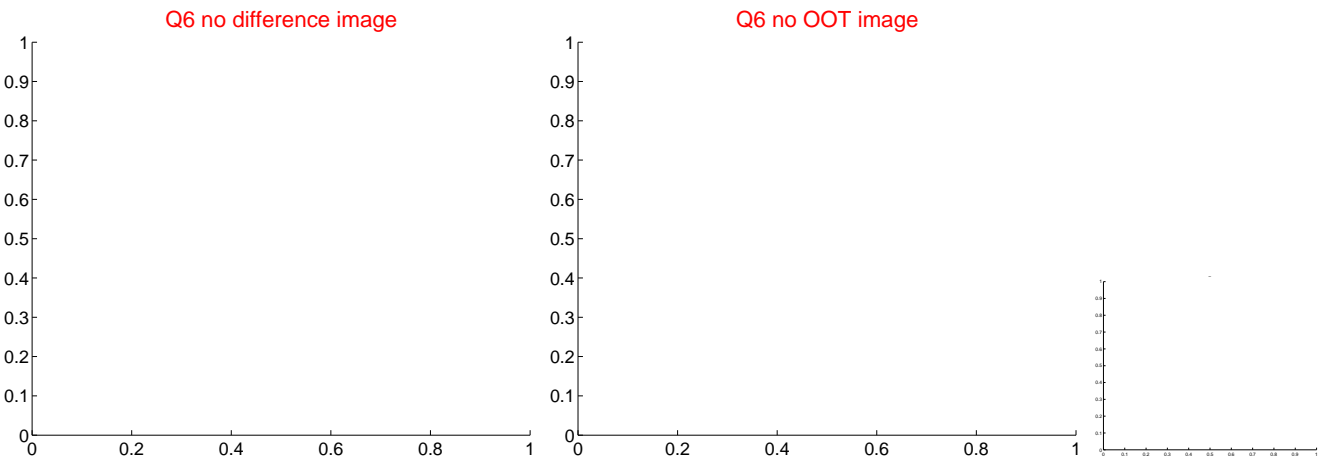
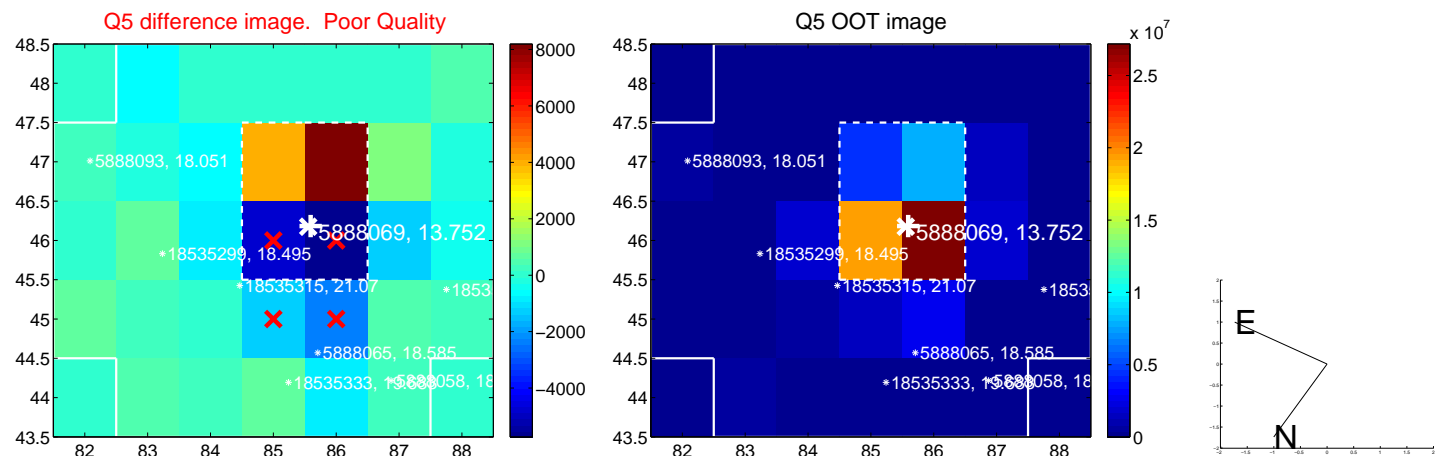
Q4 difference image



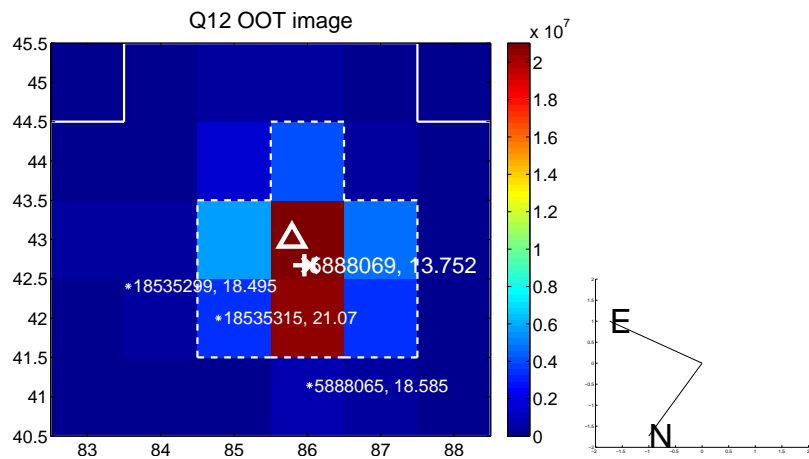
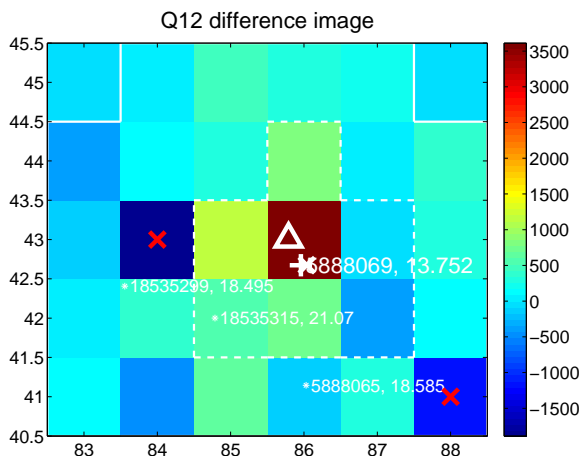
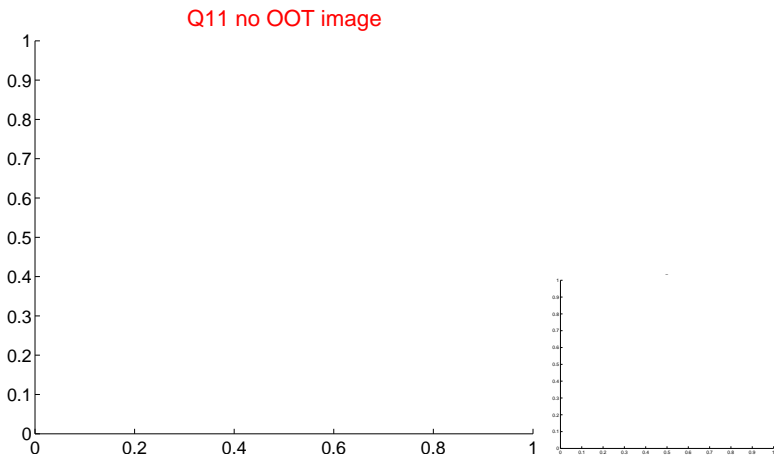
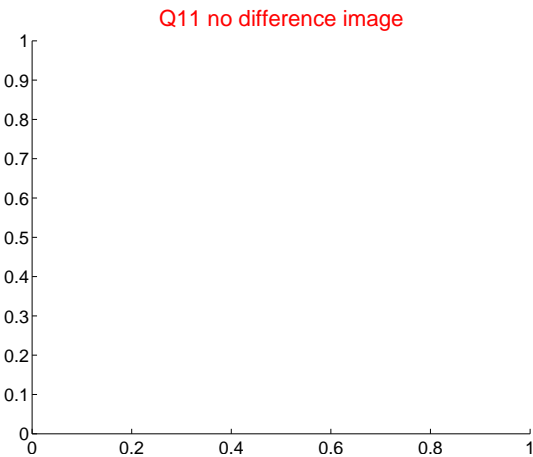
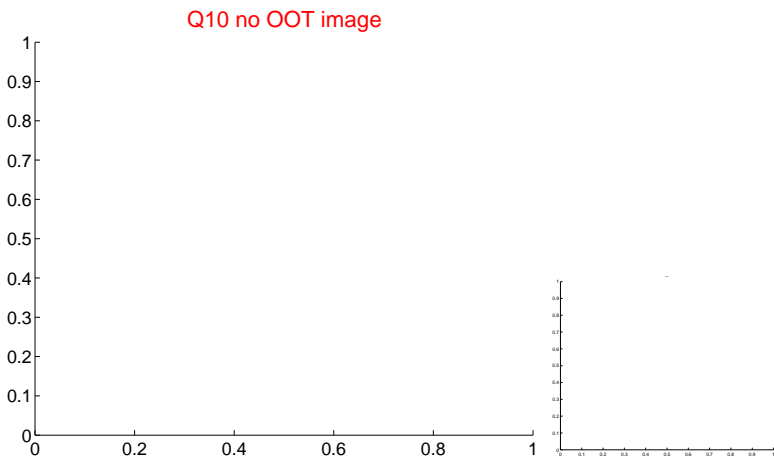
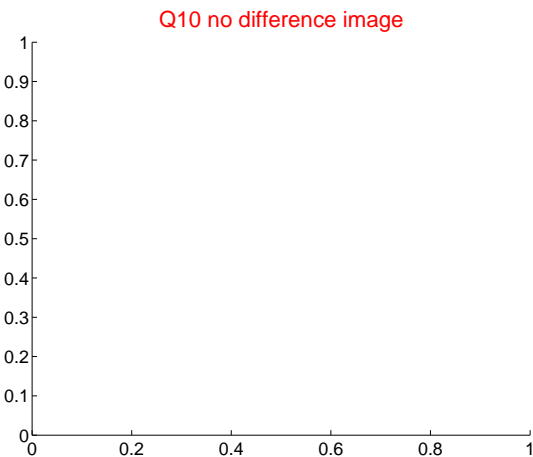
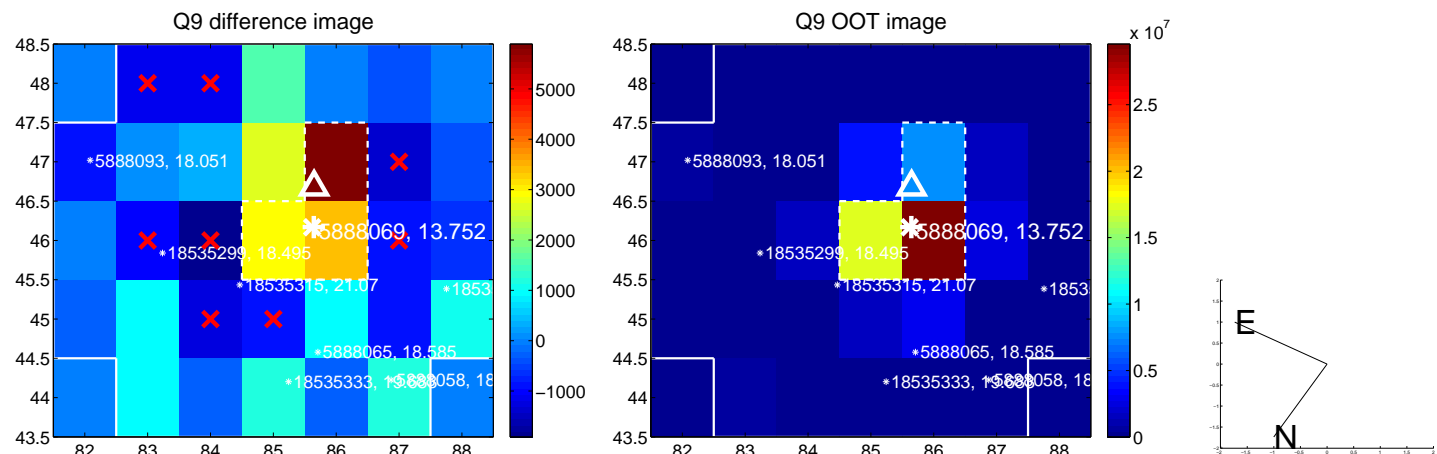
Q4 OOT image



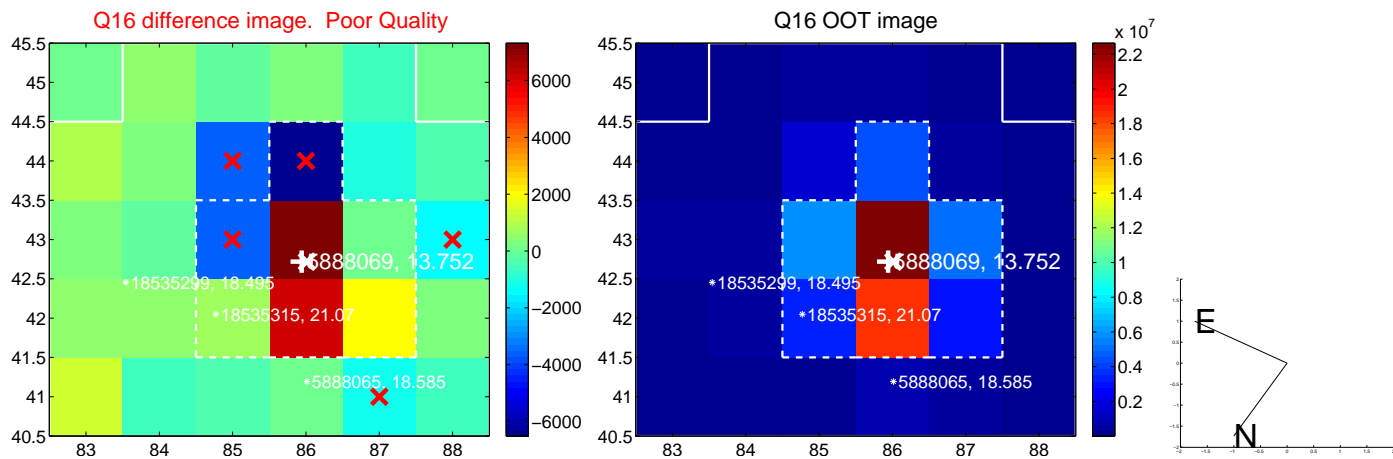
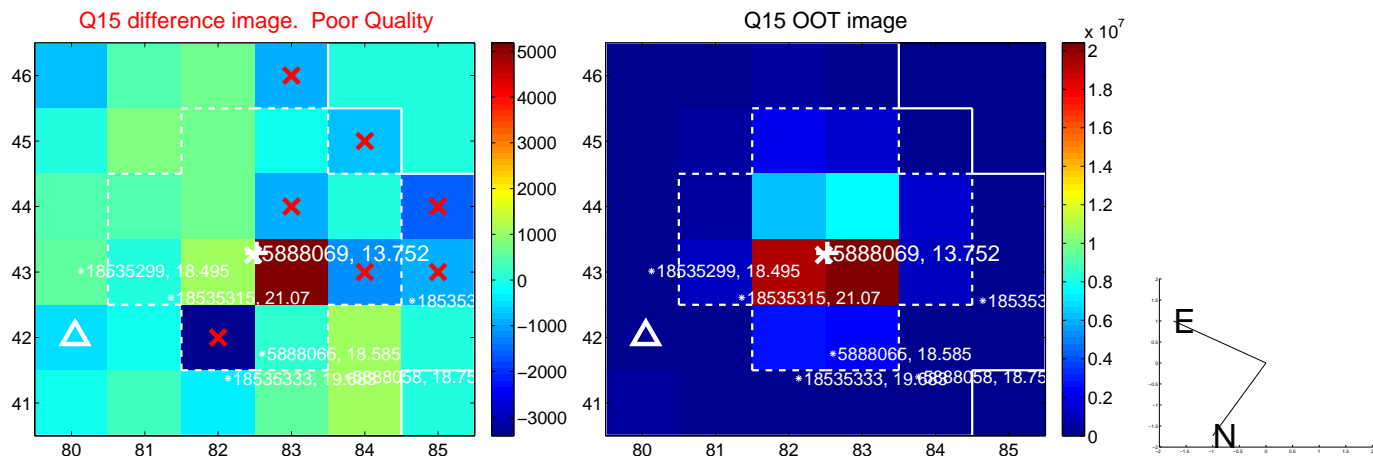
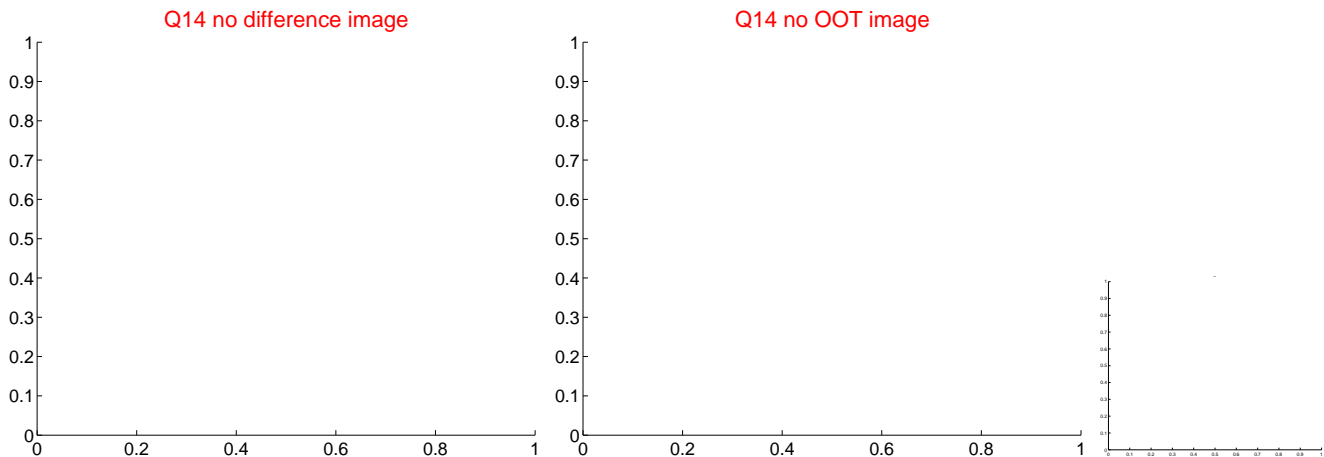
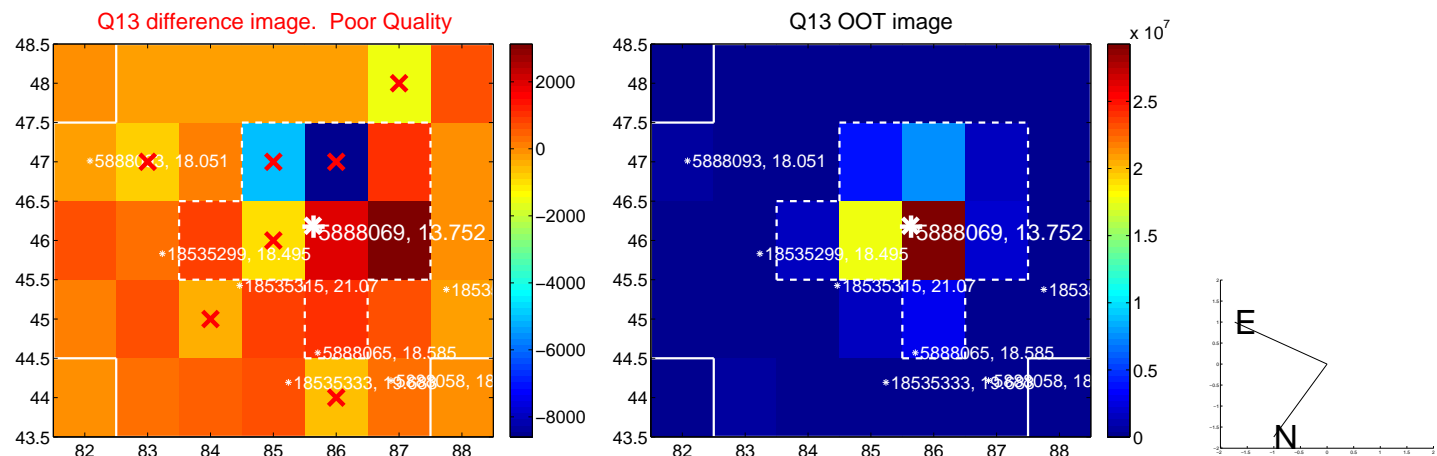
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



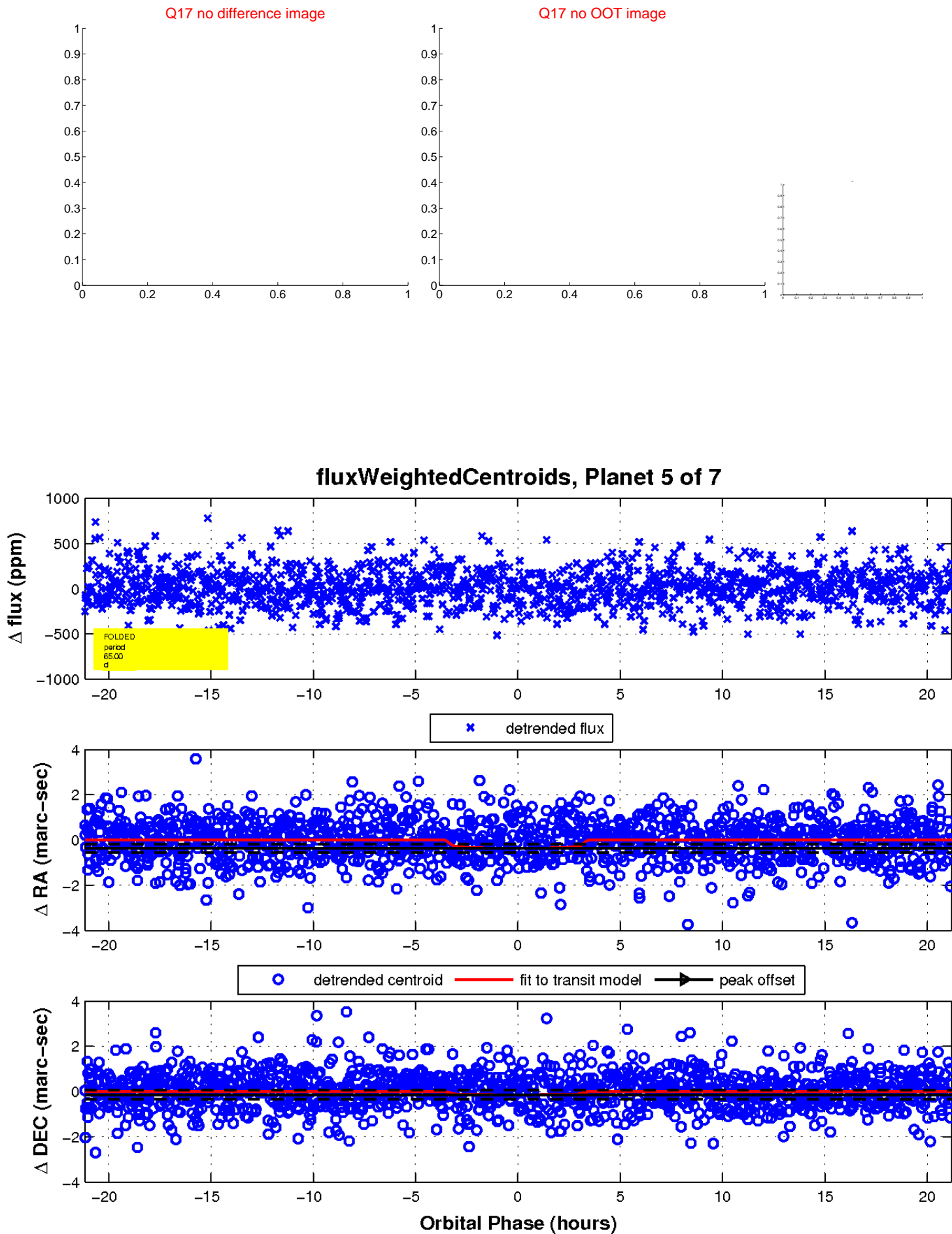
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



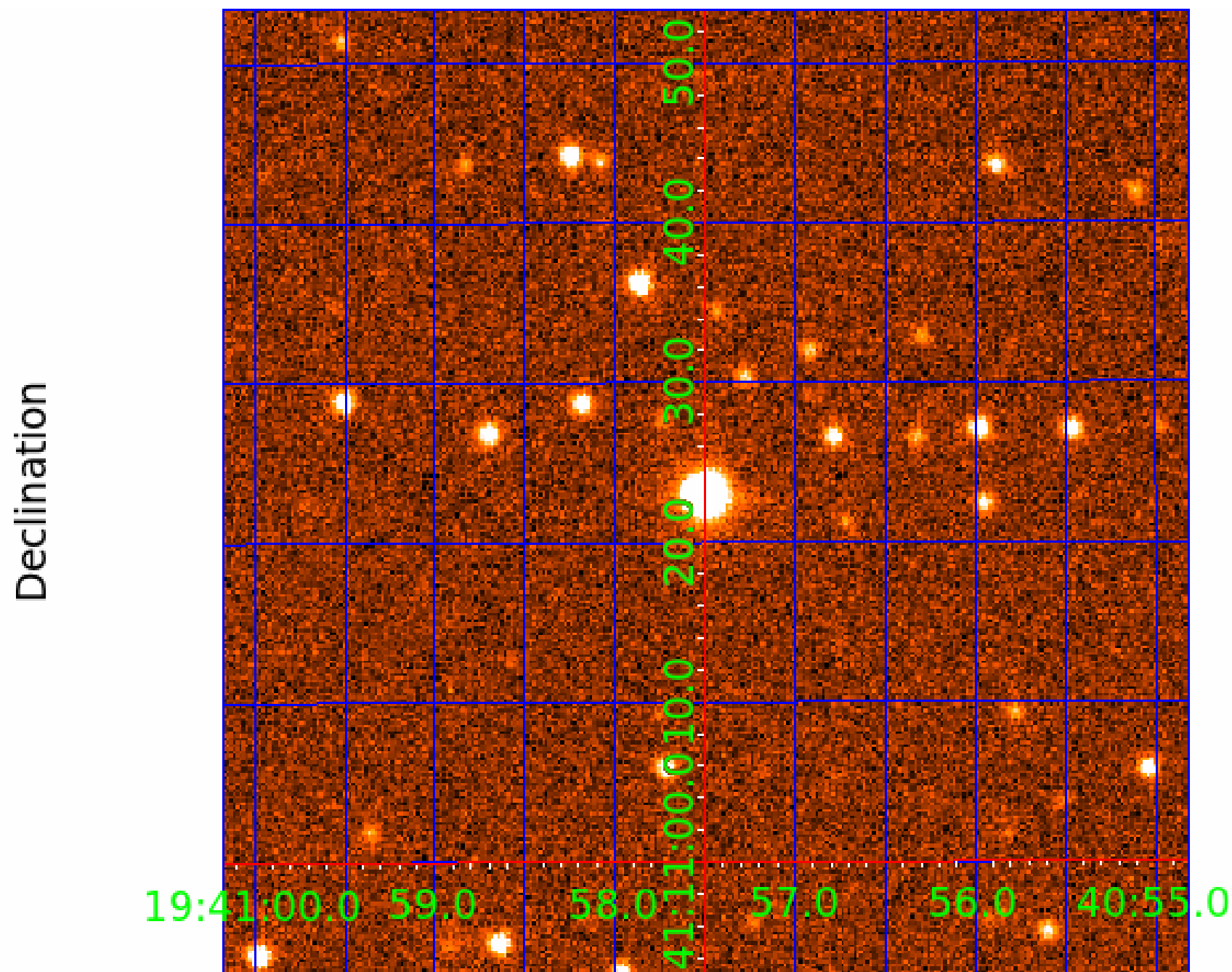
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





