

# KIC 005446068

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005446068-01	OBS	No	0.686055	132.020320	101.5	1.015	11.9	12.0	3.35	5985	3.42	41055.26
005446068-02	OBS	No	0.571708	131.678847	77.0	0.929	11.6	8.2	3.35	5985	2.96	0.00
005446068-03	OBS	No	0.571707	131.909449	88.7	0.947	10.5	9.1	3.35	5985	3.18	0.00
005446068-04	OBS	No	82.152235	173.175060	1742.4	3.754	8.3	7.2	3.35	5985	26.11	69.56
005446068-05	OBS	No	49.368650	142.734127	1094.8	2.579	8.5	6.1	3.35	5985	11.96	137.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005446068-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005446068-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
005446068-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

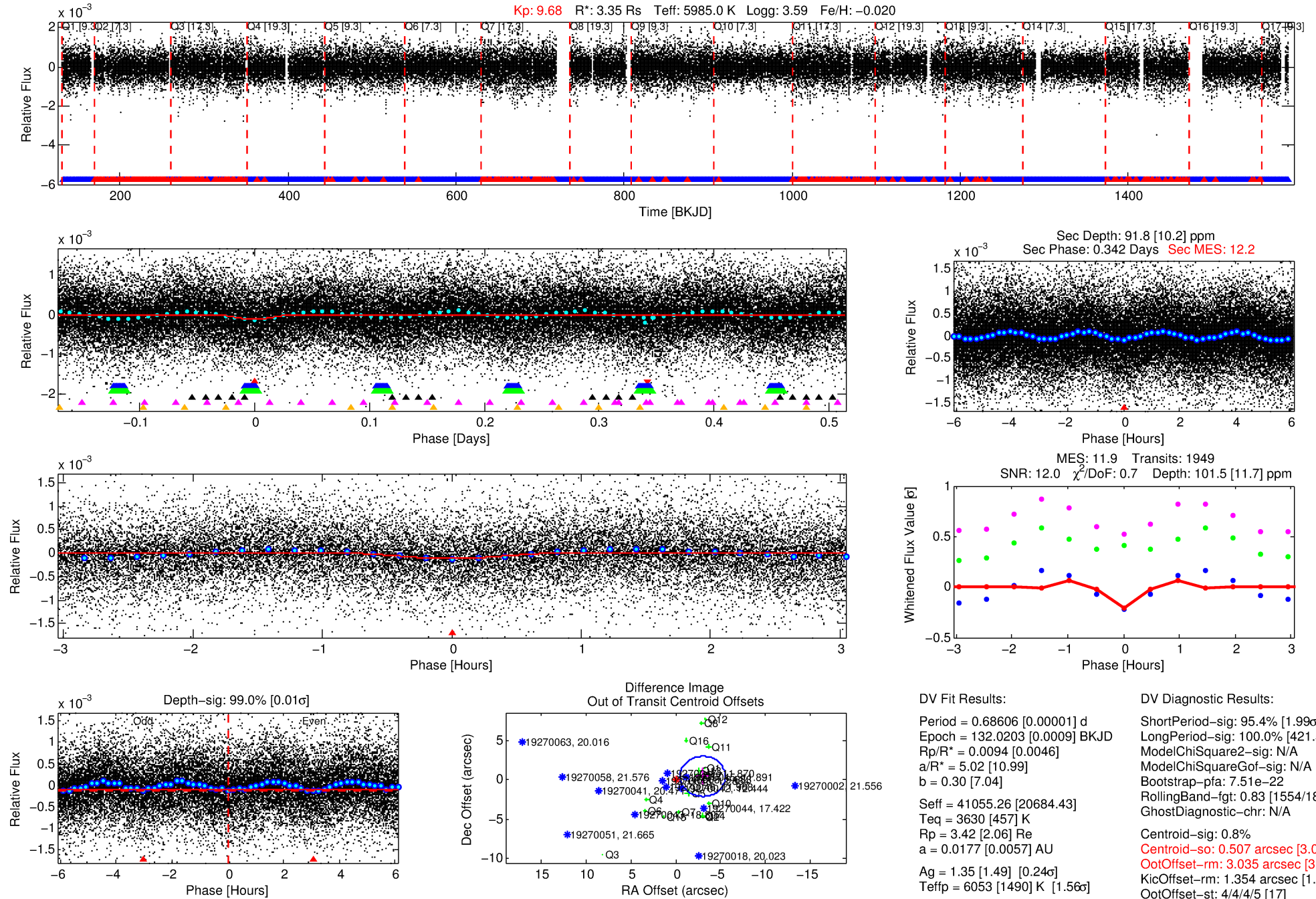
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005446068-01

No Significant Match Found

# DV One-Page Summary

KIC: 5446068 Candidate: 1 of 6 Period: 0.686 d



## DV Fit Results:

Period = 0.68606 [0.00001] d  
Epoch = 132.0203 [0.0009] BKJD  
Rp/R\* = 0.0094 [0.0046]  
a/R\* = 5.02 [10.99]  
b = 0.30 [7.04]  
Seff = 41055.26 [20684.43]  
Teq = 3630 [457] K  
Rp = 3.42 [2.06] Re  
a = 0.0177 [0.0057] AU  
Ag = 1.35 [1.49] [0.24 $\sigma$ ]  
Teffp = 6053 [1490] K [1.56 $\sigma$ ]

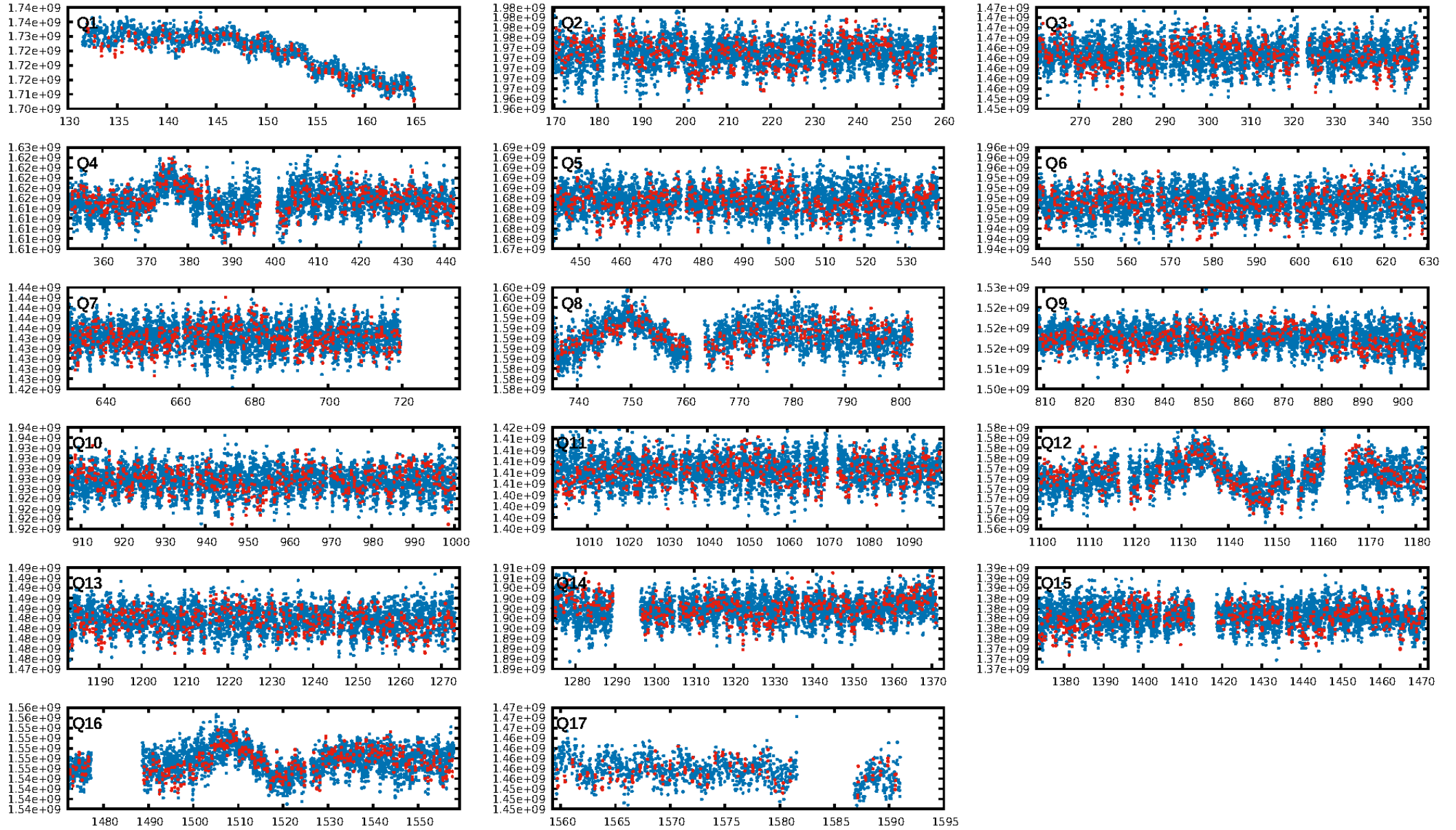
## DV Diagnostic Results:

ShortPeriod-sig: 95.4% [1.99 $\sigma$ ]  
LongPeriod-sig: 100.0% [421.56 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.51e-22  
RollingBand-fgt: 0.83 [1554/1862]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.8%  
Centroid-so: 0.507 arcsec [3.03 $\sigma$ ]  
OotOffset-rm: 3.035 arcsec [3.59 $\sigma$ ]  
KicOffset-rm: 1.354 arcsec [1.24 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:46:01 Z

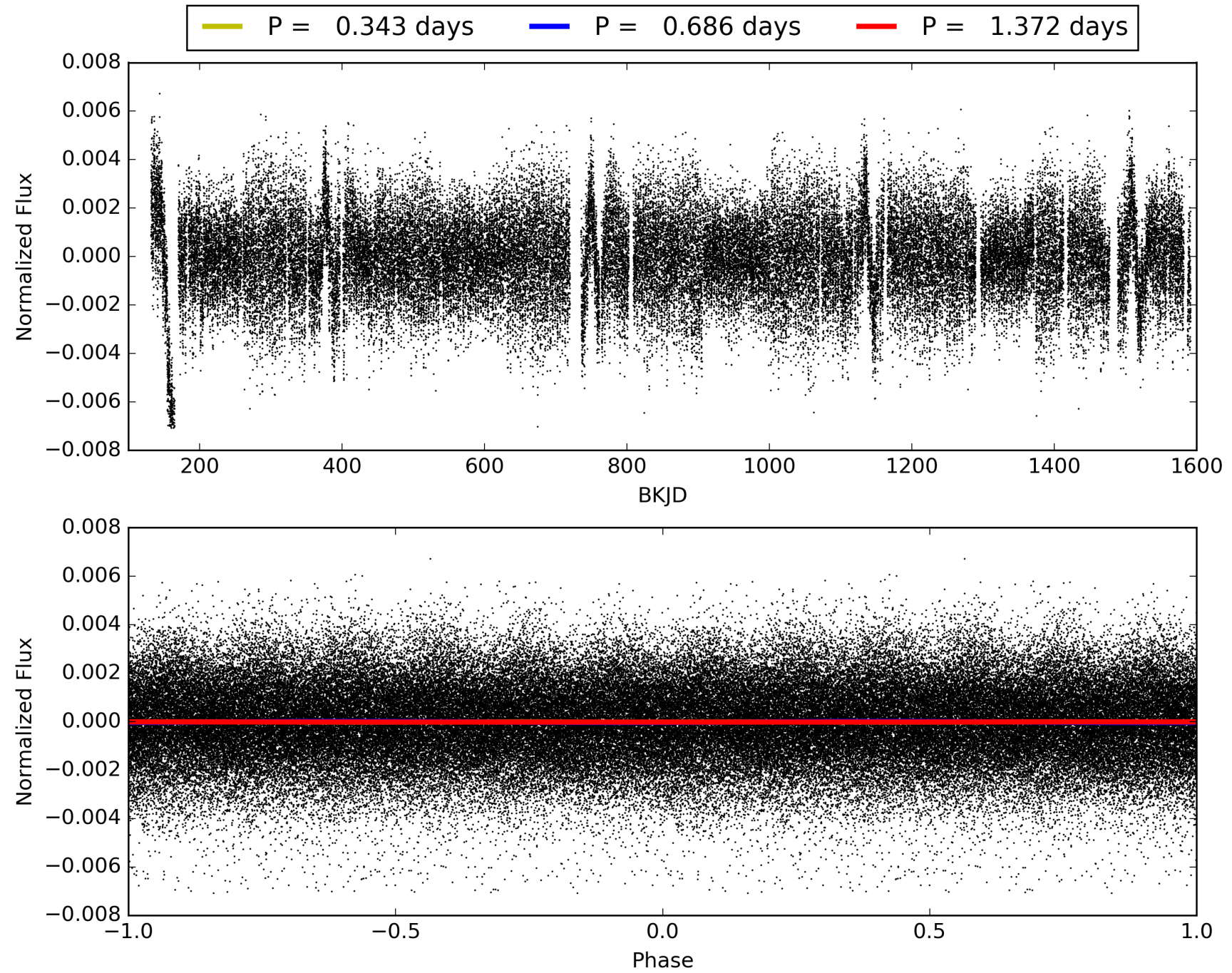
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005446068-01, PDC Light Curves





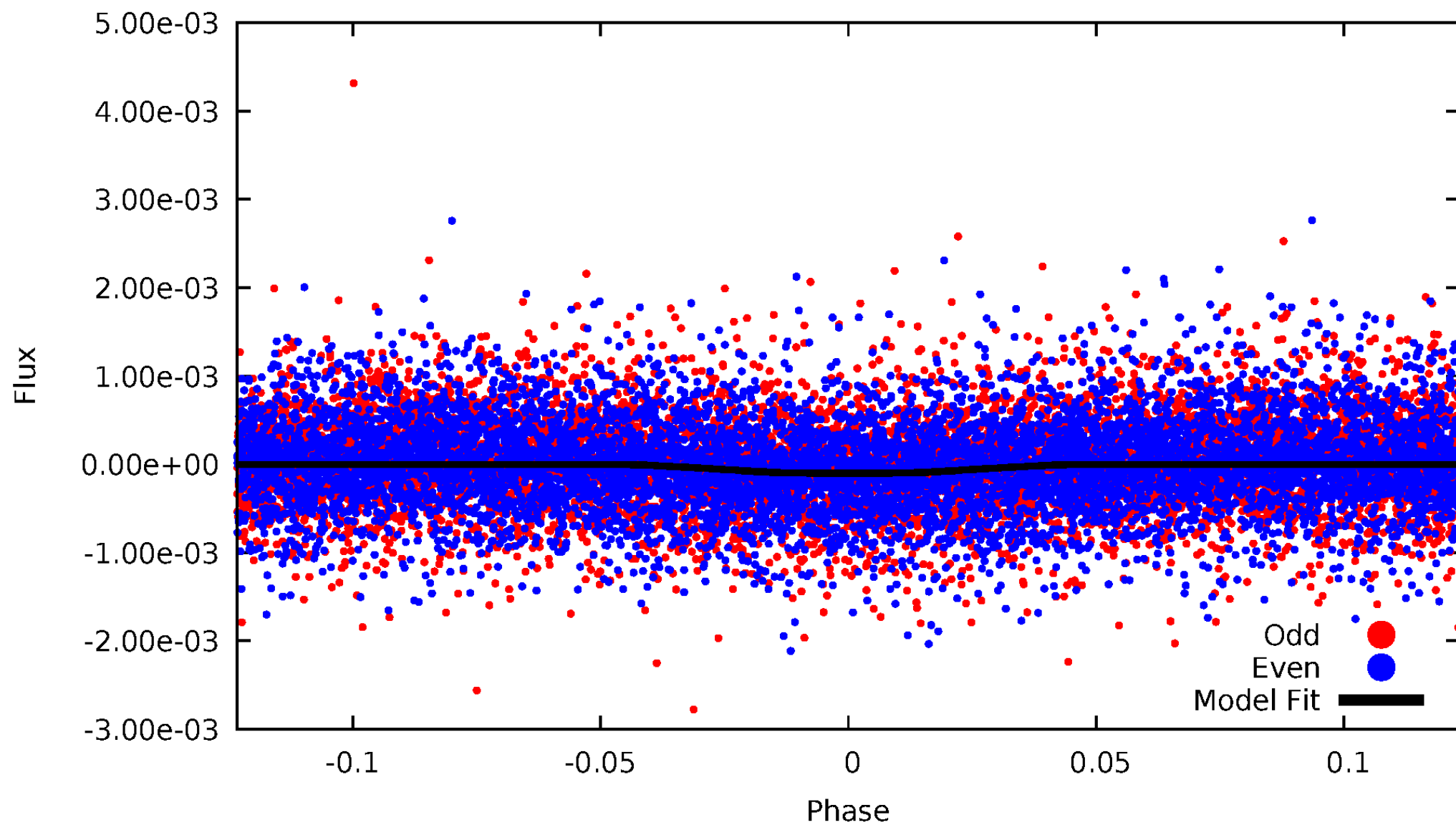
TCE 005446068-01





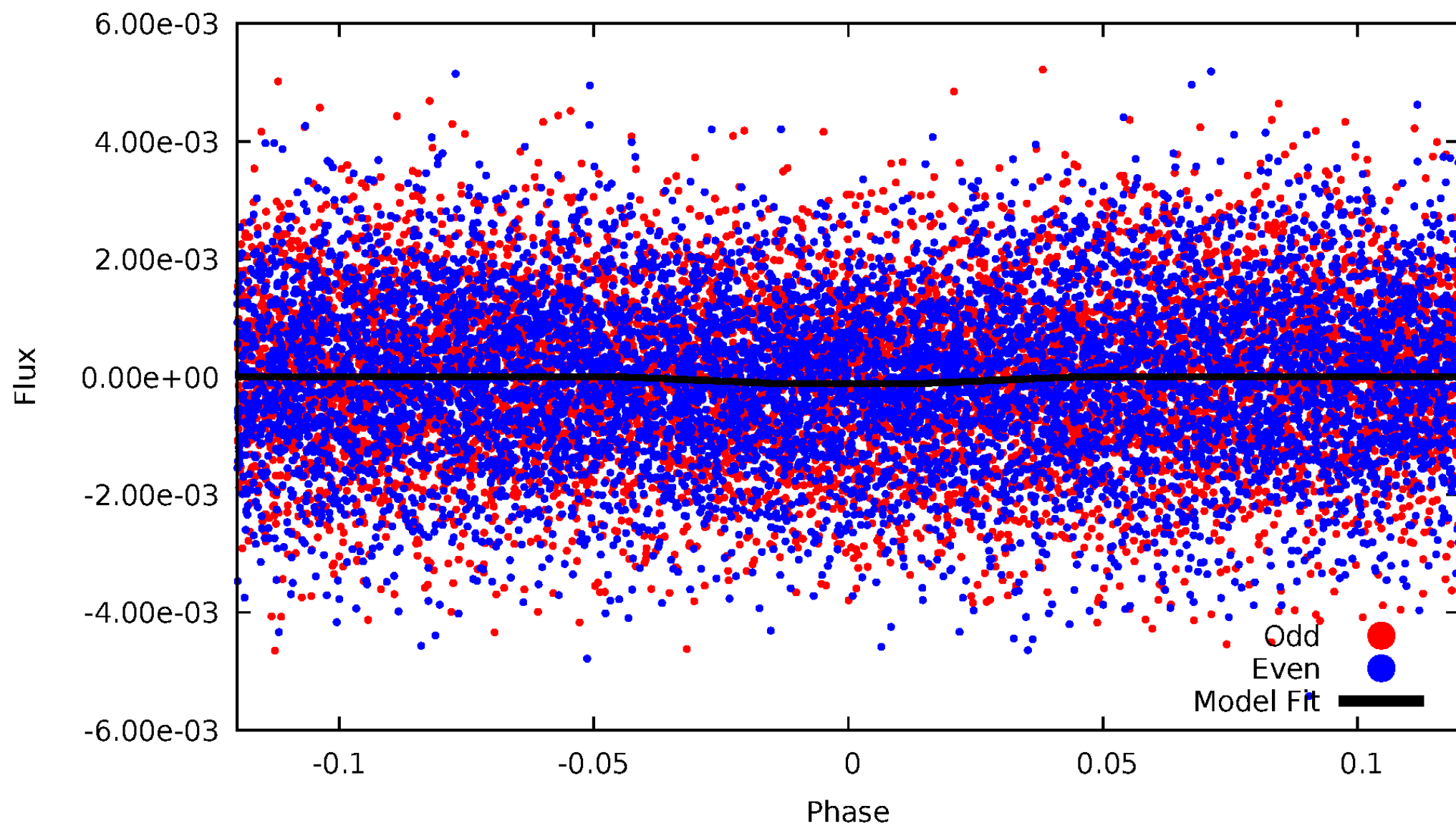
# DV Odd/Even

TCE 005446068-01



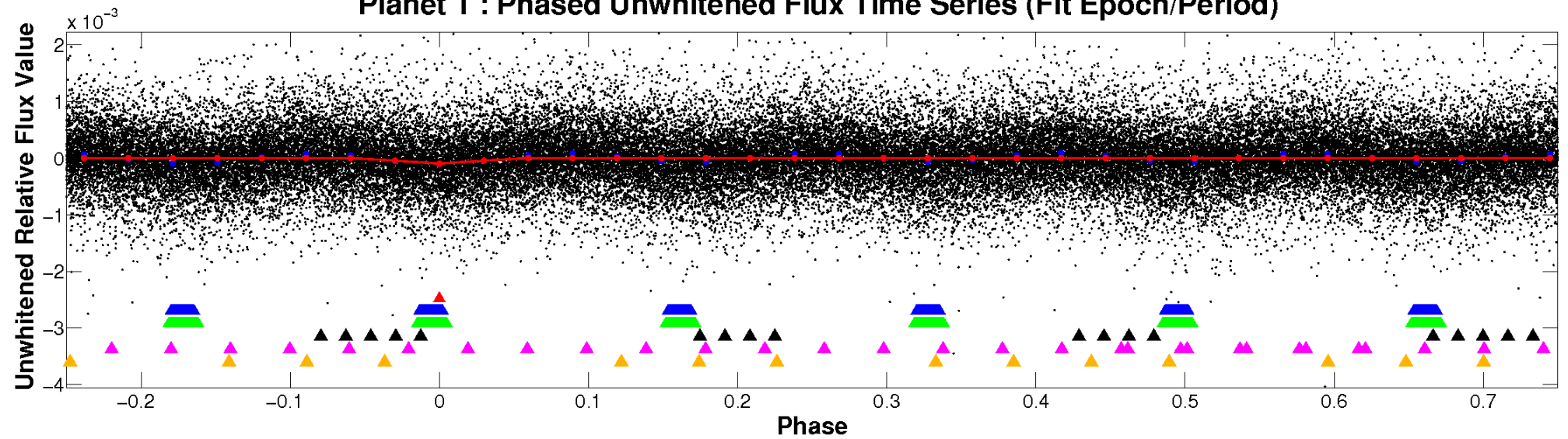
# ALT Odd/Even

TCE 005446068-01

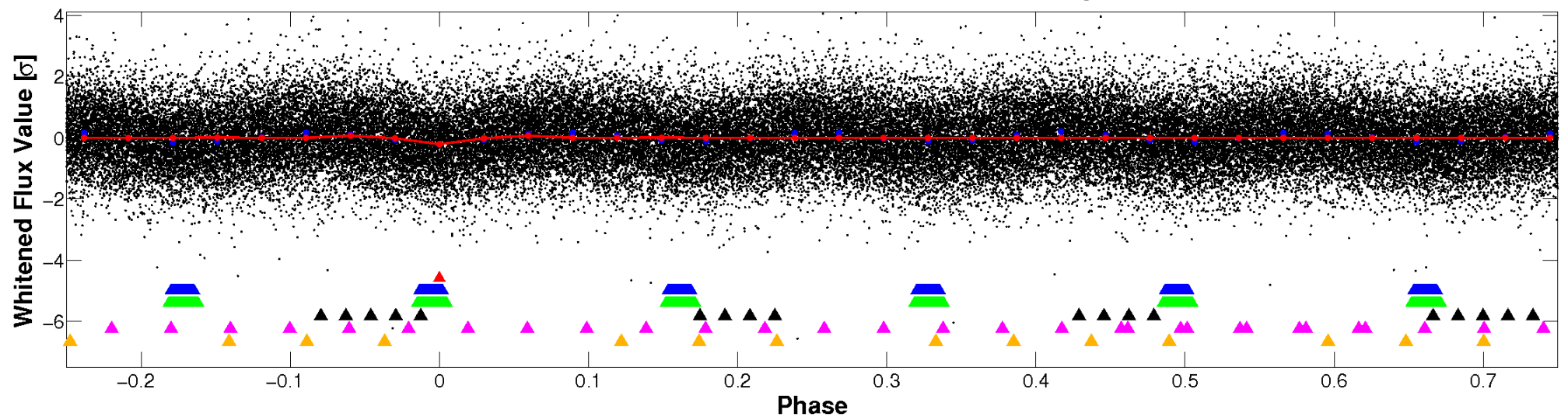


# Non-Whitened Vs. Whitened Light Curve

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



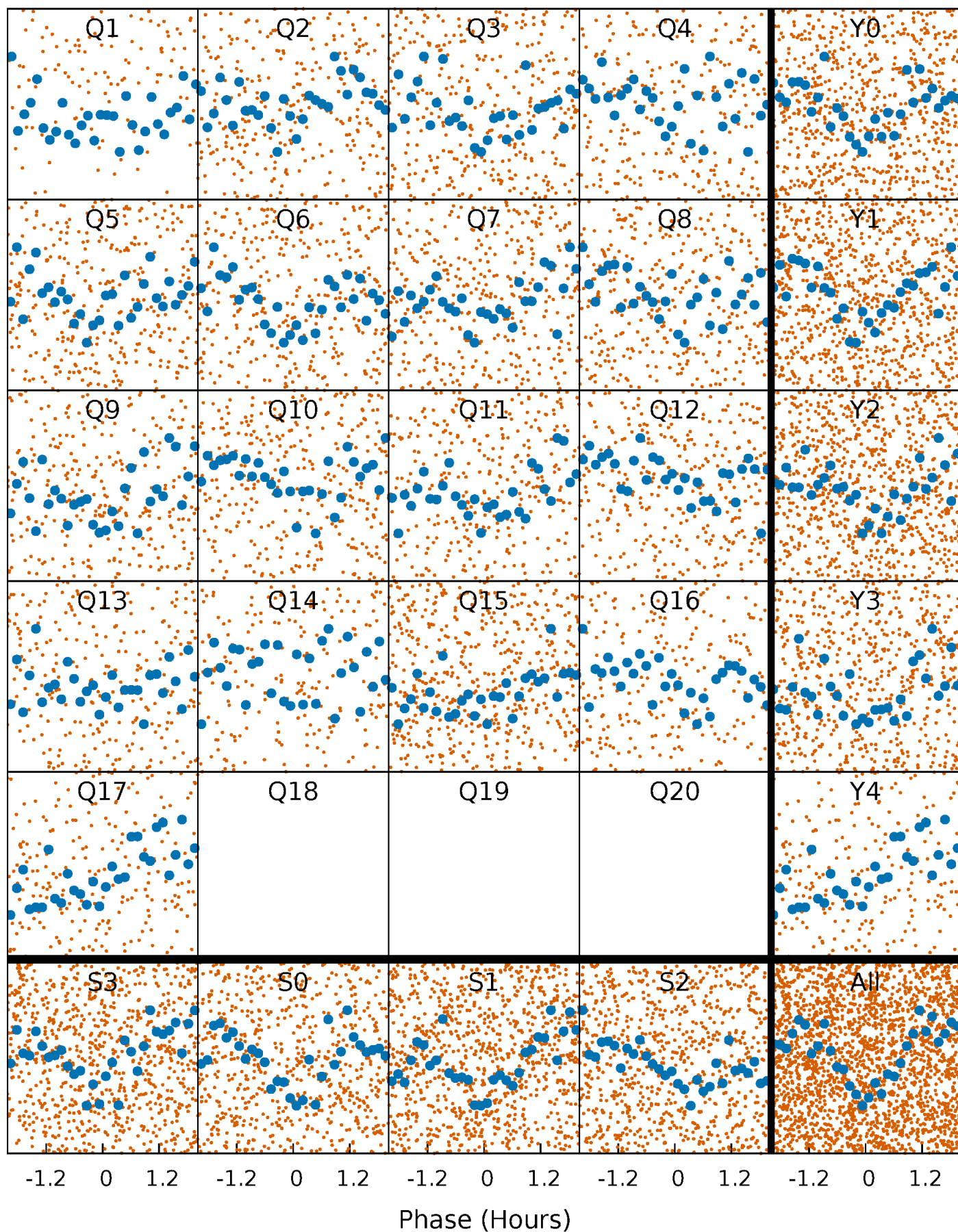
## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





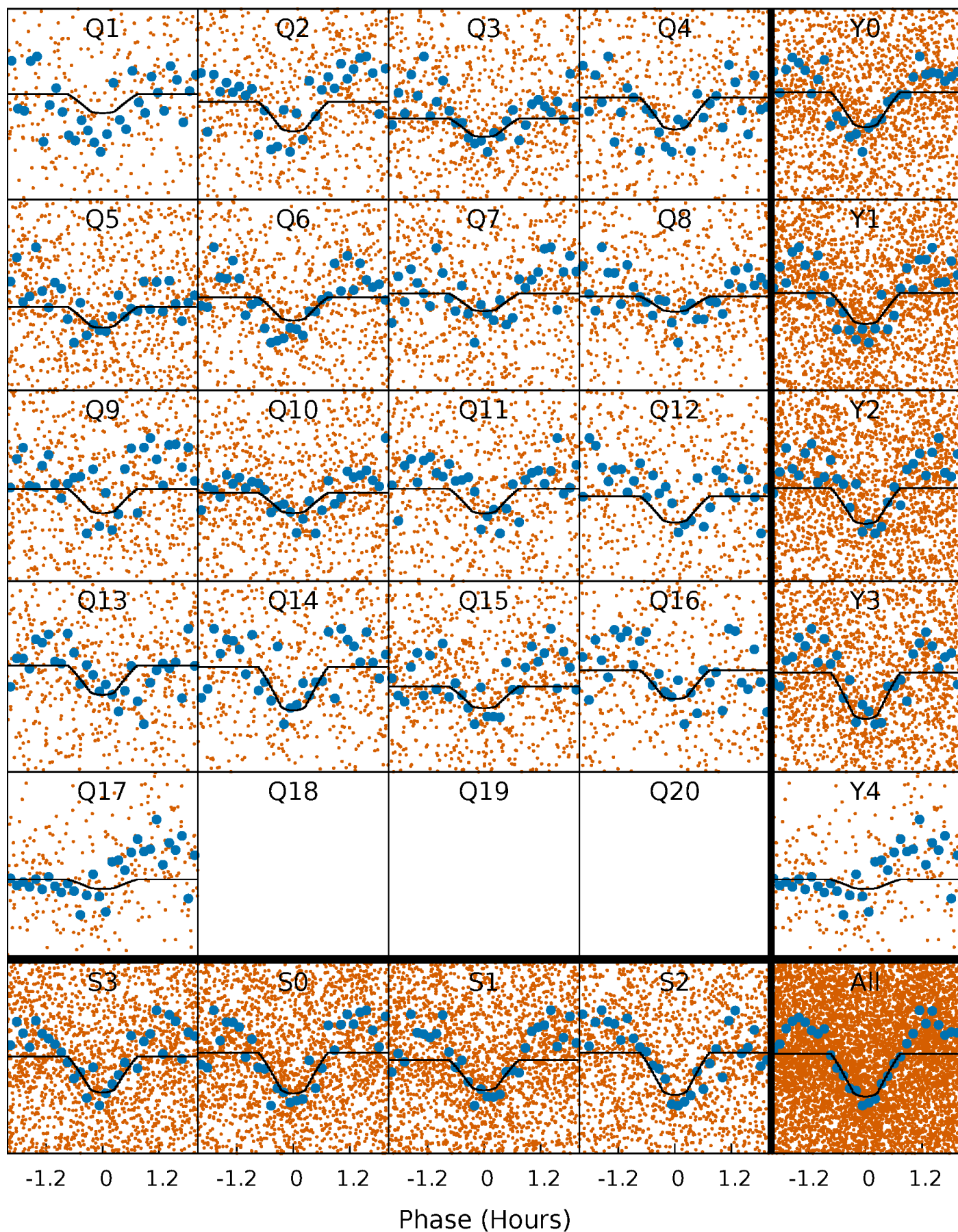
# PDC Quarter-Phased Transit Curves

TCE 005446068-01 P= 0.686055 Days  $T_0=132.020320$  (BKJD)