# KIC 005888069

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005888069-01	OBS	No	2.623478	132.555154	44.5	7.967	12.1	11.8	1.68	7325	1.29	3692.41
005888069-02	OBS	No	0.874365	132.075953	40.9	5.721	10.8	13.7	1.68	7325	1.25	15979.26
005888069-03	OBS	No	37.059135	138.971343	315.3	4.067	9.7	9.7	1.68	7325	3.33	108.13
005888069-04	OBS	No	53.290743	173.864956	297.0	3.166	9.7	10.5	1.68	7325	2.94	66.62
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005888069-06	OBS	No	33.114287	163.250495	313.3	2.198	8.4	9.4	1.68	7325	3.34	125.64
005888069-07	OBS	No	41.030170	137.094447	238.6	4.040	8.0	7.5	1.68	7325	2.88	94.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005888069-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005888069-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
005888069-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005888069-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005888069-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

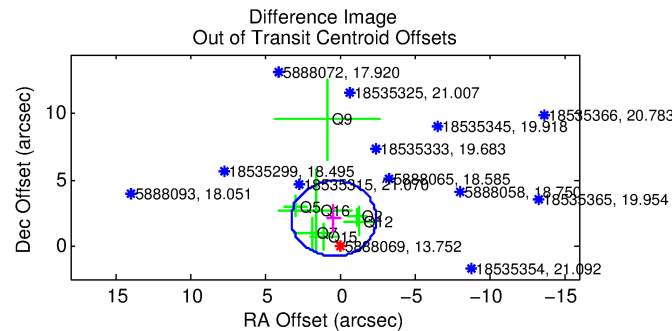
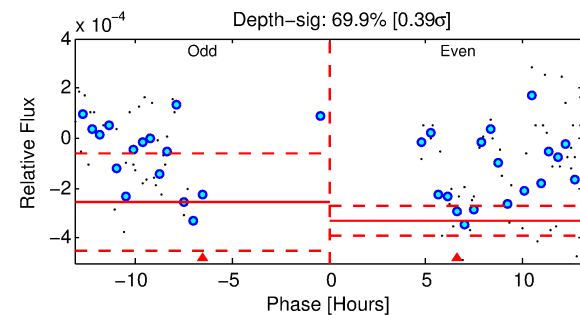
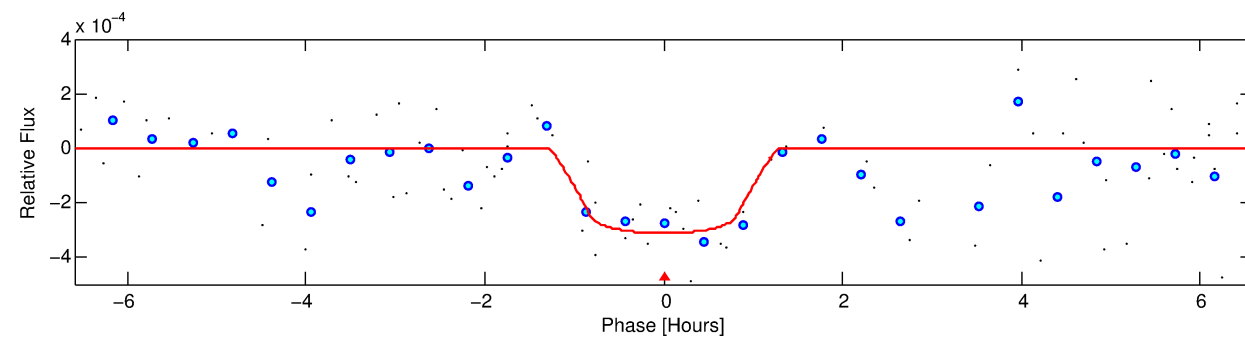
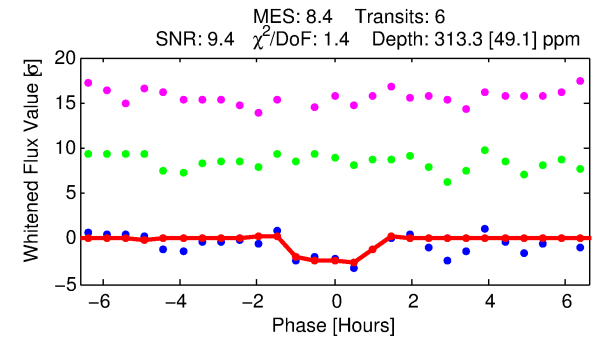
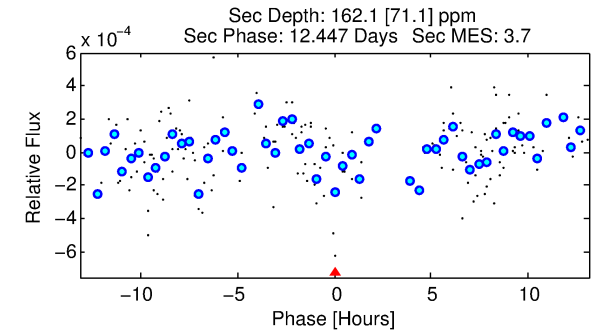
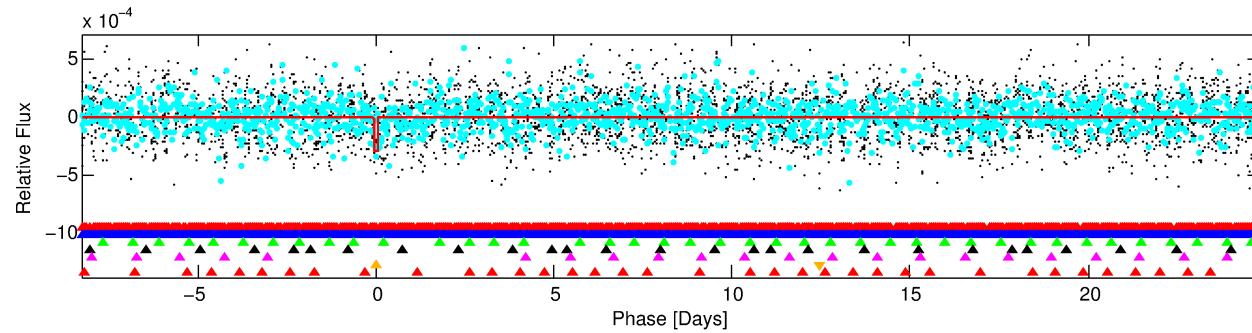
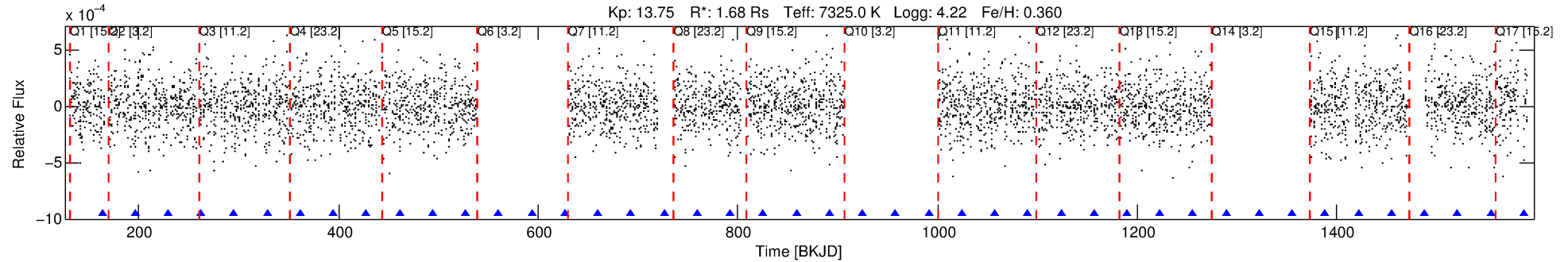
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005888069-06

No Significant Match Found

# DV One-Page Summary

KIC: 5888069 Candidate: 6 of 7 Period: 33.114 d



## DV Fit Results:

Period = 33.11429 [0.00032] d  
Epoch = 163.2505 [0.0068] BKJD  
Rp/R\* = 0.0182 [0.0112]  
a/R\* = 65.28 [246.22]  
b = 0.85 [1.28]  
Seff = 125.64 [37.63]  
Teff = 854 [64] K  
Rp = 3.34 [2.20] Re  
a = 0.2403 [0.0484] AU  
Ag = 462.59 [620.47] [0.74σ]  
Teffp = 6121 [2004] K [2.63σ]

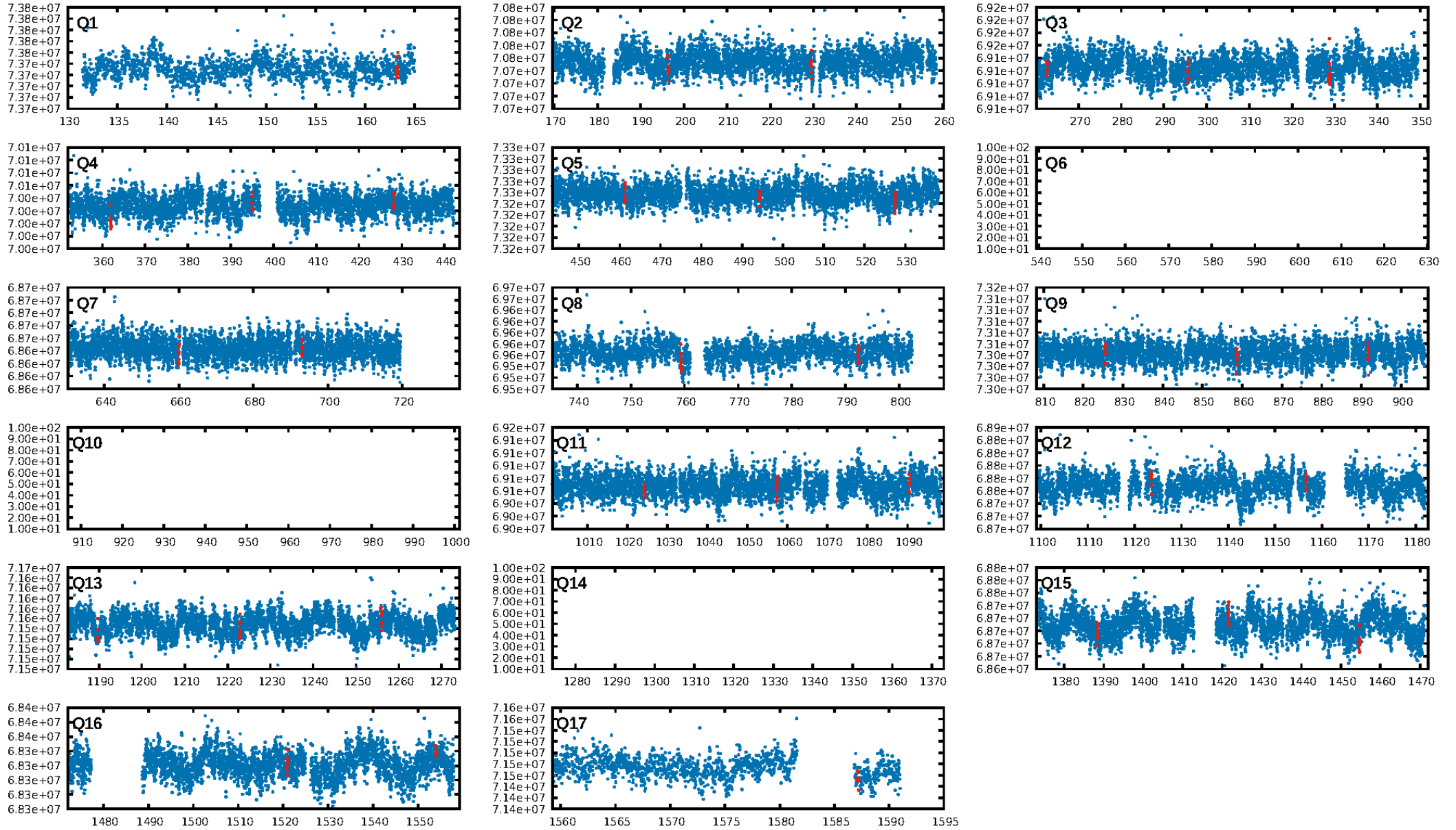
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [88.54σ]  
LongPeriod-sig: 100.0% [20.48σ]  
ModelChiSquare2-sig: 73.3%  
ModelChiSquareGof-sig: 99.9%  
**Bootstrap-pfa: 5.80e-09**  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: -1.55  
Centroid-sig: 3.3%  
Centroid-so: 1.035 arcsec [1.52σ]  
OotOffset-rm: 2.105 arcsec [2.22σ]  
OotOffset-st: 1/2/2/2 [7]  
KicOffset-rm: 2.133 arcsec [1.96σ]  
KicOffset-st: 1/2/2/2 [7]  
DiffImageQuality-fgm: 0.14 [1/7]  
DiffImageOverlap-fno: 0.23 [3/13]

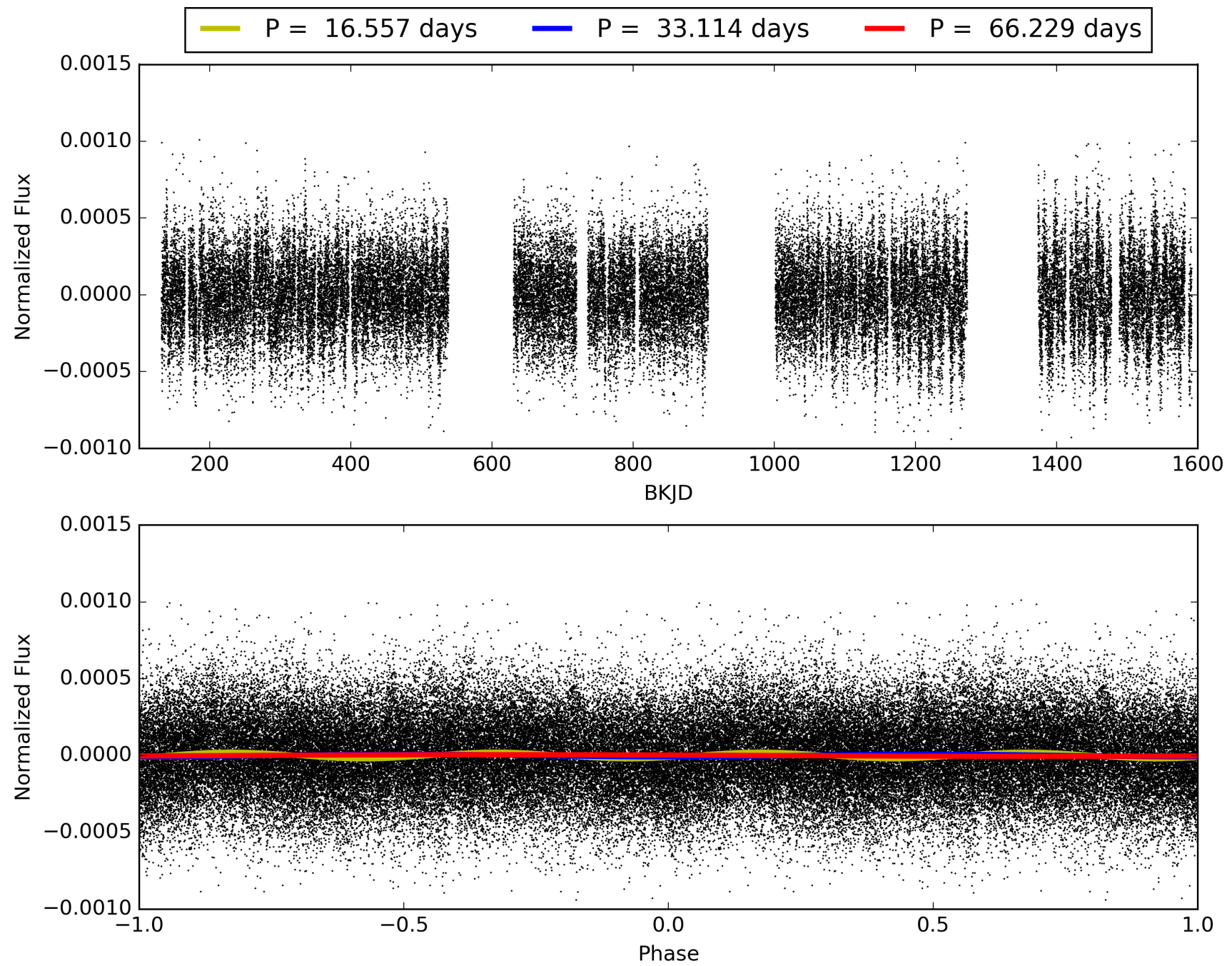
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:50:24 Z