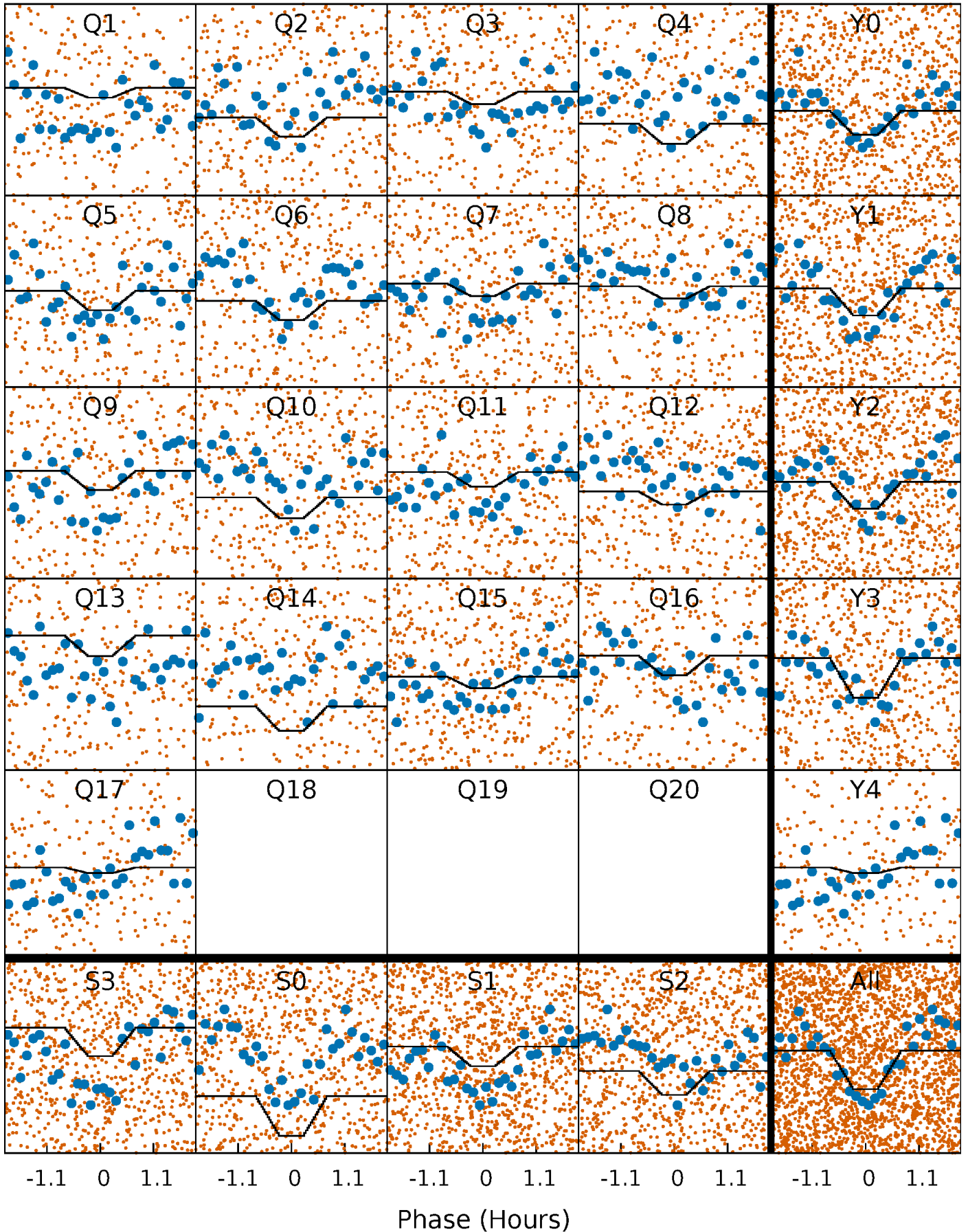
# DV Quarter-Phased Transit Curves

TCE 005446068-01 P= 0.686055 Days  $T_0=132.020320$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005446068-01 P= 0.686056 Days  $T_0=132.020359$  (BKJD)

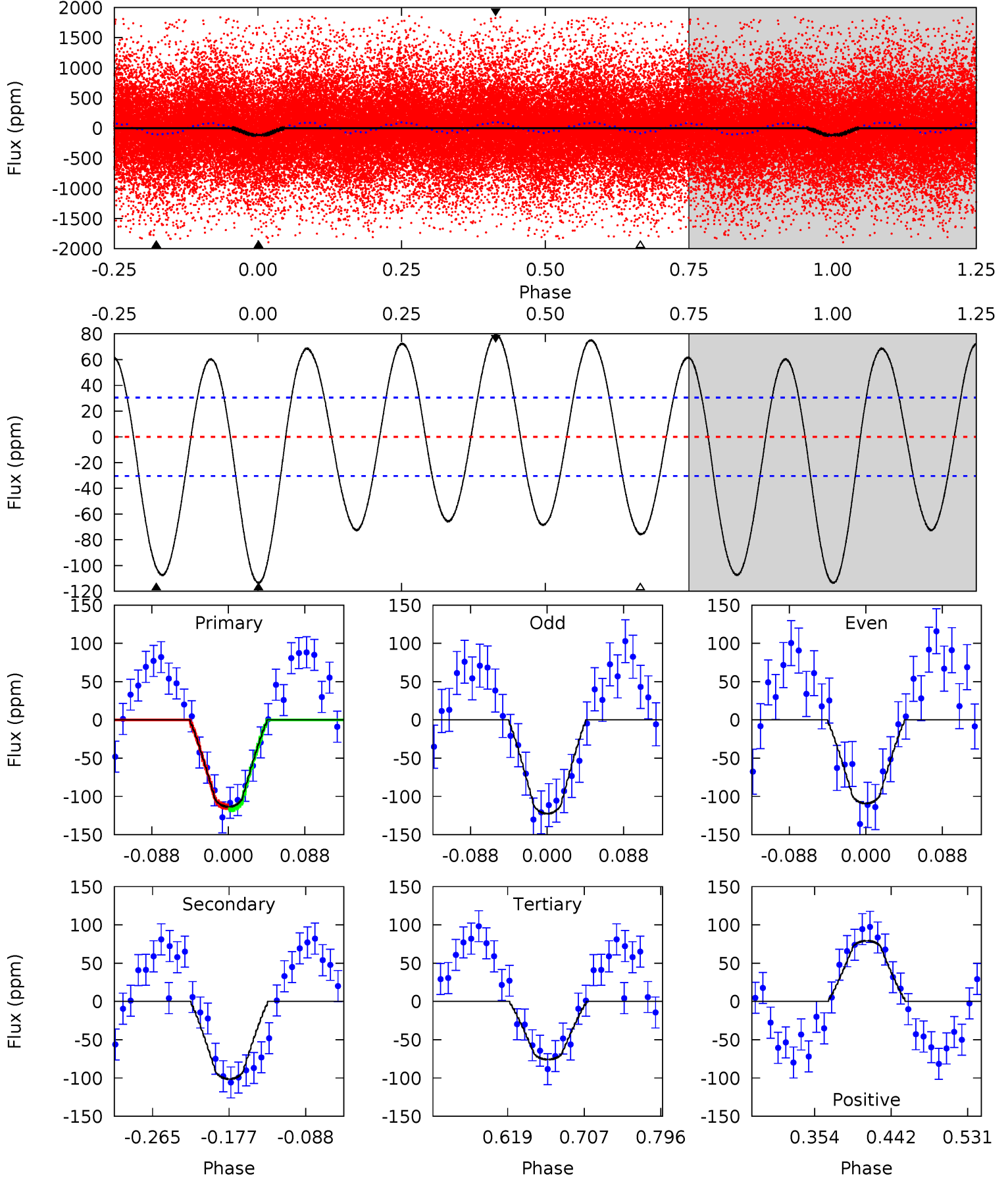




# DV Model-Shift Uniqueness Test

005446068-01, P = 0.686055 Days, E = 131.334265 Days

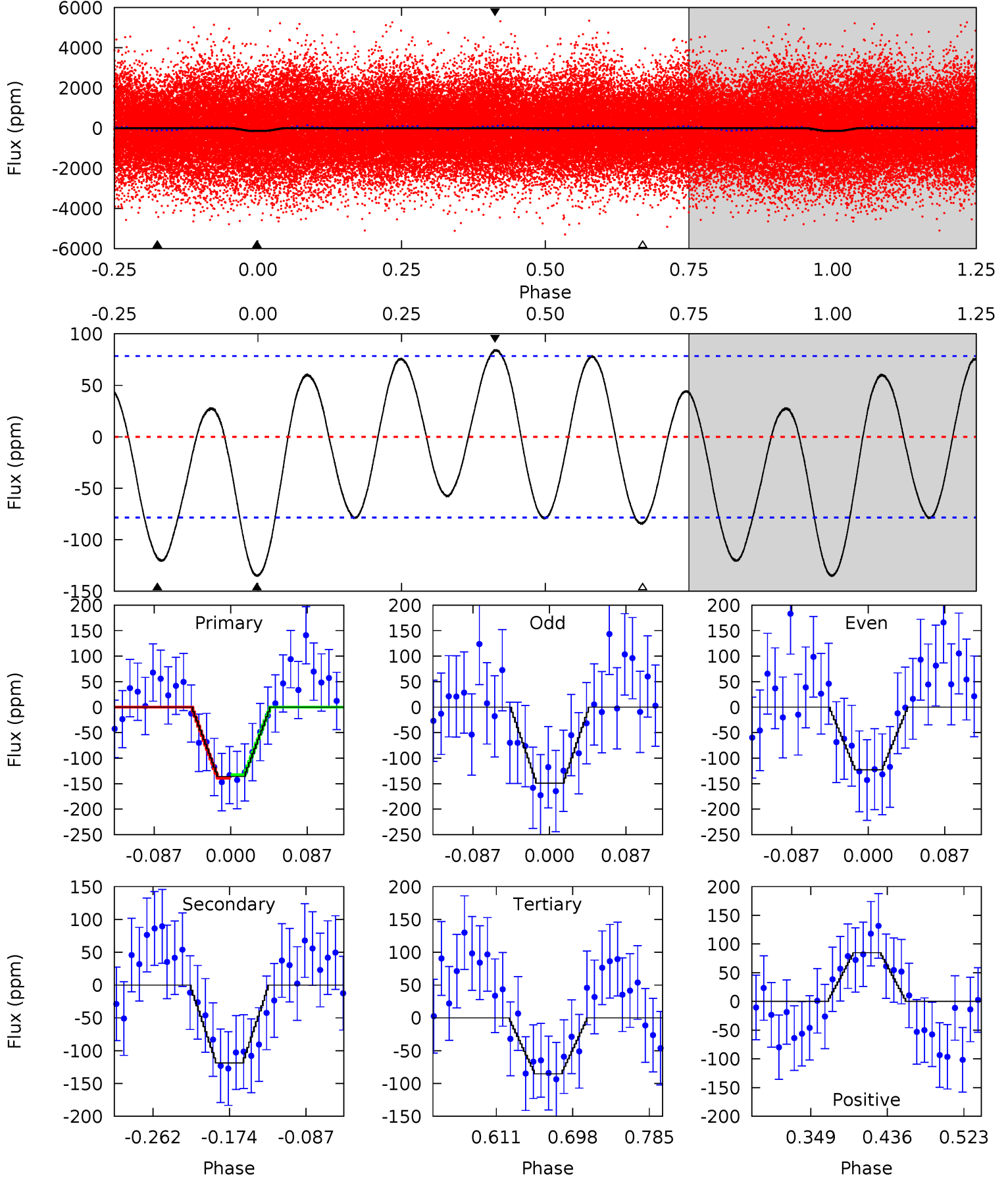
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	15.3	11.4	11.9	4.59	1.70	7.65	5.69	5.17	3.84	3.32	1.01	1.05	0.41	0.25



# Alt Model-Shift Uniqueness Test

005446068-01, P = 0.686056 Days, E = 131.334303 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	6.96	4.99	4.98	4.59	1.71	3.11	2.97	2.98	1.97	1.98	0.77	1.54	0.38	0.20



### Stellar Parameters For KIC 005446068

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5985^{+131}_{-119}$	$3.586^{+0.285}_{-0.095}$	$-0.020^{+0.150}_{-0.150}$	$3.350^{+0.588}_{-1.176}$	$1.578^{+0.138}_{-0.321}$	$0.059^{+0.117}_{-0.018}$
	+2%/-2%	+8%/-3%	+750%/-750%	+18%/-35%	+9%/-20%	+198%/-31%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 005446068-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-101 \pm 7$	$3.20^{+1.69}_{-1.44}$	$4974^{+298}_{-416}$	$5823^{+2798}_{-1175}$	$1.699^{+3.966}_{-0.960}$
Alt.	$-119 \pm 17$	$3.58^{+1.75}_{-1.52}$	$5010^{+276}_{-392}$	$5759^{+2331}_{-1126}$	$1.594^{+3.015}_{-0.869}$

$T_{max}$  = 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

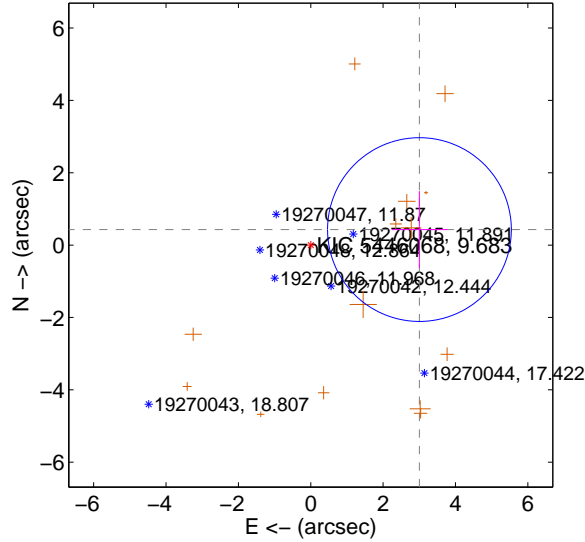
Supplemental centroid analysis for 005446068-01. **Kepler magnitude: 9.68.** Transit SNR 12.02

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

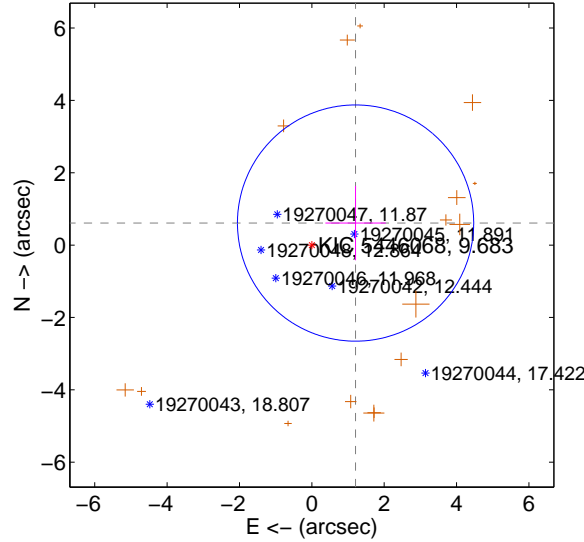
The direct PRF centroid is offset from the target star catalog position by about 1.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>3.035 \pm 0.846</math></b>	<b>3.59</b>	$-3.004 \pm 0.764$	$0.429 \pm 1.062$
PRF-fit source offset from KIC position	$1.354 \pm 1.088$	1.24	$-1.209 \pm 0.834$	$0.609 \pm 1.029$
photometric centroid source offset	<b><math>0.51 \pm 0.17</math></b>	<b>3.03</b>	$0.51 \pm 0.17$	$0.03 \pm 0.23$

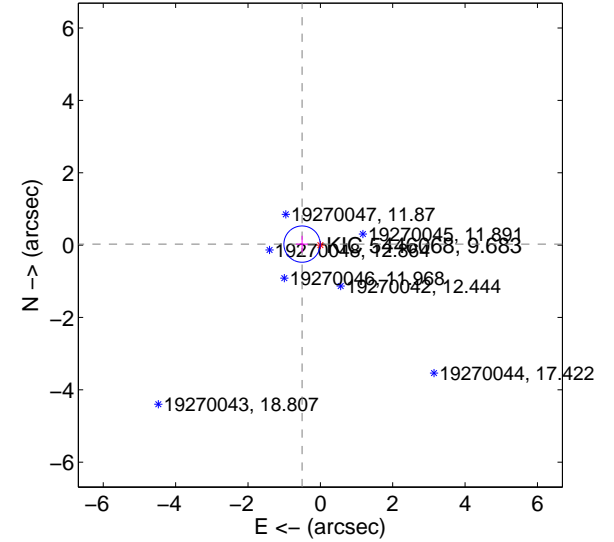
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

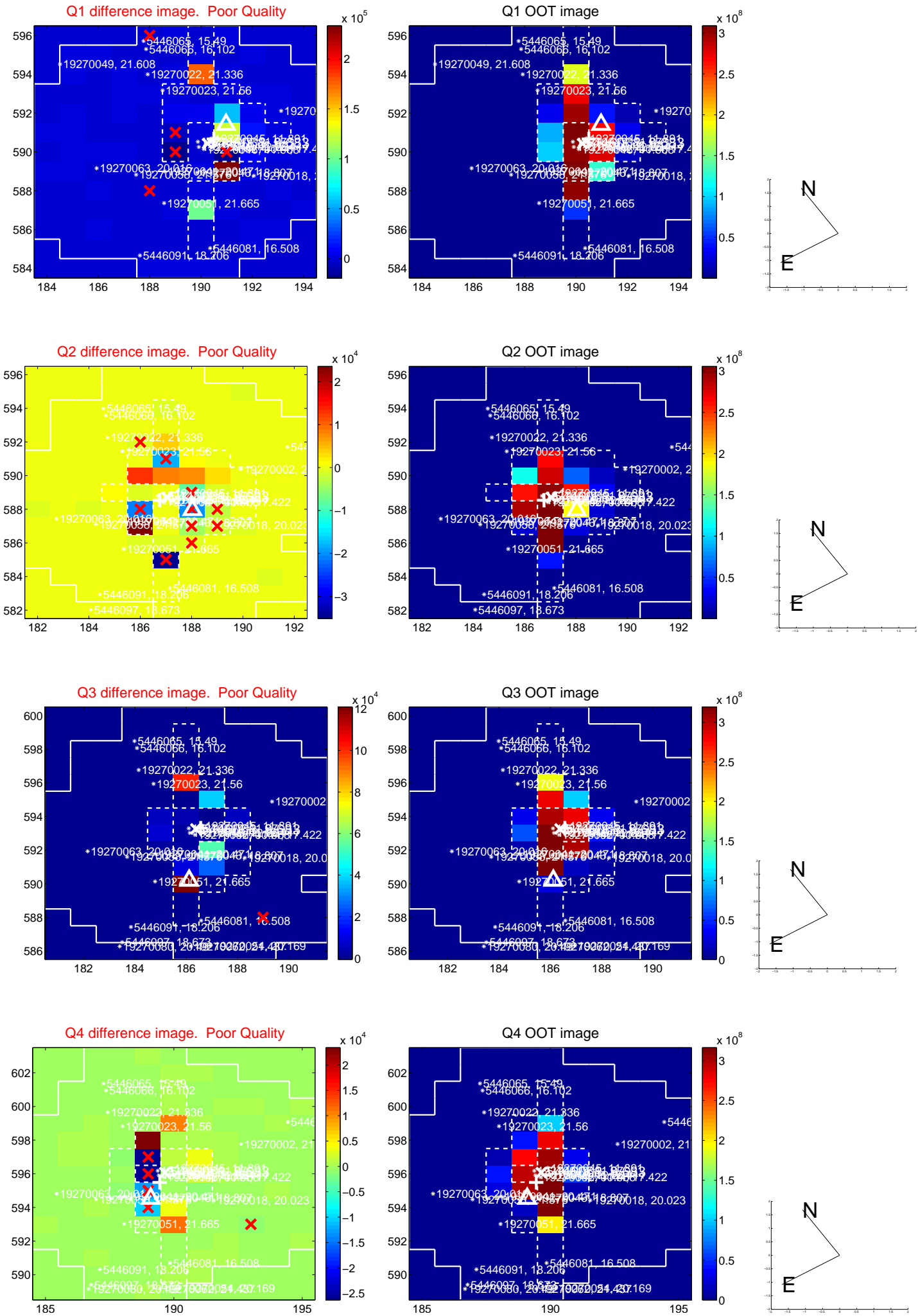


offset from photometric centroids

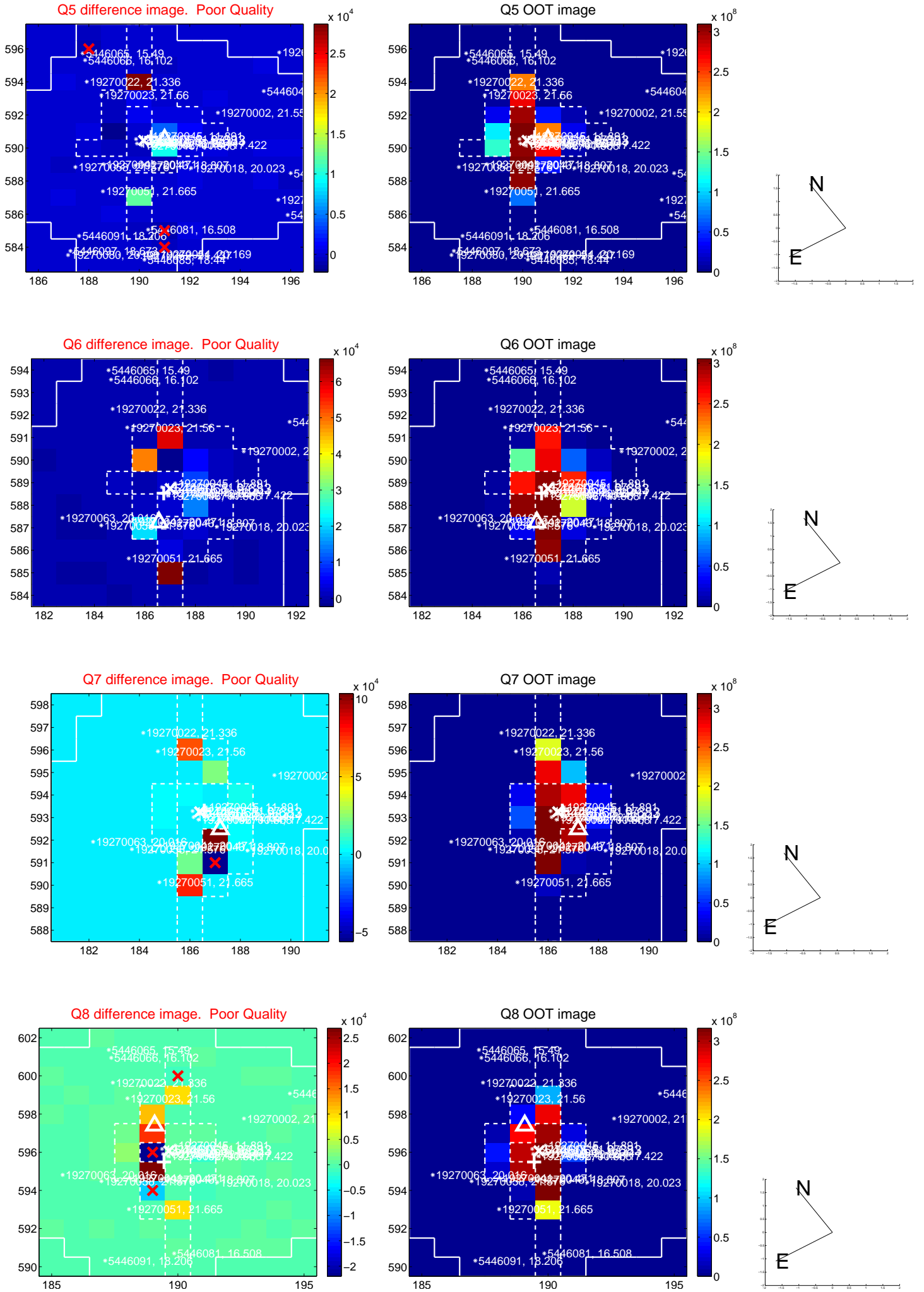


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

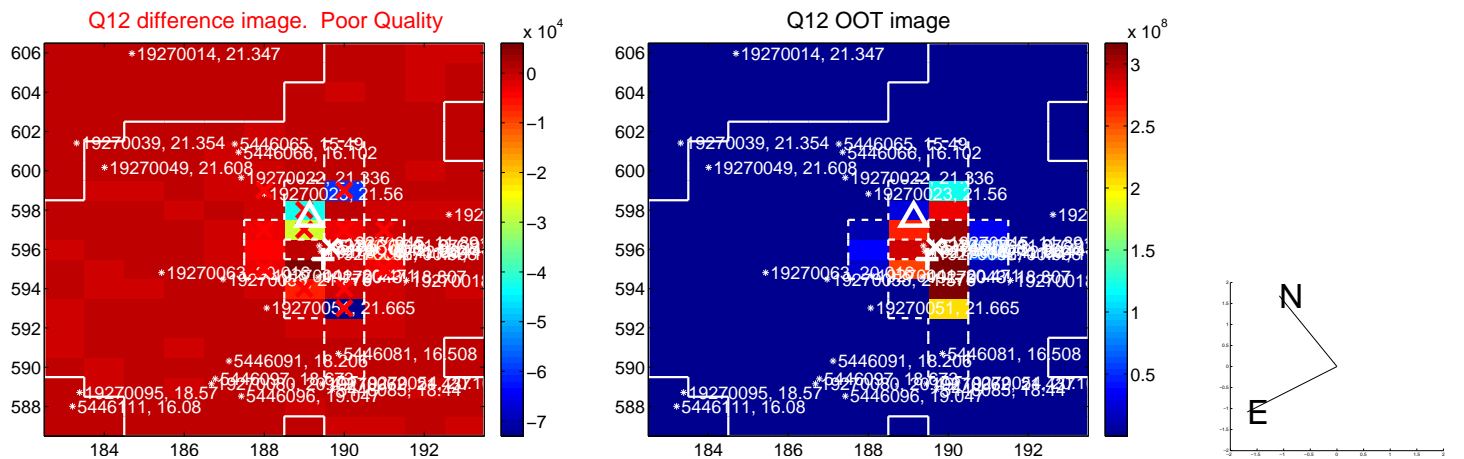
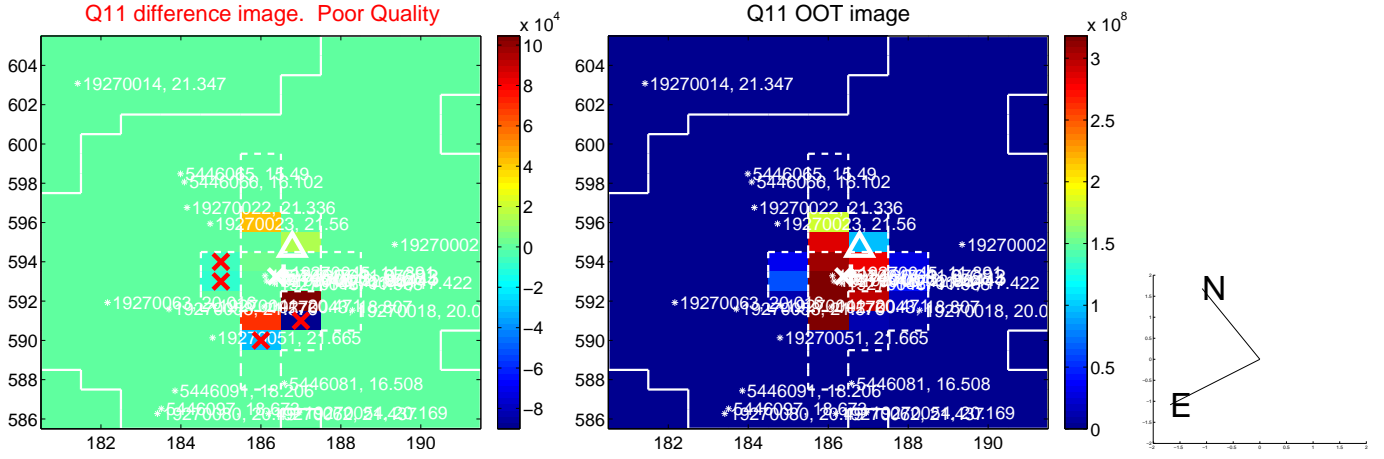
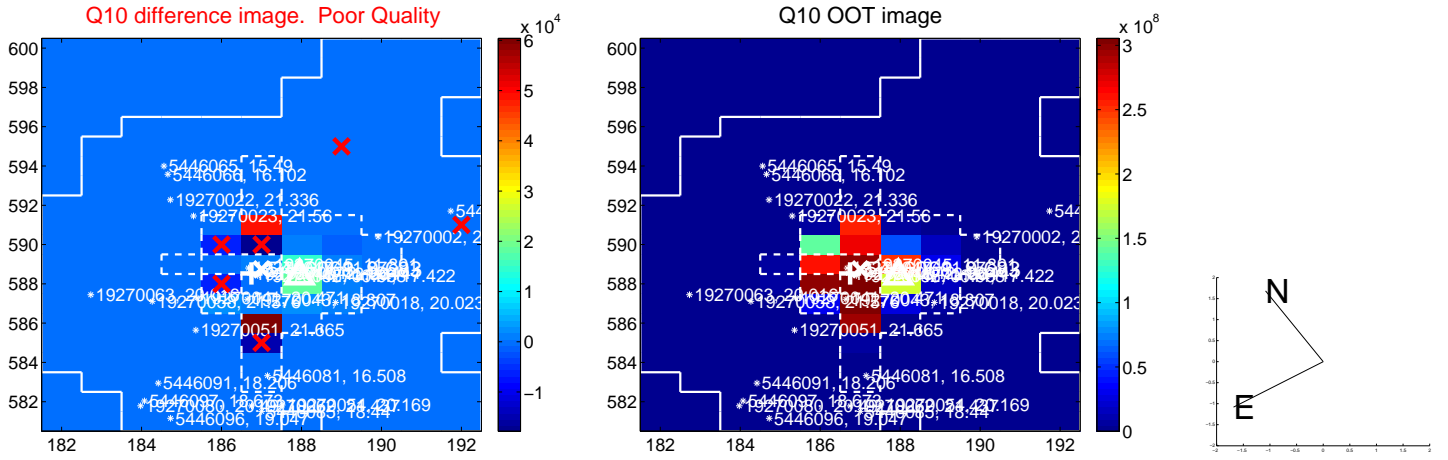
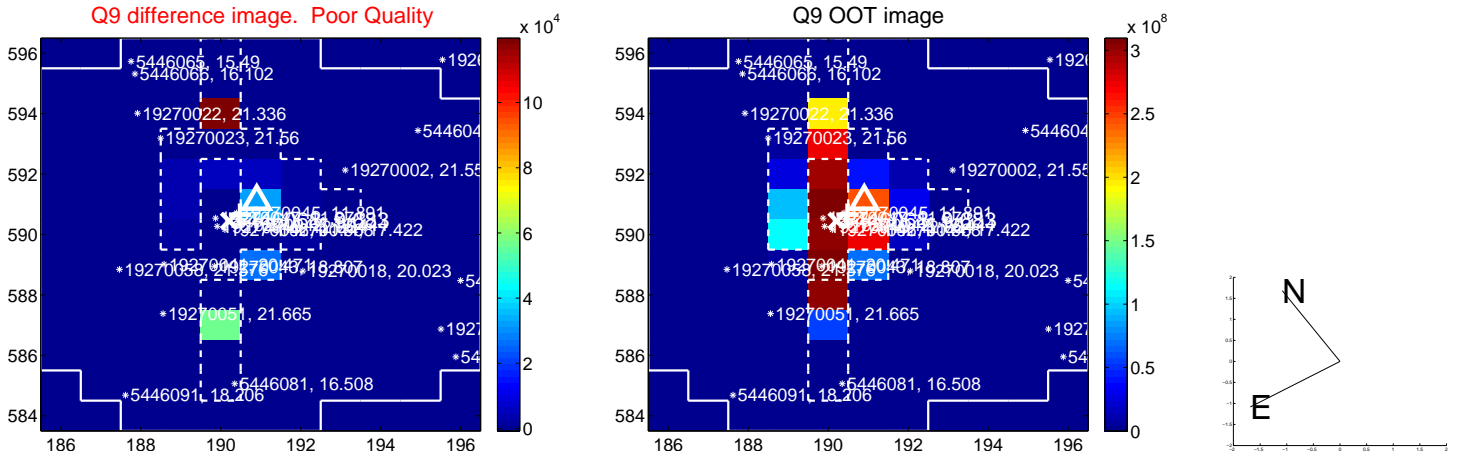


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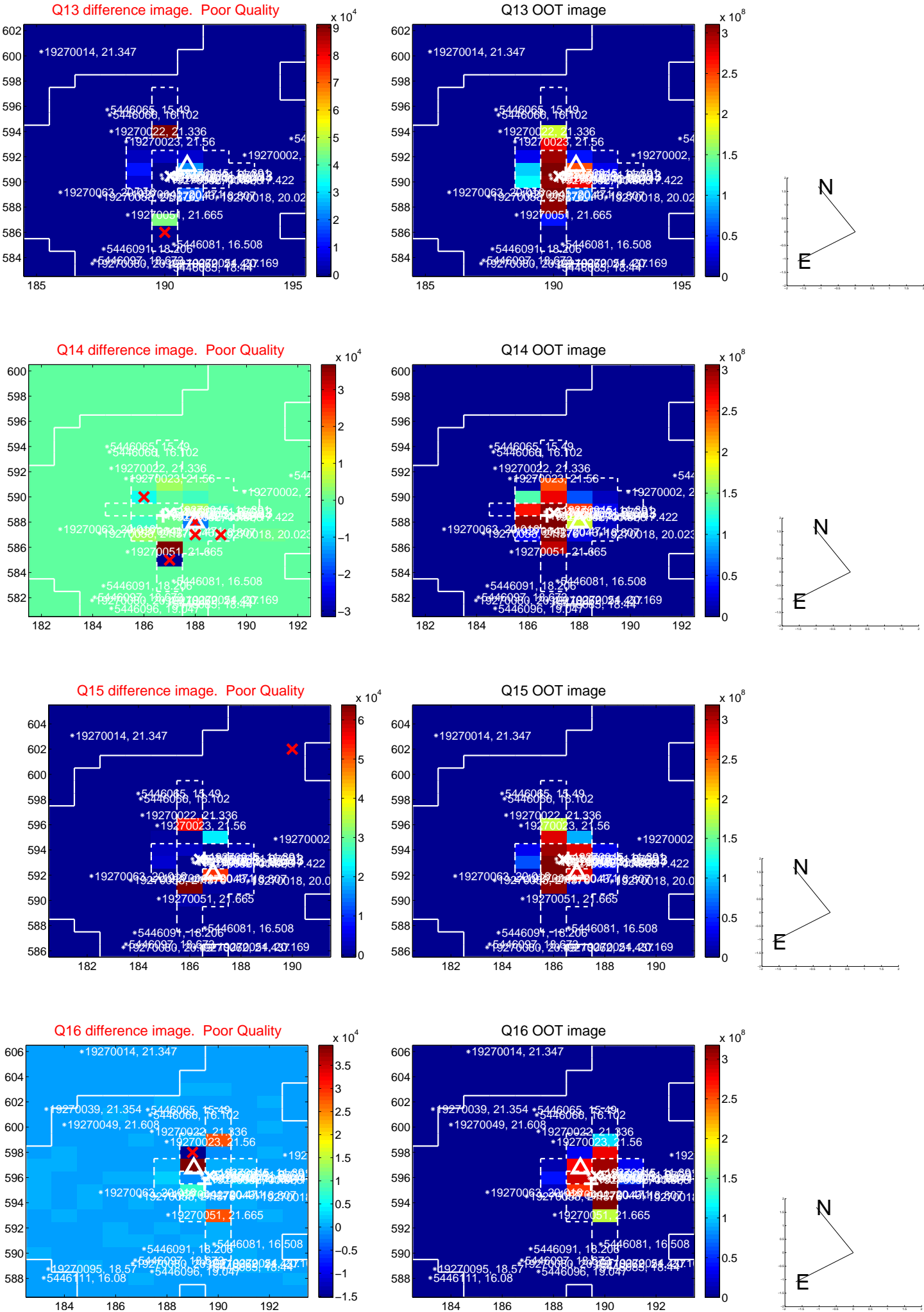




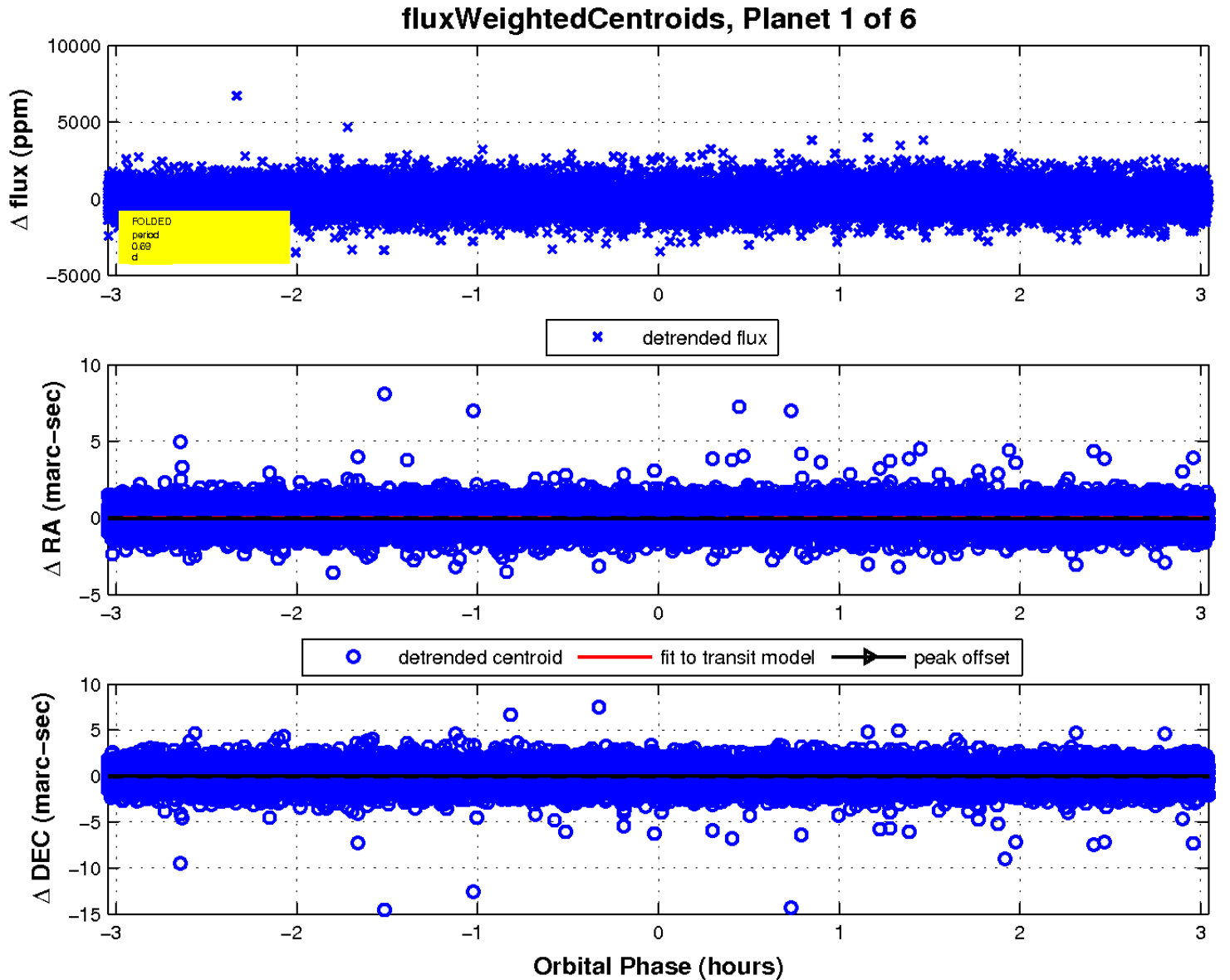
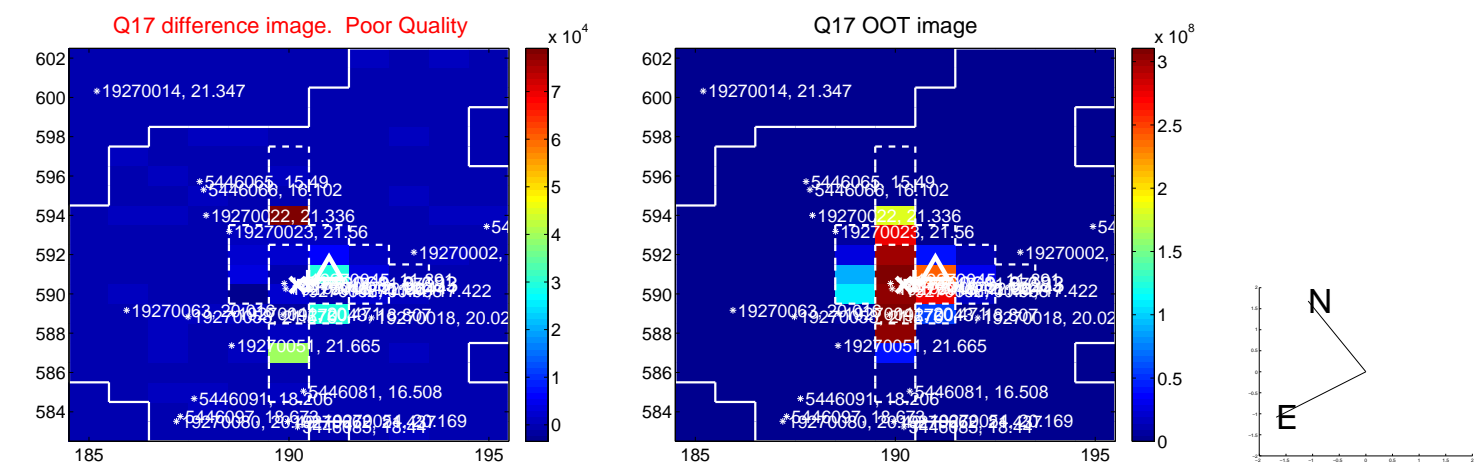
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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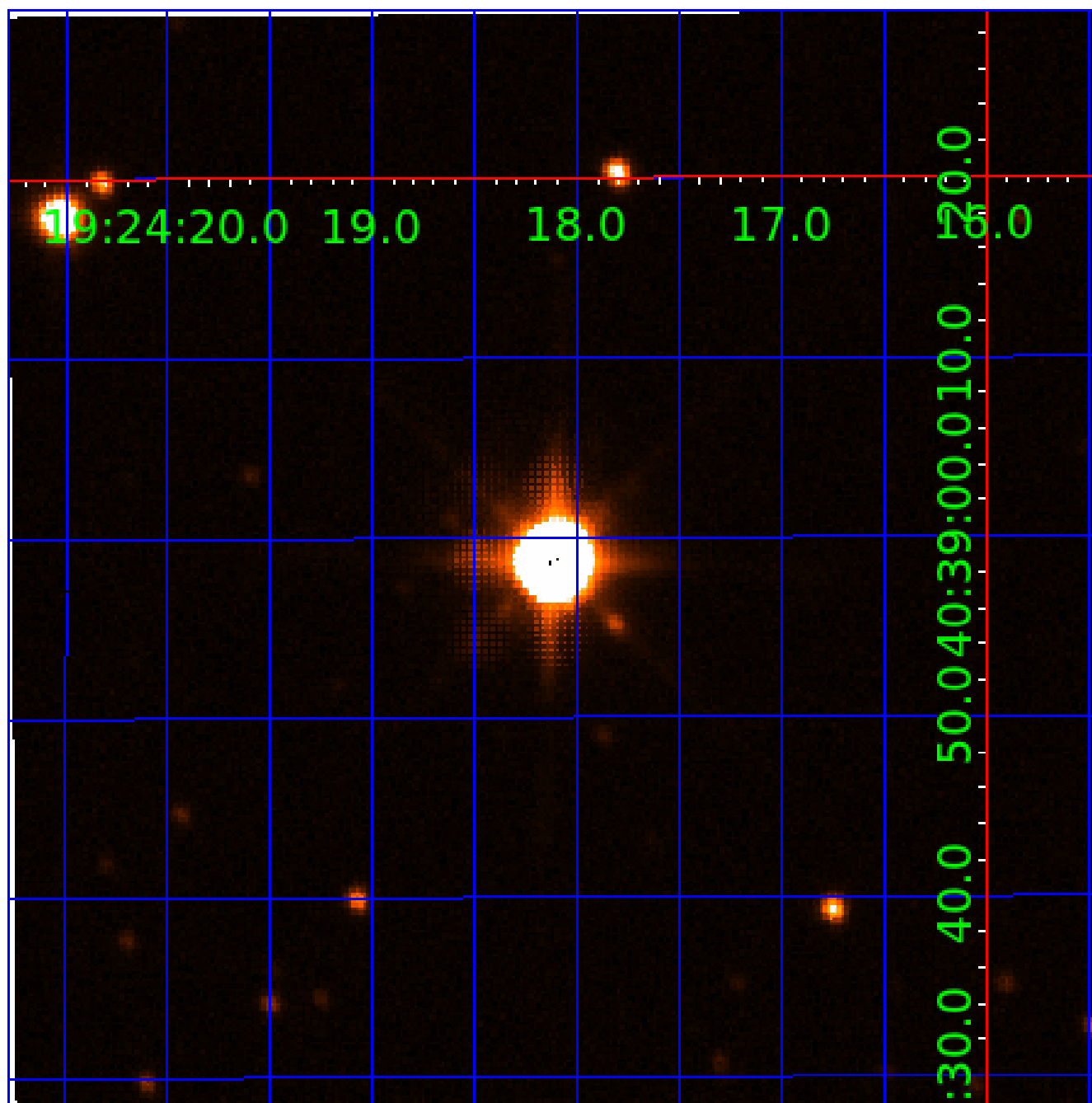


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005446068

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005446068-01	OBS	No	0.686055	132.020320	101.5	1.015	11.9	12.0	3.35	5985	3.42	41055.26
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005446068-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005446068-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
005446068-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

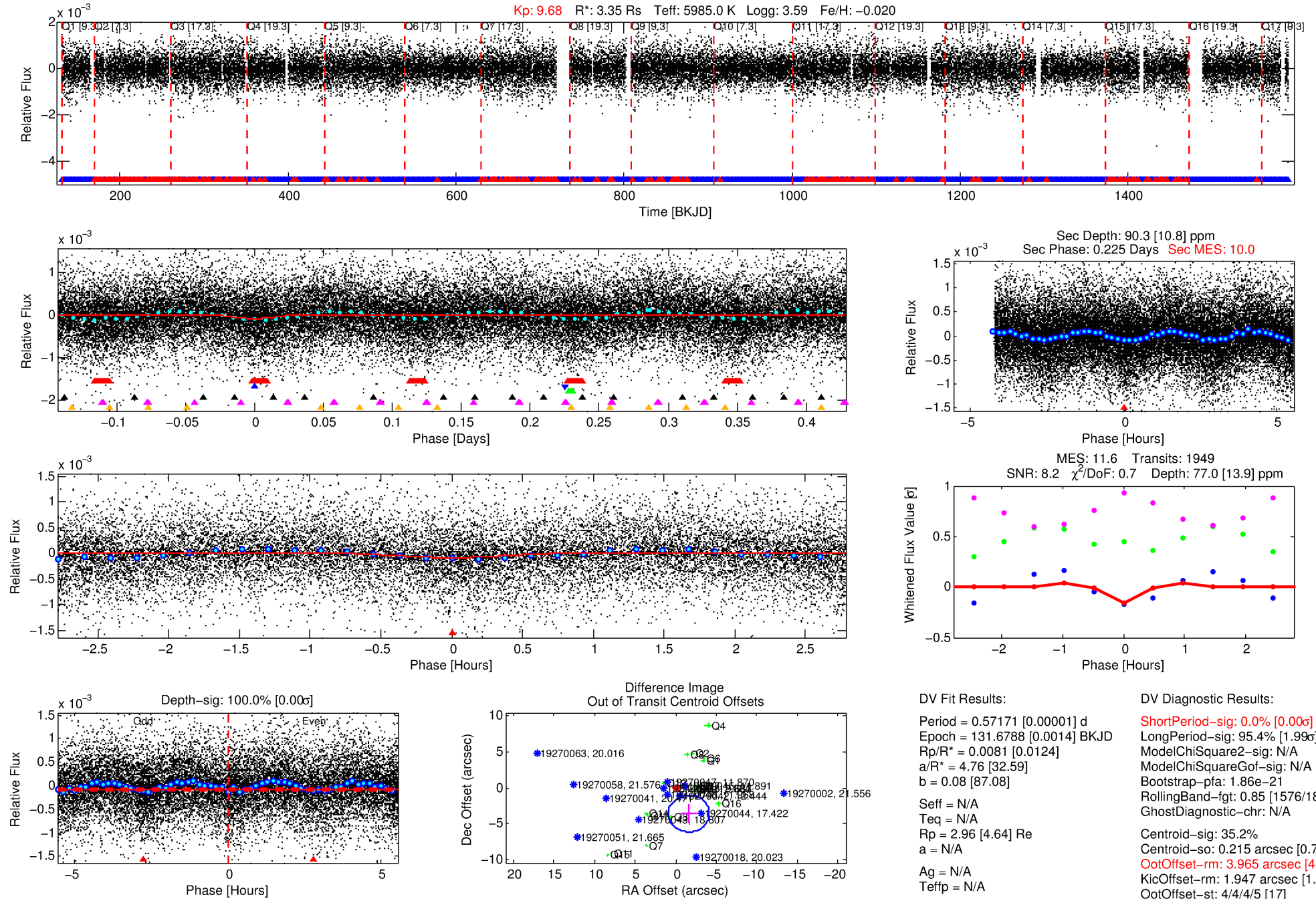
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005446068-02

No Significant Match Found

# DV One-Page Summary

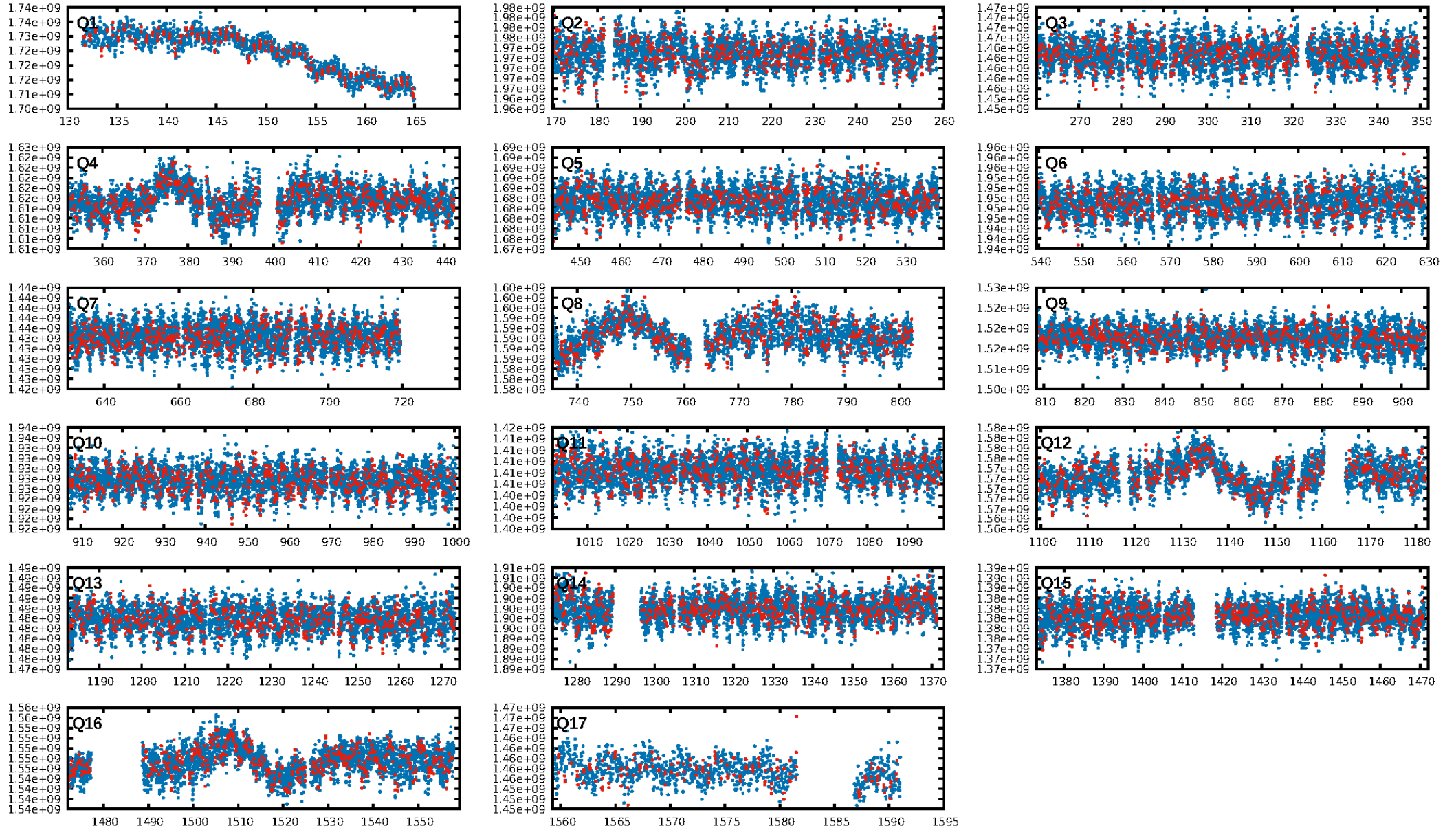
KIC: 5446068 Candidate: 2 of 6 Period: 0.572 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:46:11 Z

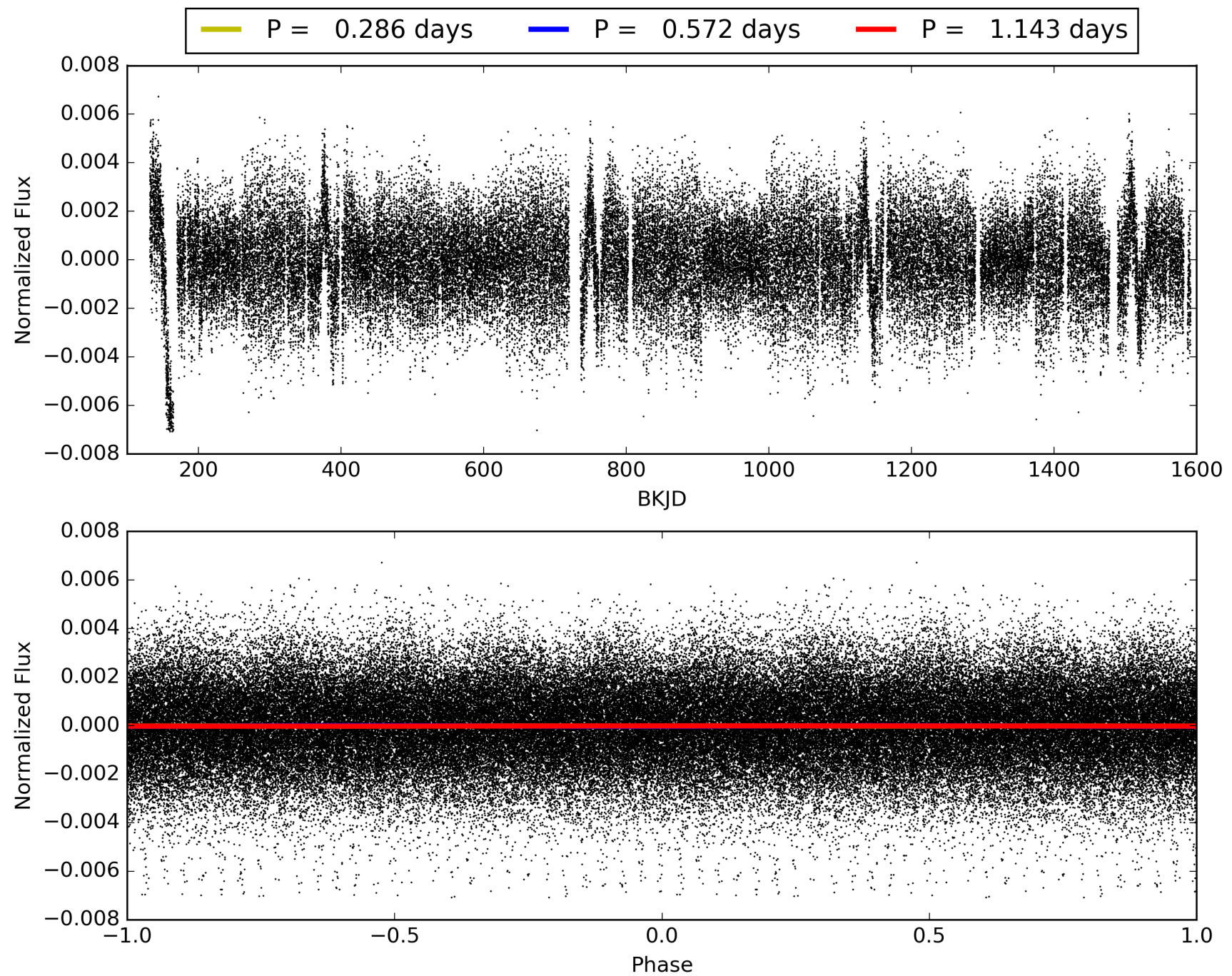
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005446068-02, PDC Light Curves