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

# TCE 005888069-06, PDC Light Curves

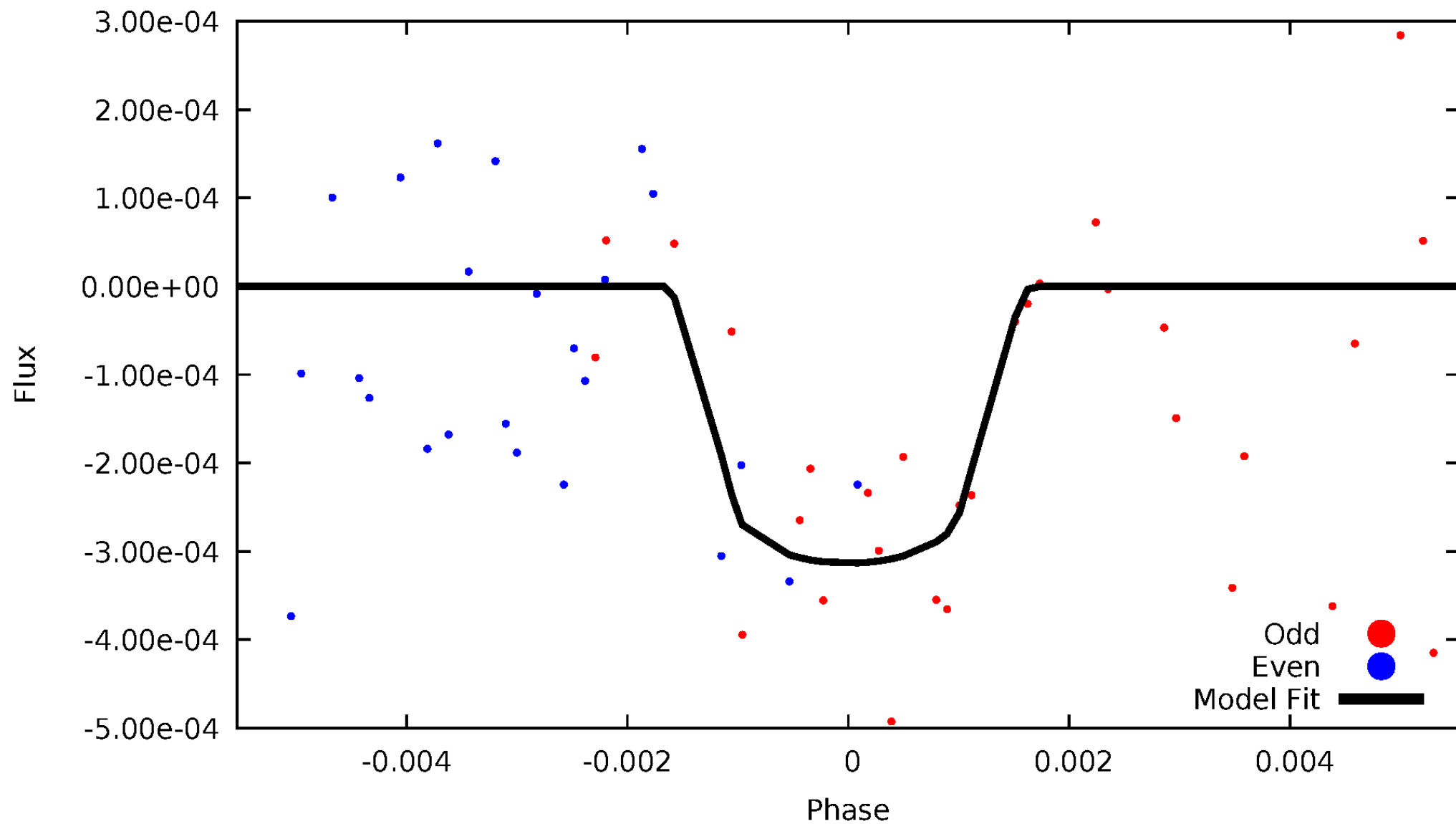


TCE 005888069-06



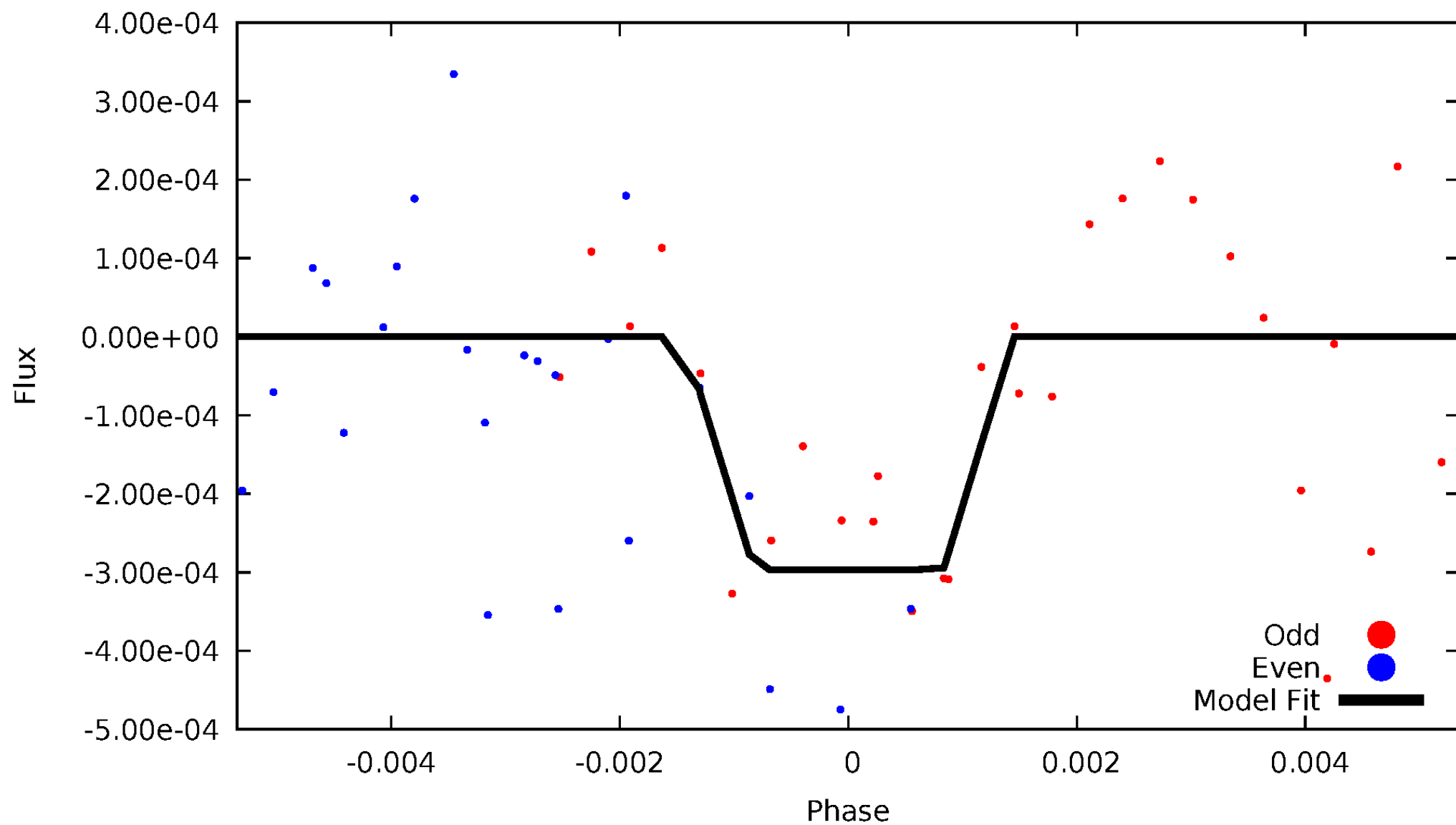
# DV Odd/Even

TCE 005888069-06



# ALT Odd/Even

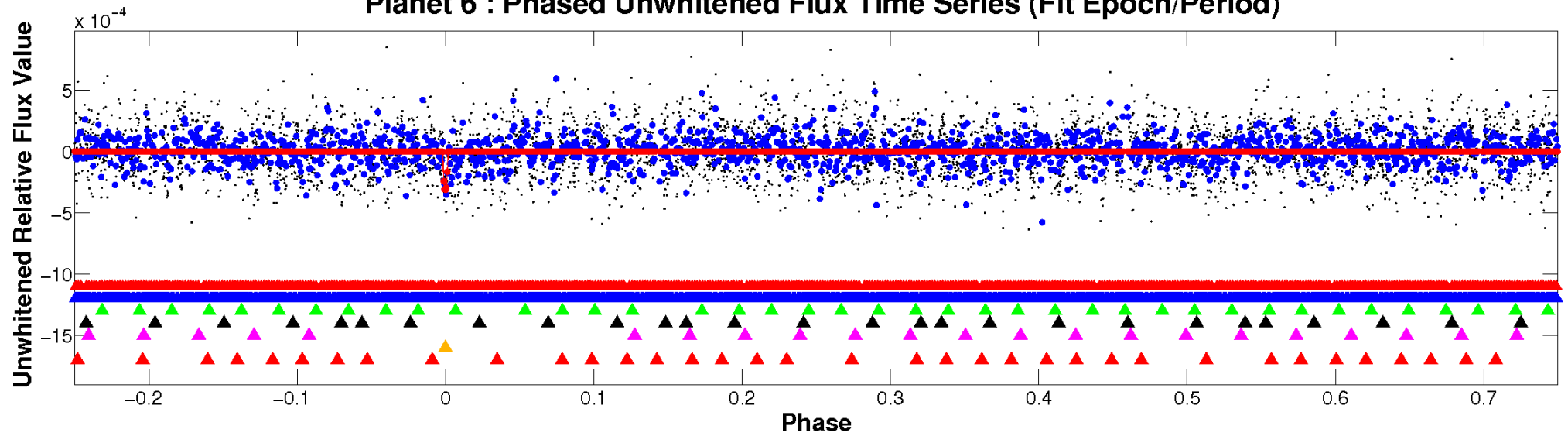
TCE 005888069-06



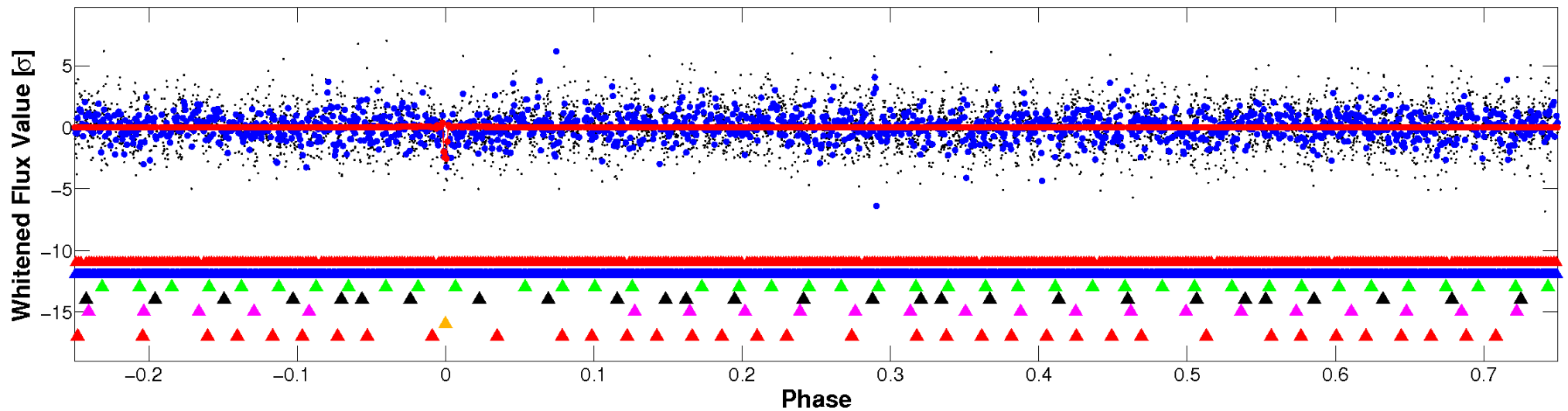


# Non-Whitened Vs. Whitened Light Curve

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

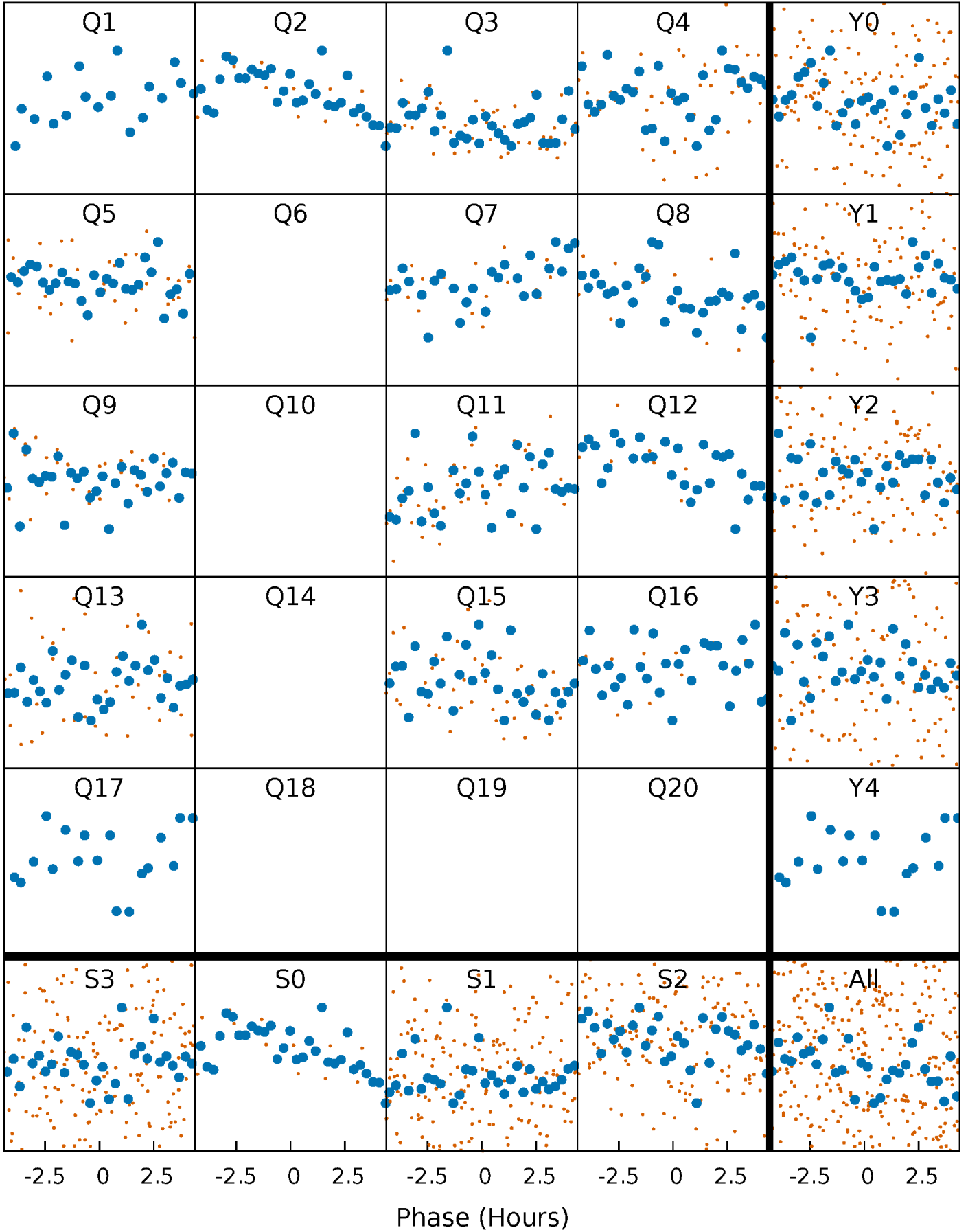


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



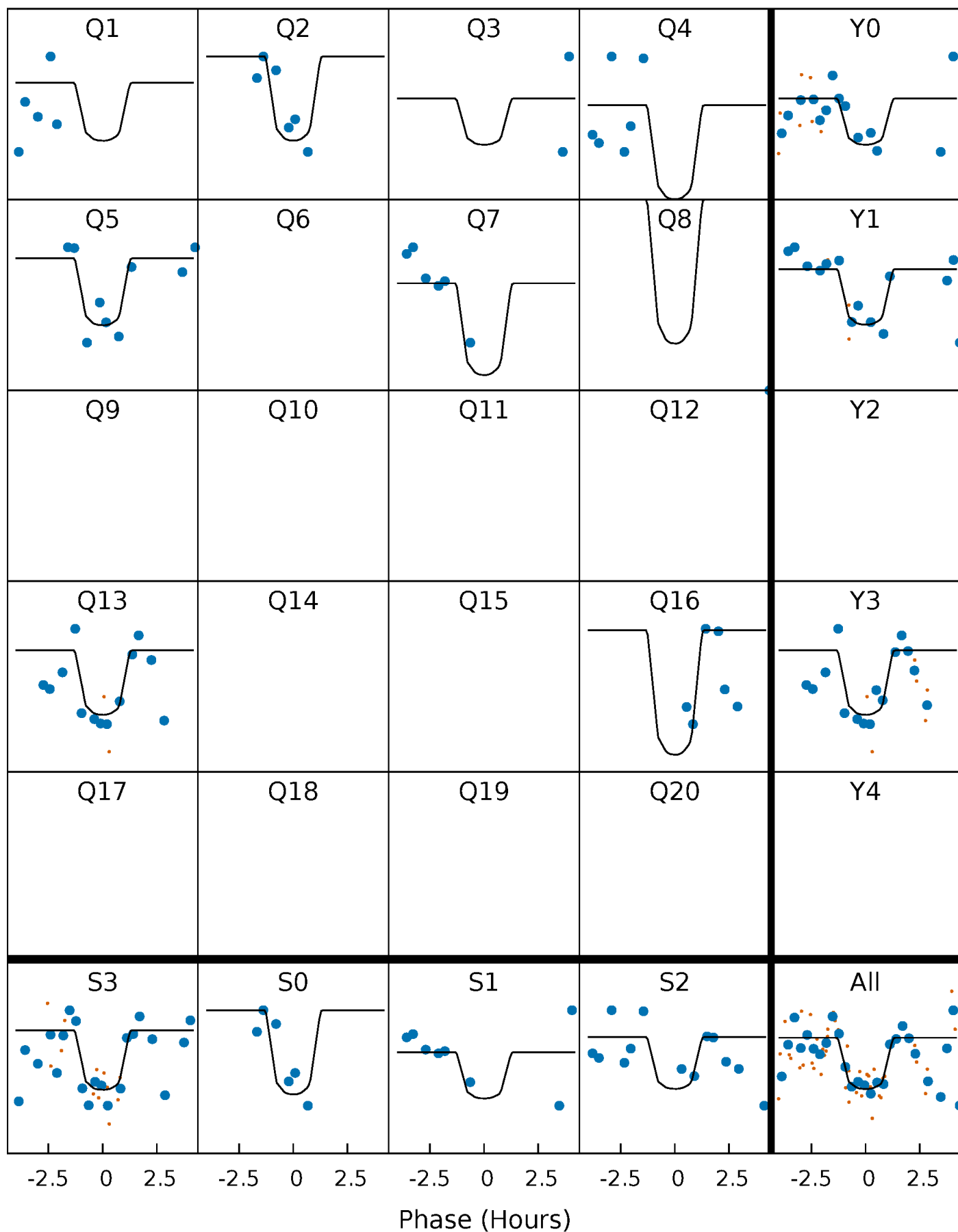
# PDC Quarter-Phased Transit Curves

TCE 005888069-06 P= 33.114287 Days  $T_0=163.250495$  (BKJD)



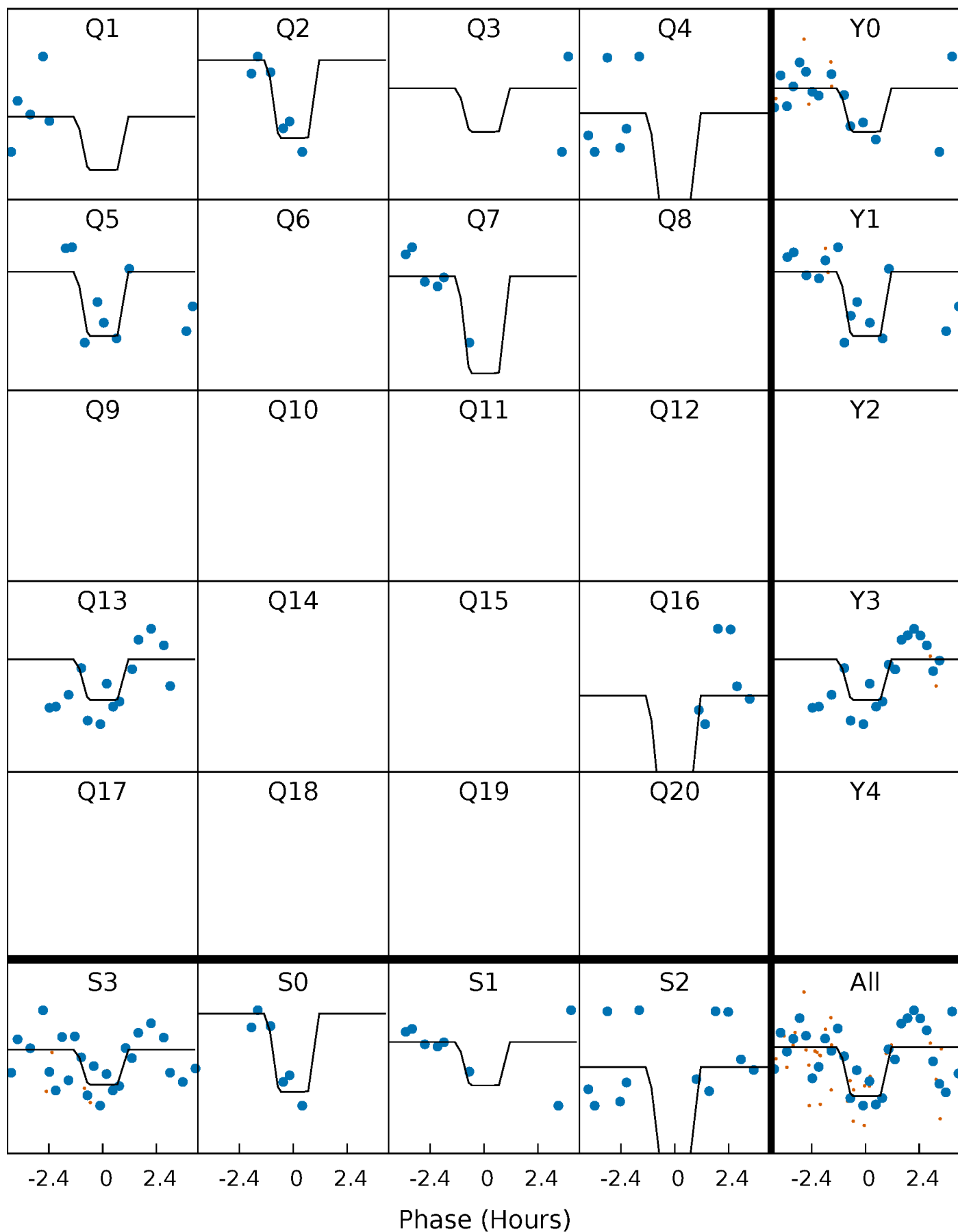
# DV Quarter-Phased Transit Curves

TCE 005888069-06 P= 33.114287 Days  $T_0=163.250495$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

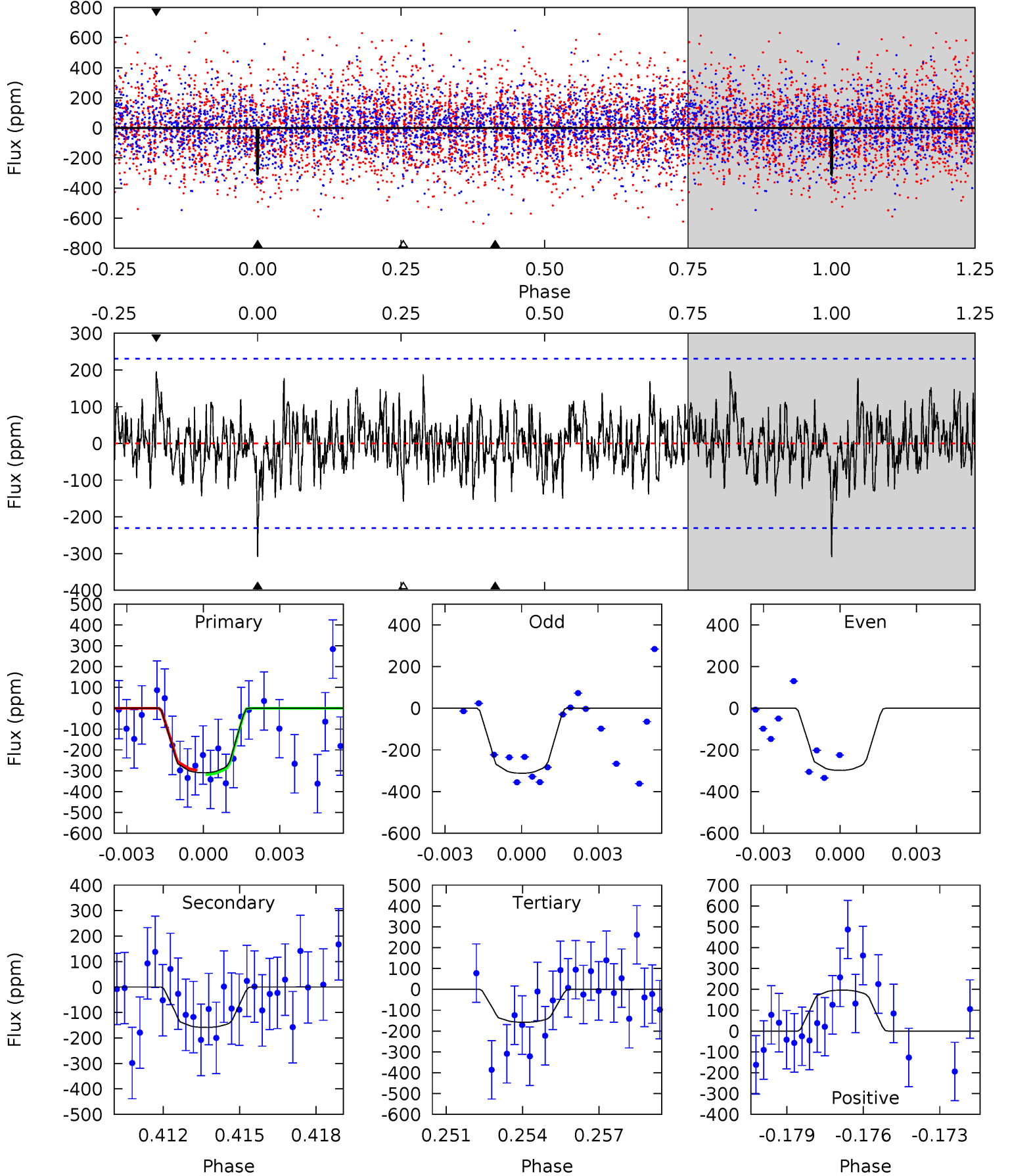
TCE 005888069-06 P= 33.113540 Days  $T_0=163.259070$  (BKJD)



# DV Model-Shift Uniqueness Test

005888069-06, P = 33.114287 Days, E = 130.136208 Days

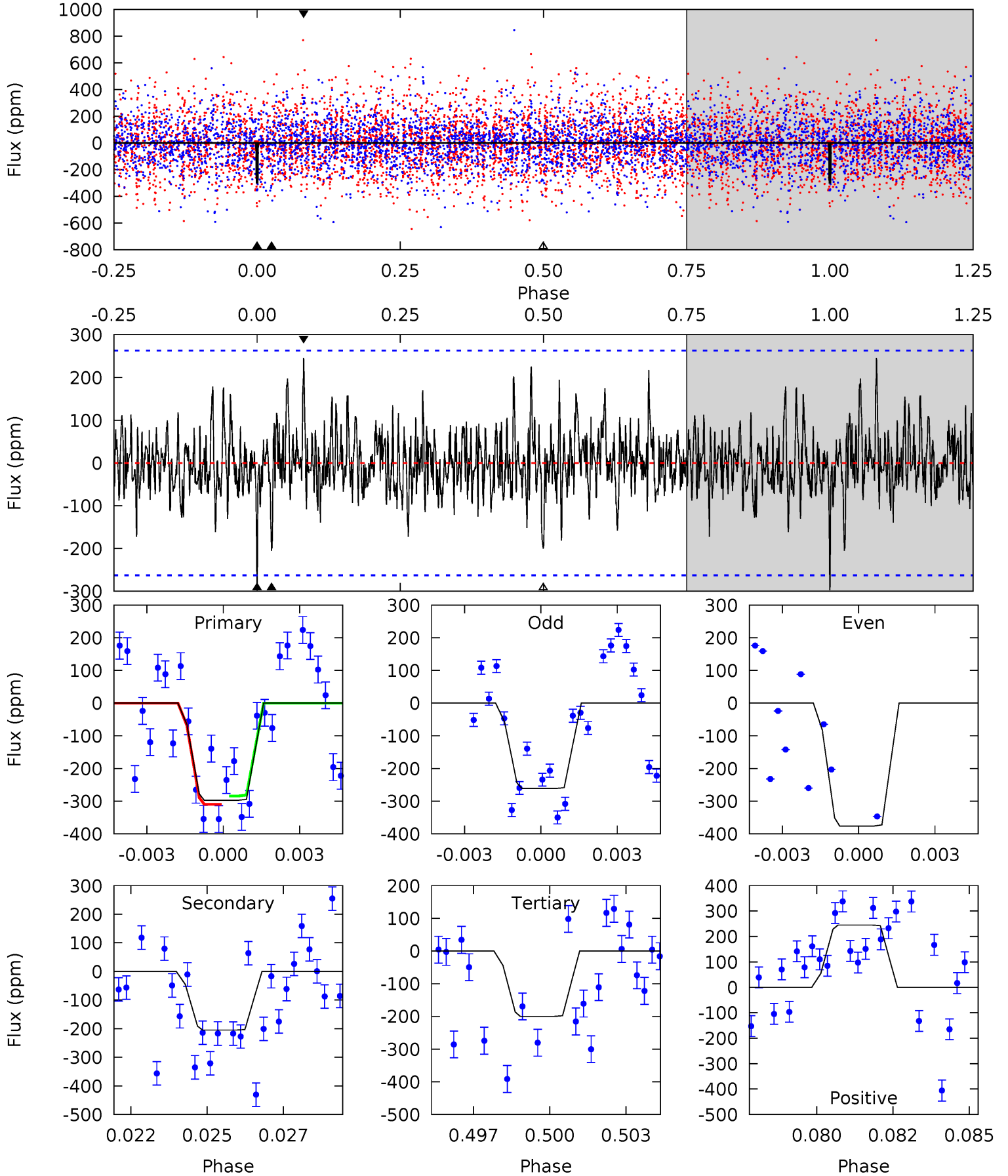
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.06	3.62	3.60	4.48	5.26	2.98	1.30	3.46	2.58	0.01	-0.86	0.12	0.98	0.39	0.24



# Alt Model-Shift Uniqueness Test

005888069-06, P = 33.113540 Days, E = 130.145530 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.96	4.11	4.01	4.91	5.27	2.99	1.18	1.95	1.05	0.10	-0.80	1.06	1.12	0.45	0.26





### Stellar Parameters For KIC 005888069

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7325^{+73}_{-95}$	$4.216^{+0.018}_{-0.162}$	$0.360^{+0.050}_{-0.150}$	$1.677^{+0.399}_{-0.070}$	$1.687^{+0.139}_{-0.075}$	$0.503^{+0.035}_{-0.227}$
	+1%/-1%	+0%/-4%	+14%/-42%	+24%/-4%	+8%/-4%	+7%/-45%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005888069-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-159 \pm 44$	$3.57^{+2.23}_{-1.90}$	$1212^{+71}_{-29}$	$5958^{+3194}_{-1144}$	$379^{+1401}_{-240}$
Alt.	$-205 \pm 50$	$3.51^{+2.11}_{-1.91}$	$1211^{+66}_{-28}$	$6358^{+3861}_{-1244}$	$515^{+1815}_{-320}$

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

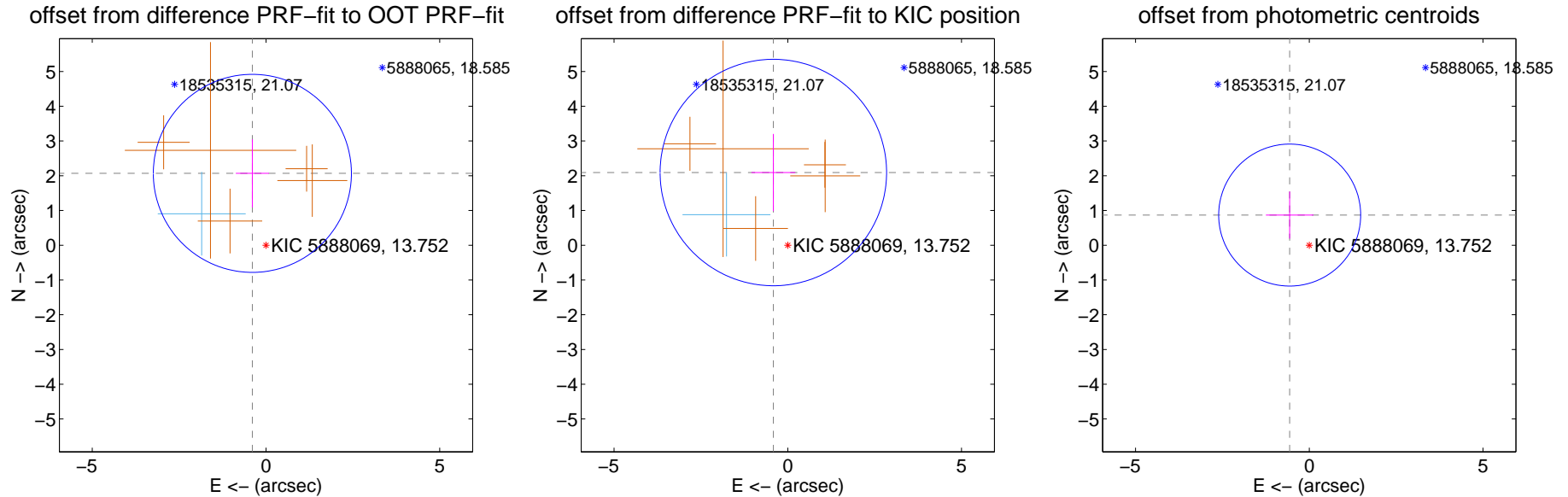
## DV Centroid Data

Supplemental centroid analysis for 005888069-06. Kepler magnitude: 13.75. Transit SNR 9.40