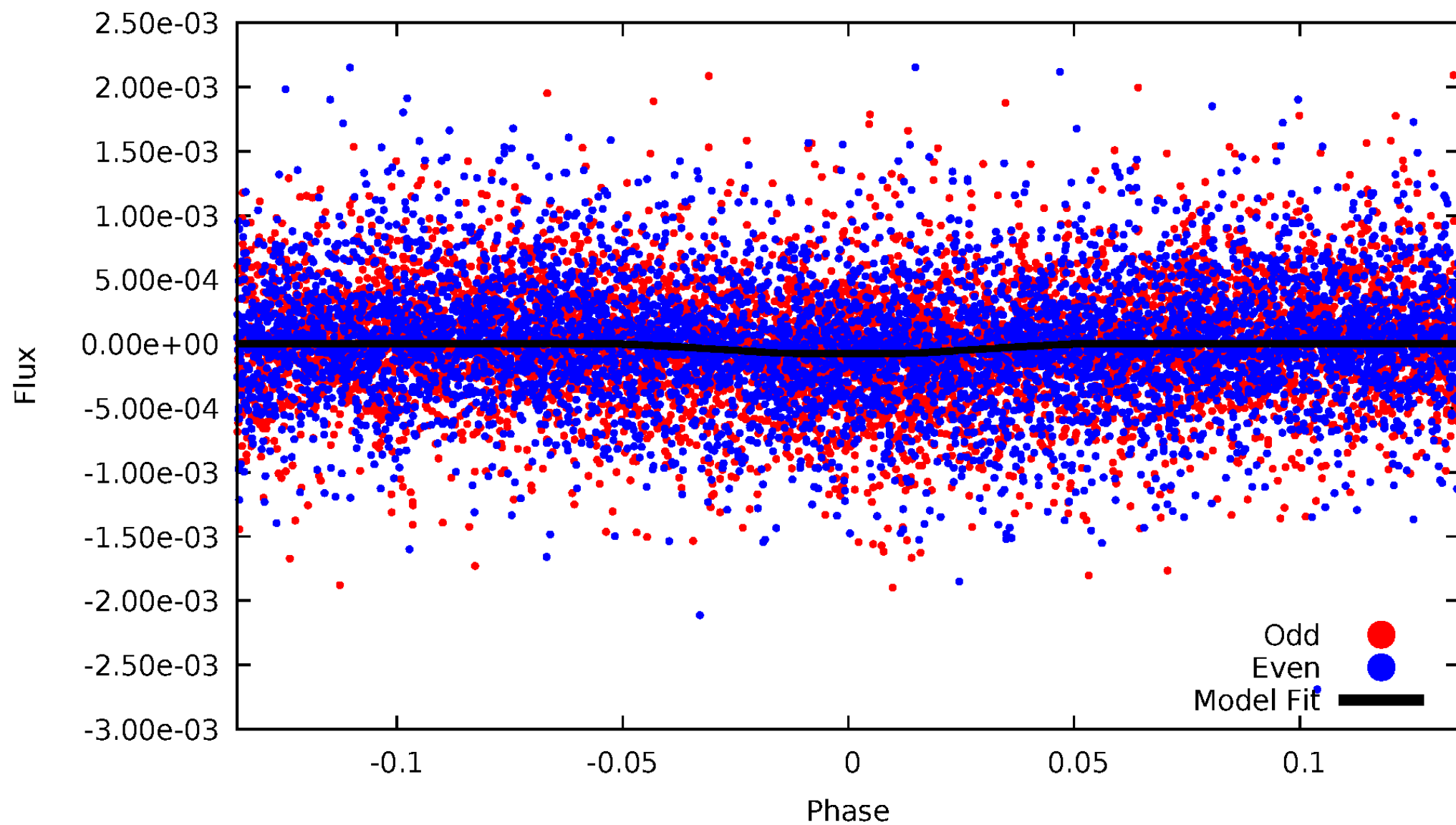
TCE 005446068-02





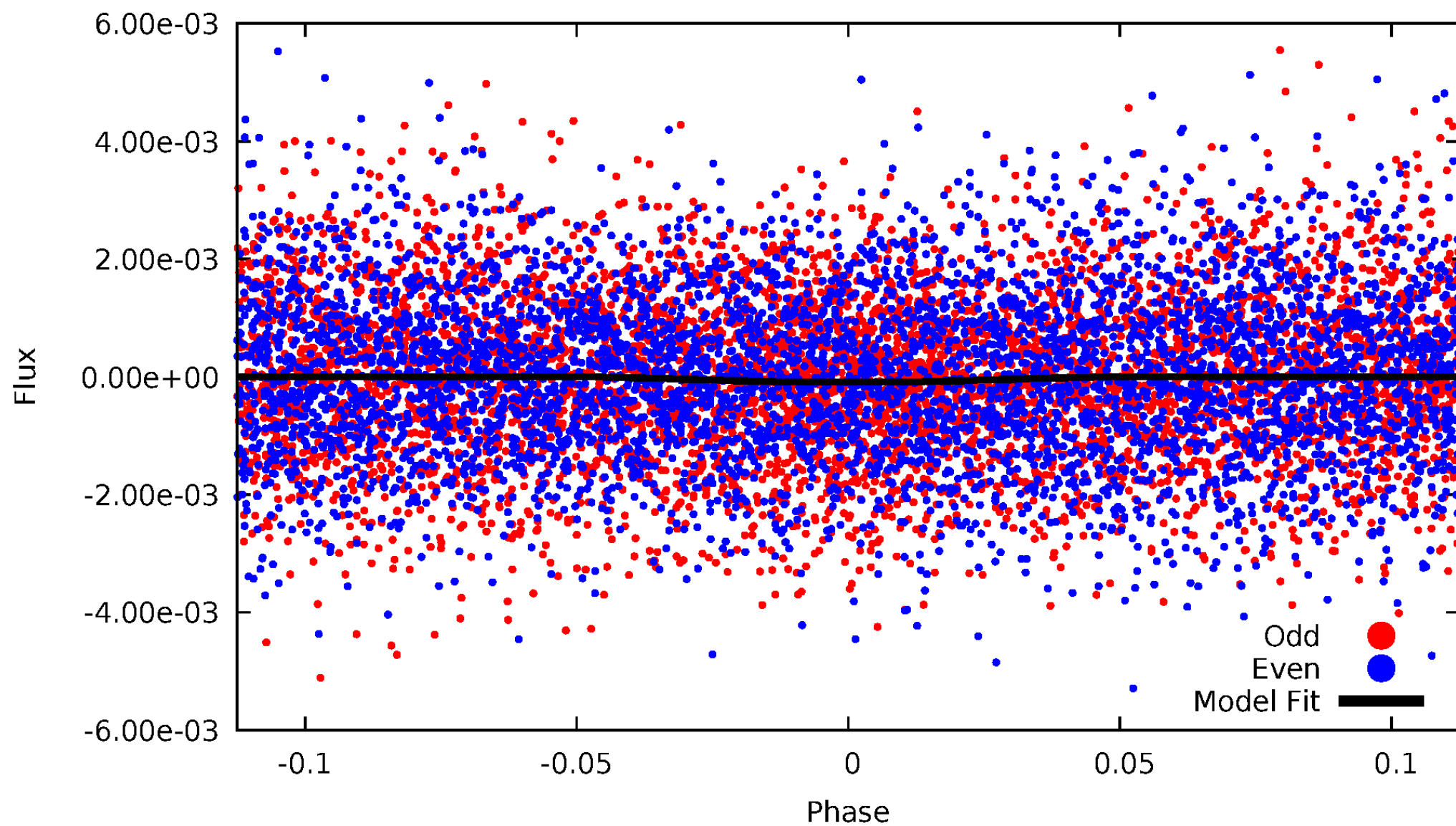
# DV Odd/Even

TCE 005446068-02



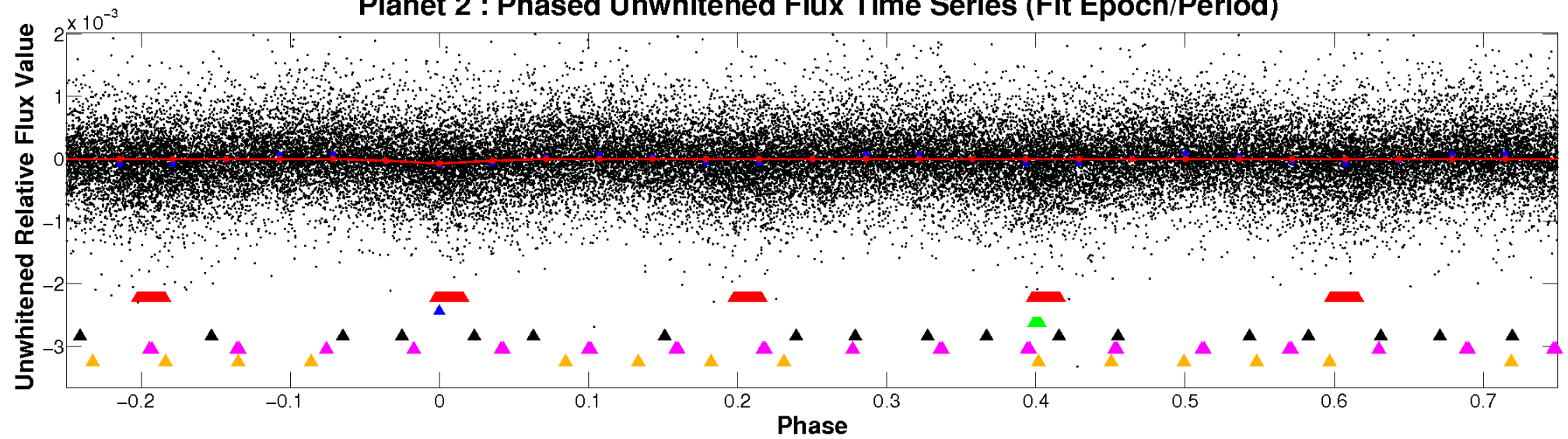
# ALT Odd/Even

TCE 005446068-02

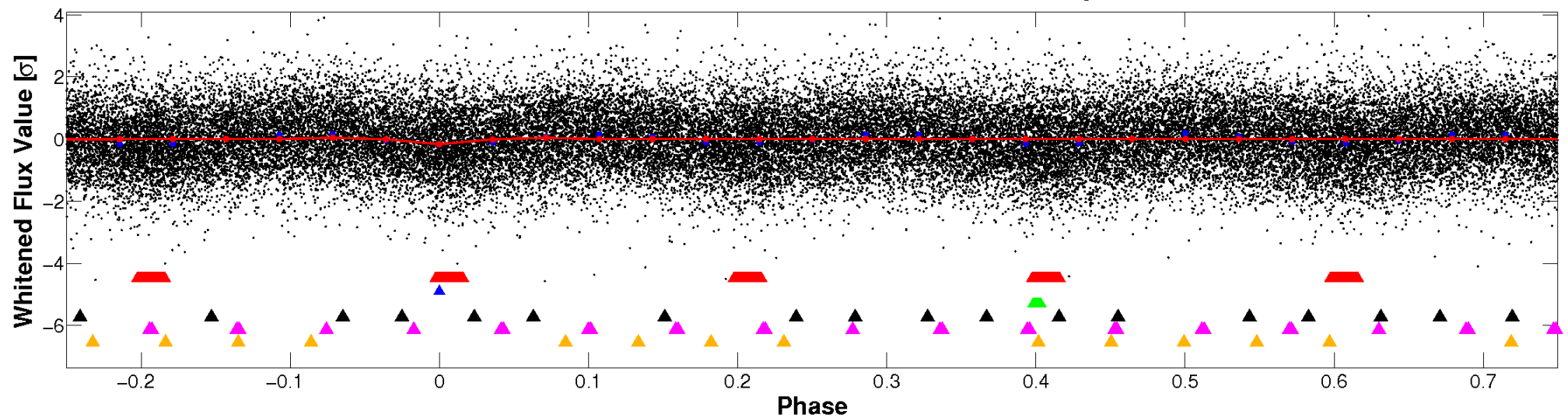


# Non-Whitened Vs. Whitened Light Curve

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

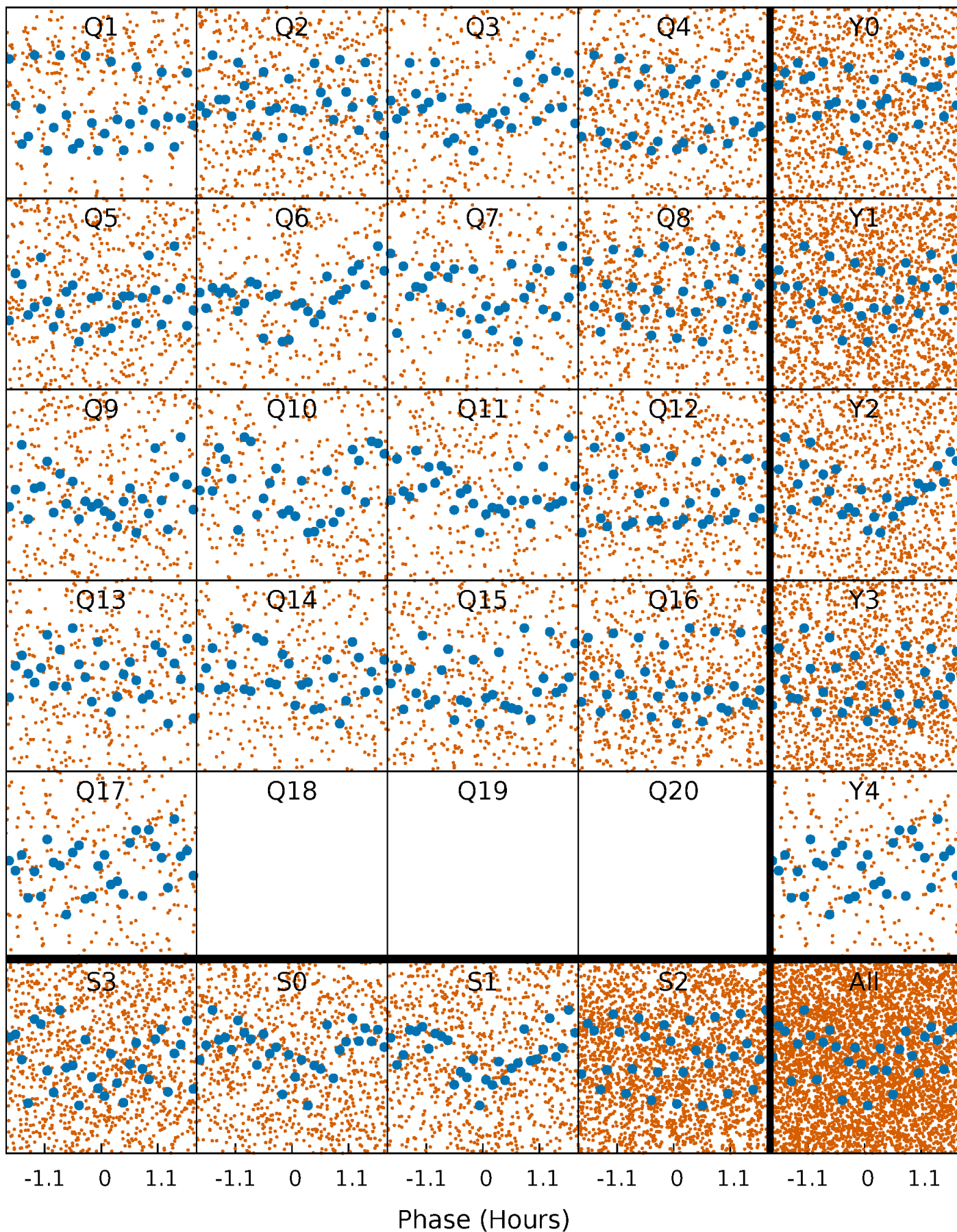


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

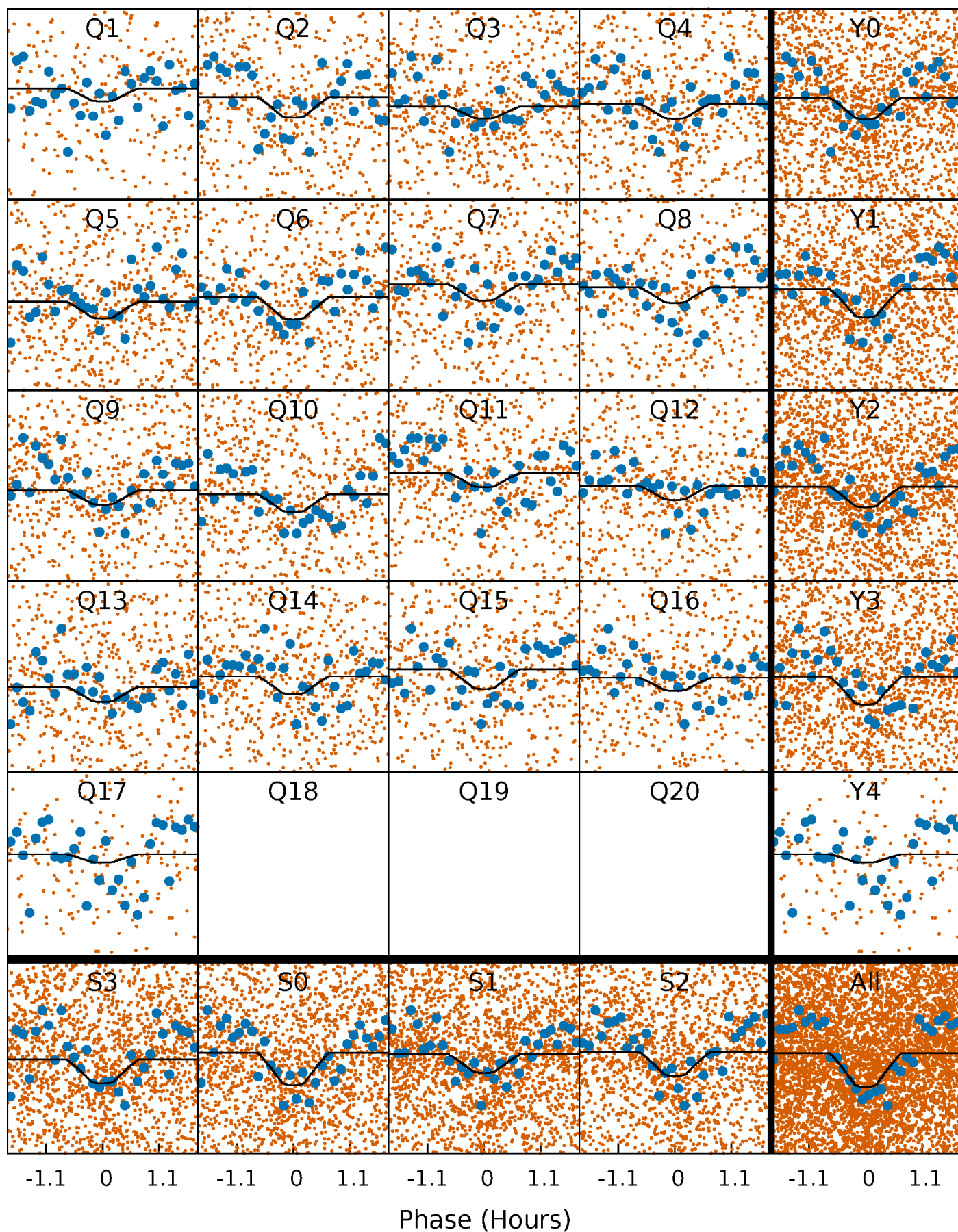
TCE 005446068-02   P= 0.571708 Days    $T_0=131.678847$  (BKJD)





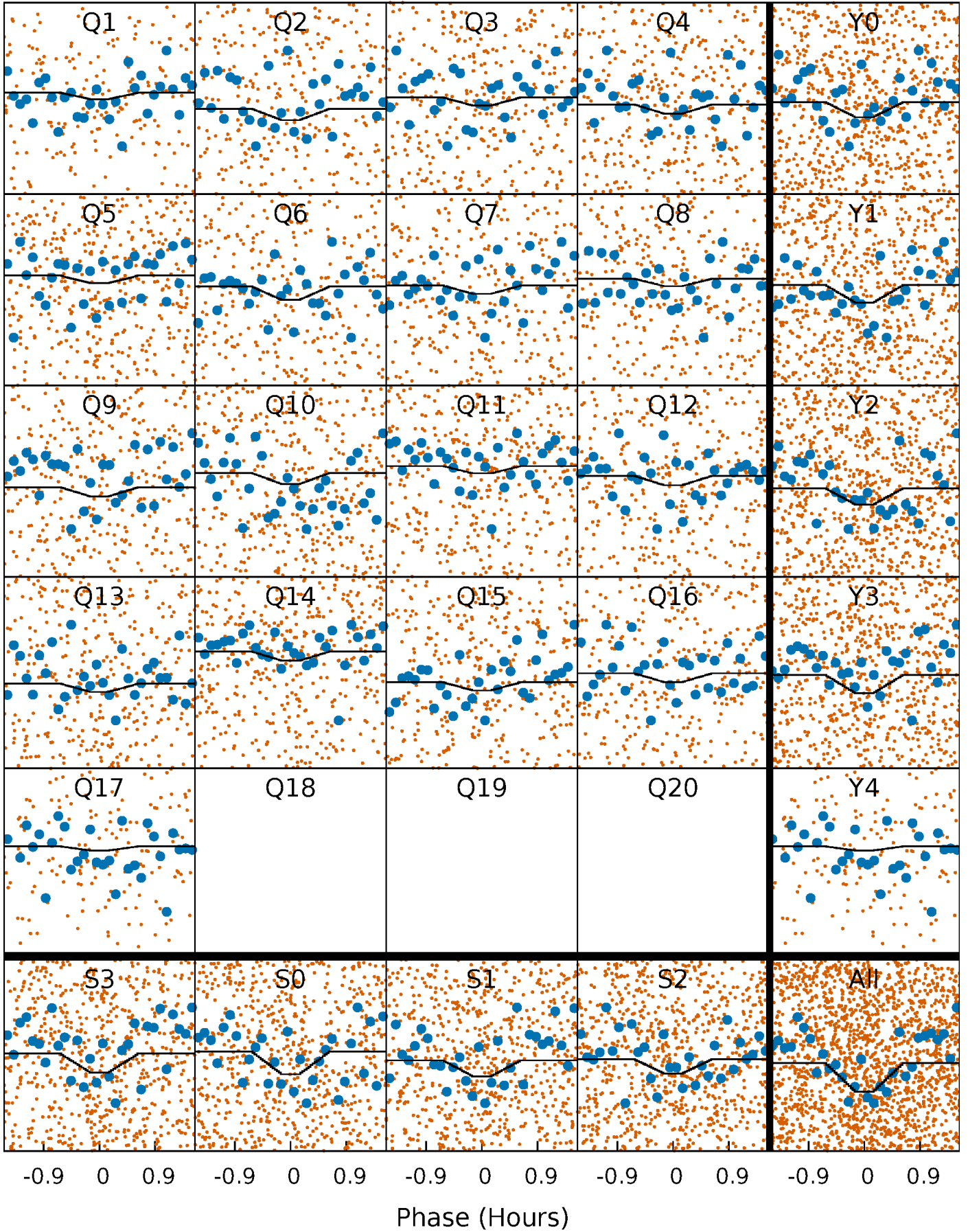
# DV Quarter-Phased Transit Curves

TCE 005446068-02 P= 0.571708 Days  $T_0=131.678847$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

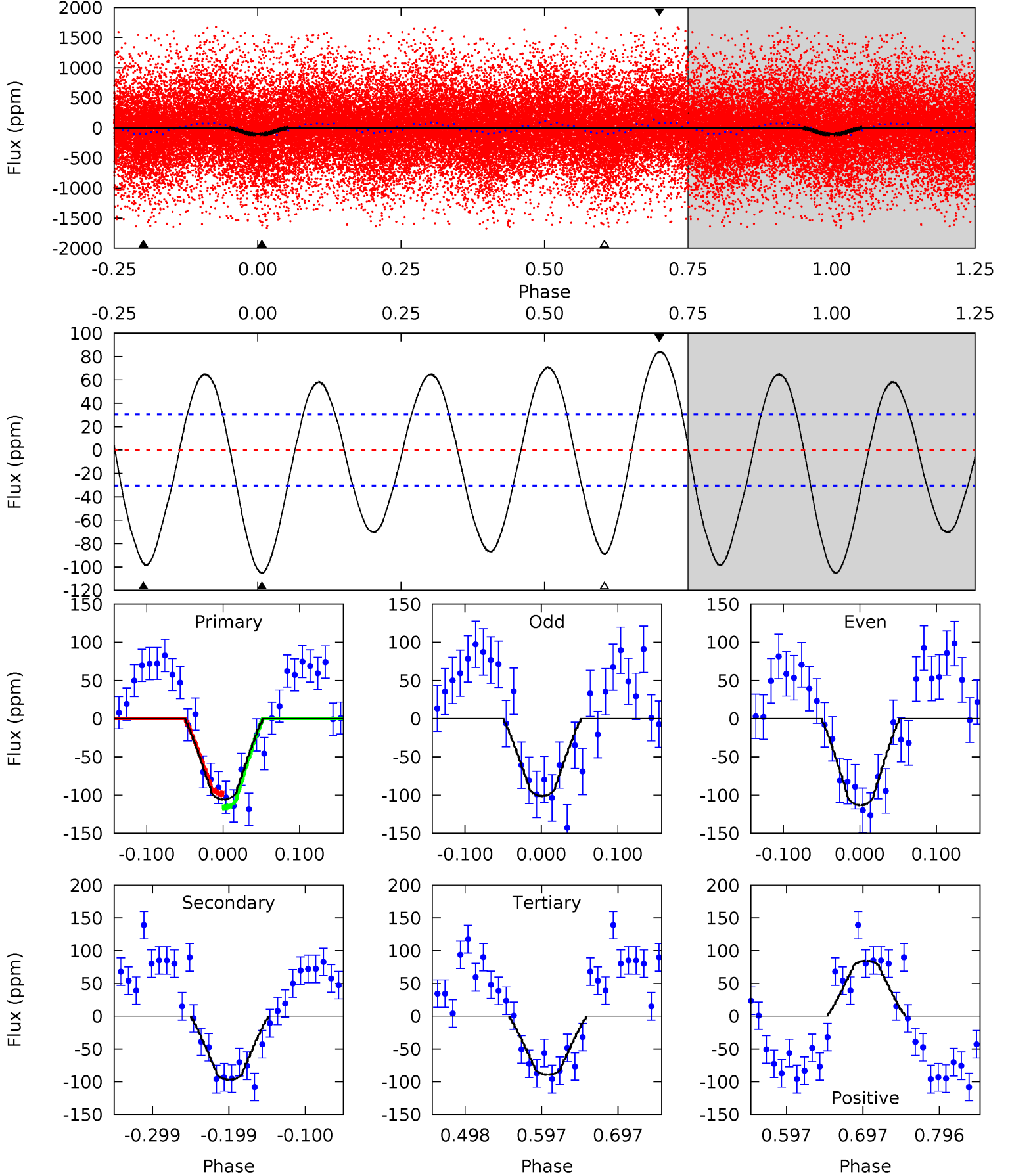
TCE 005446068-02   P= 0.571712 Days    $T_0=131.677797$  (BKJD)



# DV Model-Shift Uniqueness Test

005446068-02, P = 0.571708 Days, E = 131.107139 Days

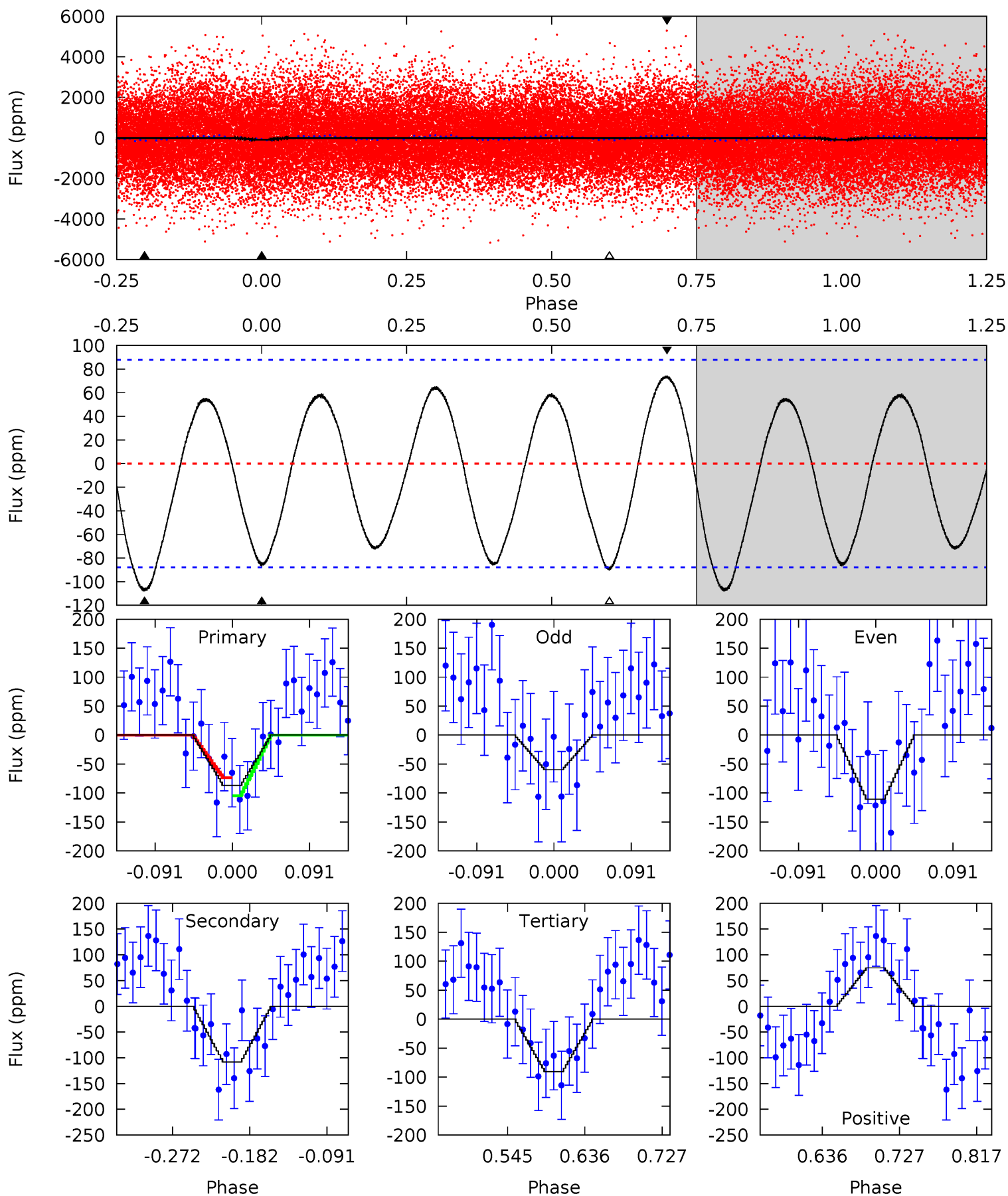
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	14.5	13.4	12.6	4.57	1.65	8.19	2.44	3.19	1.15	1.91	0.91	1.03	0.44	1.31



# Alt Model-Shift Uniqueness Test

005446068-02, P = 0.571712 Days, E = 131.106085 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
4.53	5.64	4.72	3.89	4.58	1.69	2.71	-0.19	0.64	0.92	1.75	1.30	0.78	0.41	0.81





### Stellar Parameters For KIC 005446068

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5985^{+131}_{-119}$	$3.586^{+0.285}_{-0.095}$	$-0.020^{+0.150}_{-0.150}$	$3.350^{+0.588}_{-1.176}$	$1.578^{+0.138}_{-0.321}$	$0.059^{+0.117}_{-0.018}$
	+2%/-2%	+8%/-3%	+750%/-750%	+18%/-35%	+9%/-20%	+198%/-31%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 005446068-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-97 \pm 7$	$4.11^{+4.01}_{-2.62}$	$5346^{+274}_{-475}$	$4867^{+4440}_{-8613}$	$0.767^{+5.224}_{-0.569}$
Alt.	$-108 \pm 19$	$4.57^{+3.81}_{-2.97}$	$5324^{+274}_{-424}$	$4724^{+5109}_{-8505}$	$0.696^{+5.468}_{-0.501}$

$T_{max}$  = 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

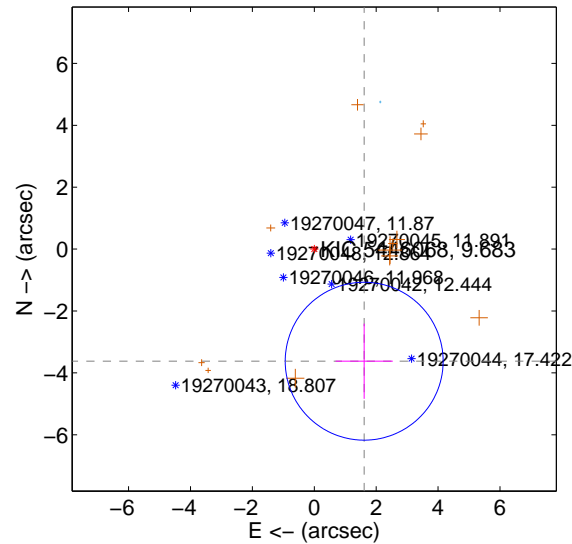
Supplemental centroid analysis for 005446068-02. **Kepler magnitude: 9.68.** Transit SNR 8.24

**There are 1 quarters with good PRF difference image offsets**

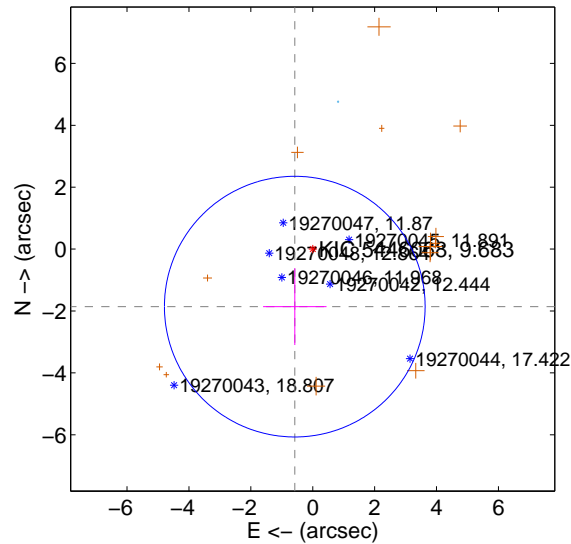
The direct PRF centroid is offset from the target star catalog position by about 1.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>3.965 \pm 0.850</math></b>	<b>4.66</b>	$-1.612 \pm 0.925$	$-3.622 \pm 1.215$
PRF-fit source offset from KIC position	$1.947 \pm 1.404$	1.39	$0.580 \pm 1.025$	$-1.859 \pm 1.241$
photometric centroid source offset	$0.22 \pm 0.27$	0.78	$-0.01 \pm 0.20$	$-0.21 \pm 0.27$

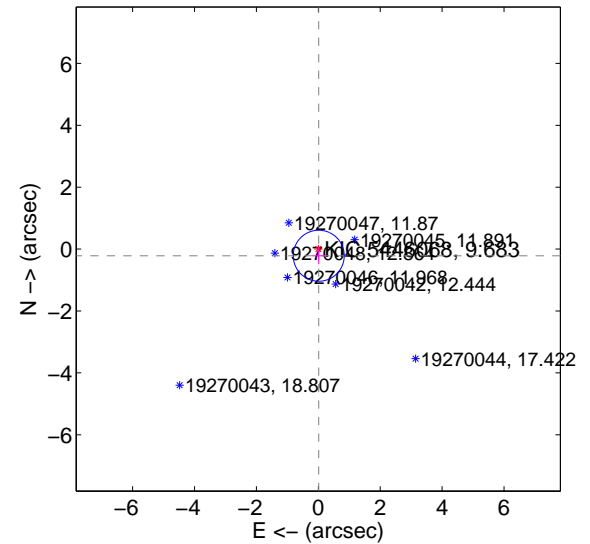
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

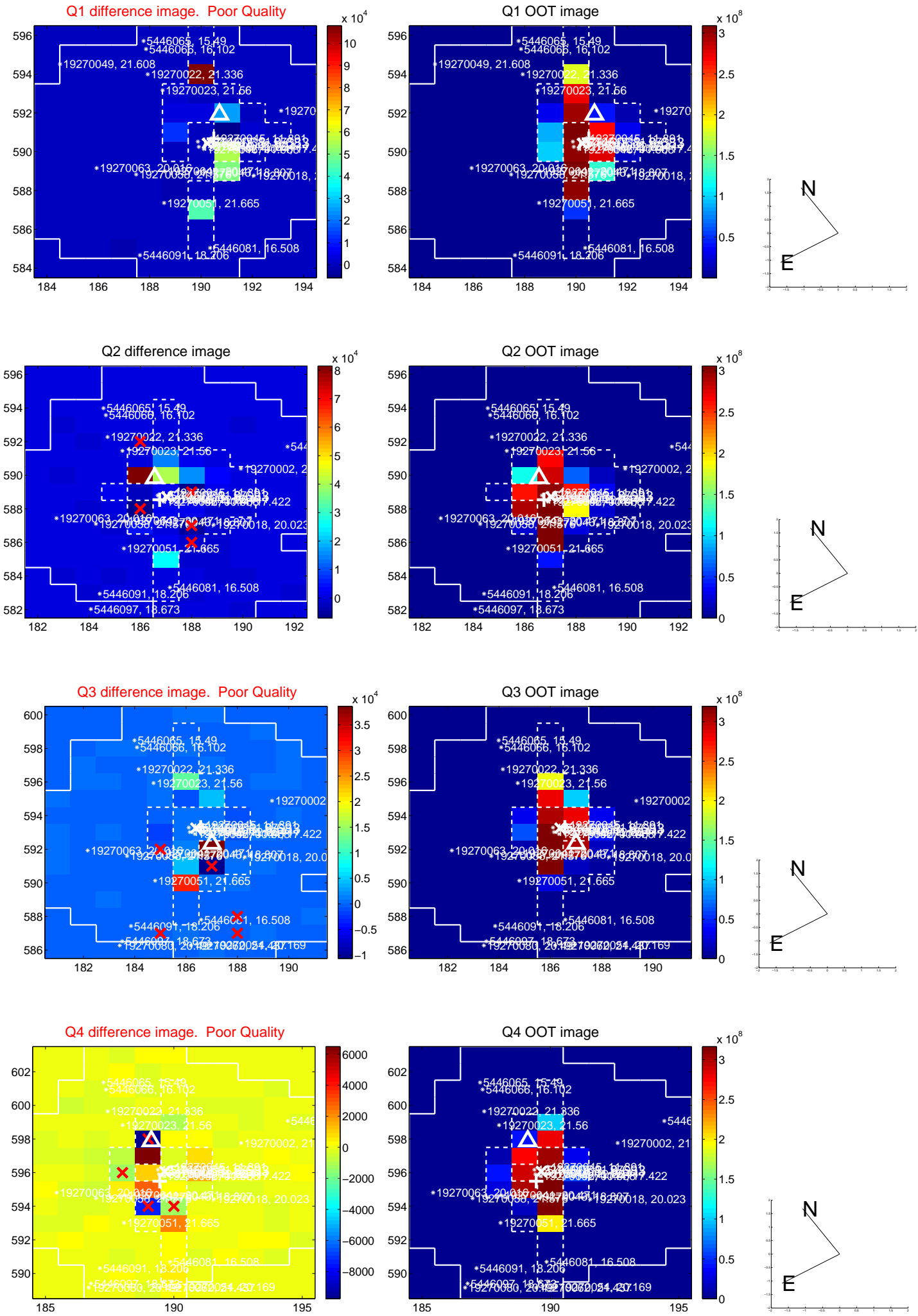


offset from photometric centroids

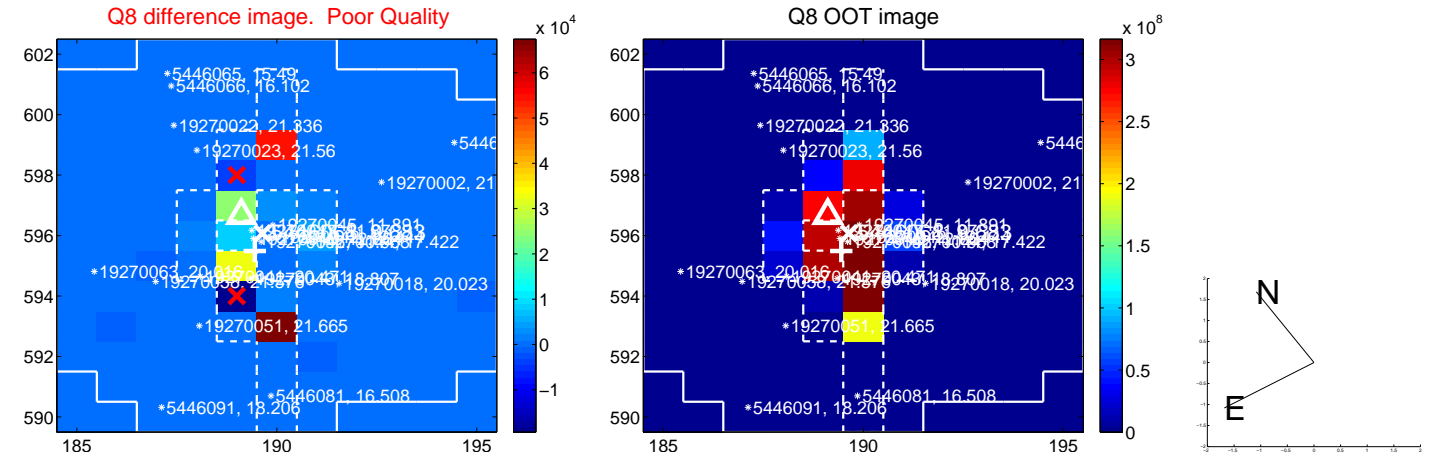
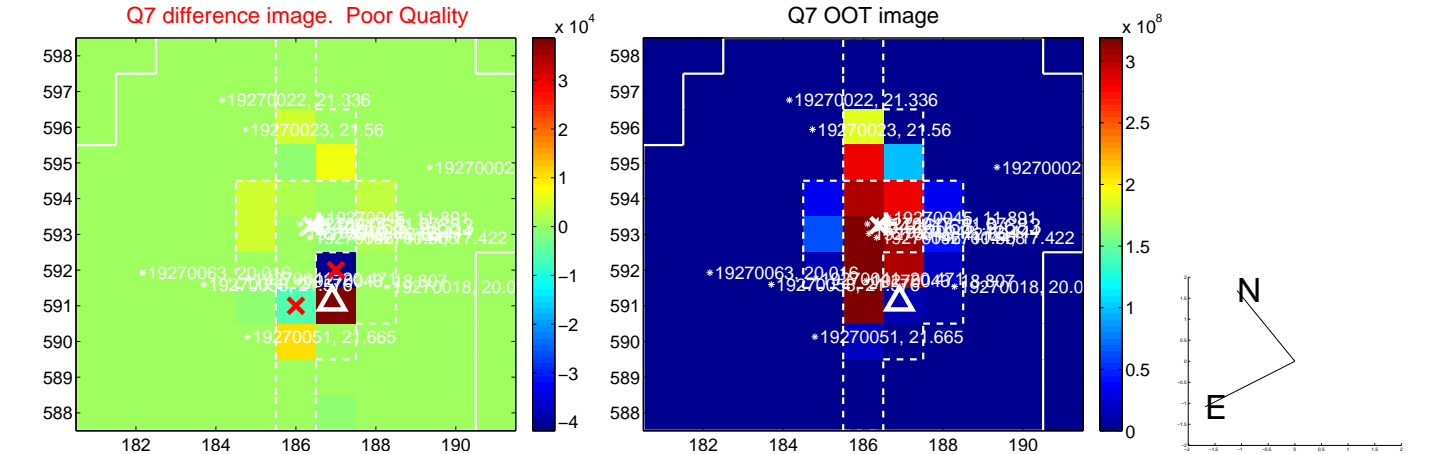
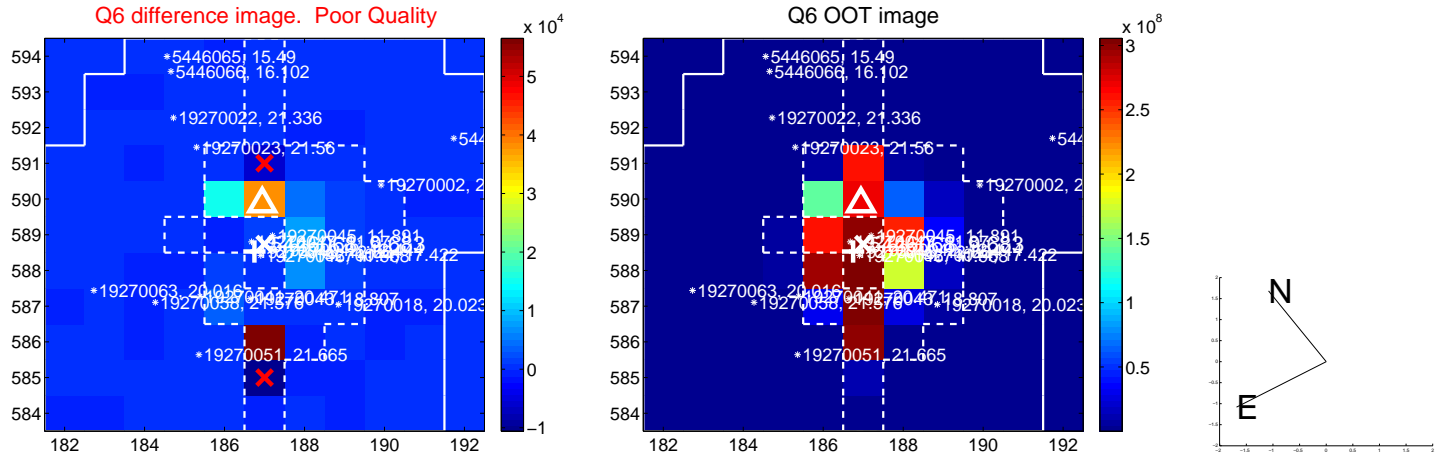
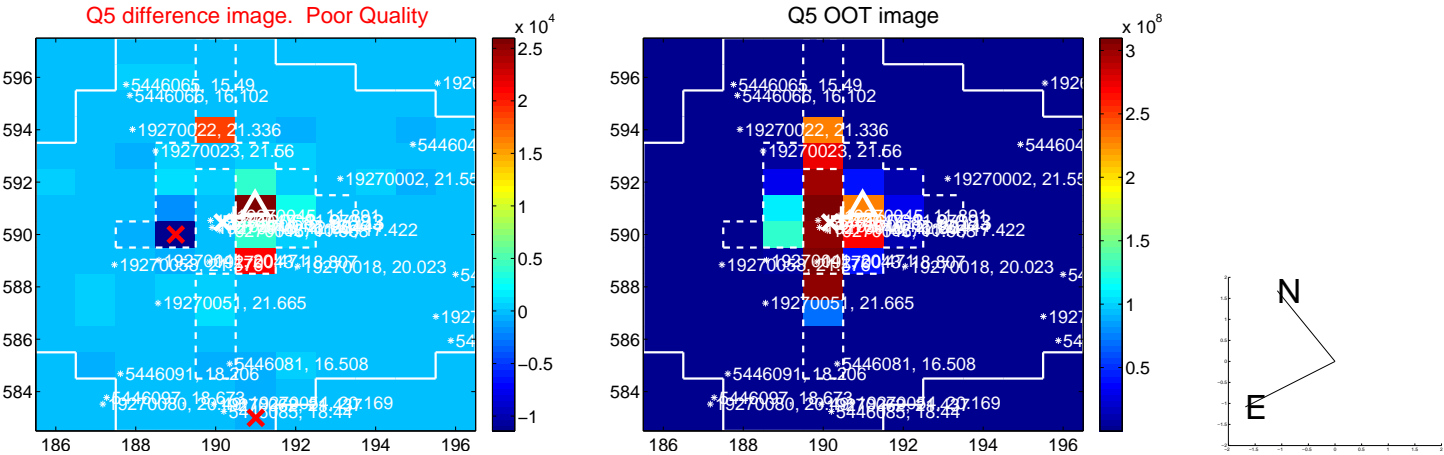


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

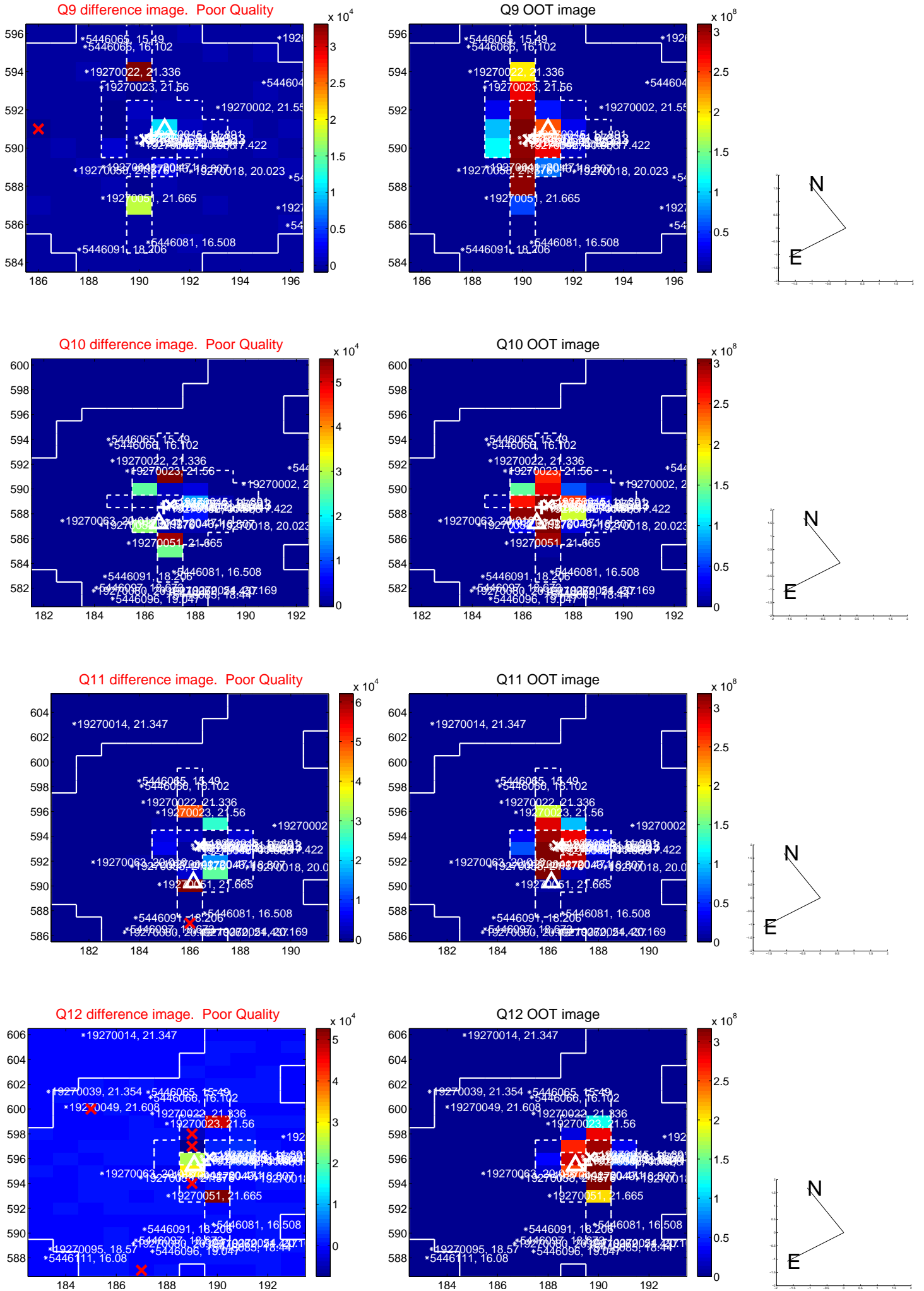
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

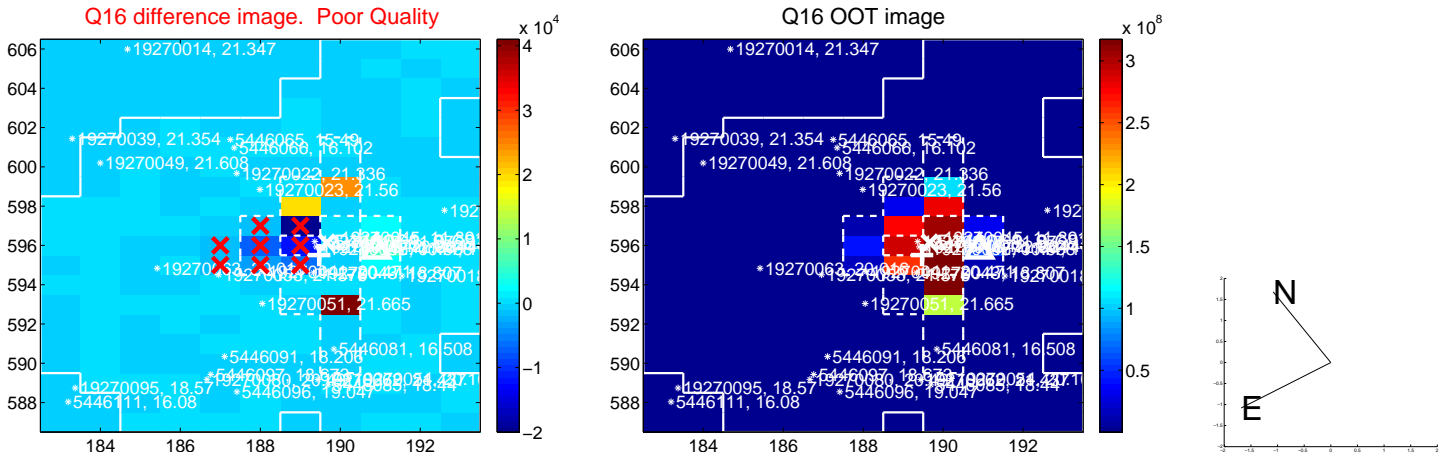
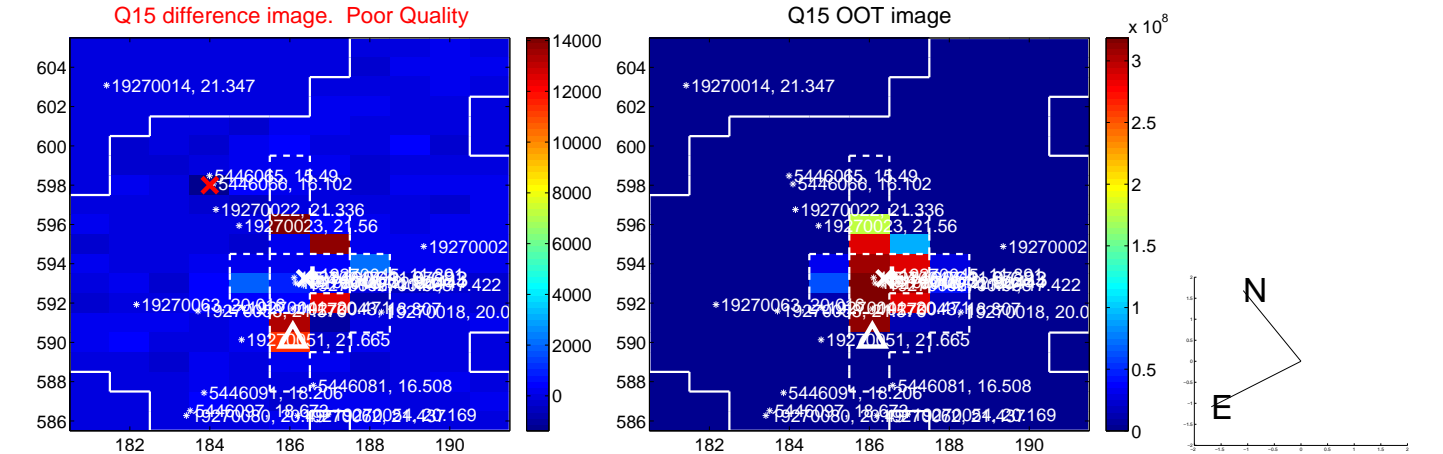
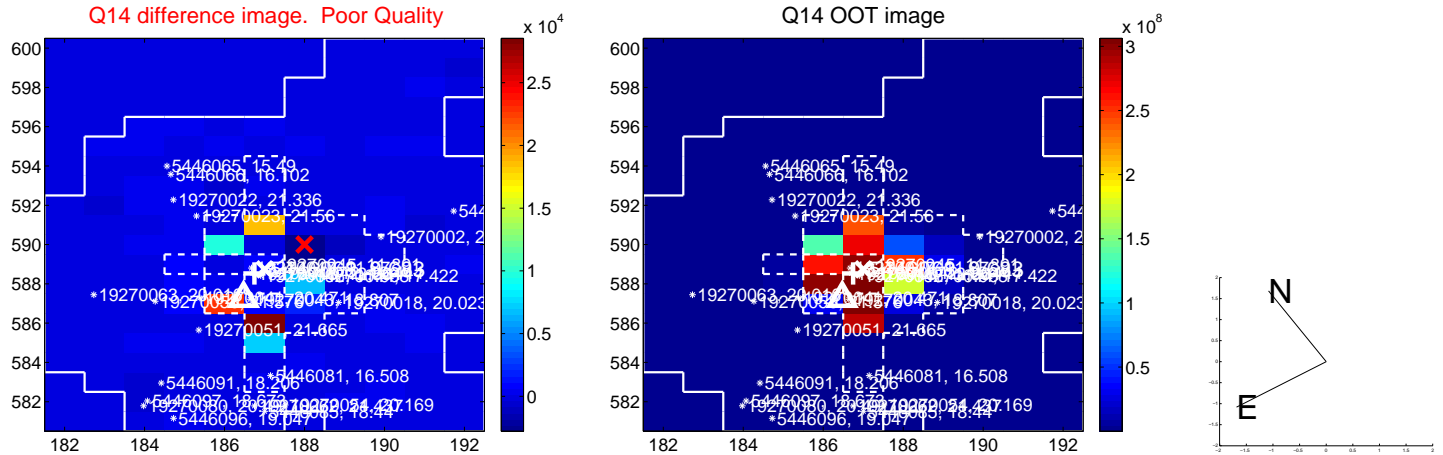
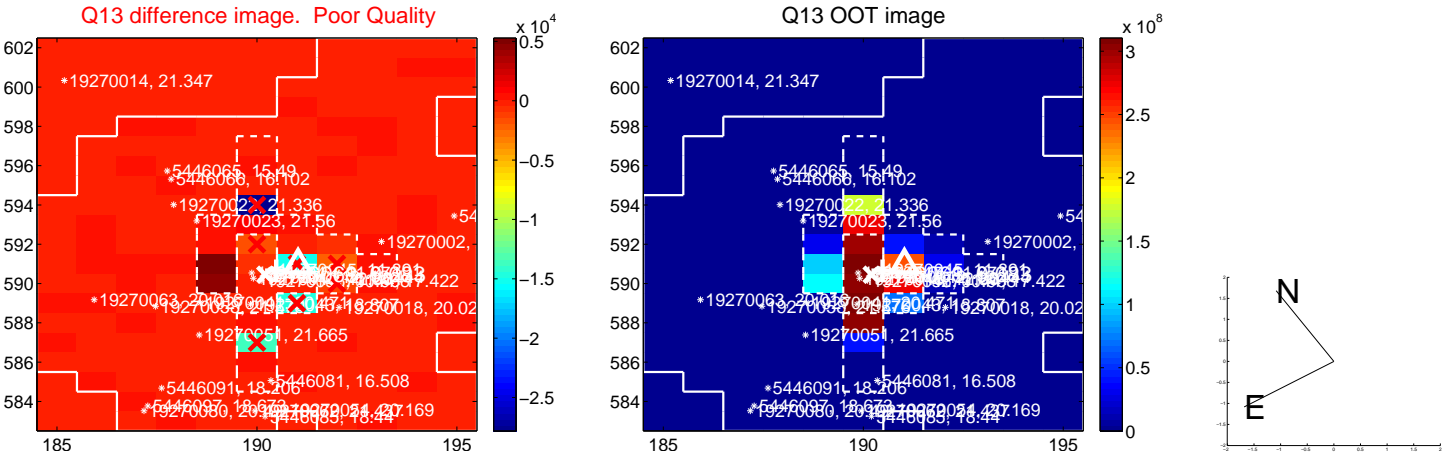


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

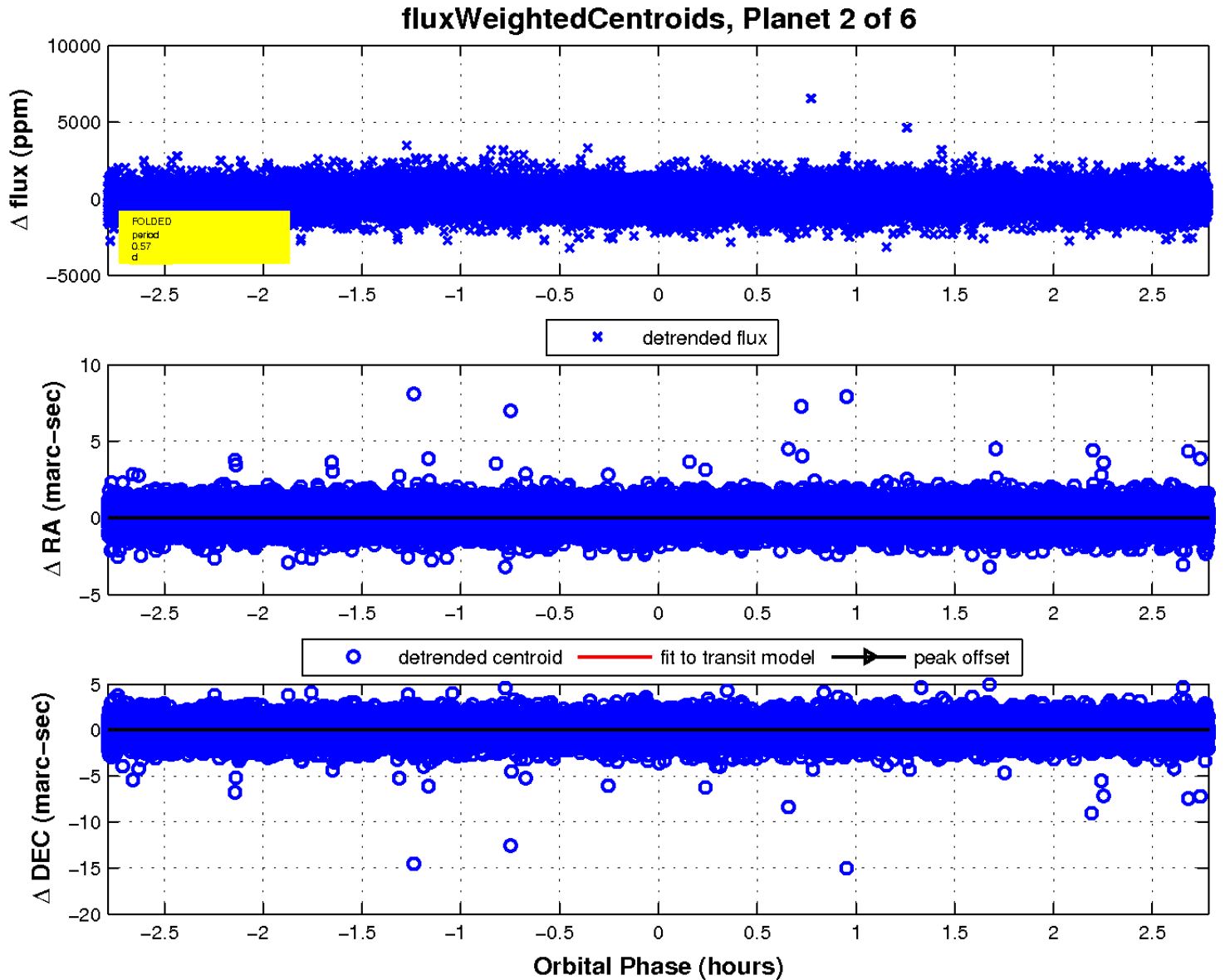
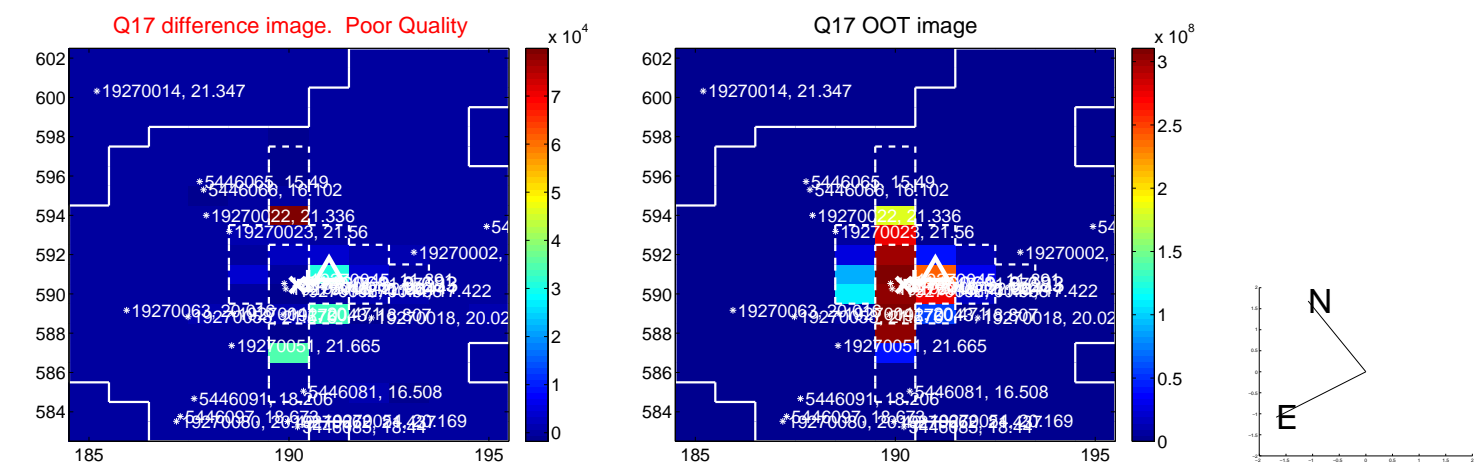




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

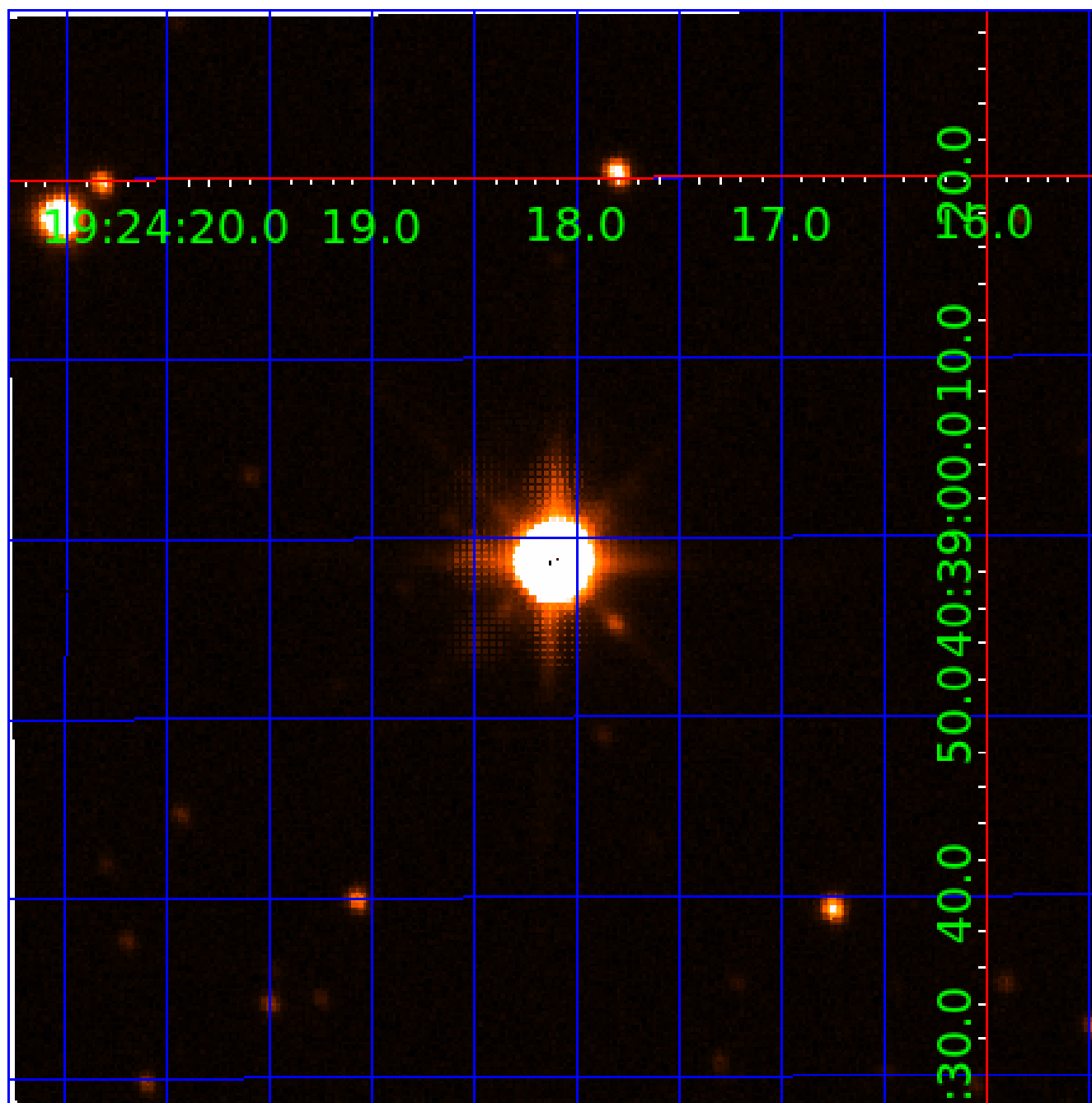


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination



# KIC 005446068

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005446068-01	OBS	No	0.686055	132.020320	101.5	1.015	11.9	12.0	3.35	5985	3.42	41055.26
005446068-02	OBS	No	0.571708	131.678847	77.0	0.929	11.6	8.2	3.35	5985	2.96	0.00
005446068-03	OBS	No	0.571707	131.909449	88.7	0.947	10.5	9.1	3.35	5985	3.18	0.00
005446068-04	OBS	No	82.152235	173.175060	1742.4	3.754	8.3	7.2	3.35	5985	26.11	69.56
005446068-05	OBS	No	49.368650	142.734127	1094.8	2.579	8.5	6.1	3.35	5985	11.96	137.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005446068-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005446068-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
005446068-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