There are 1 quarters with good PRF difference image offsets

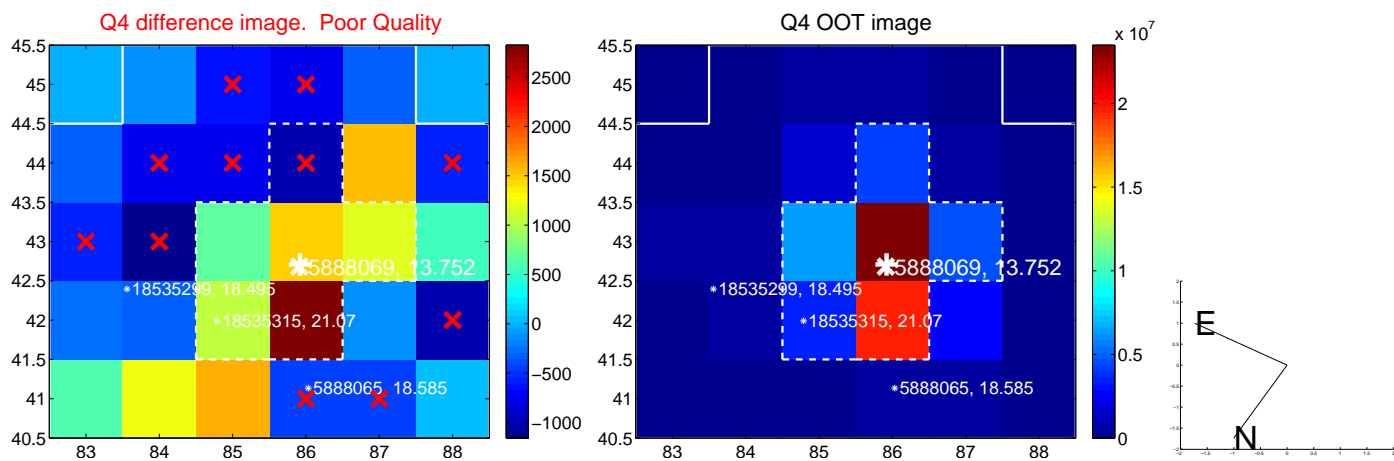
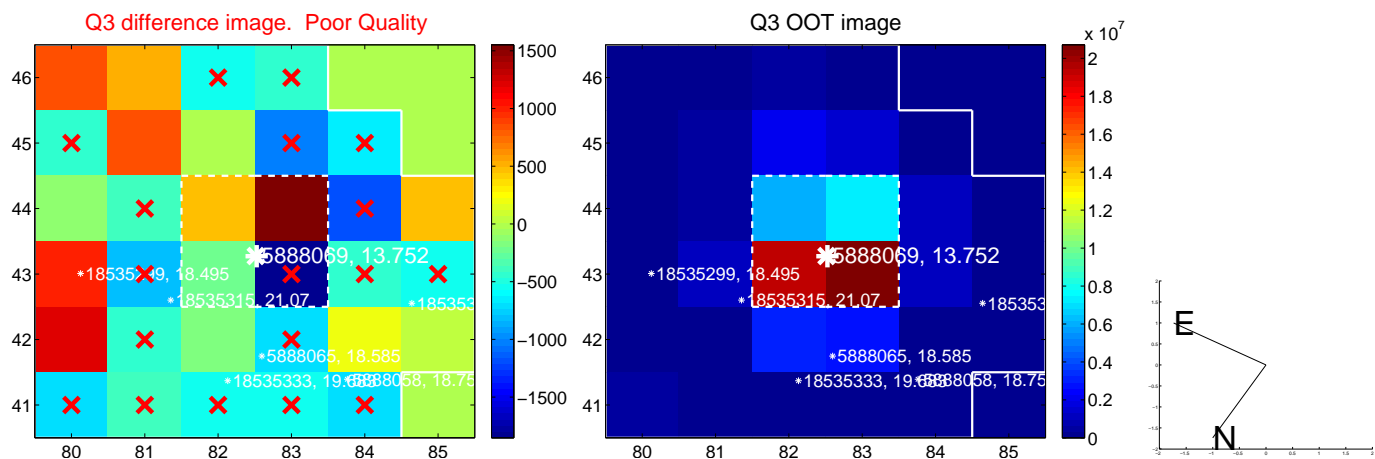
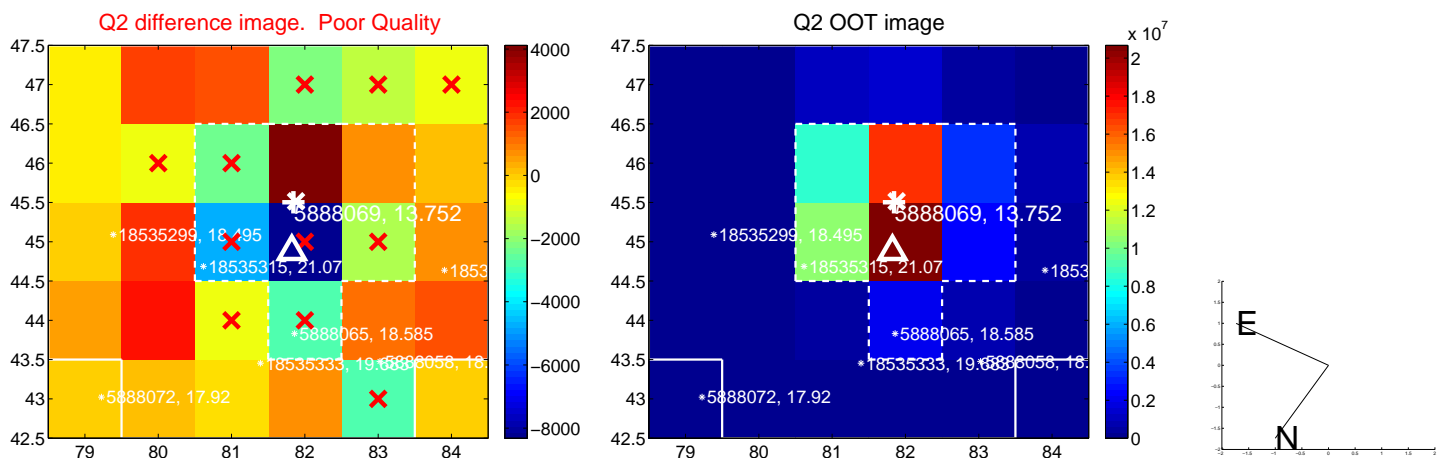
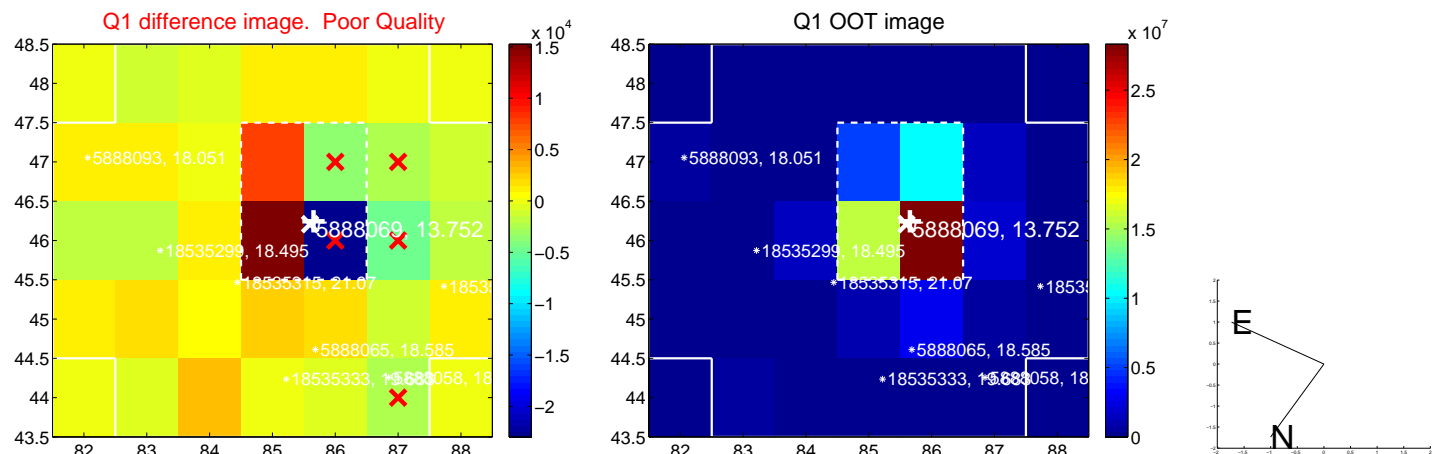
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.105 \pm 0.950$	2.22	$0.392 \pm 0.477$	$2.068 \pm 0.982$
PRF-fit source offset from KIC position	$2.133 \pm 1.086$	1.96	$0.415 \pm 0.631$	$2.093 \pm 1.112$
photometric centroid source offset	$1.04 \pm 0.68$	1.52	$0.56 \pm 0.69$	$0.87 \pm 0.68$

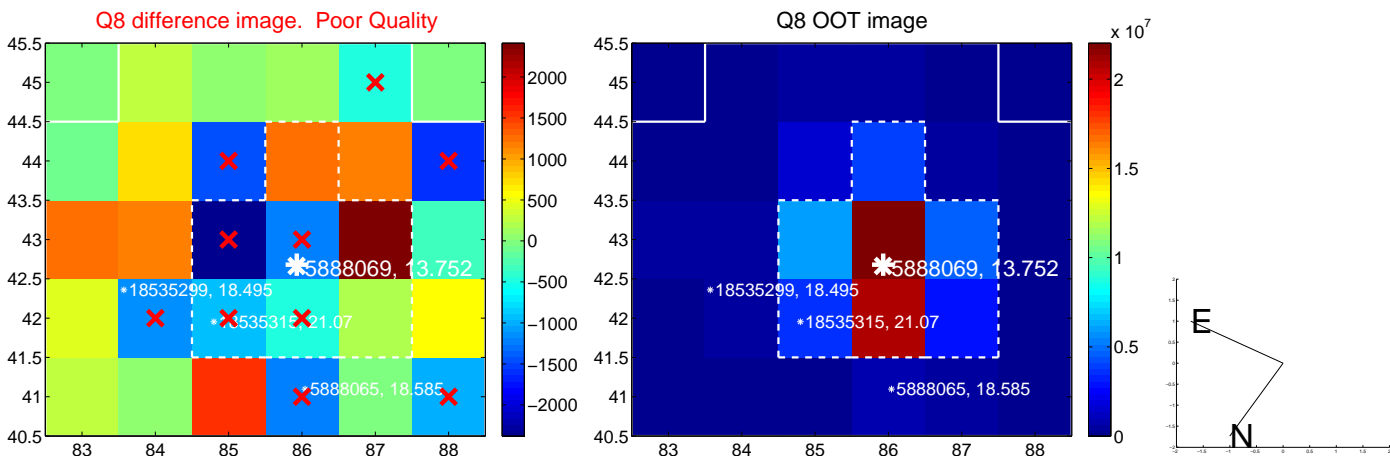
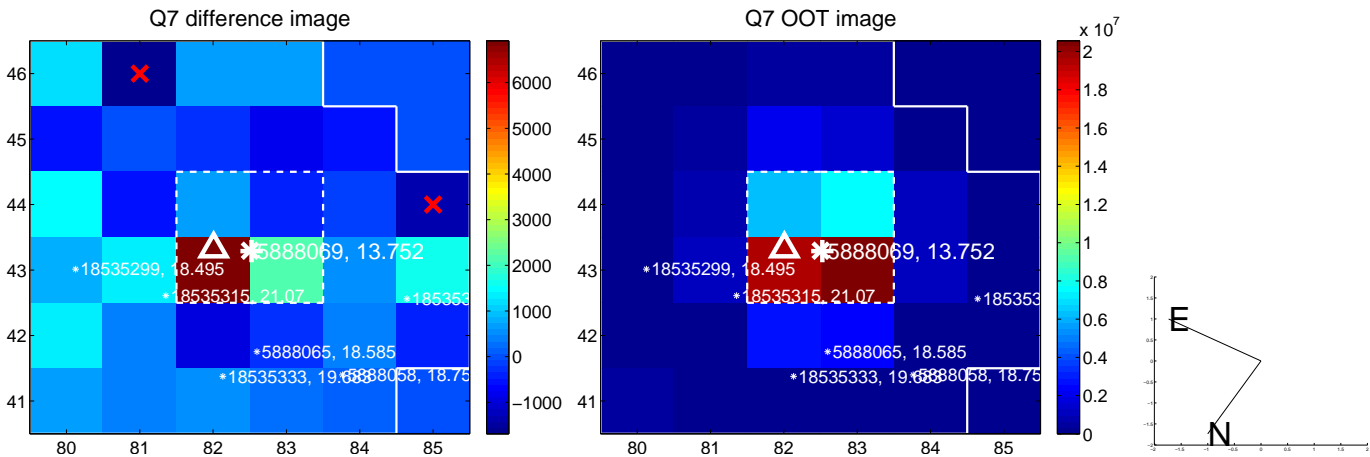
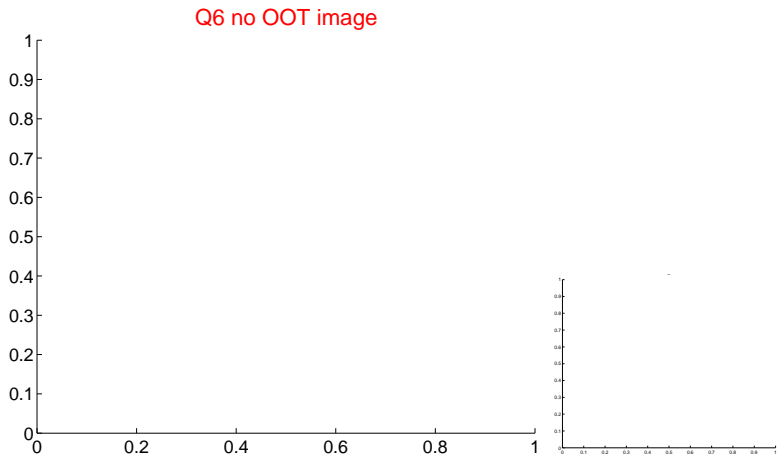
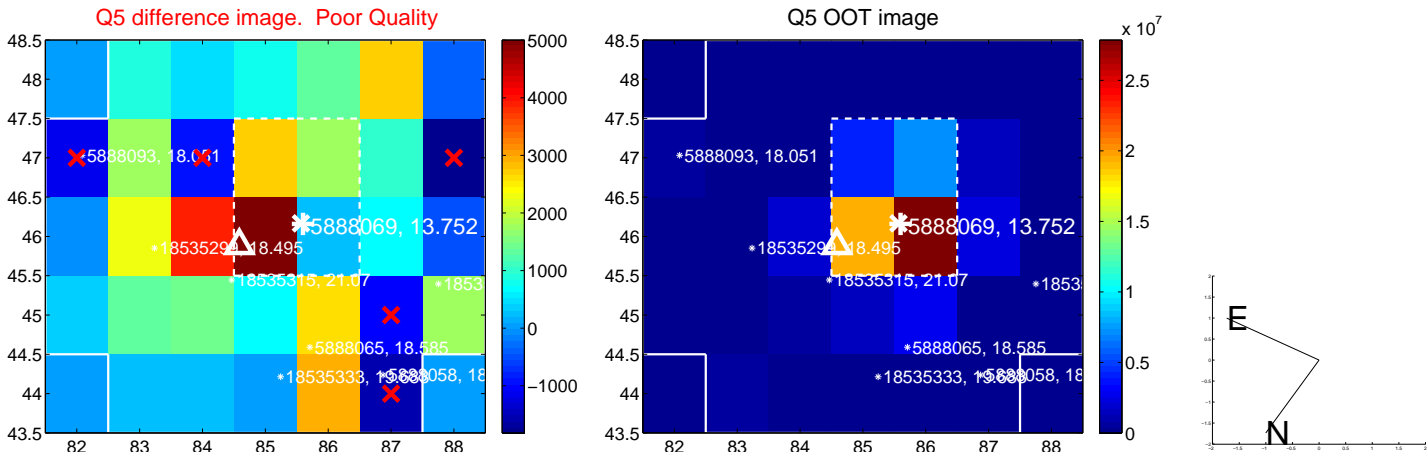


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

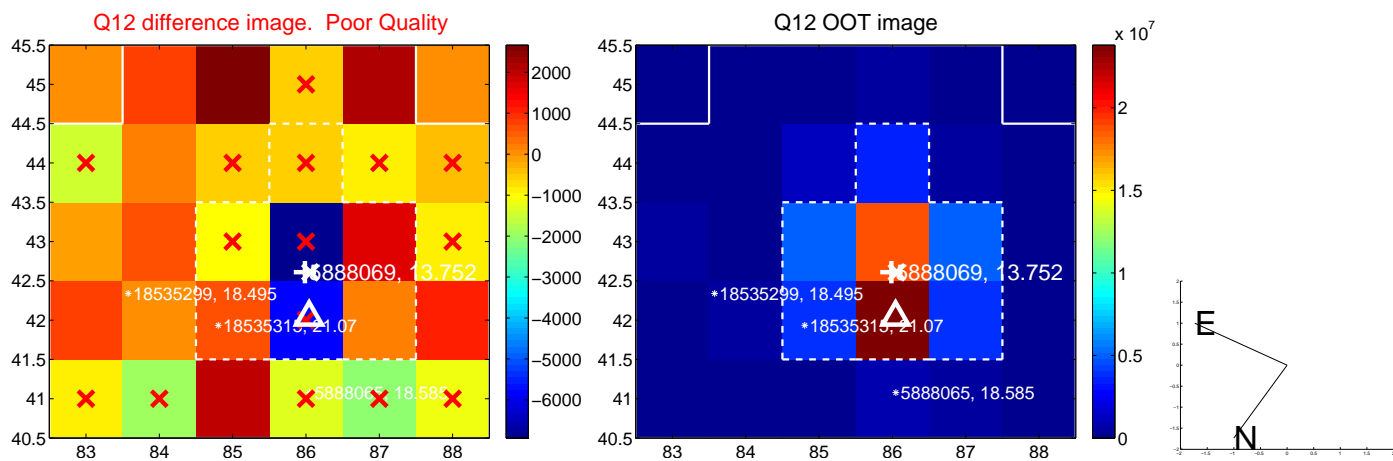
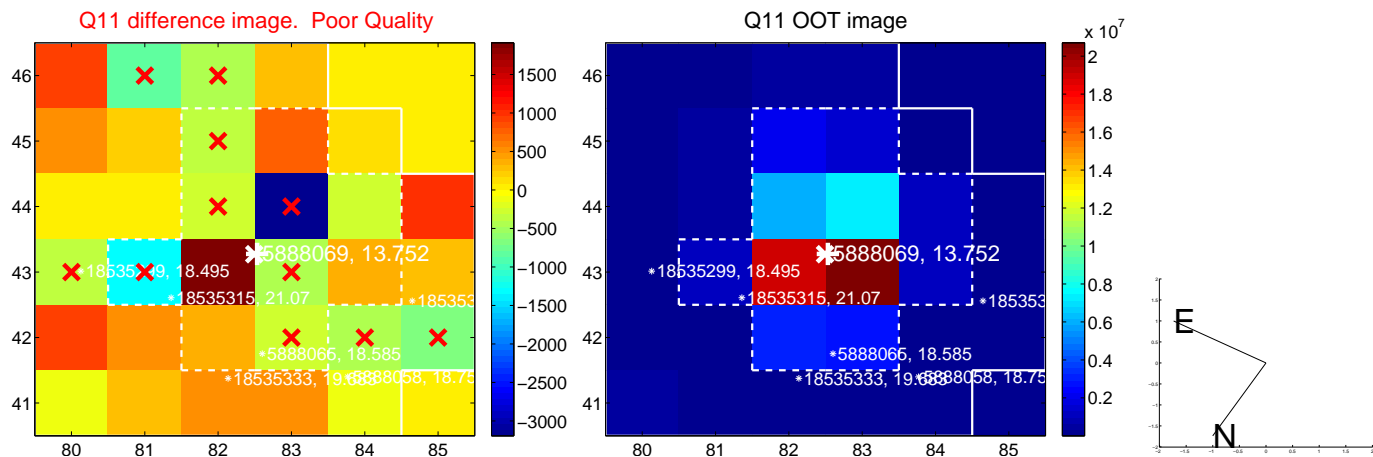
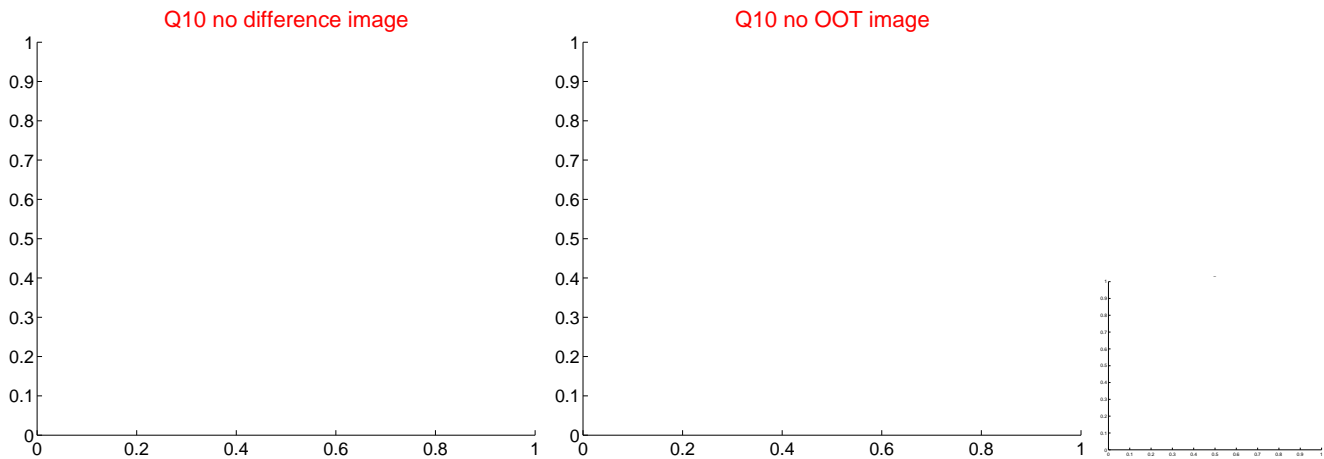
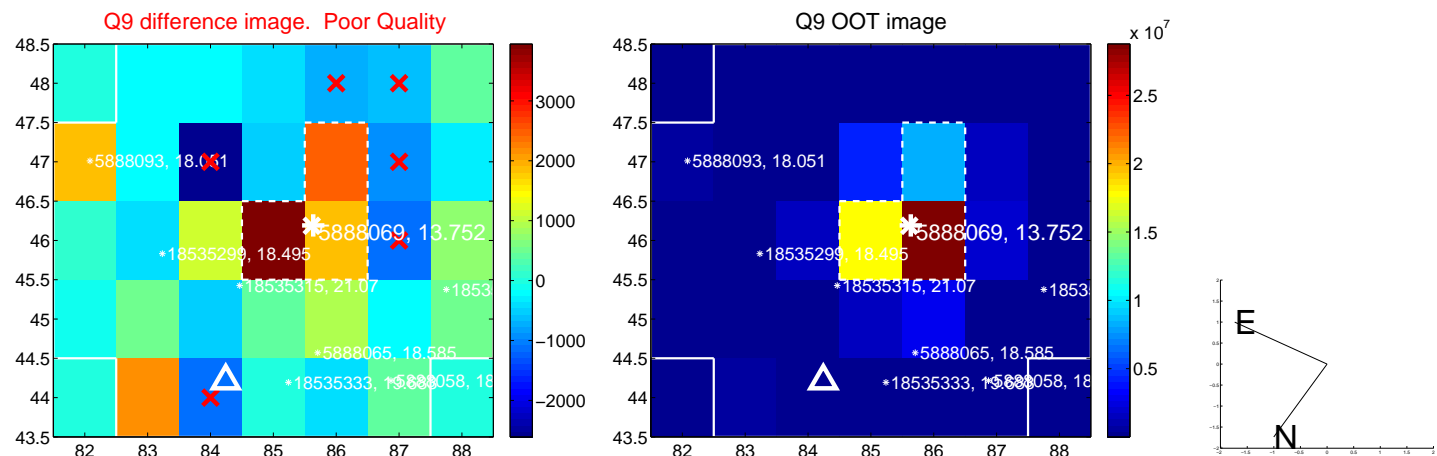
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



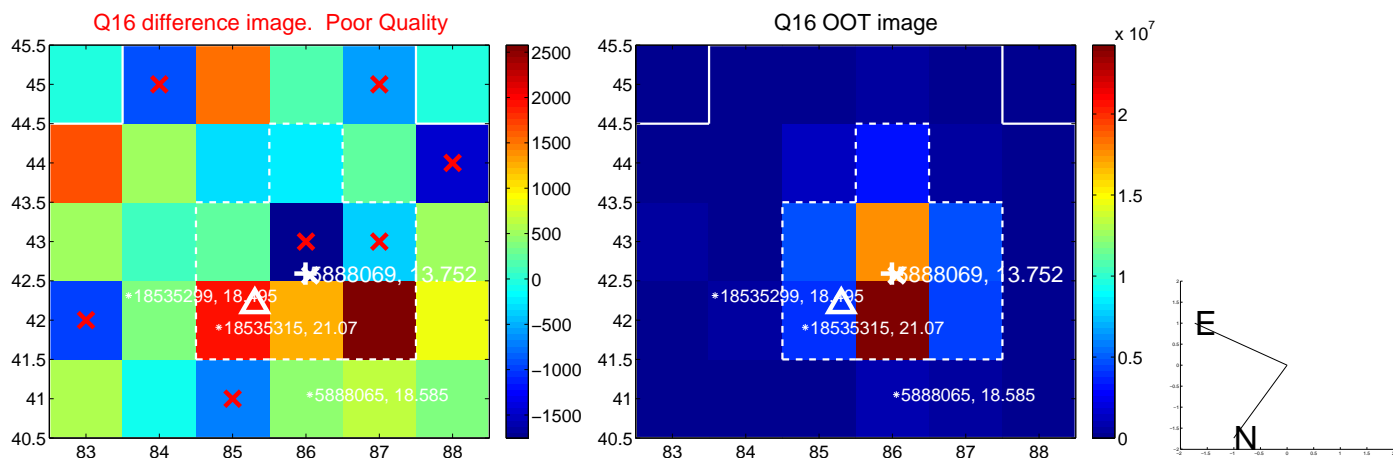
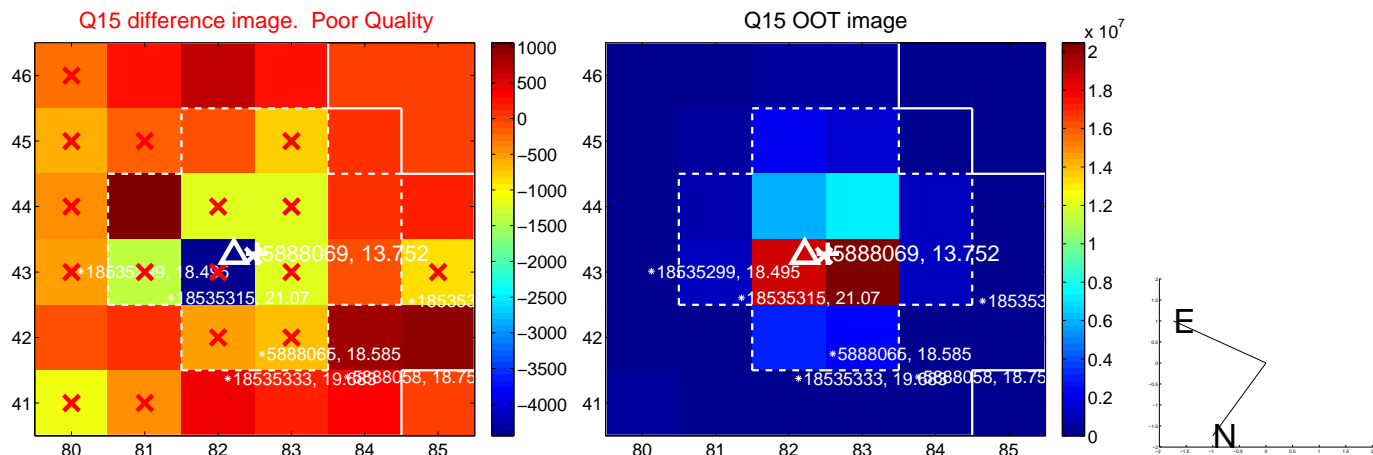
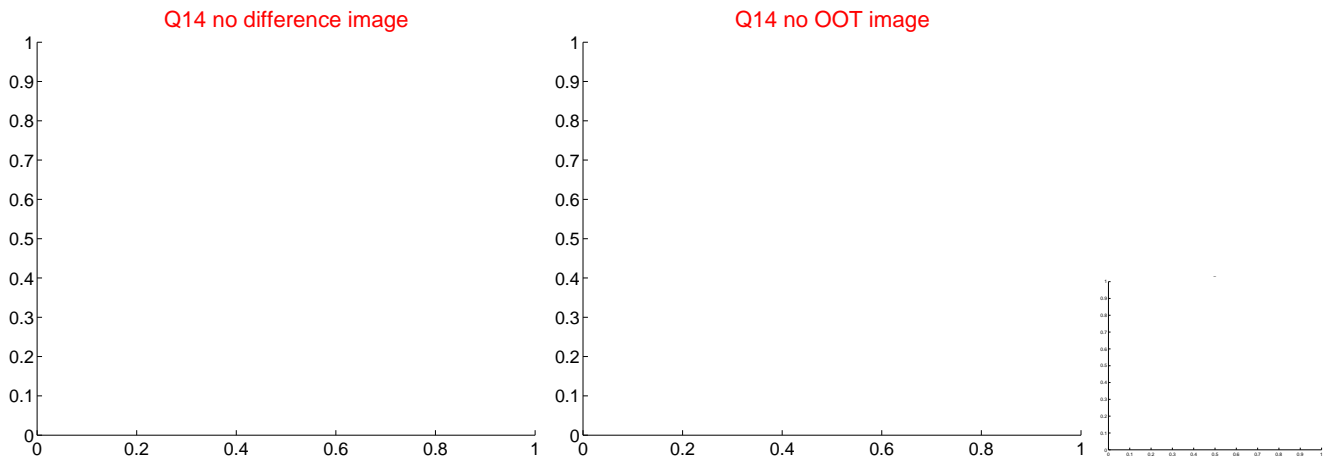
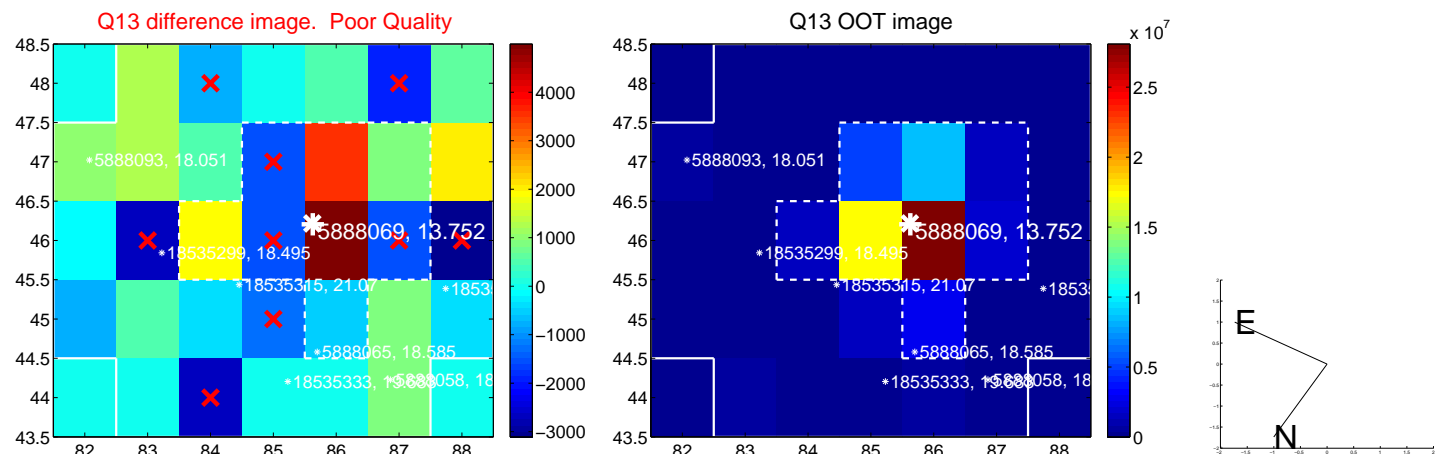
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



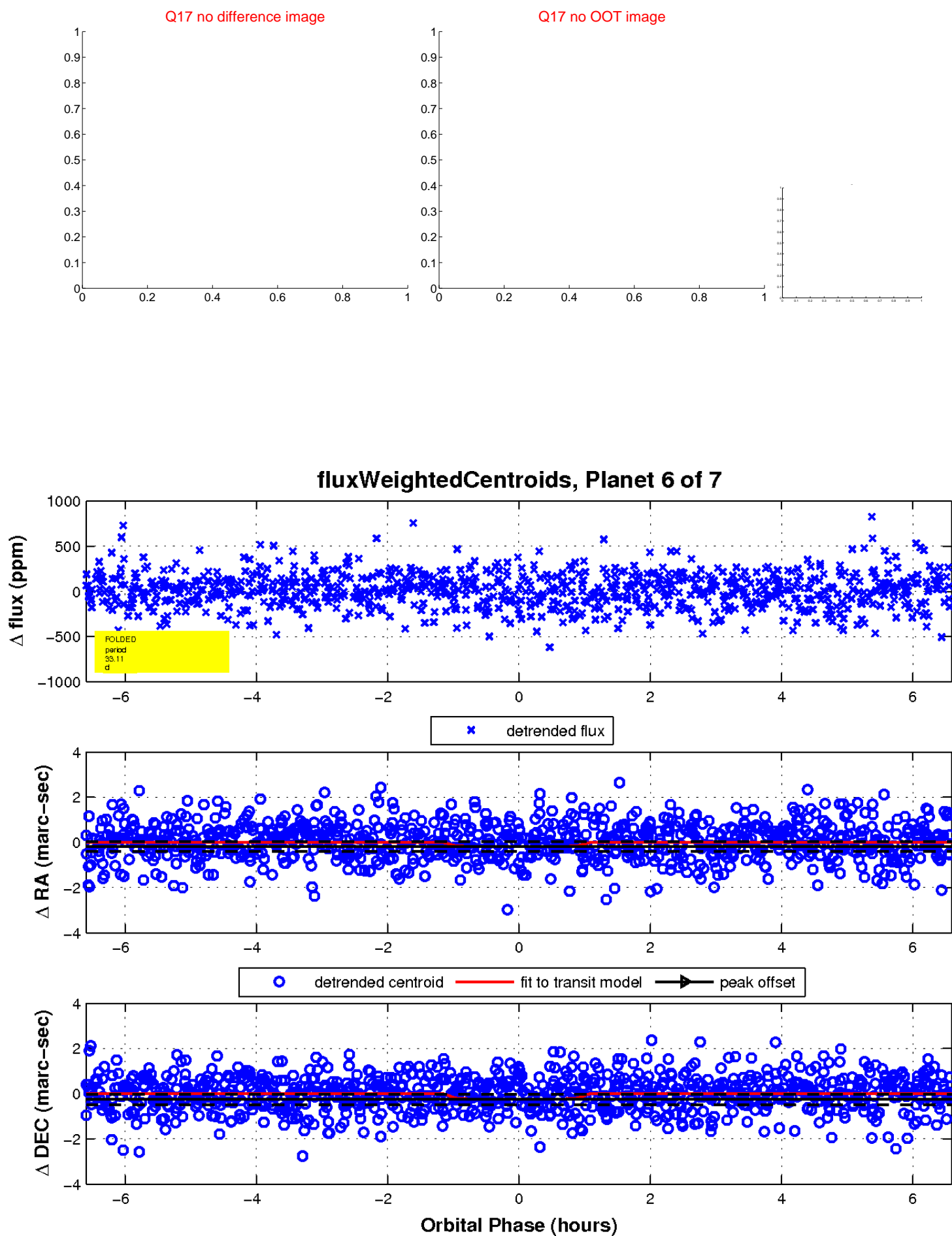
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

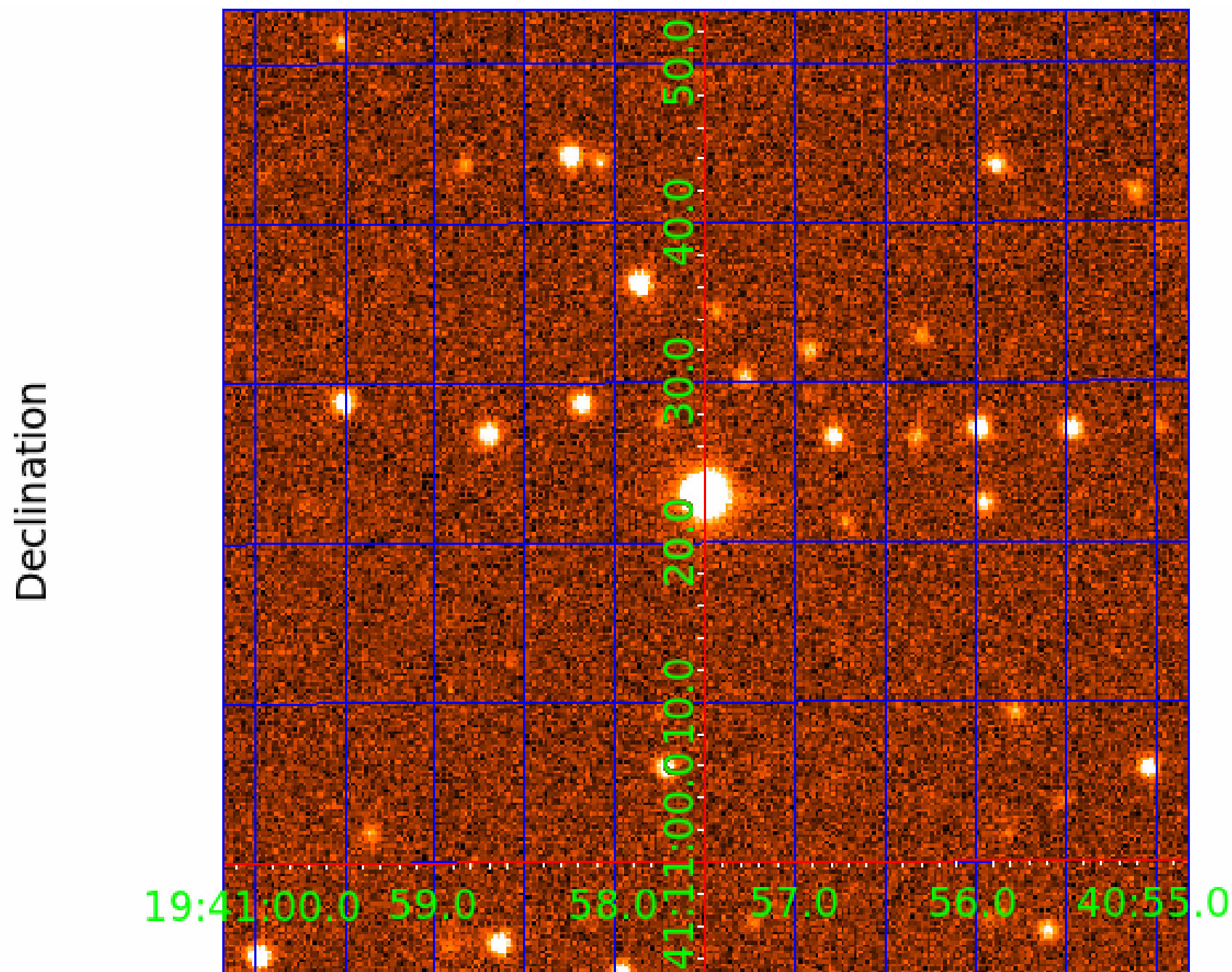


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image



## KIC 005888069

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005888069-01	OBS	No	2.623478	132.555154	44.5	7.967	12.1	11.8	1.68	7325	1.29	3692.41
005888069-02	OBS	No	0.874365	132.075953	40.9	5.721	10.8	13.7	1.68	7325	1.25	15979.26
005888069-03	OBS	No	37.059135	138.971343	315.3	4.067	9.7	9.7	1.68	7325	3.33	108.13
005888069-04	OBS	No	53.290743	173.864956	297.0	3.166	9.7	10.5	1.68	7325	2.94	66.62
005888069-05	OBS	No	64.997876	193.320683	181.0	7.070	8.6	6.1	1.68	7325	2.61	51.12
005888069-06	OBS	No	33.114287	163.250495	313.3	2.198	8.4	9.4	1.68	7325	3.34	125.64
005888069-07	OBS	No	41.030170	137.094447	238.6	4.040	8.0	7.5	1.68	7325	2.88	94.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005888069-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005888069-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
005888069-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
005888069-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
005888069-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
005888069-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

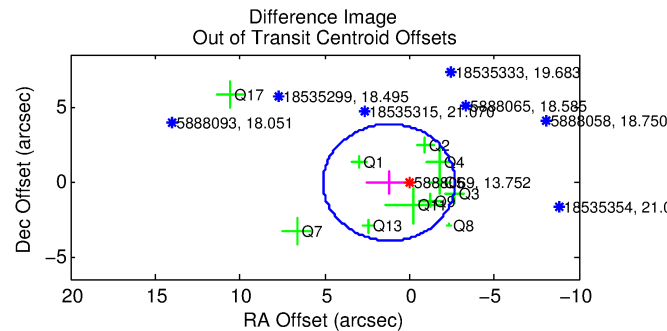
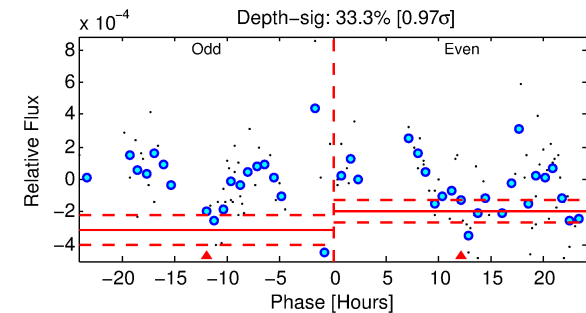
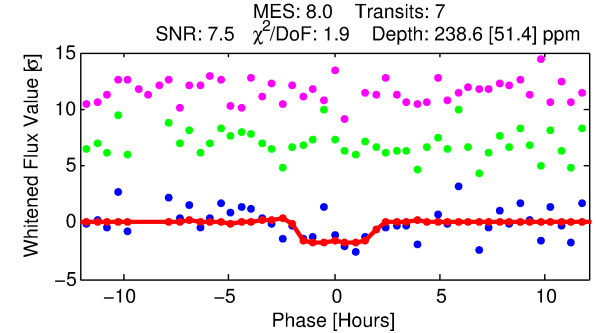
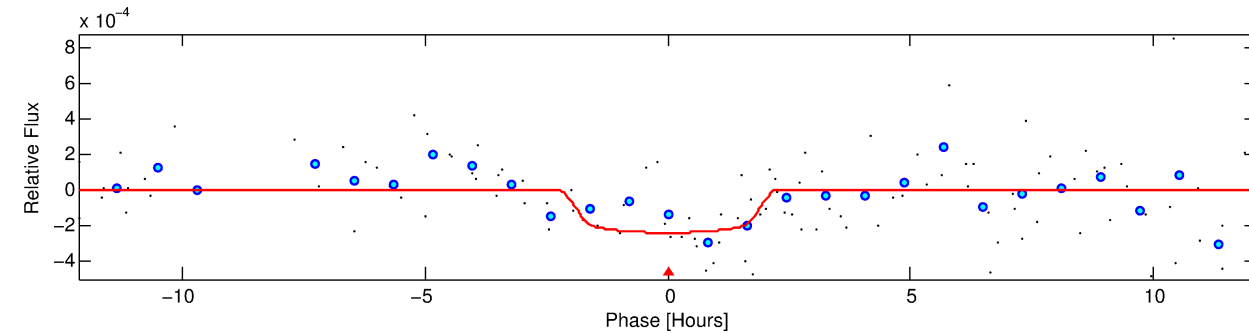
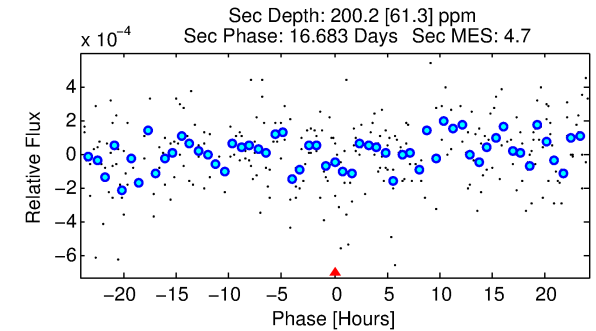
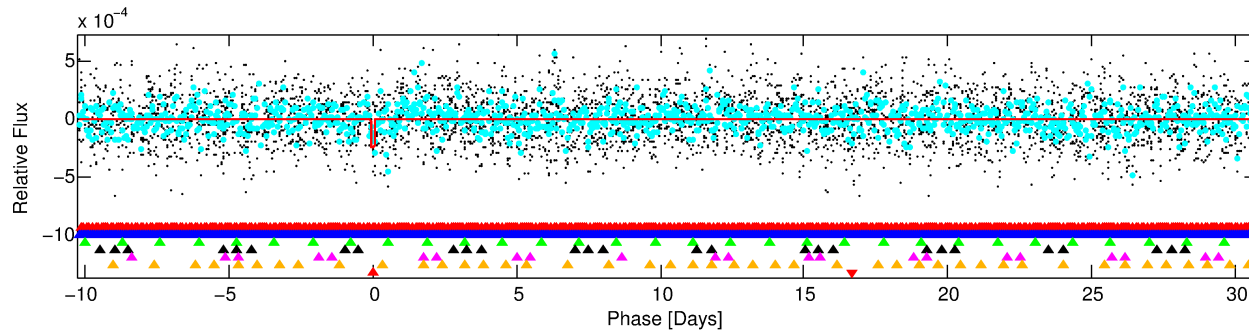
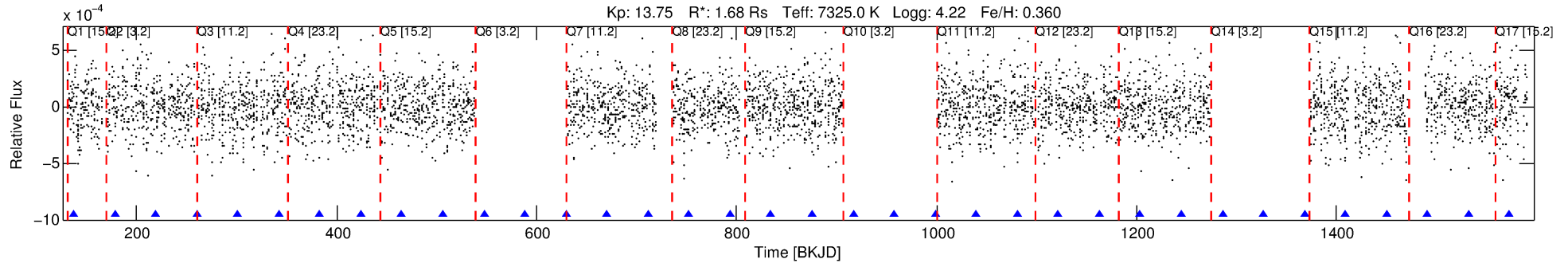
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005888069-07

No Significant Match Found

# DV One-Page Summary

KIC: 5888069 Candidate: 7 of 7 Period: 41.030 d



## DV Fit Results:

Period = 41.03017 [0.00099] d  
Epoch = 137.0944 [0.0153] BKJD  
Rp/R\* = 0.0157 [0.0298]  
a/R\* = 46.15 [543.98]  
b = 0.82 [4.66]  
Seff = 94.41 [28.27]  
Teff = 795 [60] K  
Rp = 2.88 [5.49] Re  
a = 0.2772 [0.0559] AU  
Ag = 1019.88 [3883.39] [0.26σ]  
Teffp = 6945 [6592] K [0.93σ]

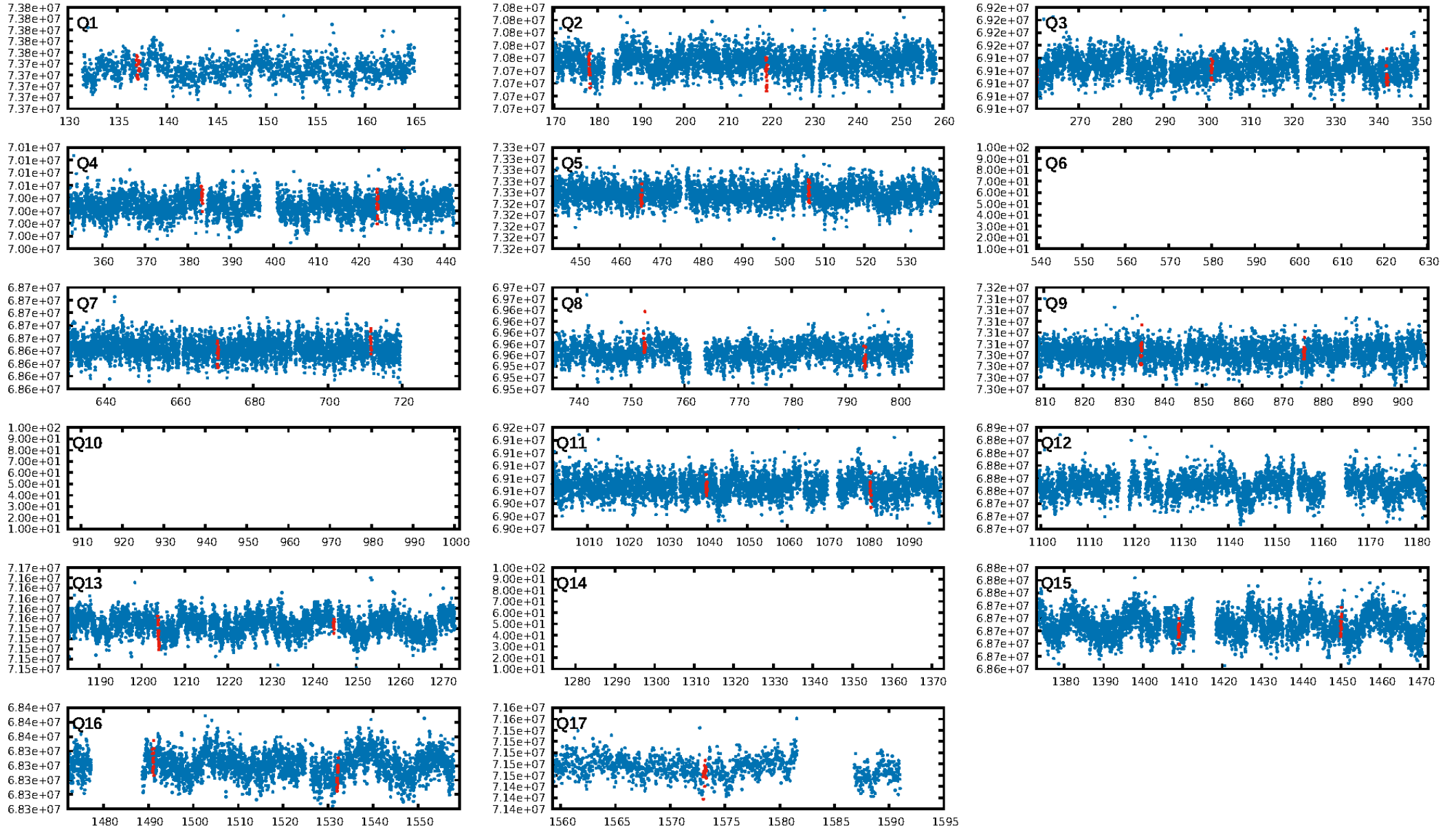
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.62σ]  
LongPeriod-sig: 100.0% [57.33σ]  
ModelChiSquare2-sig: 85.7%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 4.13e-08**  
RollingBand-fgt: 1.00 [7/7]  
GhostDiagnostic-chr: -4.852  
Centroid-sig: 37.1%  
Centroid-so: 0.556 arcsec [0.72σ]  
OotOffset-rm: 1.200 arcsec [0.92σ]  
OotOffset-st: 1/3/2/5 [11]  
KicOffset-rm: 1.159 arcsec [0.98σ]  
KicOffset-st: 1/3/2/5 [11]  
DiffImageQuality-fgm: 0.45 [5/11]  
DiffImageOverlap-fno: 0.00 [0/13]