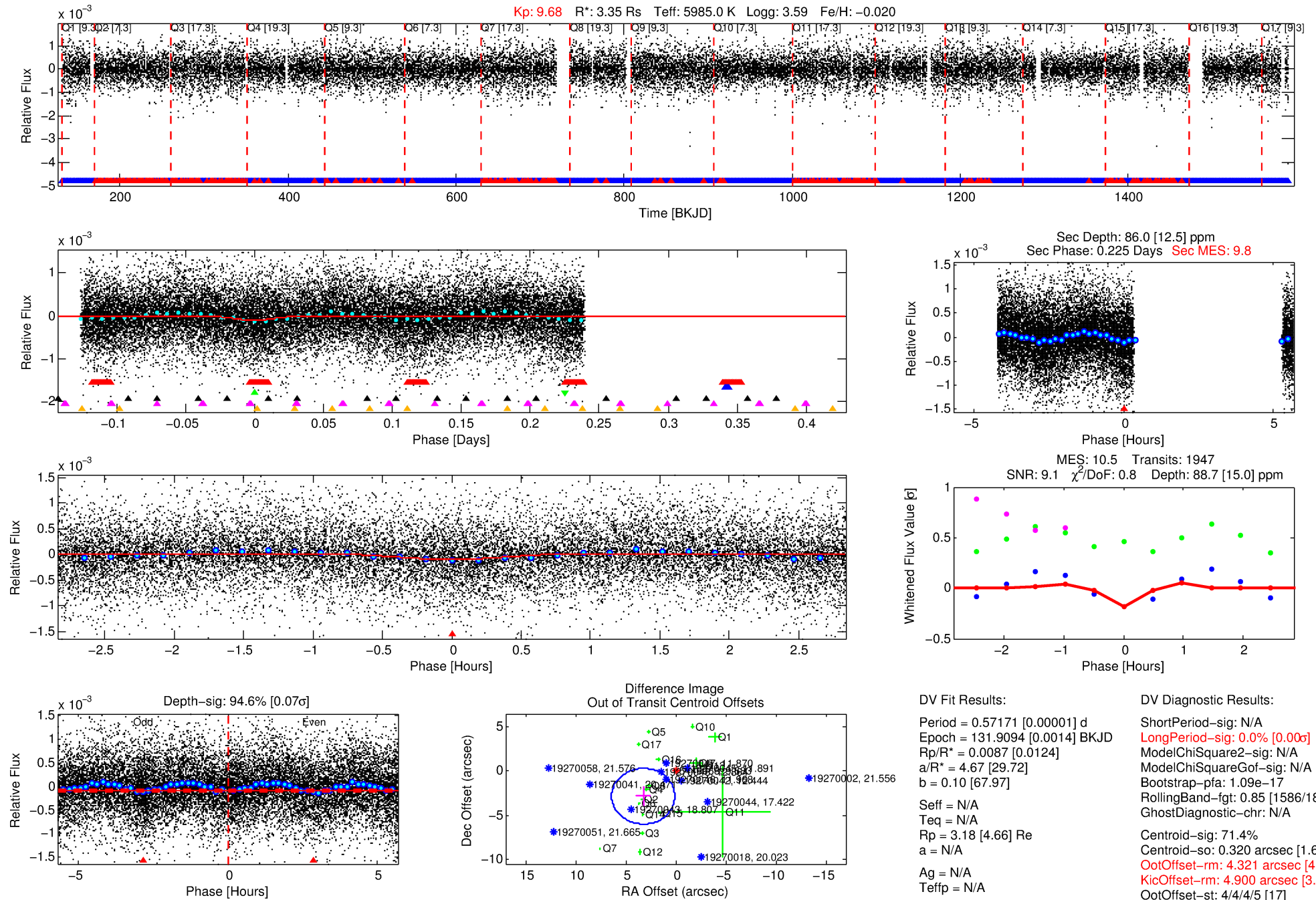
## Ephemeris Match Information For 005446068-03

No Significant Match Found



# DV One-Page Summary

KIC: 5446068 Candidate: 3 of 6 Period: 0.572 d



## DV Fit Results:

Period = 0.57171 [0.00001] d  
Epoch = 131.9094 [0.0014] BKJD  
Rp/R\* = 0.0087 [0.0124]  
a/R\* = 4.67 [29.72]  
b = 0.10 [67.97]  
Seff = N/A  
Teq = N/A  
Rp = 3.18 [4.66] Re  
a = N/A  
Ag = N/A  
Teffp = N/A

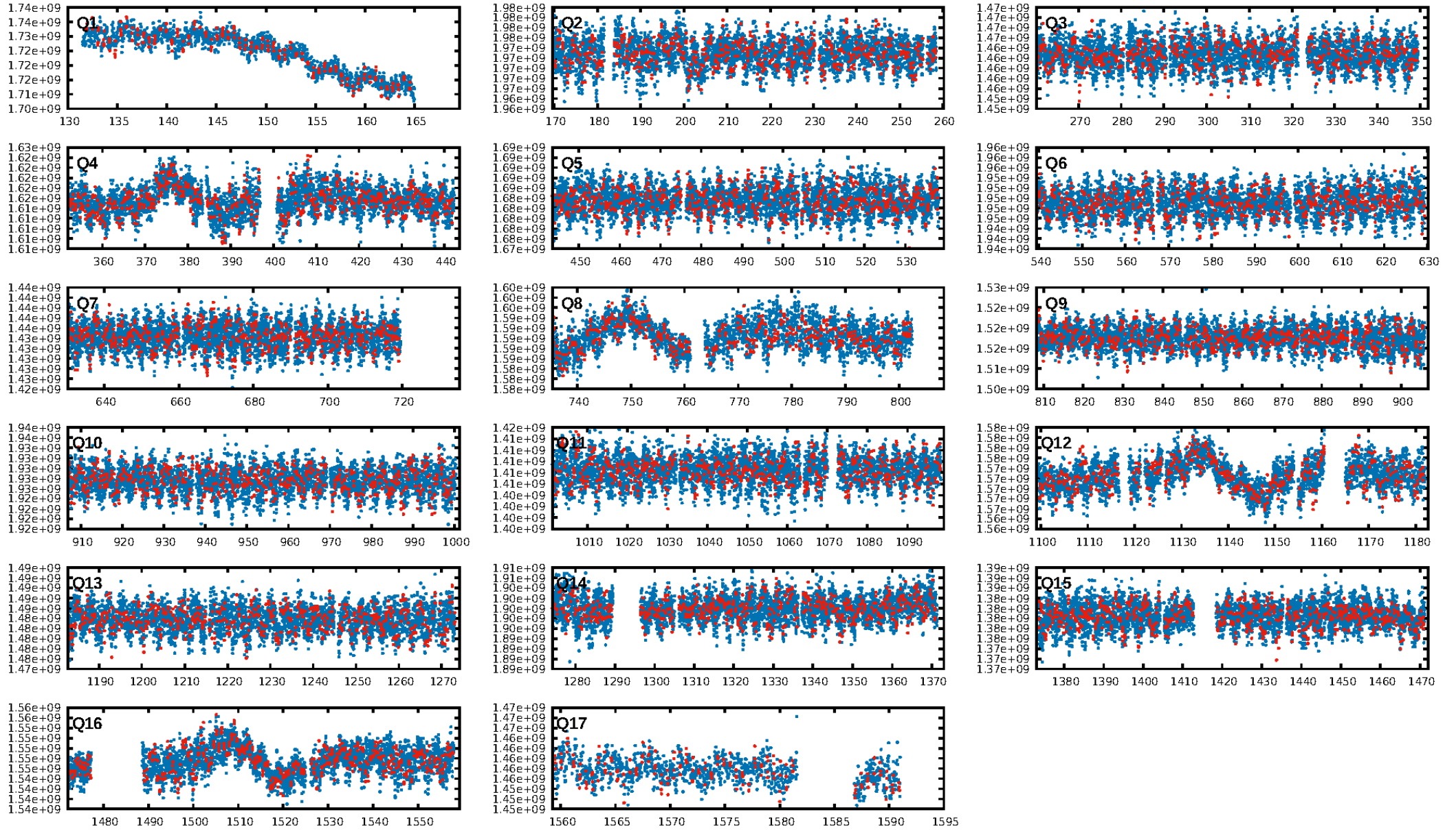
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.09e-17  
RollingBand-fgt: 0.85 [1586/1858]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 71.4%  
Centroid-so: 0.320 arcsec [1.67σ]  
OotOffset-rm: 4.321 arcsec [4.11σ]  
KicOffset-rm: 4.900 arcsec [3.80σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.00 [0/17]

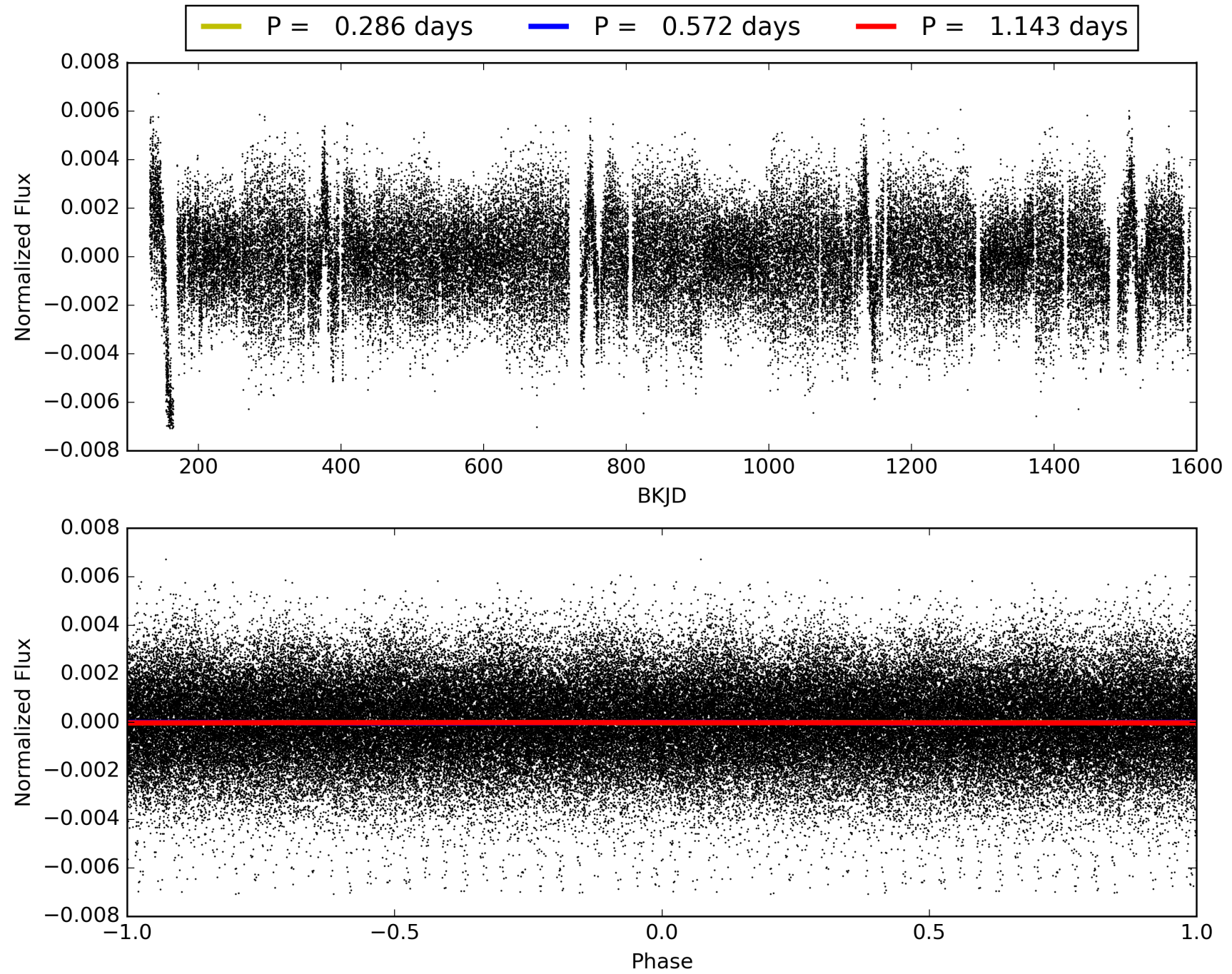
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:46:20 Z

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

# TCE 005446068-03, PDC Light Curves



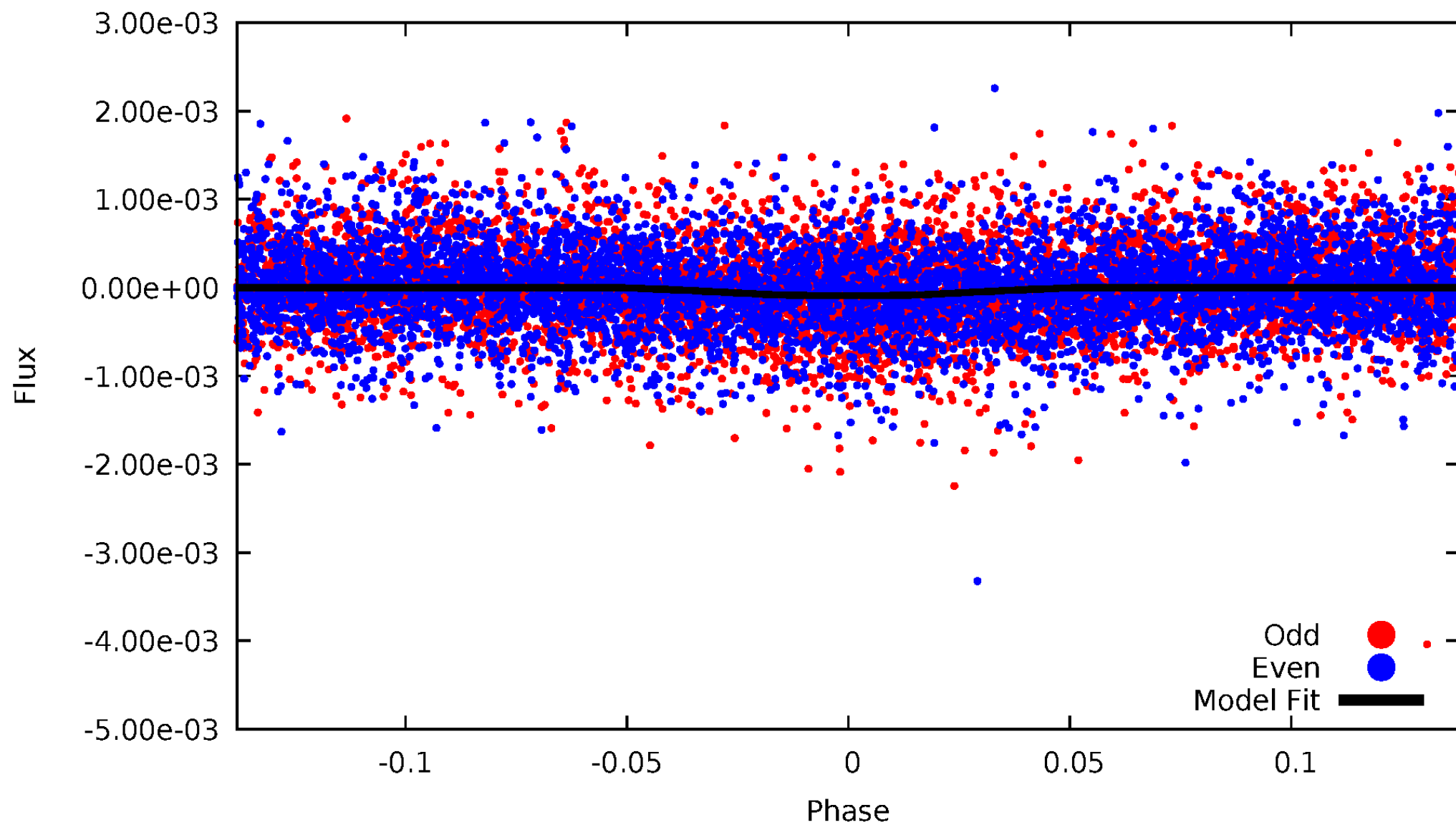
TCE 005446068-03





DV Odd/Even

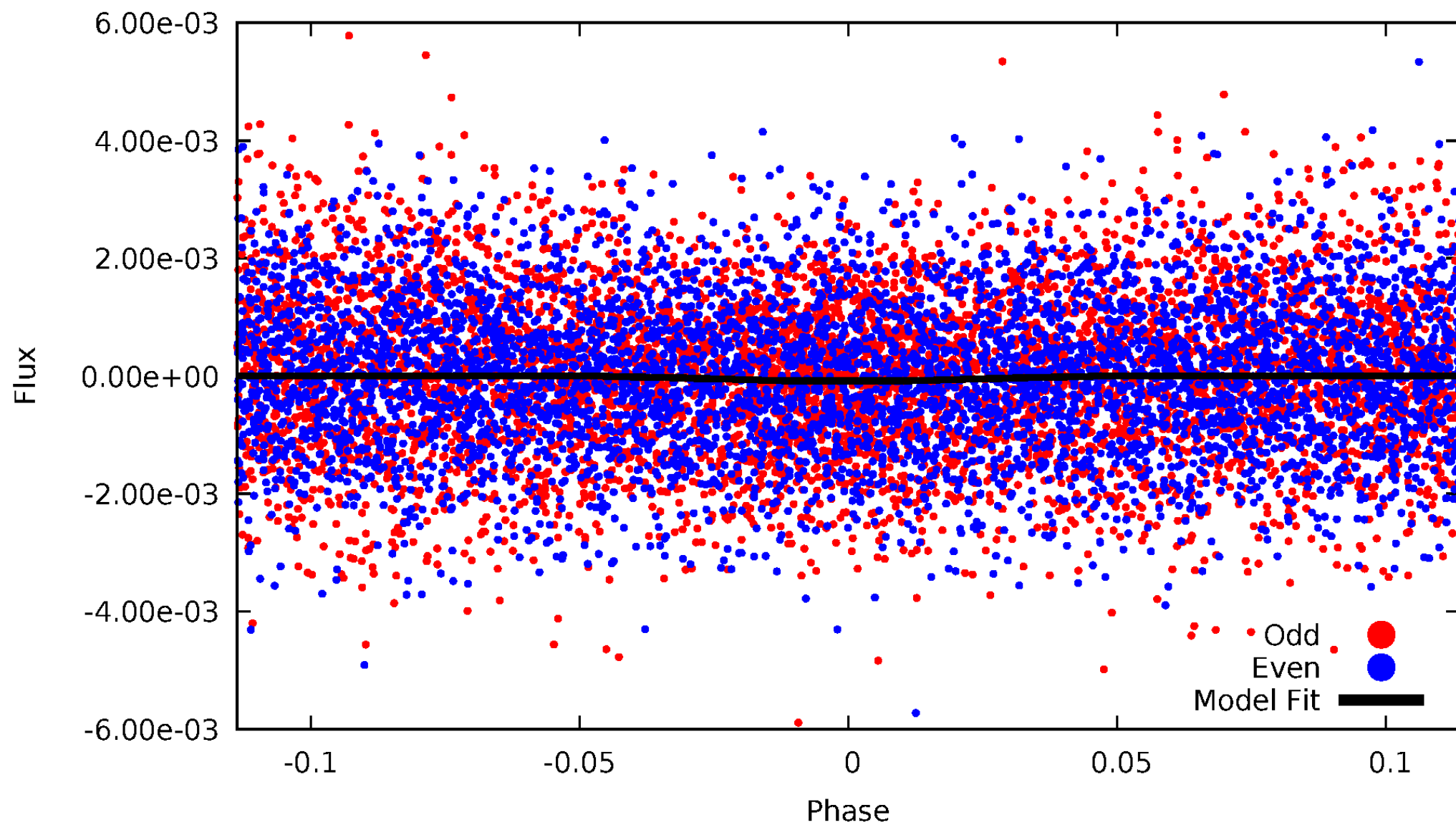
TCE 005446068-03



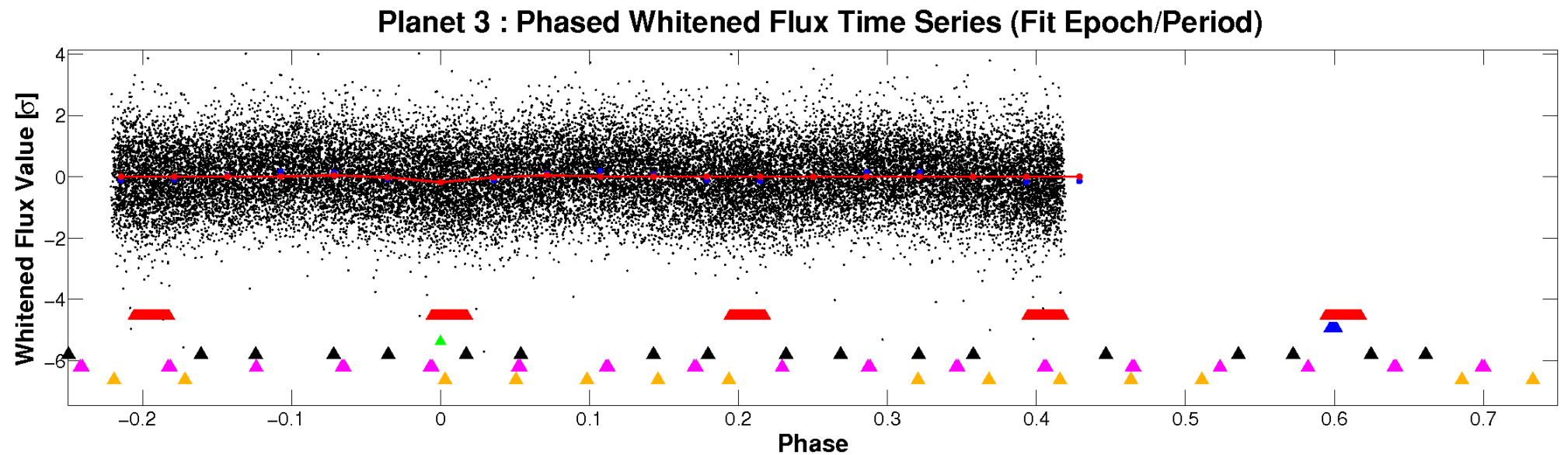
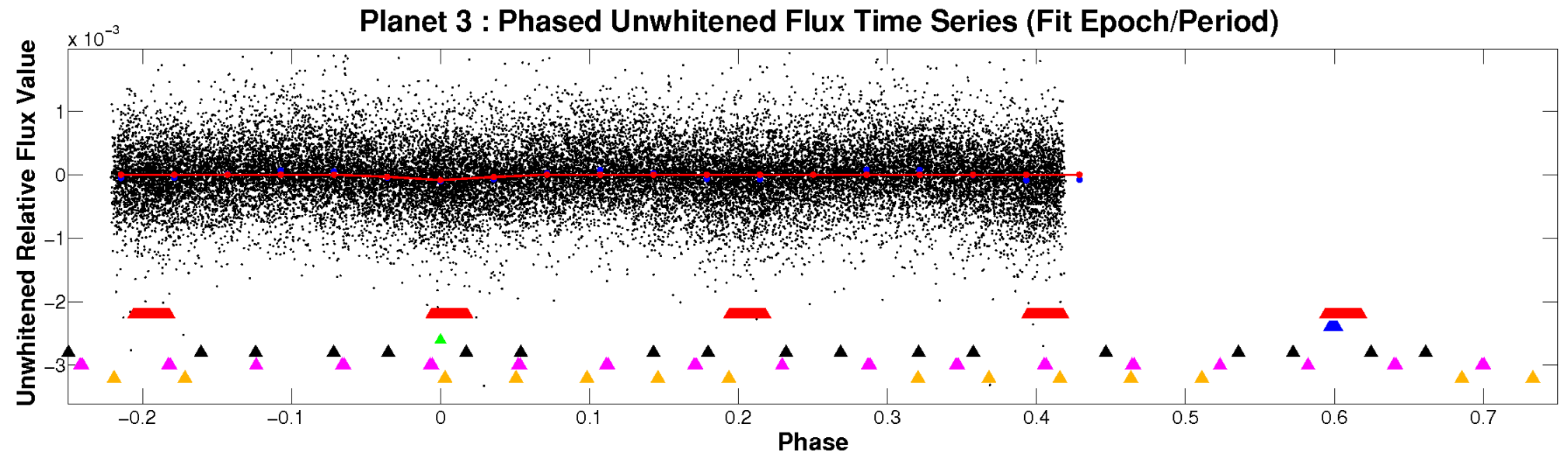


# ALT Odd/Even

TCE 005446068-03

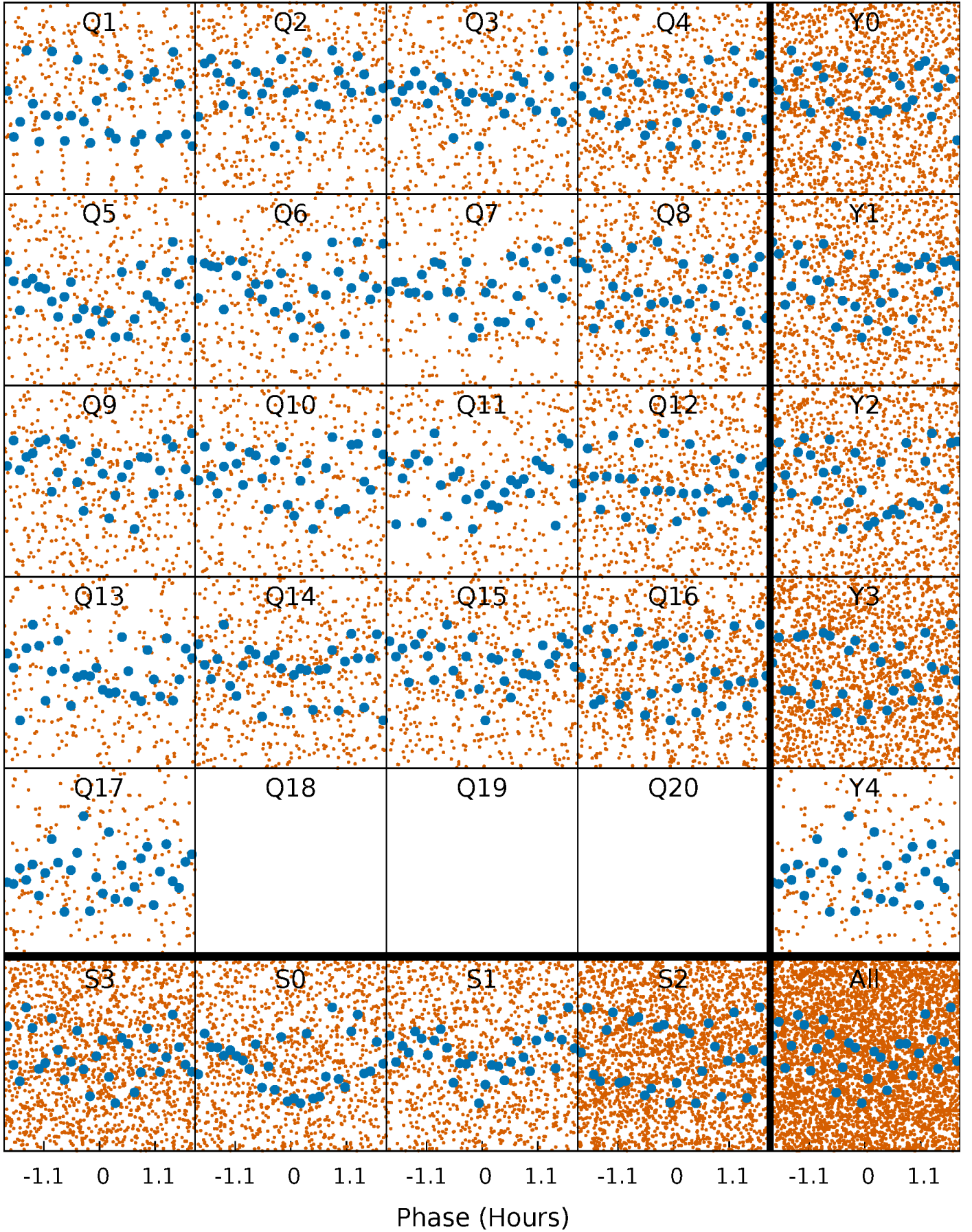


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

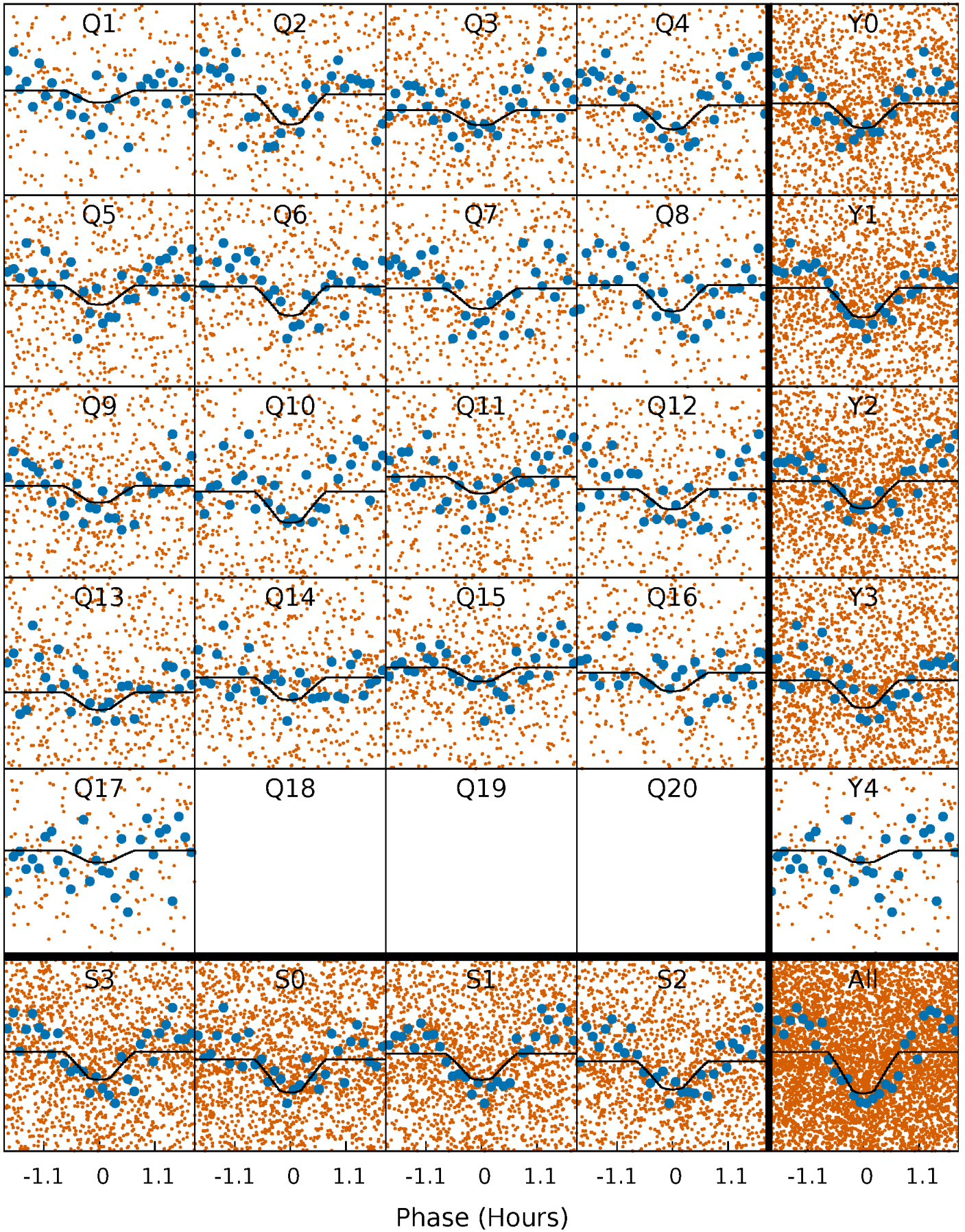
TCE 005446068-03   P= 0.571707 Days    $T_0=131.909449$  (BKJD)