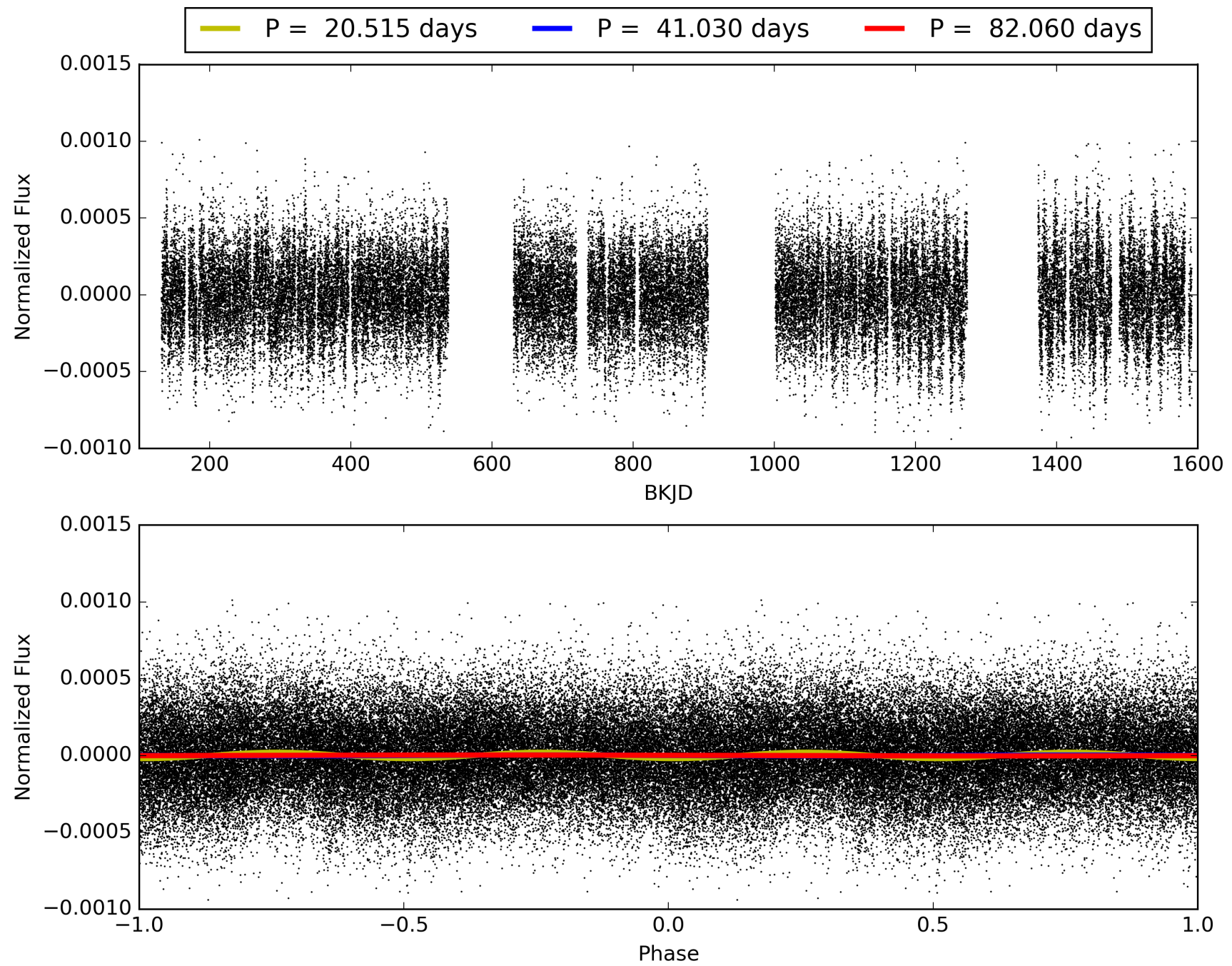
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:50:27 Z

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

# TCE 005888069-07, PDC Light Curves

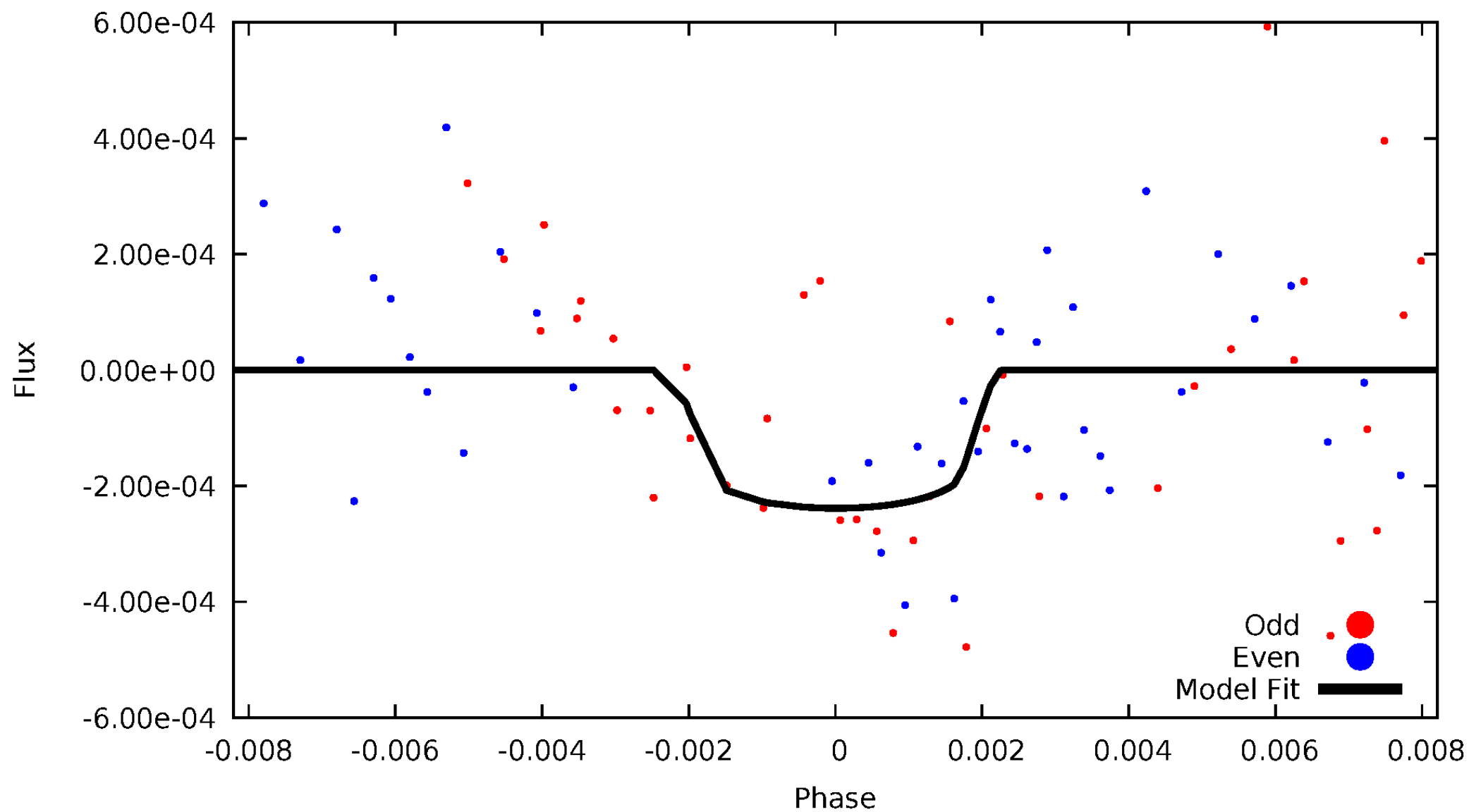


TCE 005888069-07



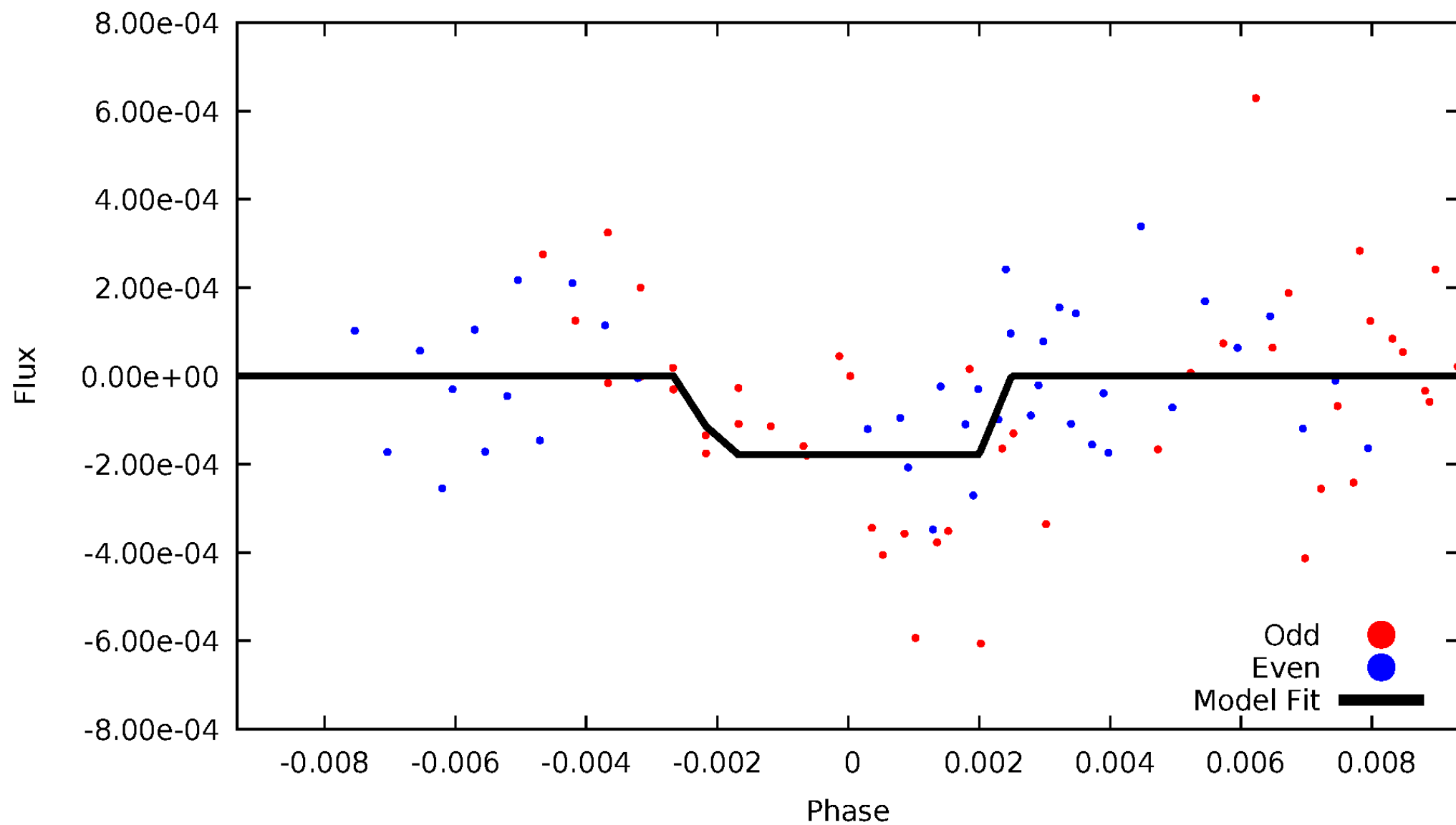
# DV Odd/Even

TCE 005888069-07



# ALT Odd/Even

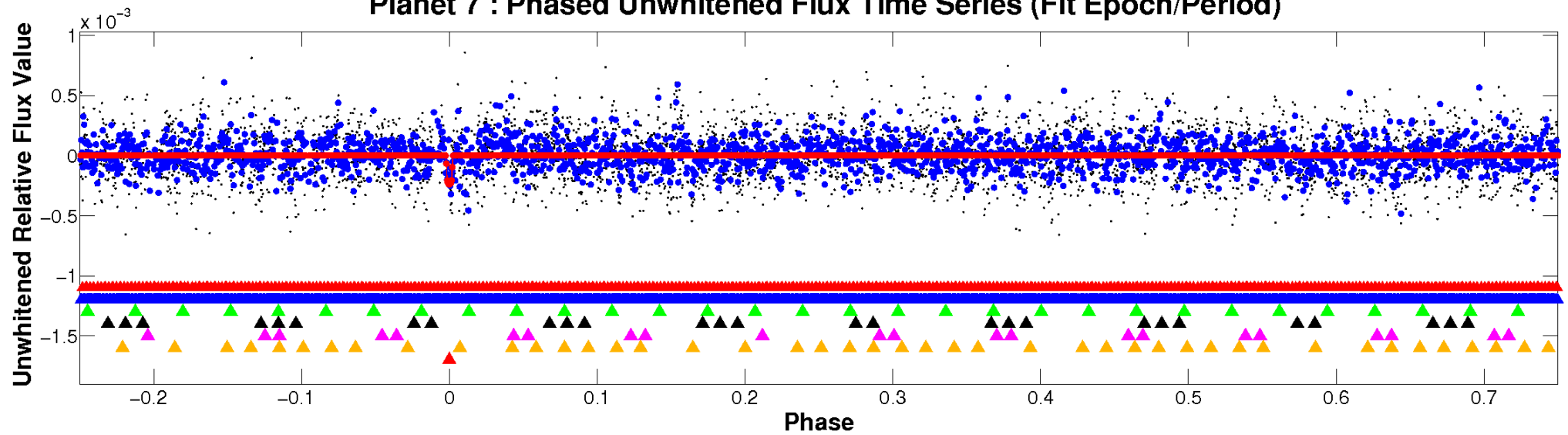
TCE 005888069-07



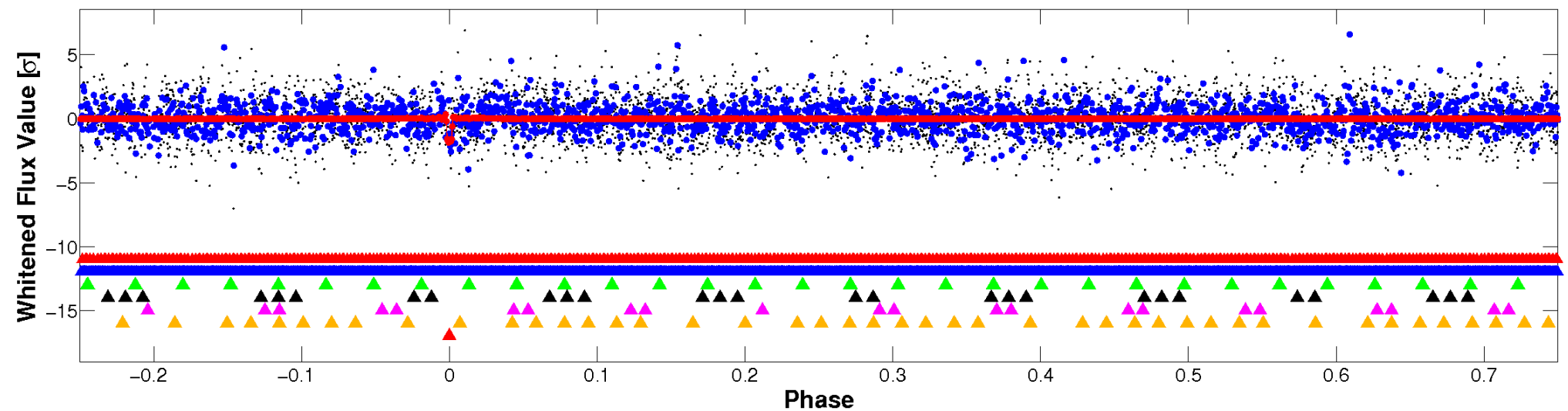


# Non-Whitened Vs. Whitened Light Curve

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

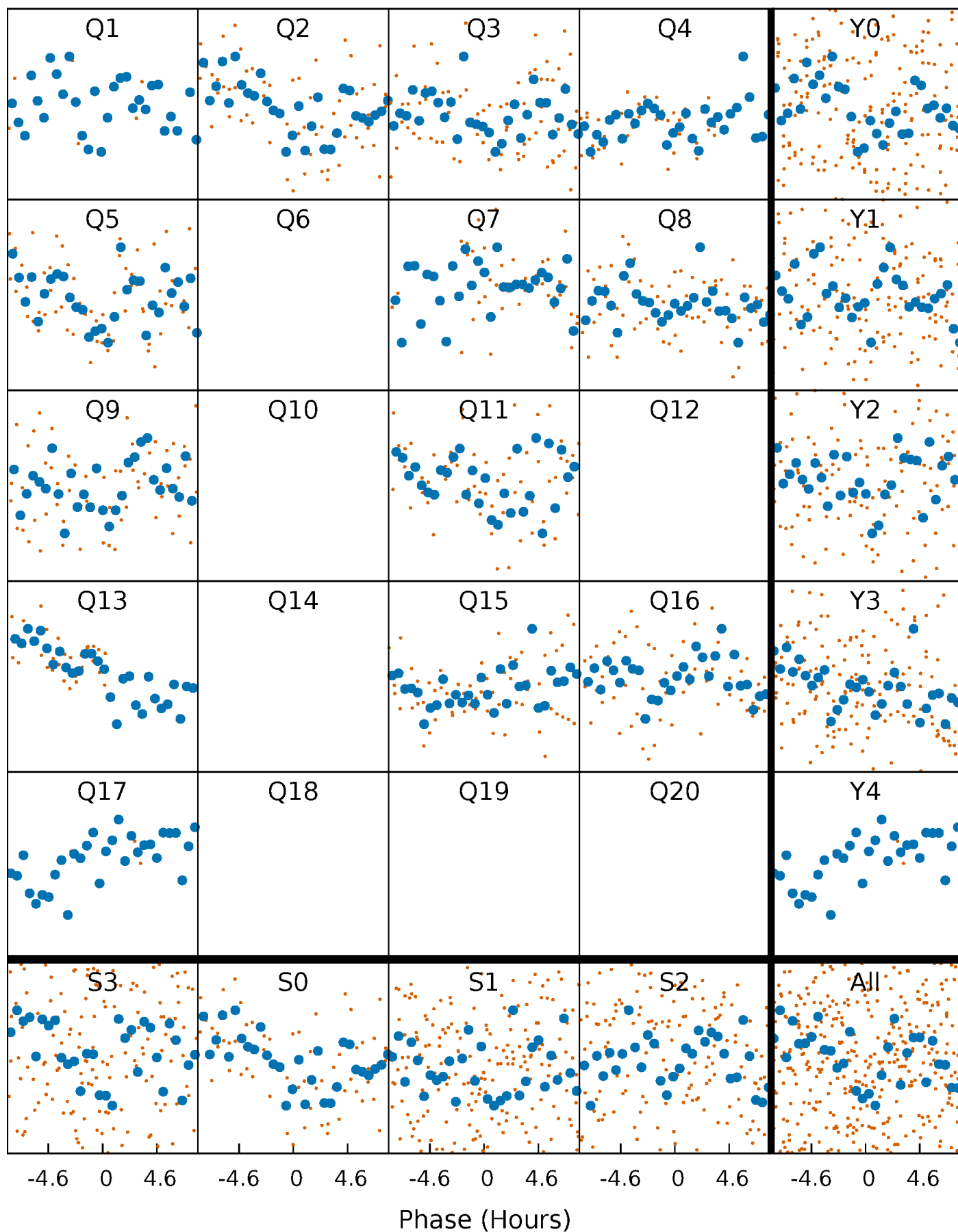


## Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



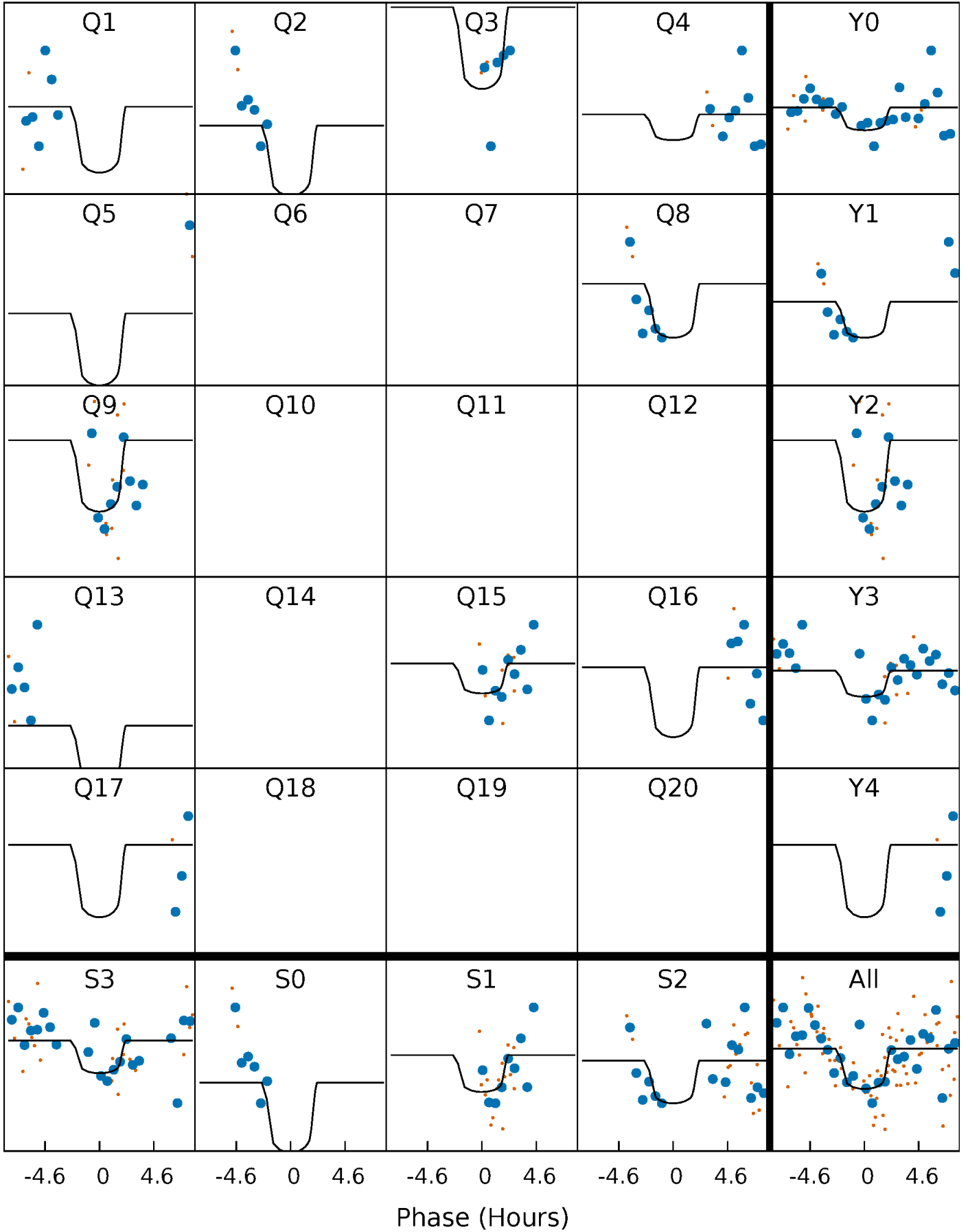
# PDC Quarter-Phased Transit Curves

TCE 005888069-07     $P = 41.030170$  Days     $T_0 = 137.094448$  (BKJD)



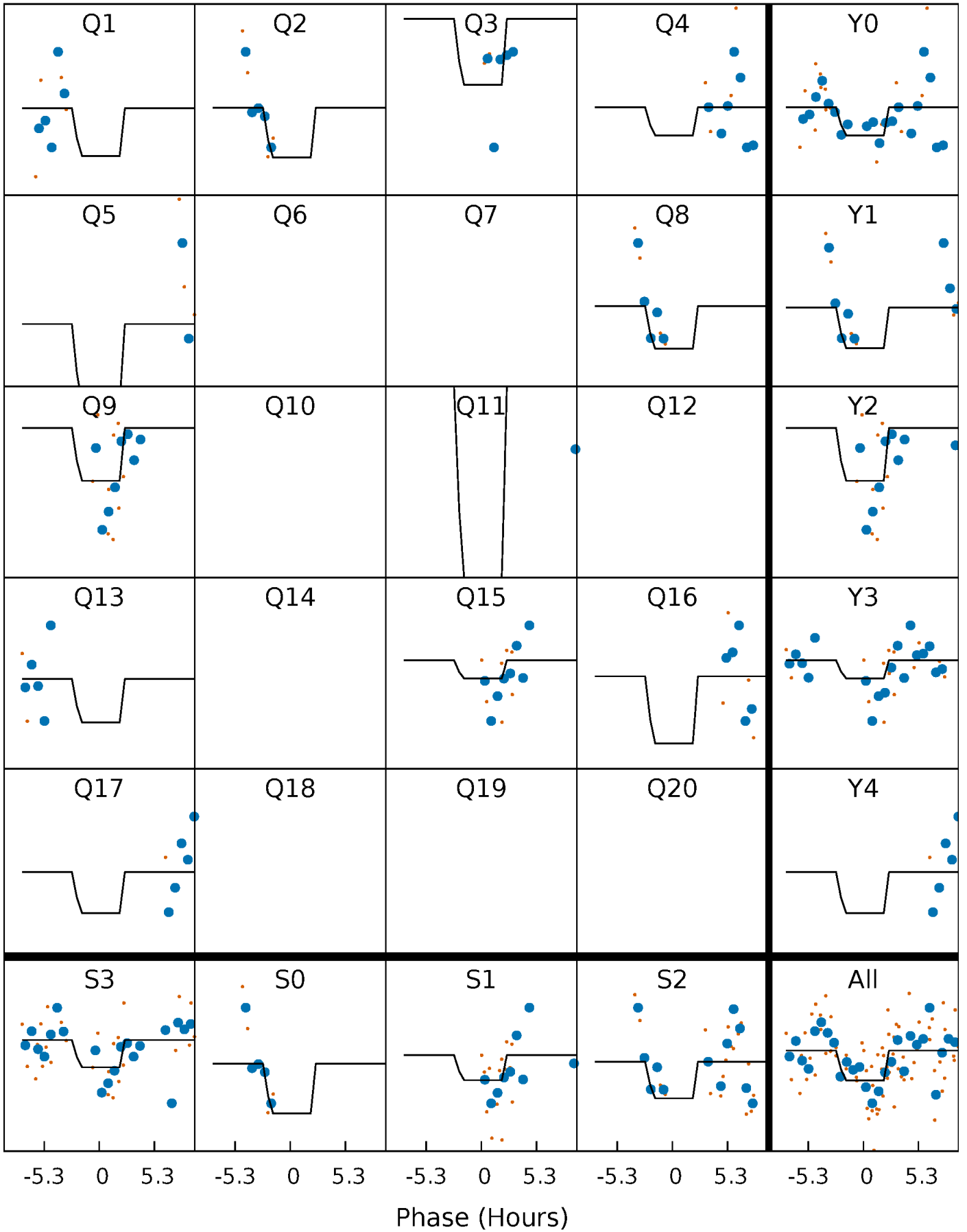
# DV Quarter-Phased Transit Curves

TCE 005888069-07     $P = 41.030170$  Days     $T_0 = 137.094448$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

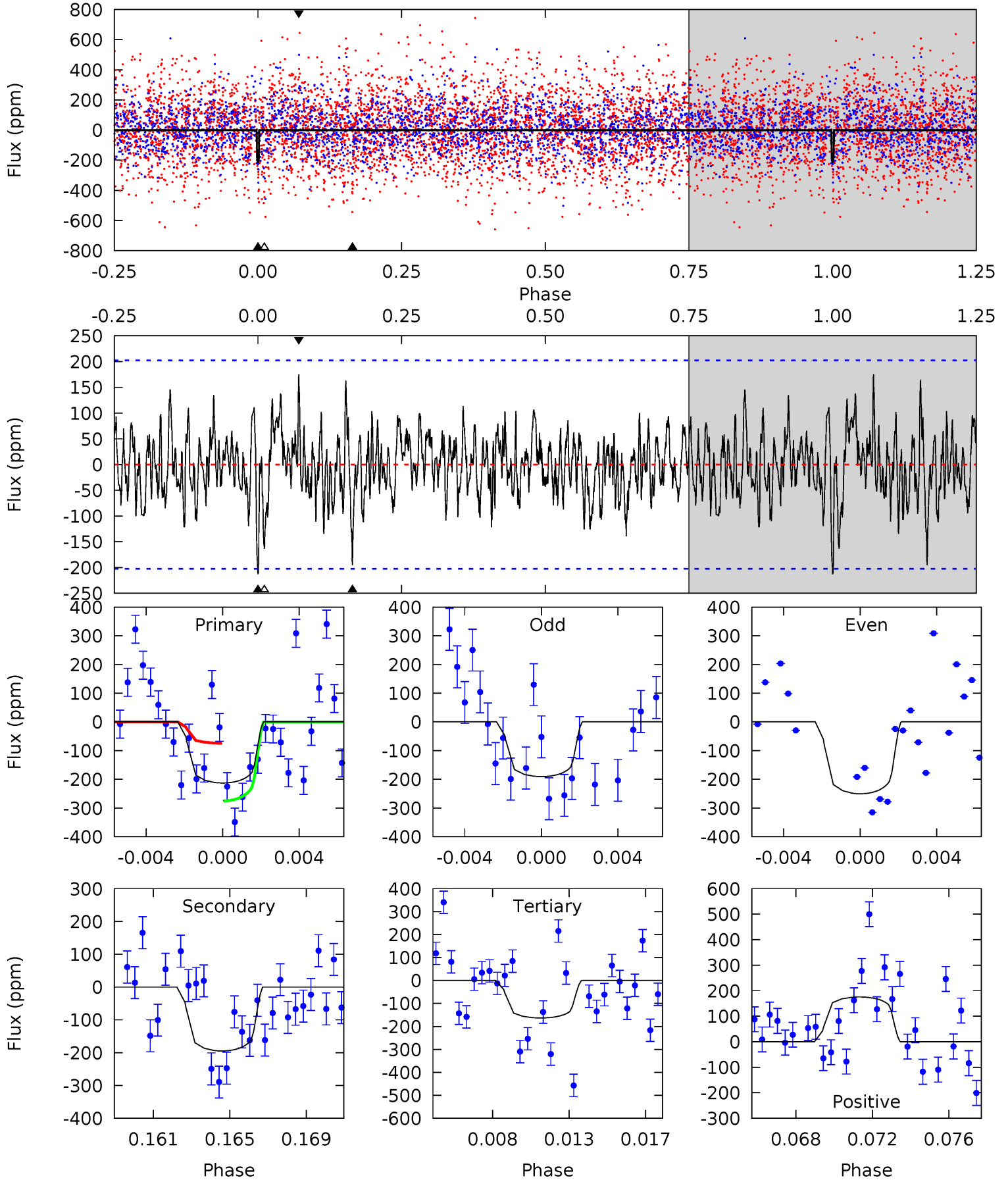
TCE 005888069-07     $P = 41.030329$  Days     $T_0 = 137.079809$  (BKJD)



# DV Model-Shift Uniqueness Test

005888069-07, P = 41.030170 Days, E = 96.064278 Days

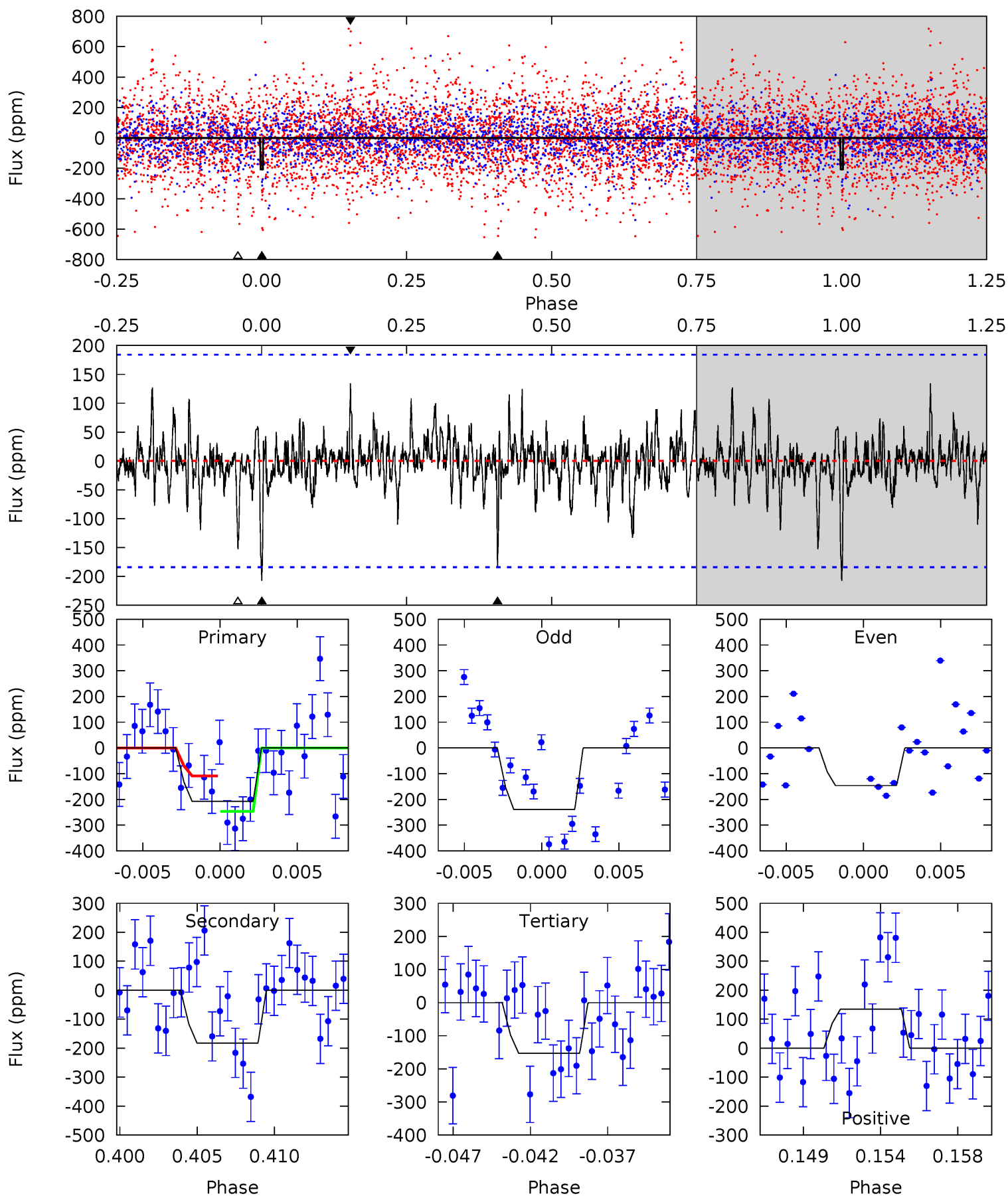
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.46	5.00	4.18	4.50	5.19	2.86	1.34	1.28	0.96	0.82	0.50	0.76	0.84	0.45	2.27



# Alt Model-Shift Uniqueness Test

005888069-07, P = 41.030329 Days, E = 96.049480 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.83	5.13	4.30	3.77	5.17	2.83	1.05	1.53	2.05	0.84	1.36	1.27	1.11	0.39	1.65



### Stellar Parameters For KIC 005888069

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7325^{+73}_{-95}$	$4.216^{+0.018}_{-0.162}$	$0.360^{+0.050}_{-0.150}$	$1.677^{+0.399}_{-0.070}$	$1.687^{+0.139}_{-0.075}$	$0.503^{+0.035}_{-0.227}$
	+1%/-1%	+0%/-4%	+14%/-42%	+24%/-4%	+8%/-4%	+7%/-45%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005888069-07 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-195 \pm 39$	$5.28^{+5.22}_{-3.63}$	$1127^{+66}_{-26}$	$5174^{+4773}_{-1190}$	$290^{+2513}_{-217}$
Alt.	$-183 \pm 36$	$4.98^{+4.72}_{-3.39}$	$1127^{+61}_{-25}$	$5233^{+4654}_{-1201}$	$299^{+2585}_{-220}$

$T_{max}$  = 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

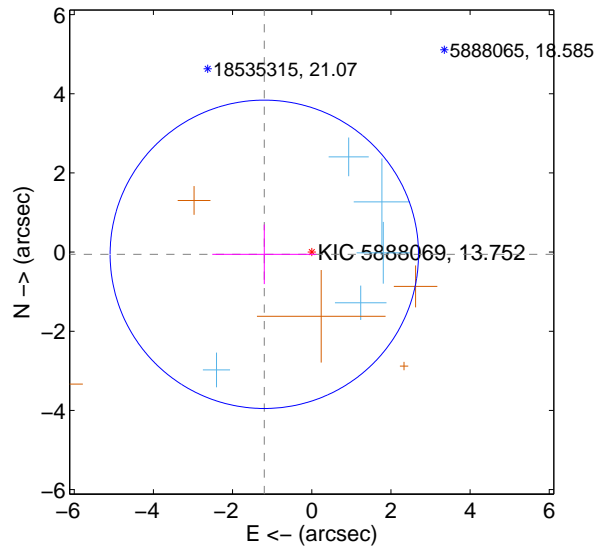
Supplemental centroid analysis for 005888069-07. Kepler magnitude: 13.75. Transit SNR 7.50

There are 5 quarters with good PRF difference image offsets

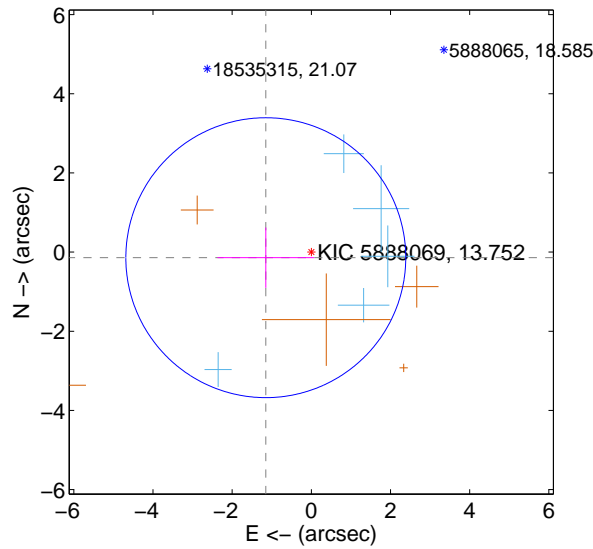
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.200 \pm 1.298$	0.92	$1.198 \pm 1.316$	$-0.056 \pm 0.752$
PRF-fit source offset from KIC position	$1.159 \pm 1.178$	0.98	$1.150 \pm 1.222$	$-0.141 \pm 0.763$
photometric centroid source offset	$0.56 \pm 0.77$	0.72	$-0.26 \pm 0.78$	$-0.49 \pm 0.77$

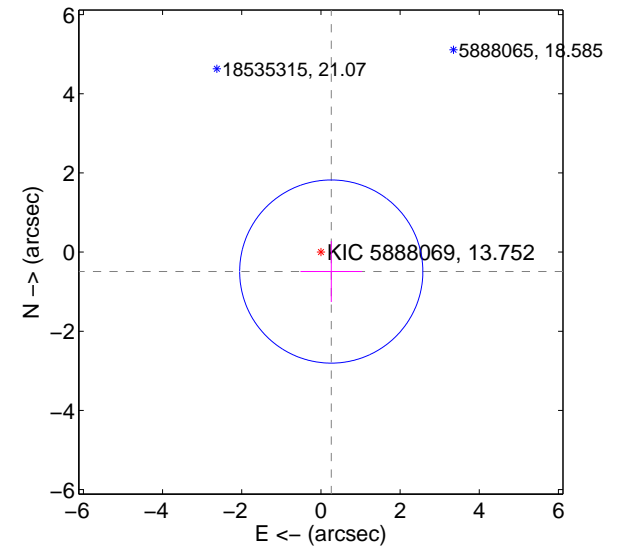
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

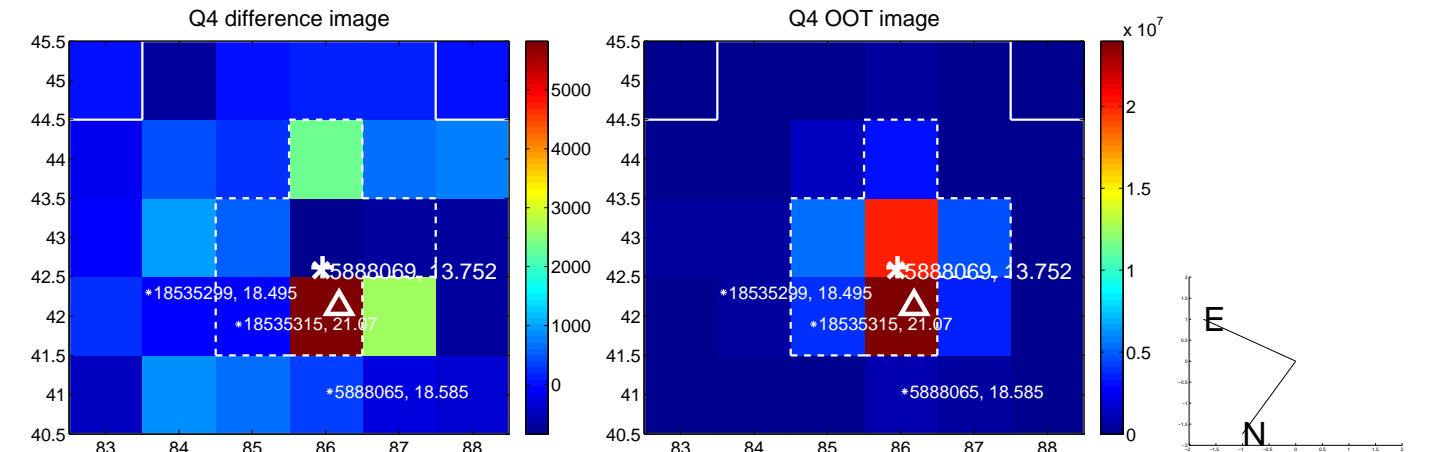
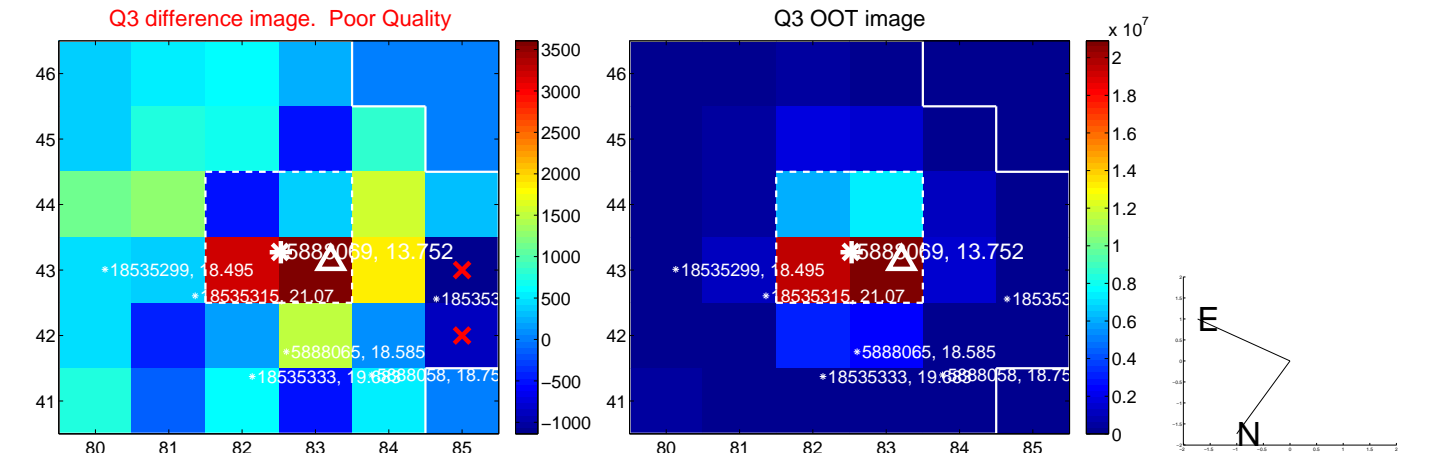
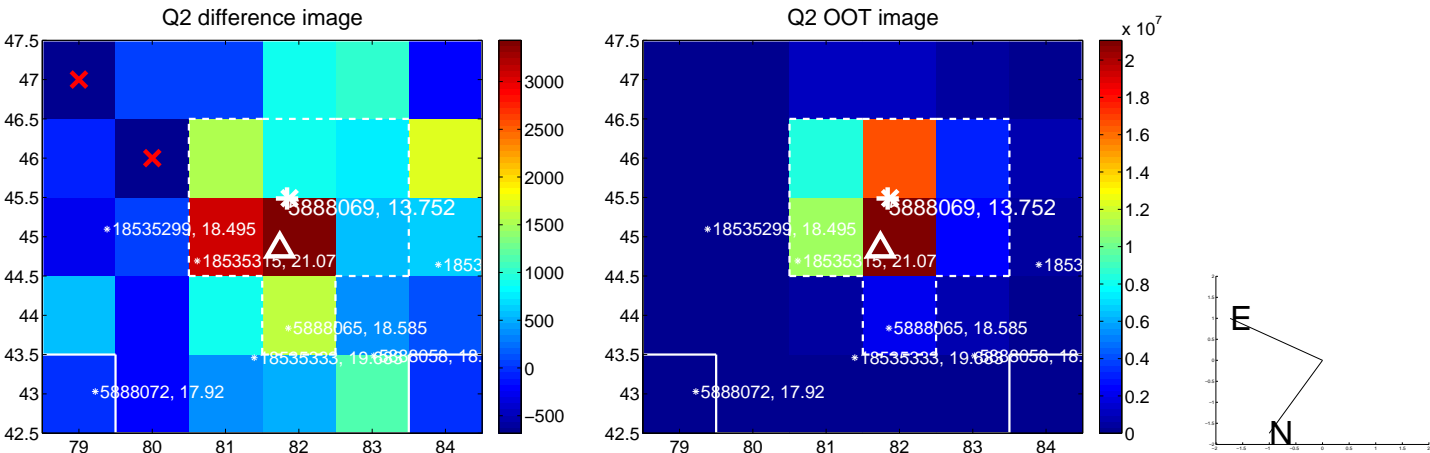
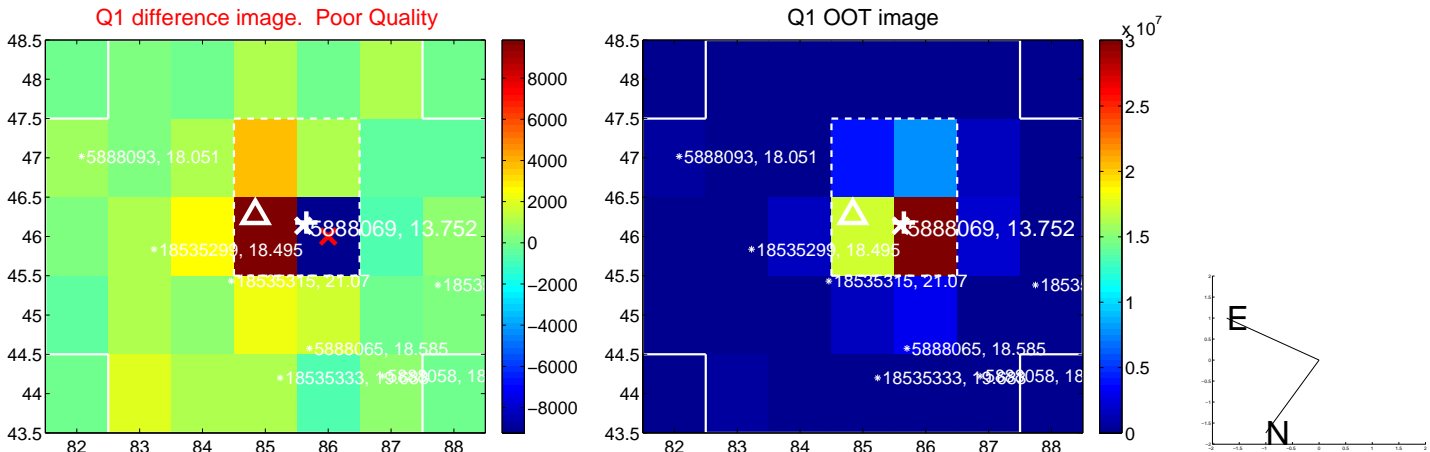


offset from photometric centroids

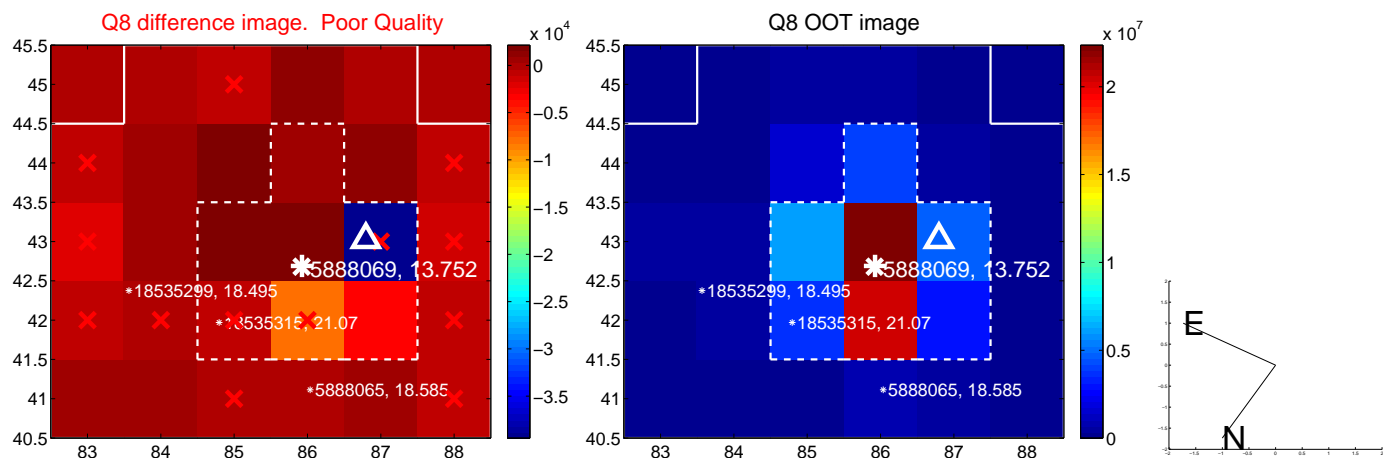
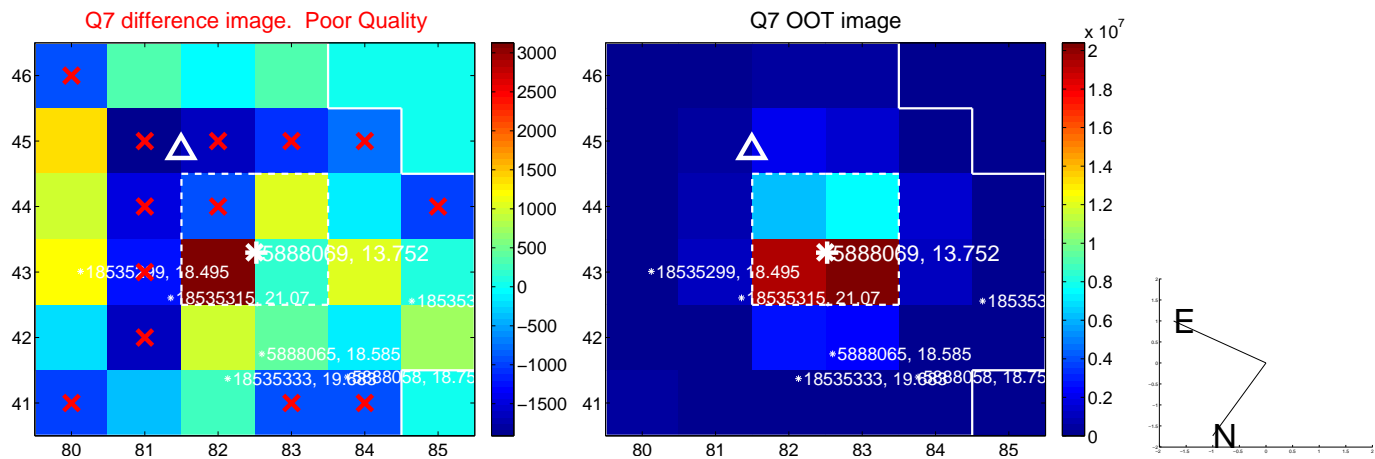
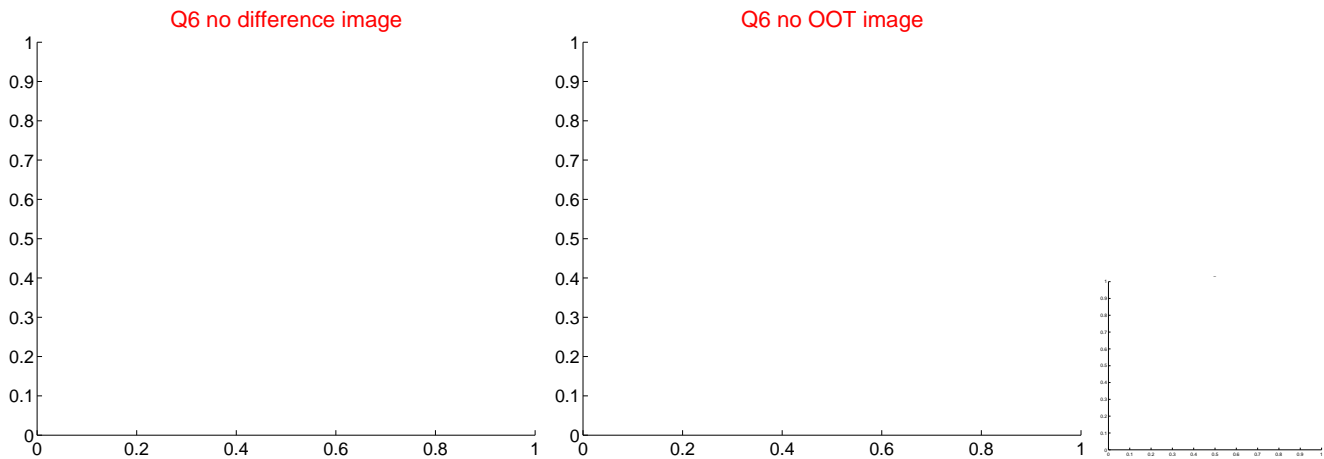
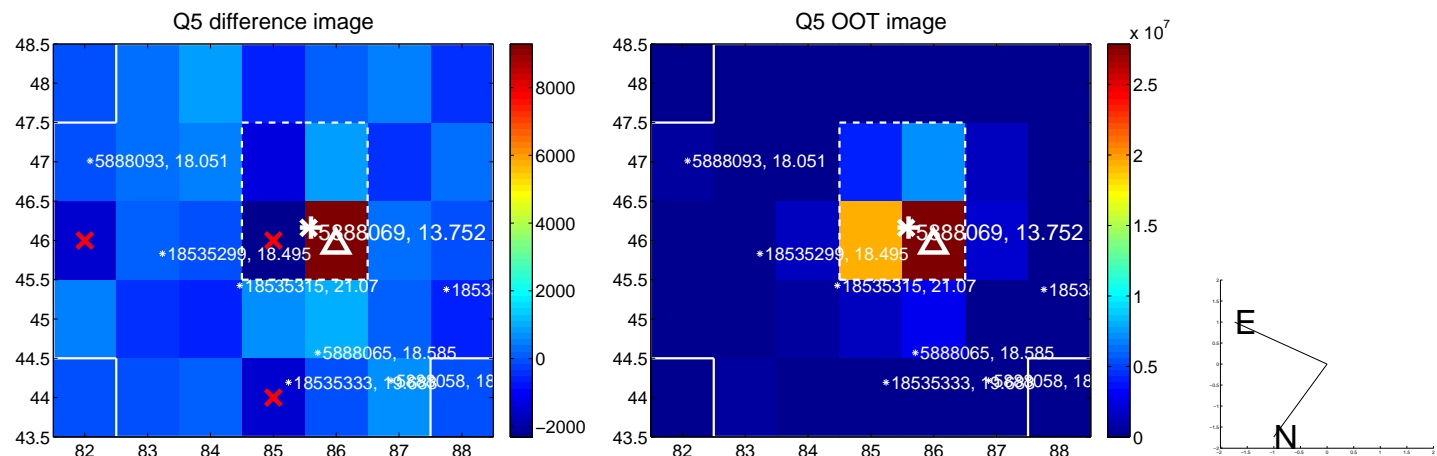