# DV Quarter-Phased Transit Curves

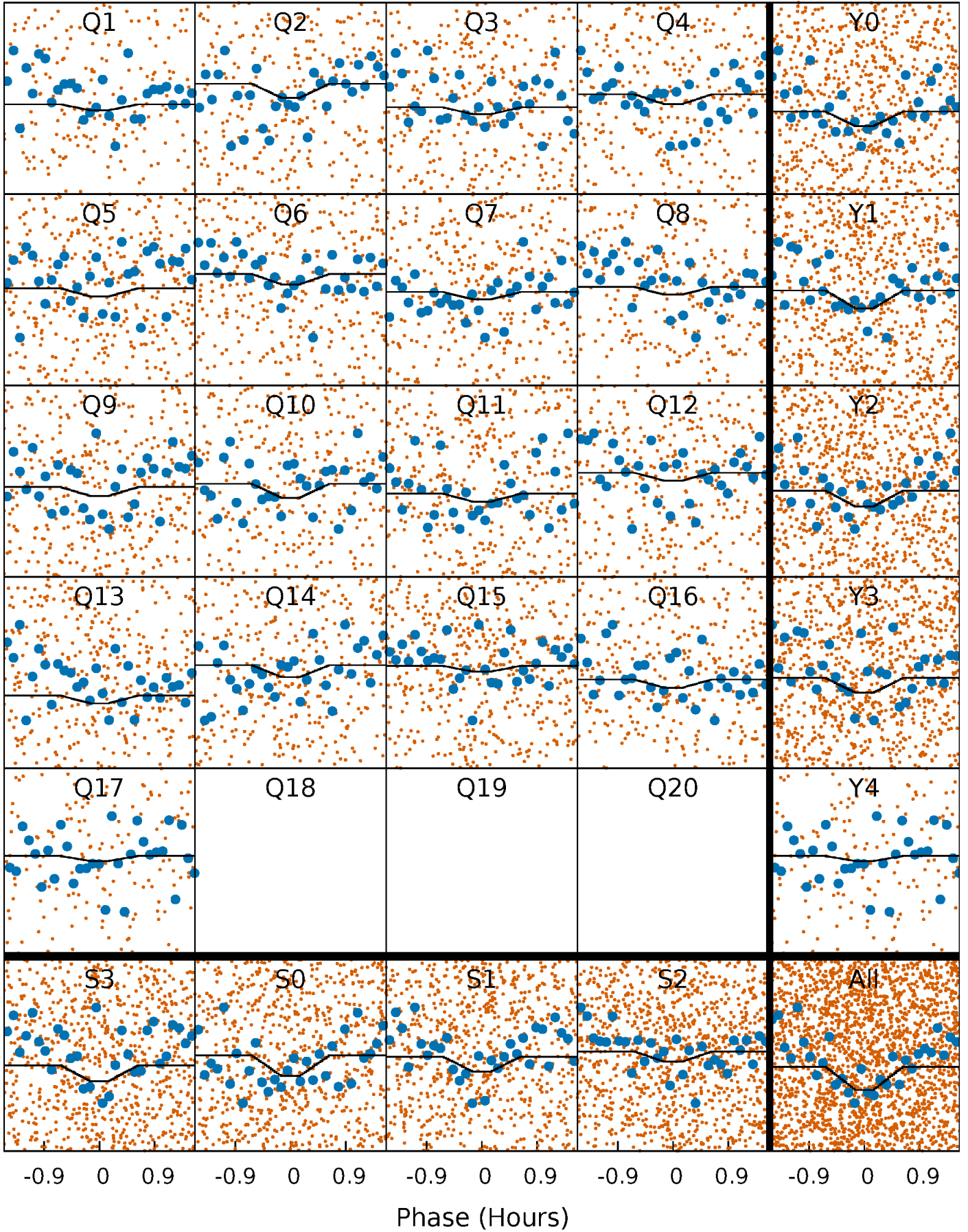
TCE 005446068-03 P= 0.571707 Days  $T_0=131.909449$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

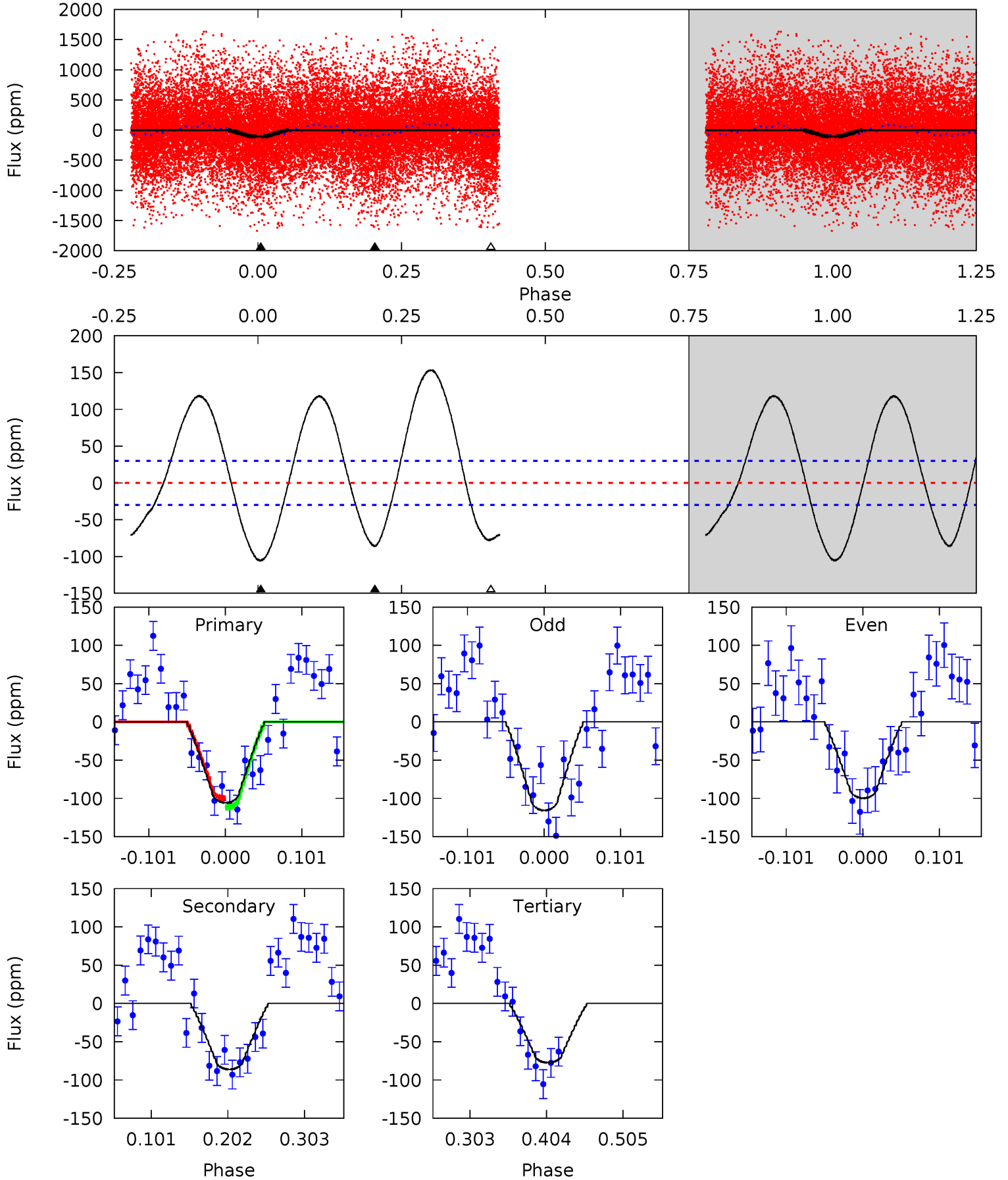
TCE 005446068-03 P= 0.571712 Days  $T_0=131.908507$  (BKJD)



# DV Model-Shift Uniqueness Test

005446068-03, P = 0.571707 Days, E = 131.337742 Days

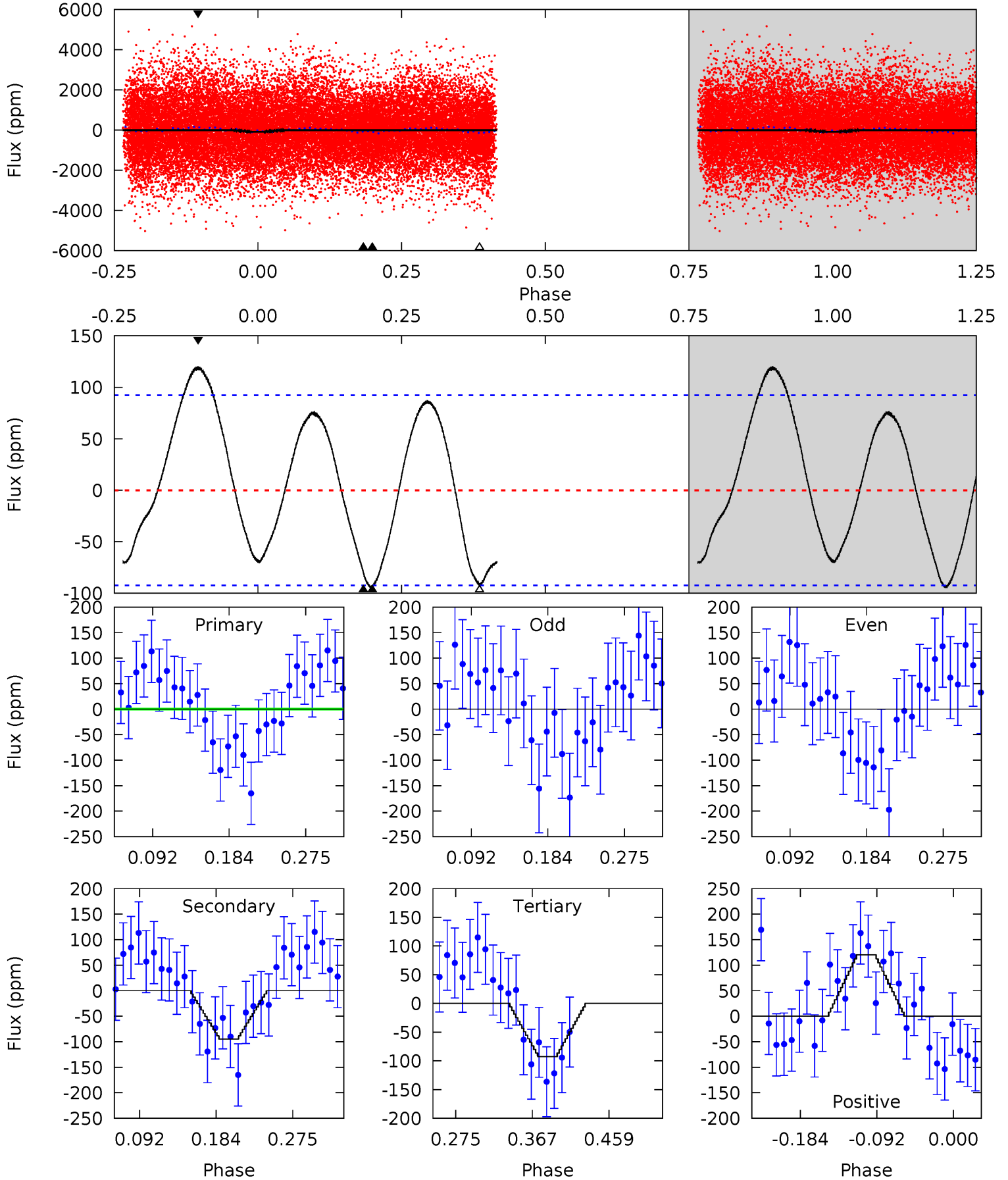
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	13.1	11.8	0	4.56	1.64	11.4	4.32	16.1	1.34	13.1	1.21	1.14	0.59	0.89



# Alt Model-Shift Uniqueness Test

005446068-03, P = 0.571712 Days, E = 131.336795 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
3.99	4.70	4.59	5.97	4.58	1.69	3.15	-0.59	-1.98	0.12	-1.27	1.14	1.55	0.56	0.43



### Stellar Parameters For KIC 005446068

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5985^{+131}_{-119}$	$3.586^{+0.285}_{-0.095}$	$-0.020^{+0.150}_{-0.150}$	$3.350^{+0.588}_{-1.176}$	$1.578^{+0.138}_{-0.321}$	$0.059^{+0.117}_{-0.018}$
	+2%/-2%	+8%/-3%	+750%/-750%	+18%/-35%	+9%/-20%	+198%/-31%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 005446068-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-86 \pm 7$	$4.21^{+3.77}_{-2.69}$	$5289^{+315}_{-455}$	$4457^{+4575}_{-8296}$	$0.615^{+4.560}_{-0.443}$
Alt.	$-95 \pm 20$	$4.50^{+3.70}_{-2.95}$	$5314^{+305}_{-449}$	$4496^{+4824}_{-8362}$	$0.616^{+4.839}_{-0.439}$

$T_{max}$  = 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

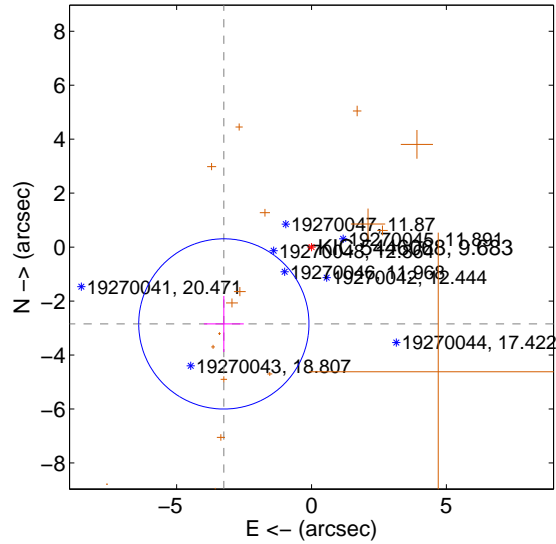
Supplemental centroid analysis for 005446068-03. **Kepler magnitude: 9.68.** Transit SNR 9.05

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

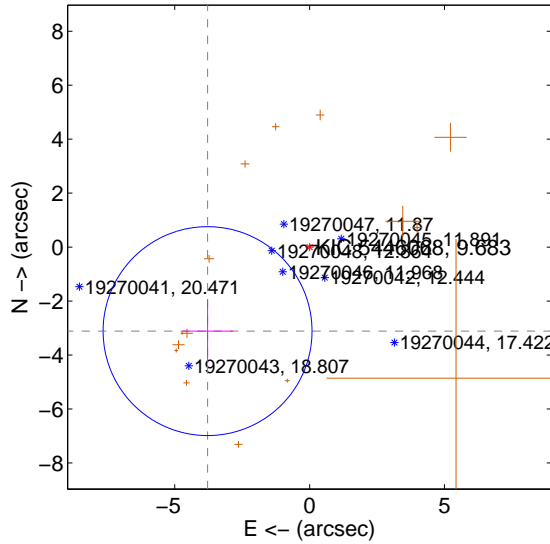
The direct PRF centroid is offset from the target star catalog position by about 1.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>4.321 <math>\pm</math> 1.052</b>	<b>4.11</b>	3.250 $\pm$ 0.738	-2.848 $\pm$ 1.039
PRF-fit source offset from KIC position	<b>4.900 <math>\pm</math> 1.291</b>	<b>3.80</b>	3.783 $\pm$ 0.942	-3.115 $\pm$ 1.180
photometric centroid source offset	0.32 $\pm$ 0.19	1.67	0.28 $\pm$ 0.17	-0.16 $\pm$ 0.24

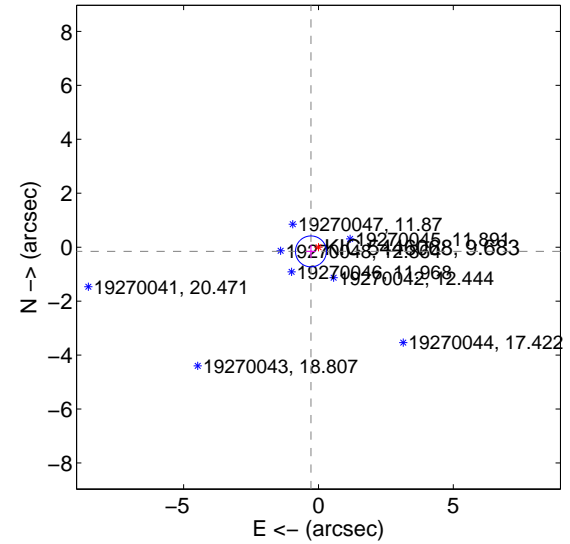
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



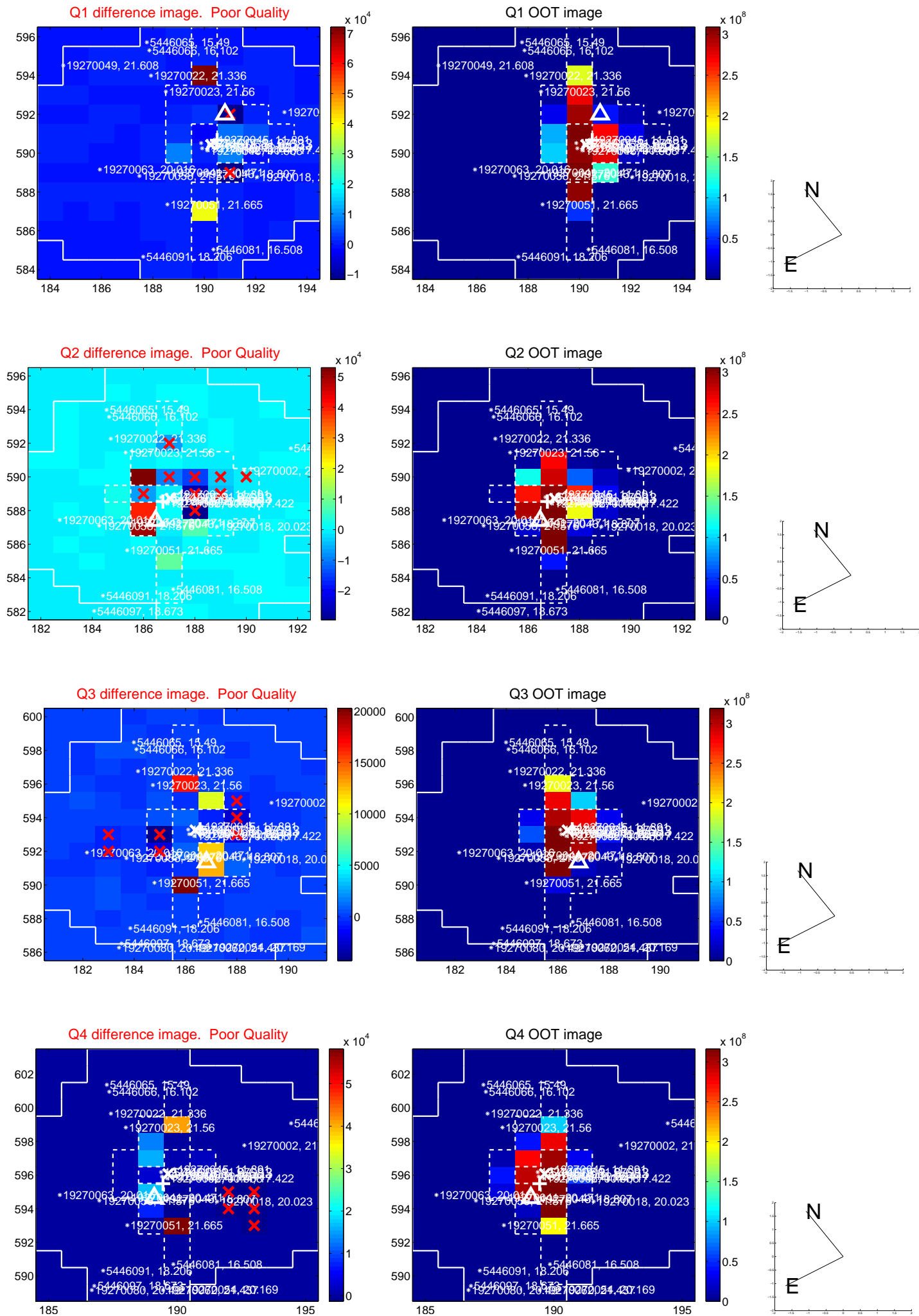
offset from photometric centroids



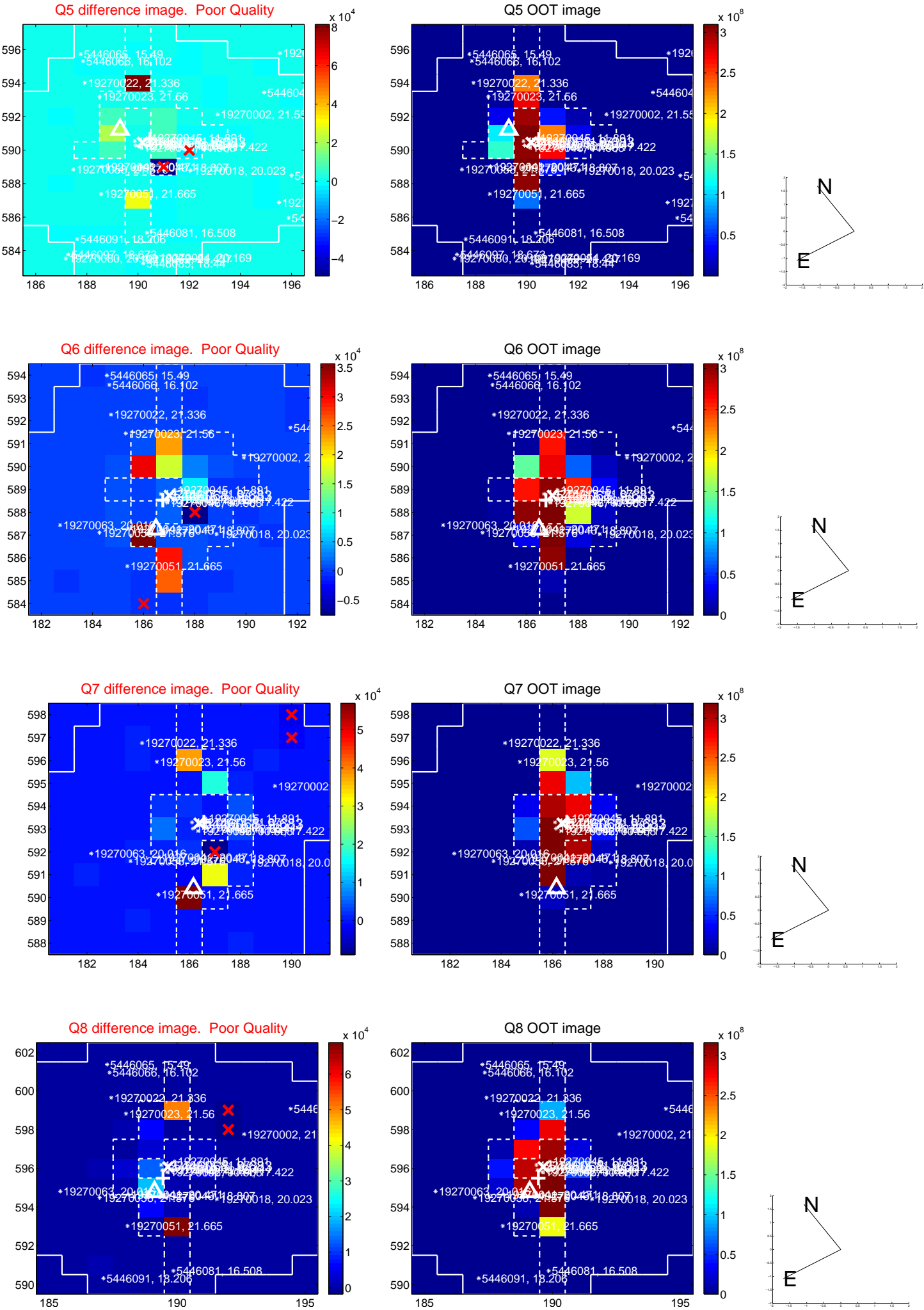
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



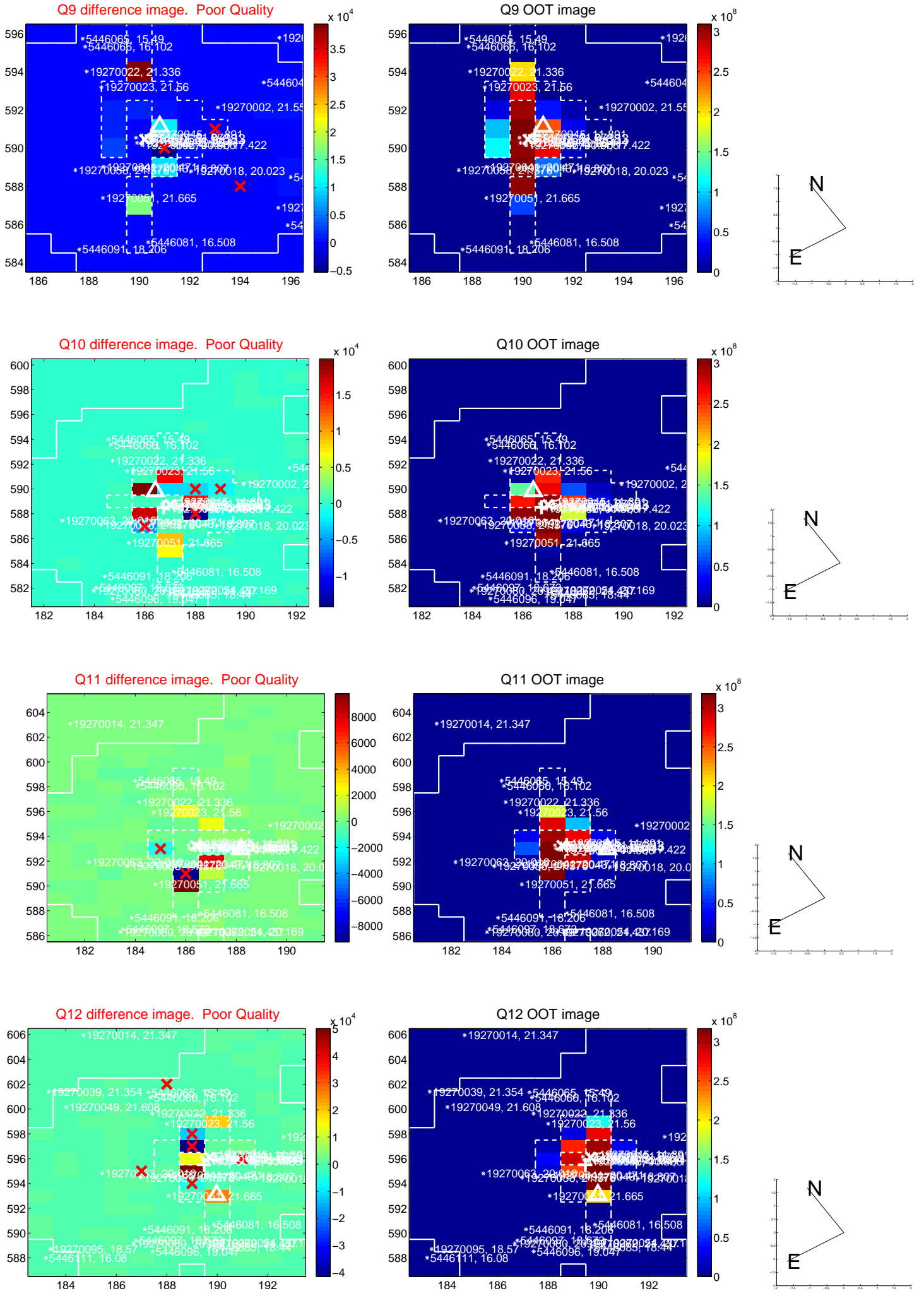
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