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

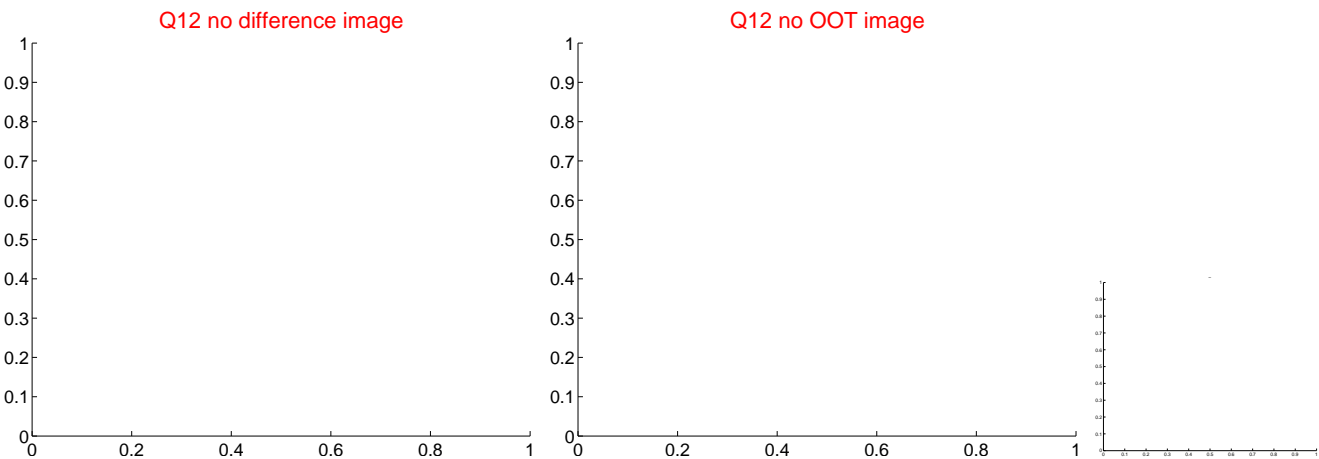
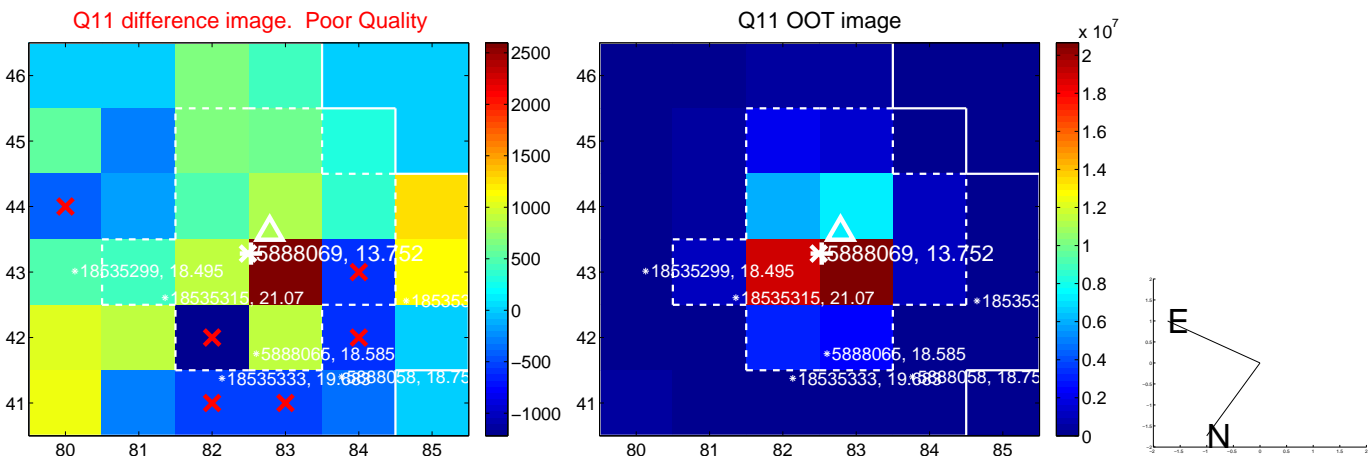
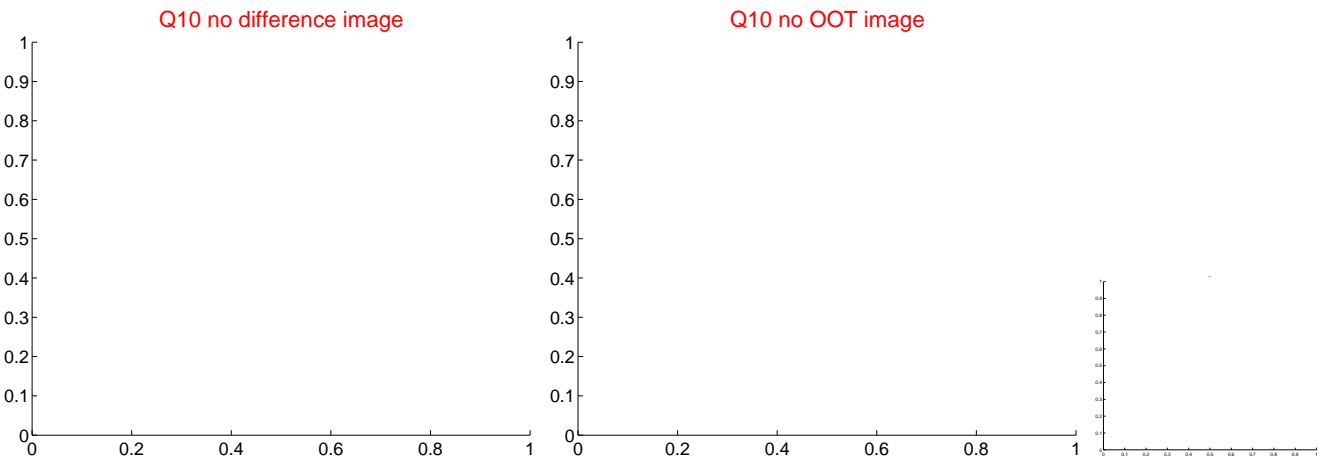
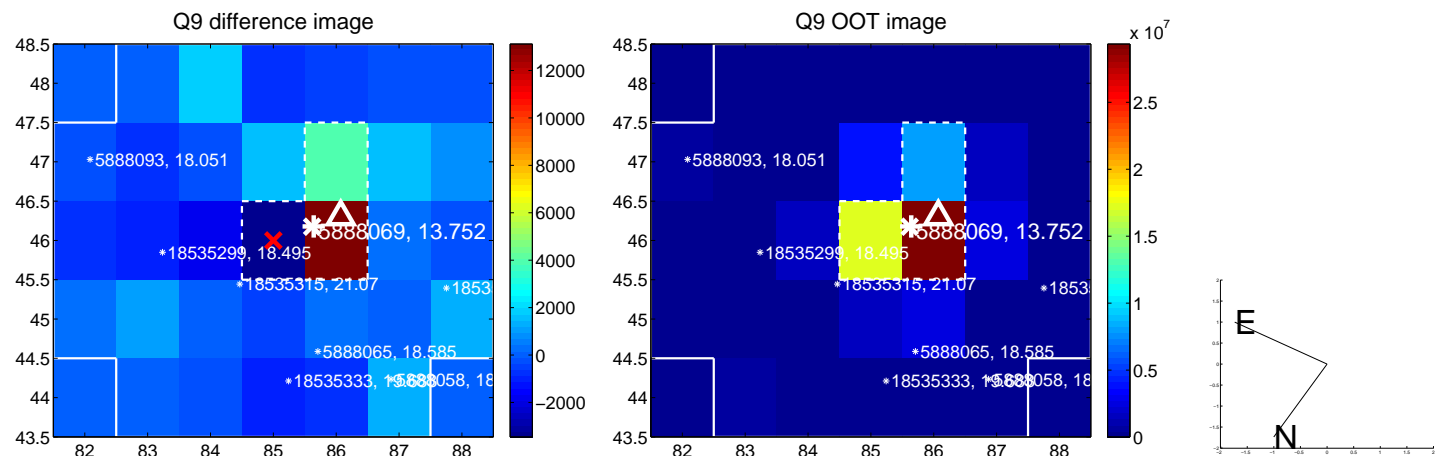
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



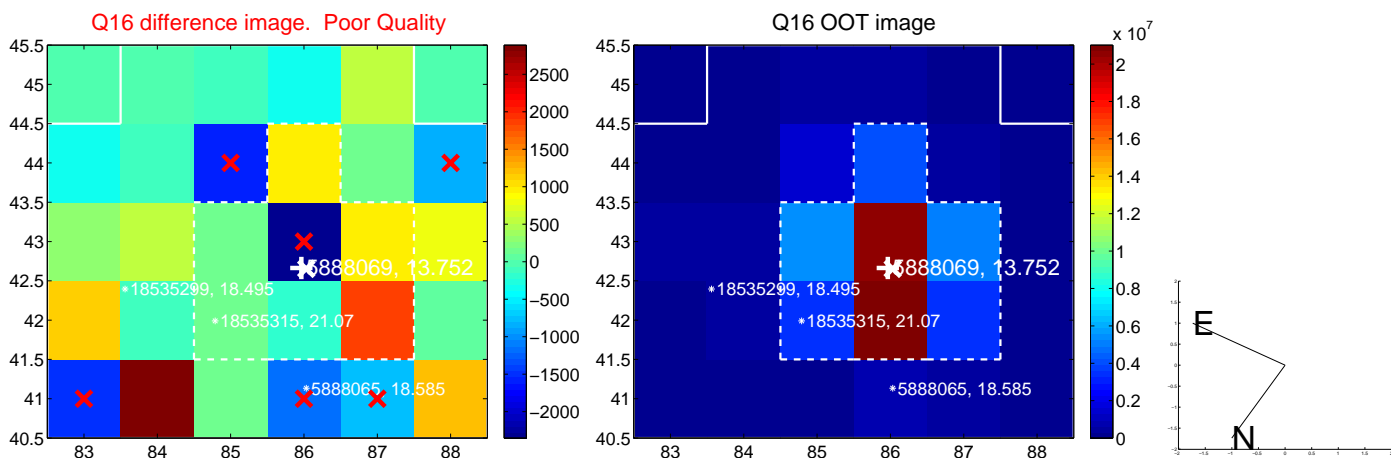
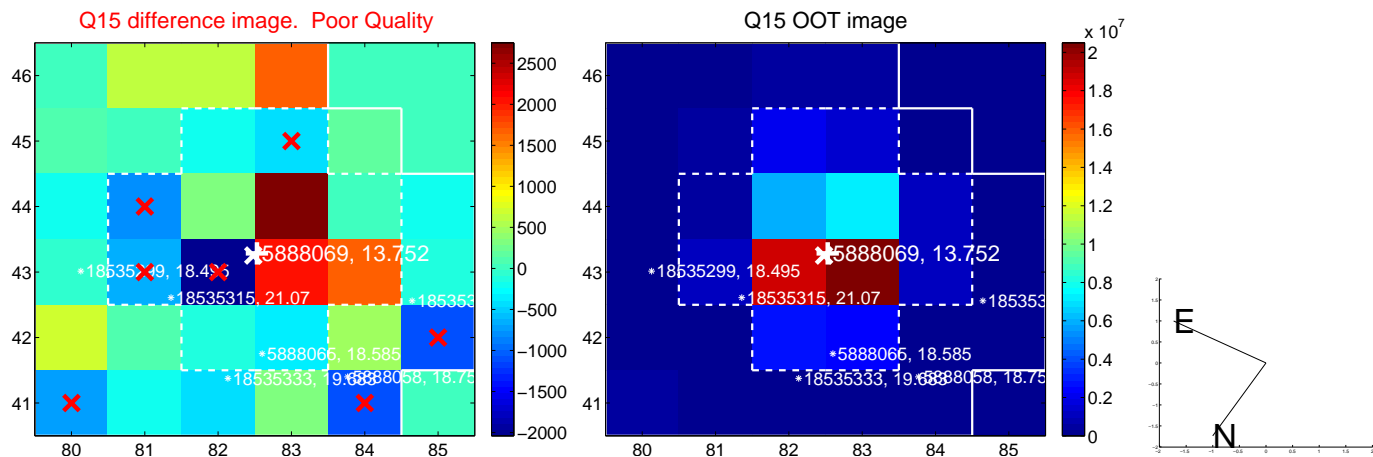
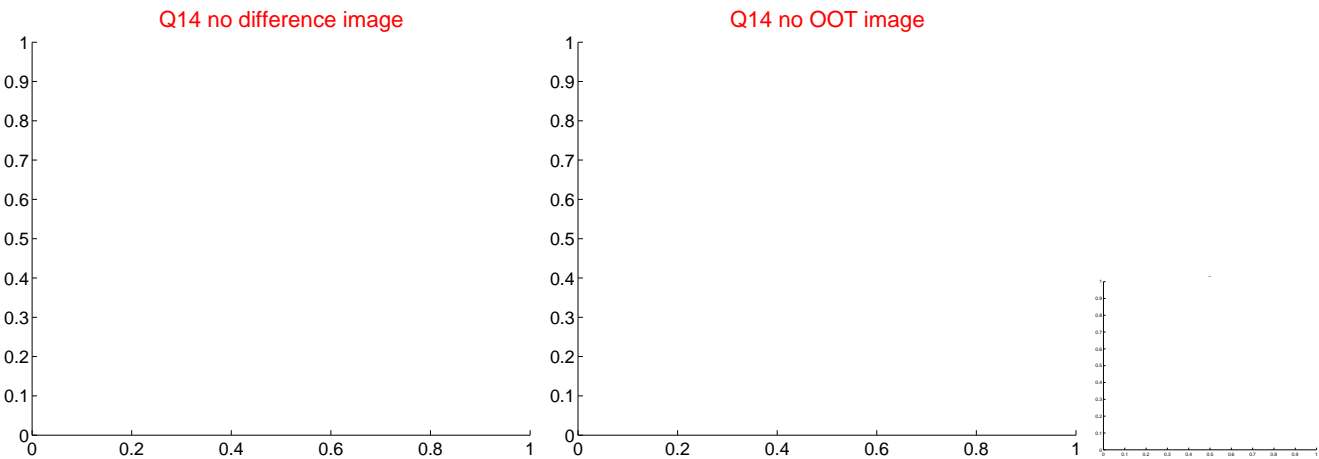
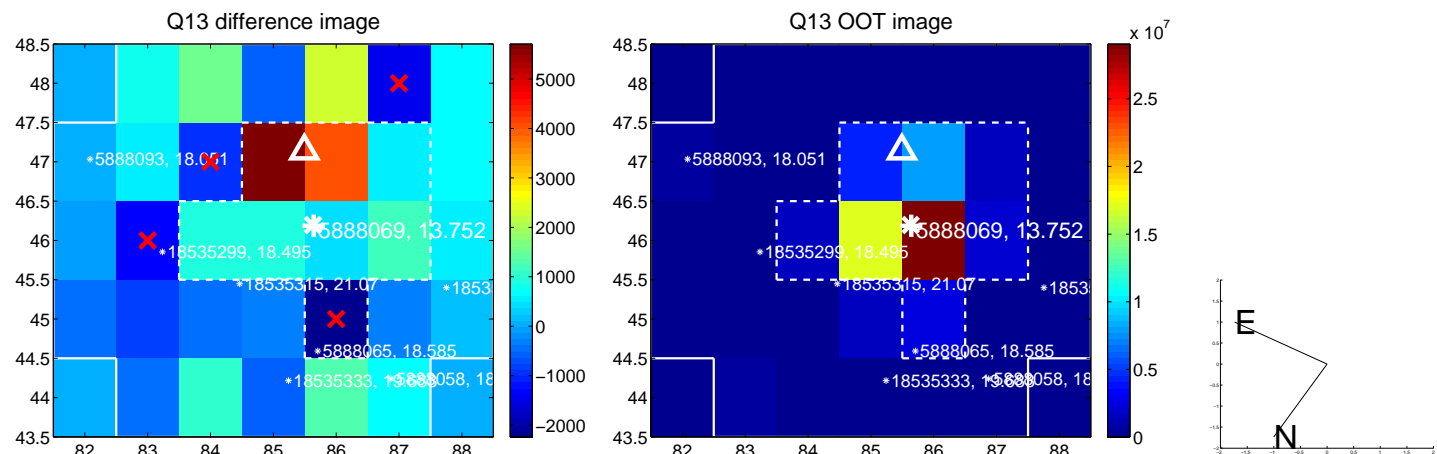
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



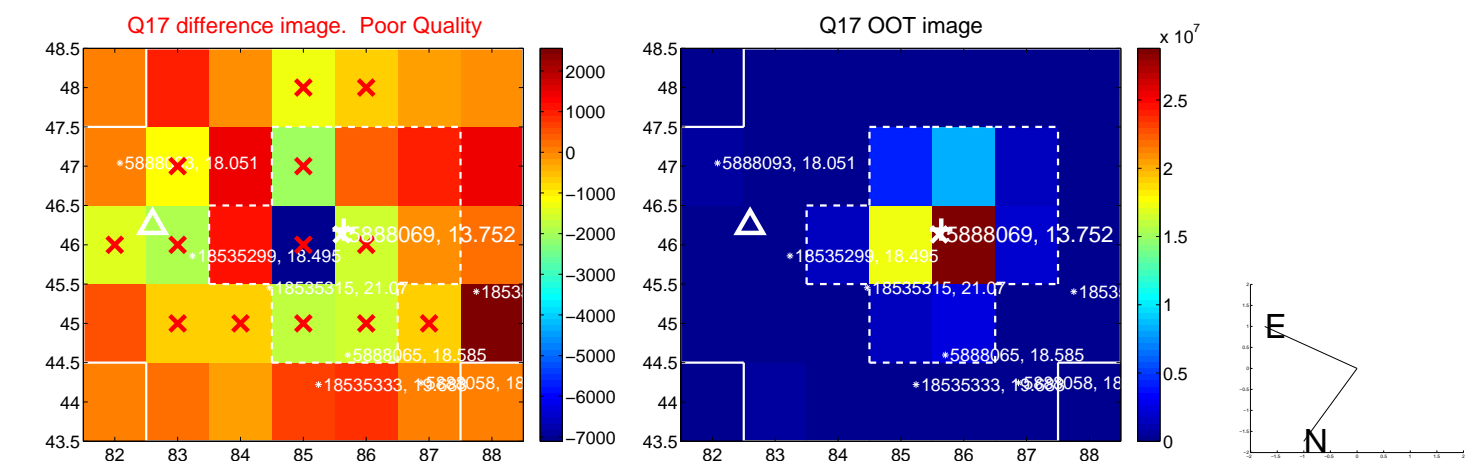
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



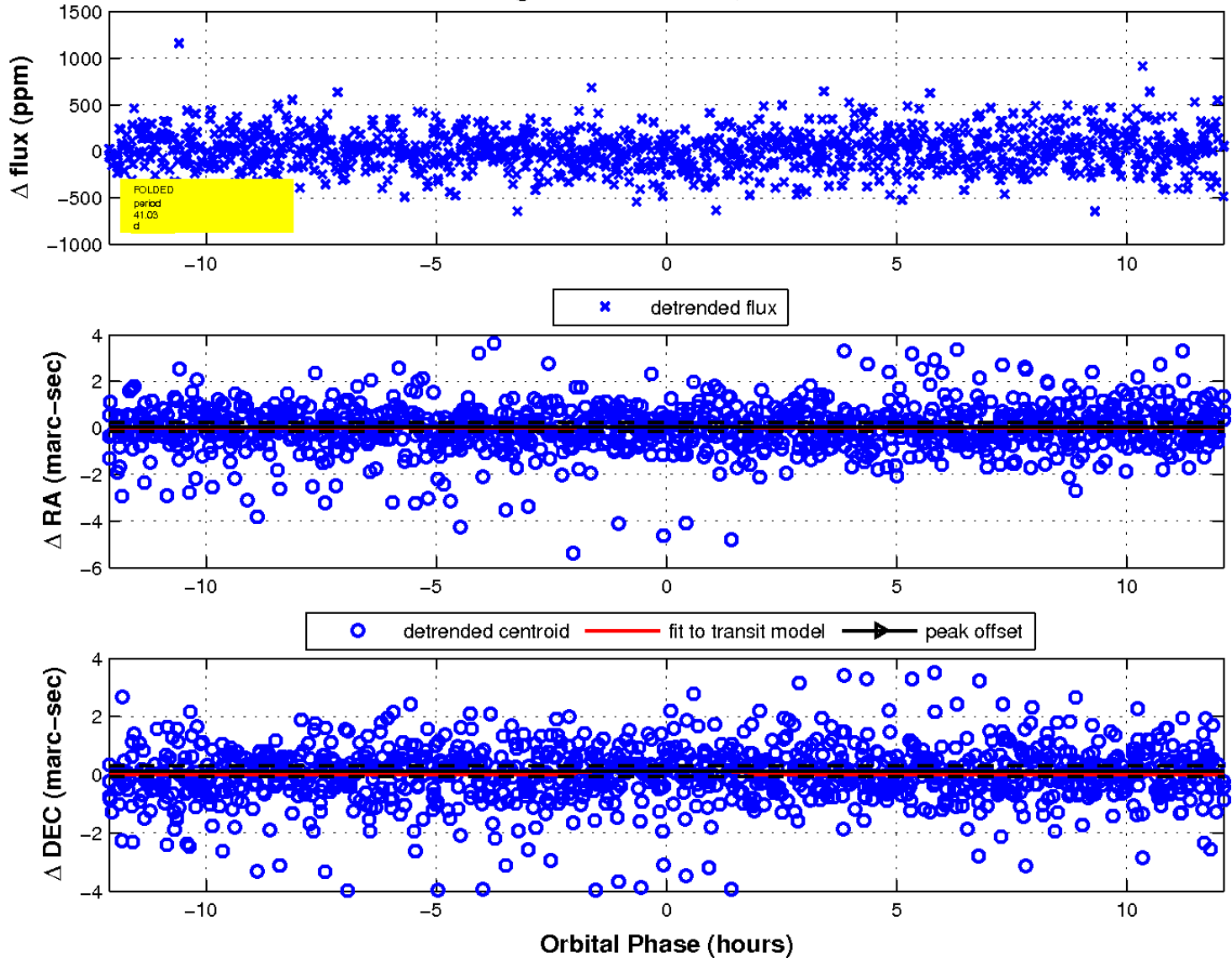
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 7 of 7



UKIRT Image