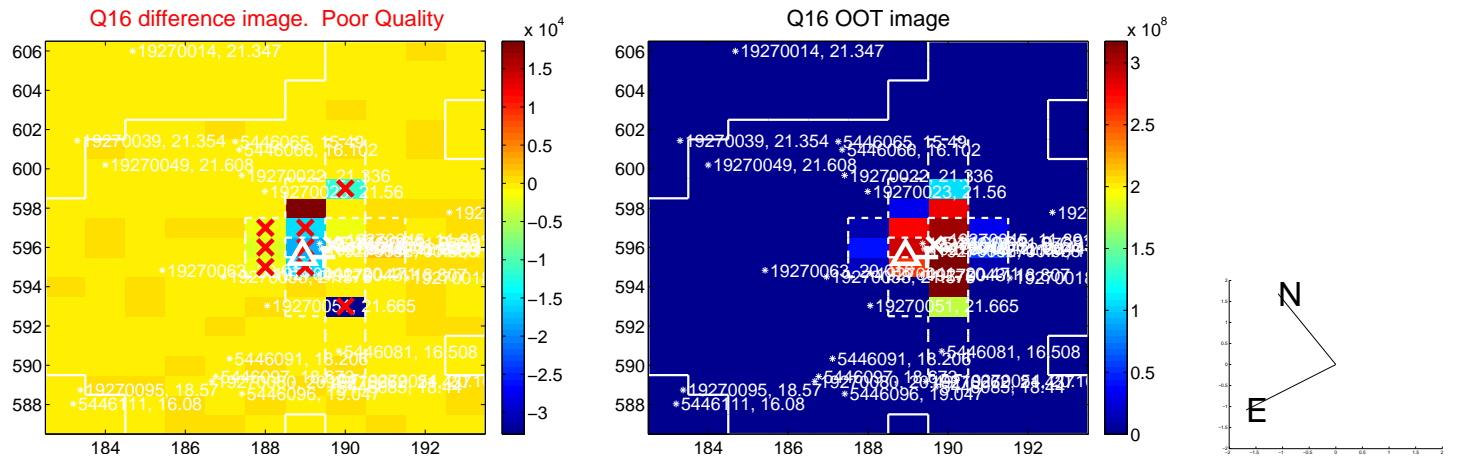
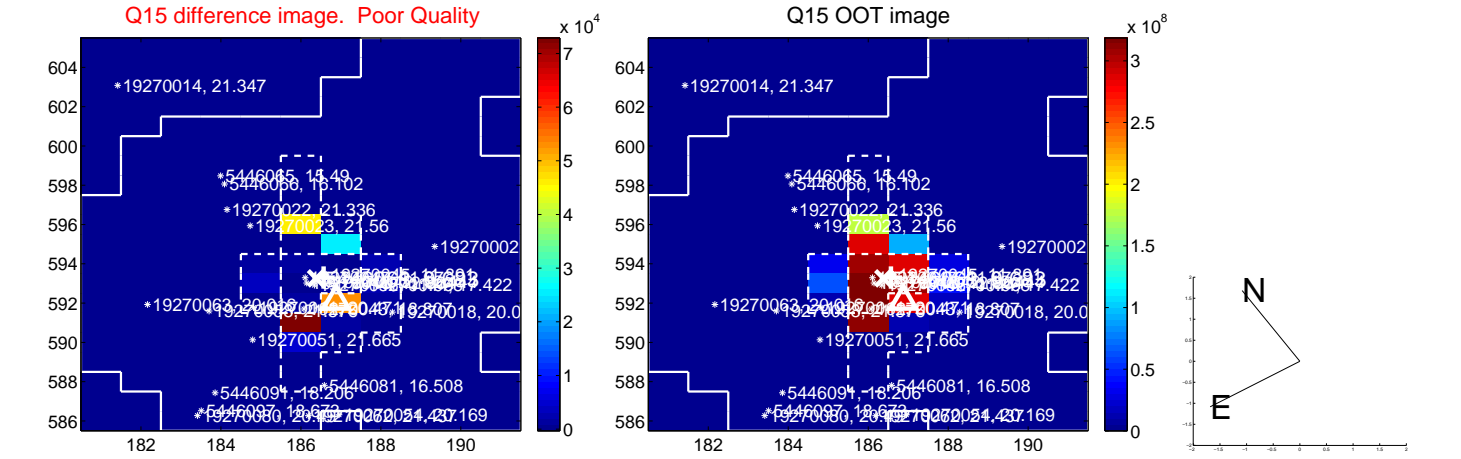
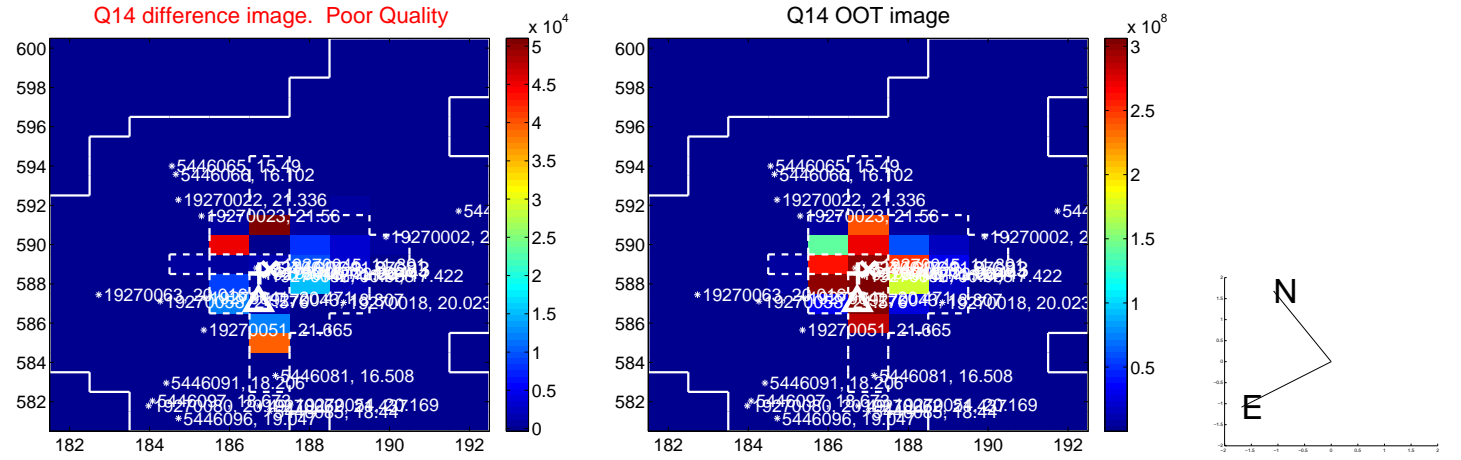
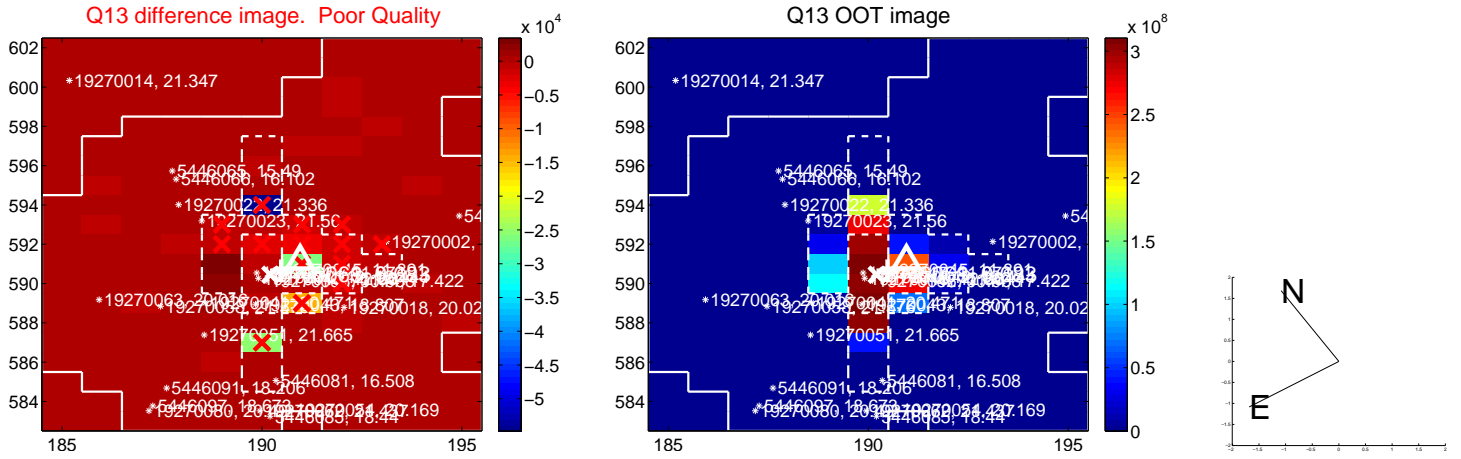
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



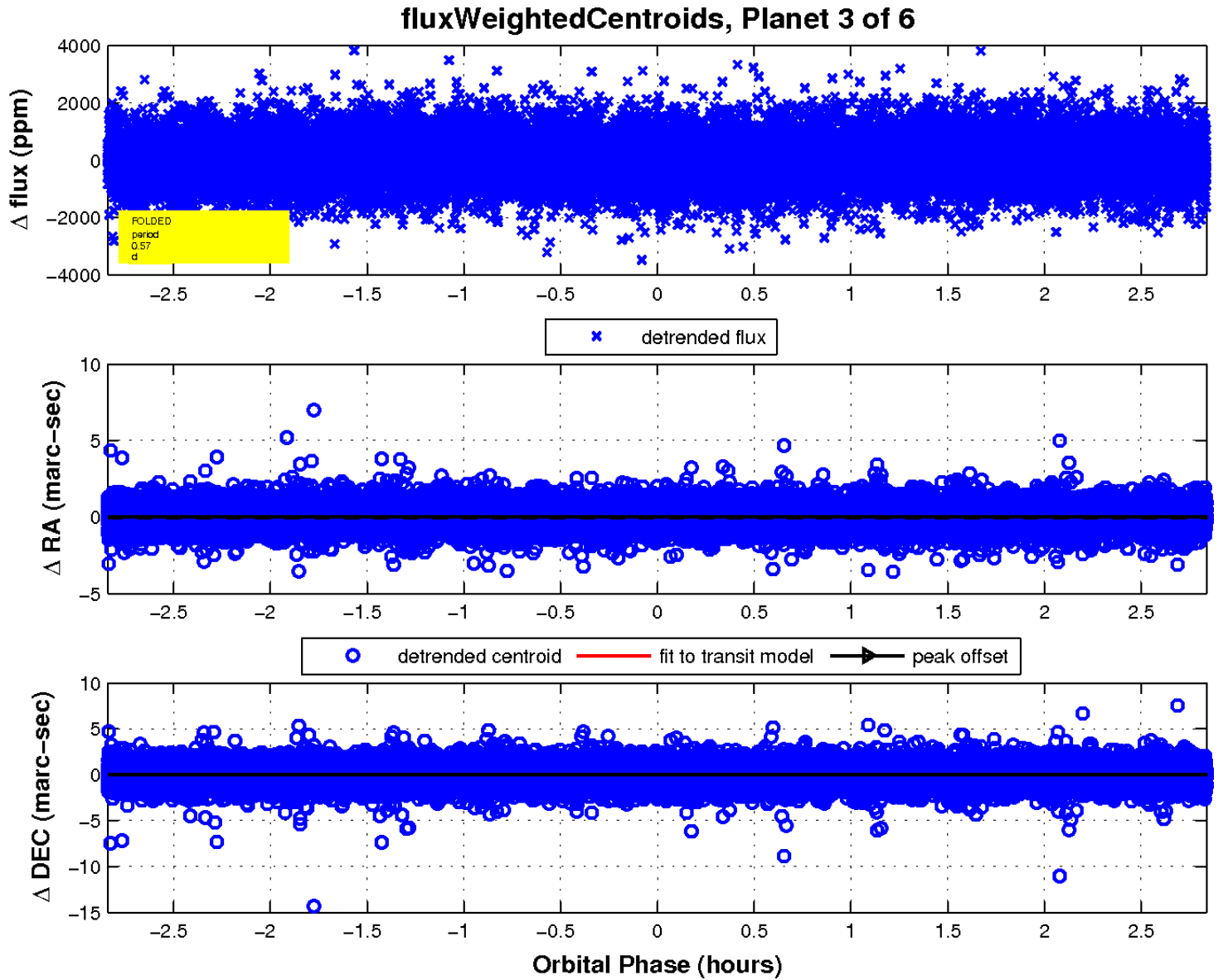
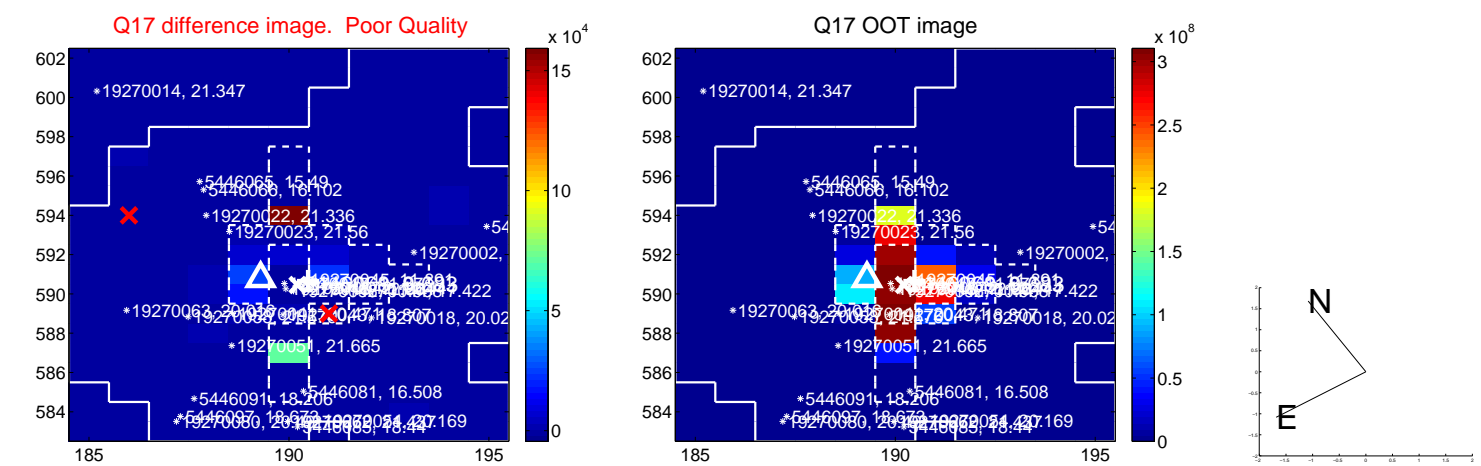
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



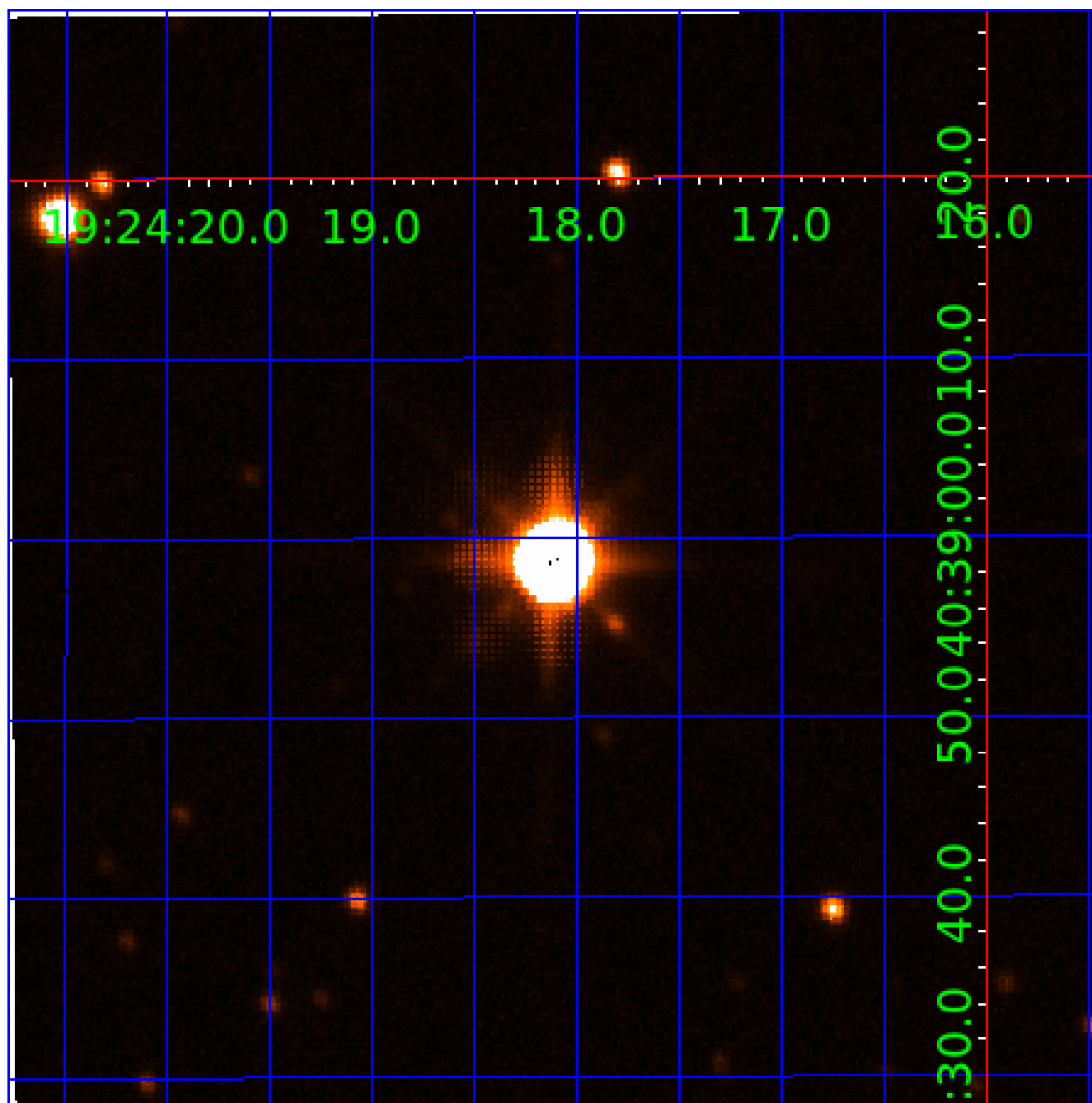
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



# KIC 005446068

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005446068-01	OBS	No	0.686055	132.020320	101.5	1.015	11.9	12.0	3.35	5985	3.42	41055.26
005446068-02	OBS	No	0.571708	131.678847	77.0	0.929	11.6	8.2	3.35	5985	2.96	0.00
005446068-03	OBS	No	0.571707	131.909449	88.7	0.947	10.5	9.1	3.35	5985	3.18	0.00
005446068-04	OBS	No	82.152235	173.175060	1742.4	3.754	8.3	7.2	3.35	5985	26.11	69.56
005446068-05	OBS	No	49.368650	142.734127	1094.8	2.579	8.5	6.1	3.35	5985	11.96	137.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005446068-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005446068-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
005446068-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

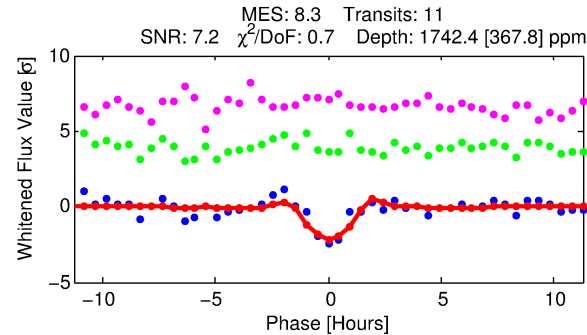
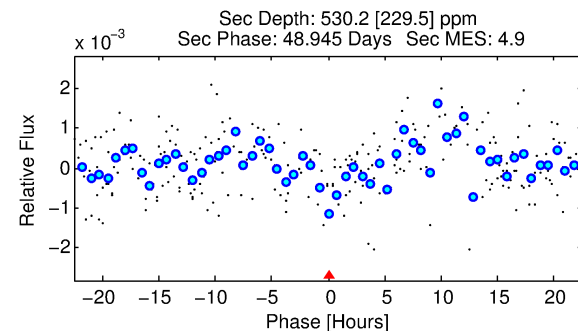
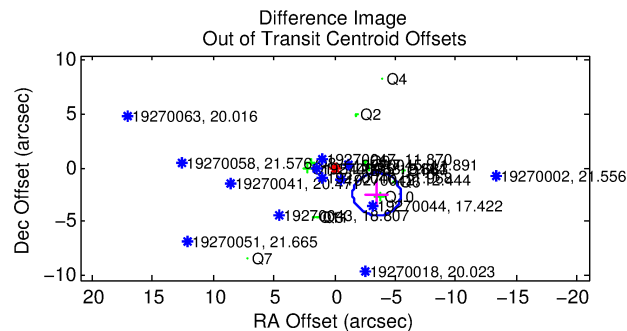
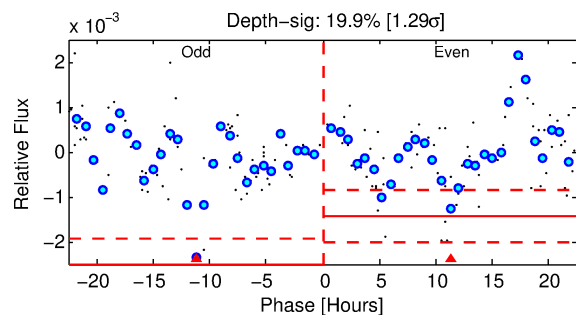
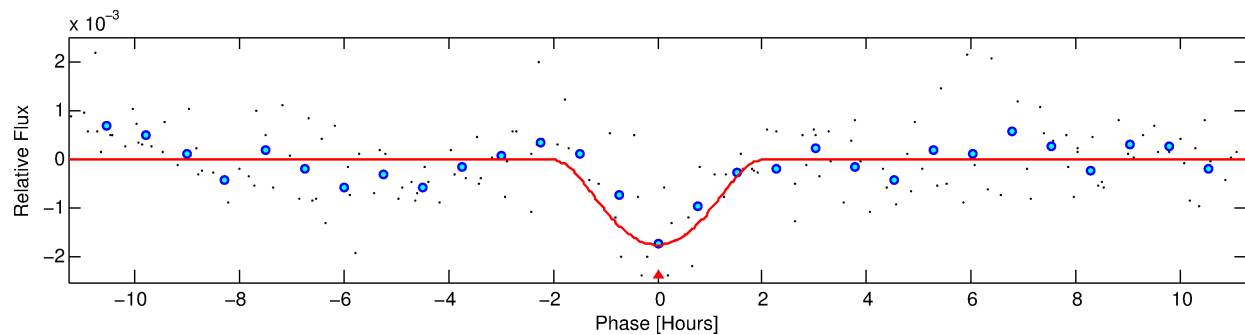
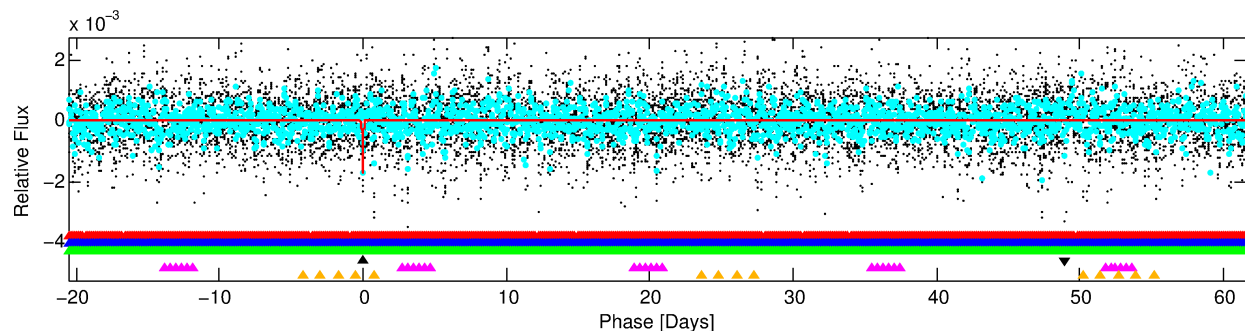
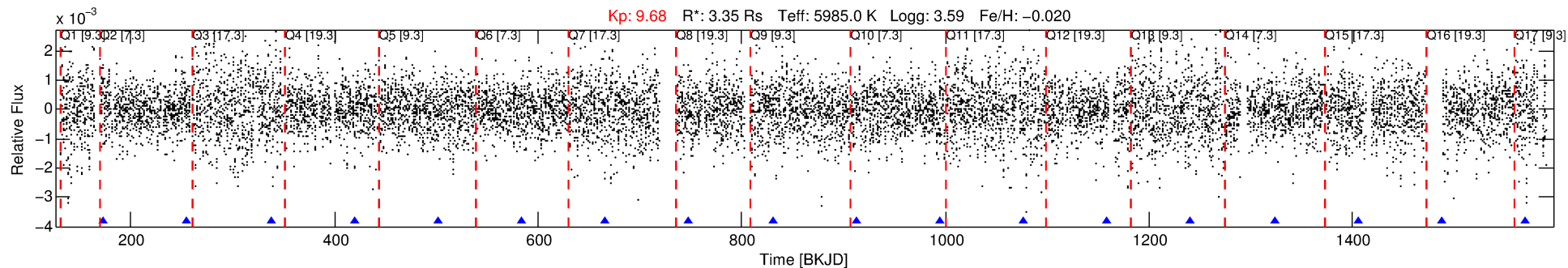
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005446068-04

No Significant Match Found

# DV One-Page Summary

KIC: 5446068 Candidate: 4 of 6 Period: 82.152 d



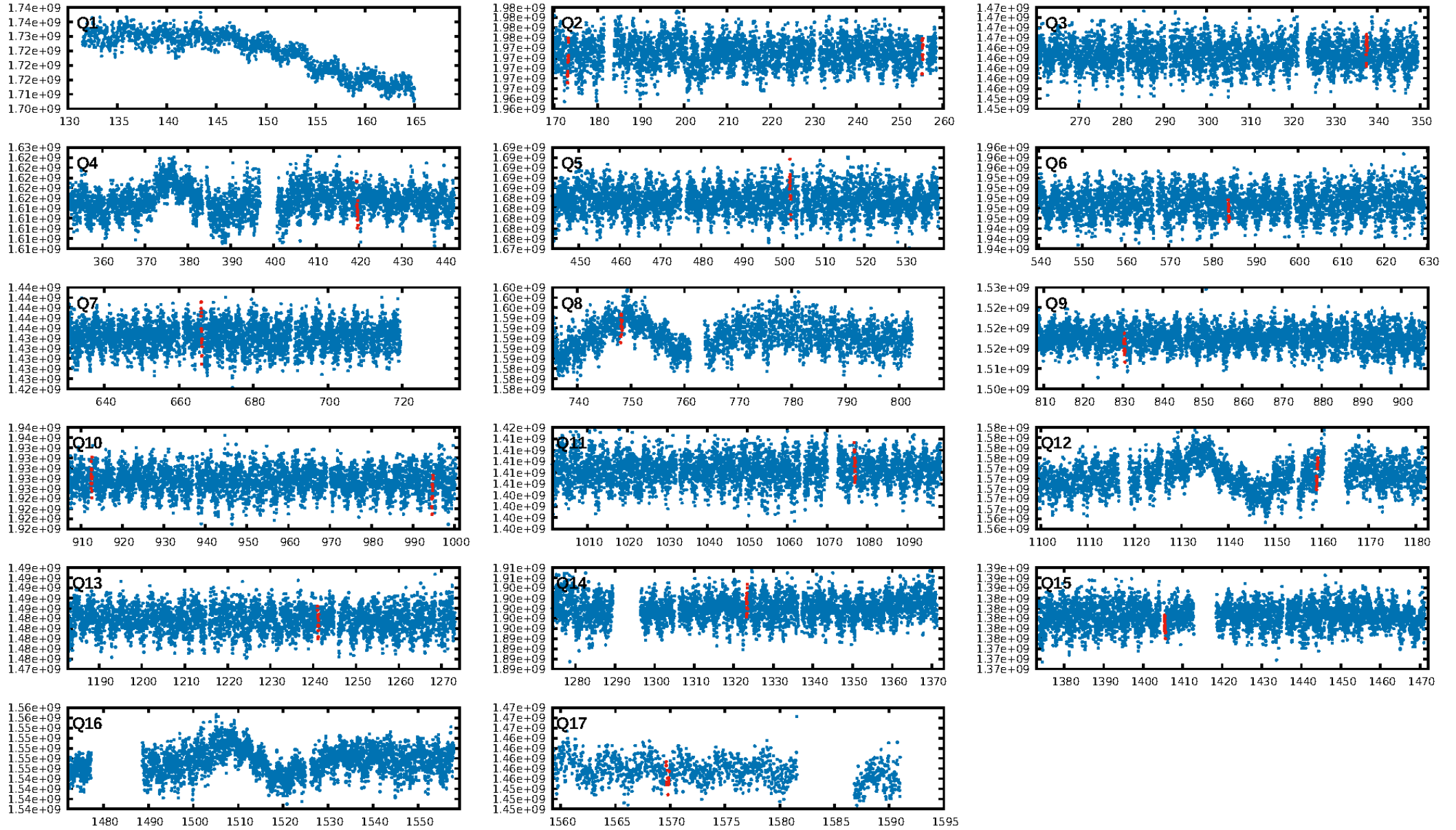
## DV Fit Results:

Period = 82.15223 [0.00110] d  
Epoch = 173.1751 [0.0092] BKJD  
 $R_p/R^*$  = 0.0714 [0.2470]  
 $a/R^*$  = 65.07 [51.09]  
 $b$  = 1.00 [0.37]  
 $\text{Seff}$  = 69.56 [35.05]  
 $T_{\text{eq}}$  = 736 [93] K  
 $R_p$  = 26.11 [90.75]  $R_e$   
 $a$  = 0.4307 [0.1380] AU  
 $\text{Ag}$  = 79.38 [551.56] [0.14 $\sigma$ ]  
 $T_{\text{eff}}$  = 3398 [5889] K [0.45 $\sigma$ ]

## DV Diagnostic Results:

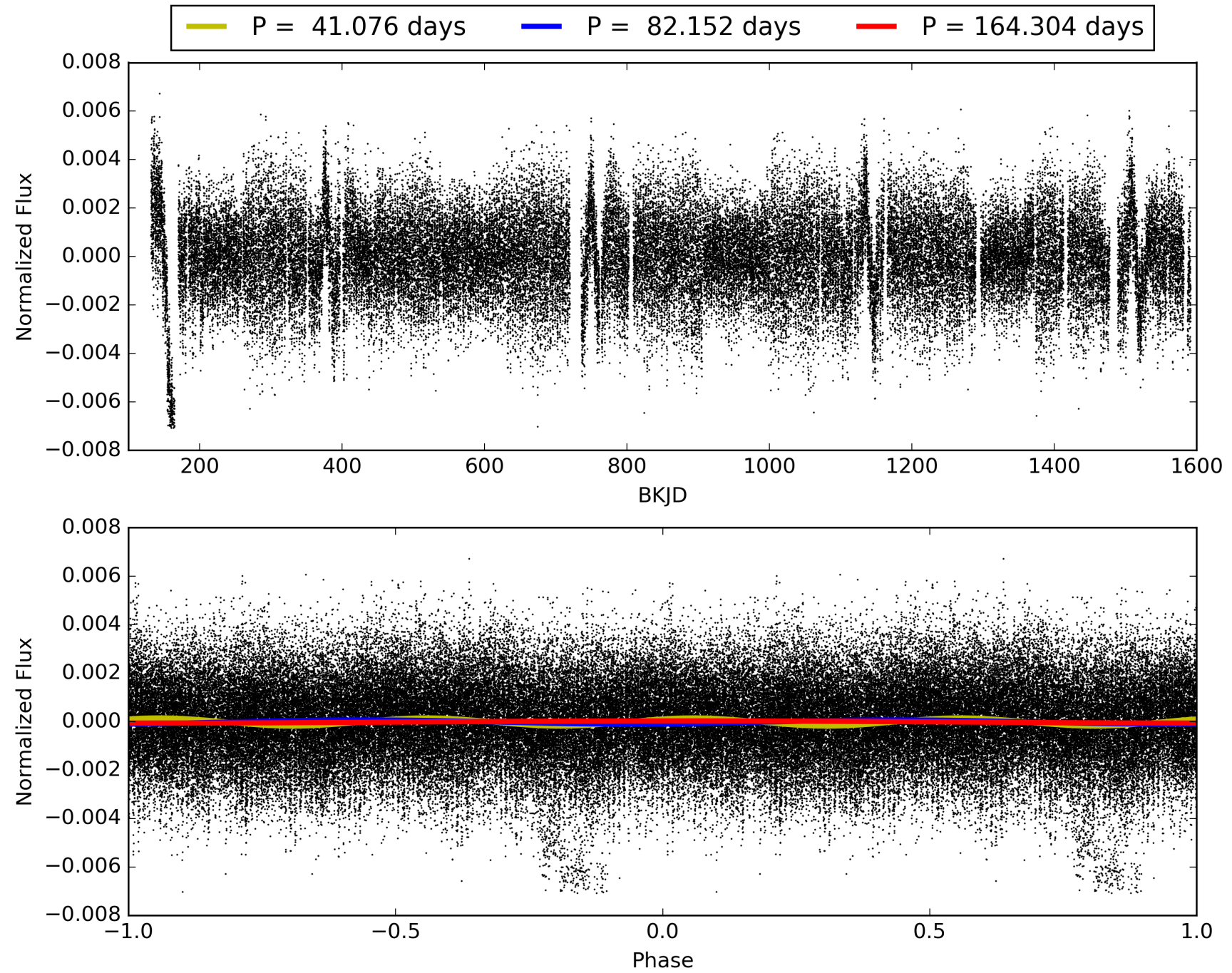
ShortPeriod-sig: 100.0% [172.75 $\sigma$ ]  
LongPeriod-sig: 100.0% [110.77 $\sigma$ ]  
ModelChiSquare2-sig: 31.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.03e-11**  
RollingBand-fgt: 1.00 [11/11]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 62.5%  
Centroid-so: 0.170 arcsec [1.24 $\sigma$ ]  
**OotOffset-rm: 4.263 arcsec [6.45 $\sigma$ ]**  
**KicOffset-rm: 3.206 arcsec [4.19 $\sigma$ ]**  
OotOffset-st: 4/3/3/3 [13]  
KicOffset-st: 4/3/3/3 [13]  
DiffImageQuality-fgm: 0.00 [0/13]  
DiffImageOverlap-fno: 0.00 [0/13]

# TCE 005446068-04, PDC Light Curves



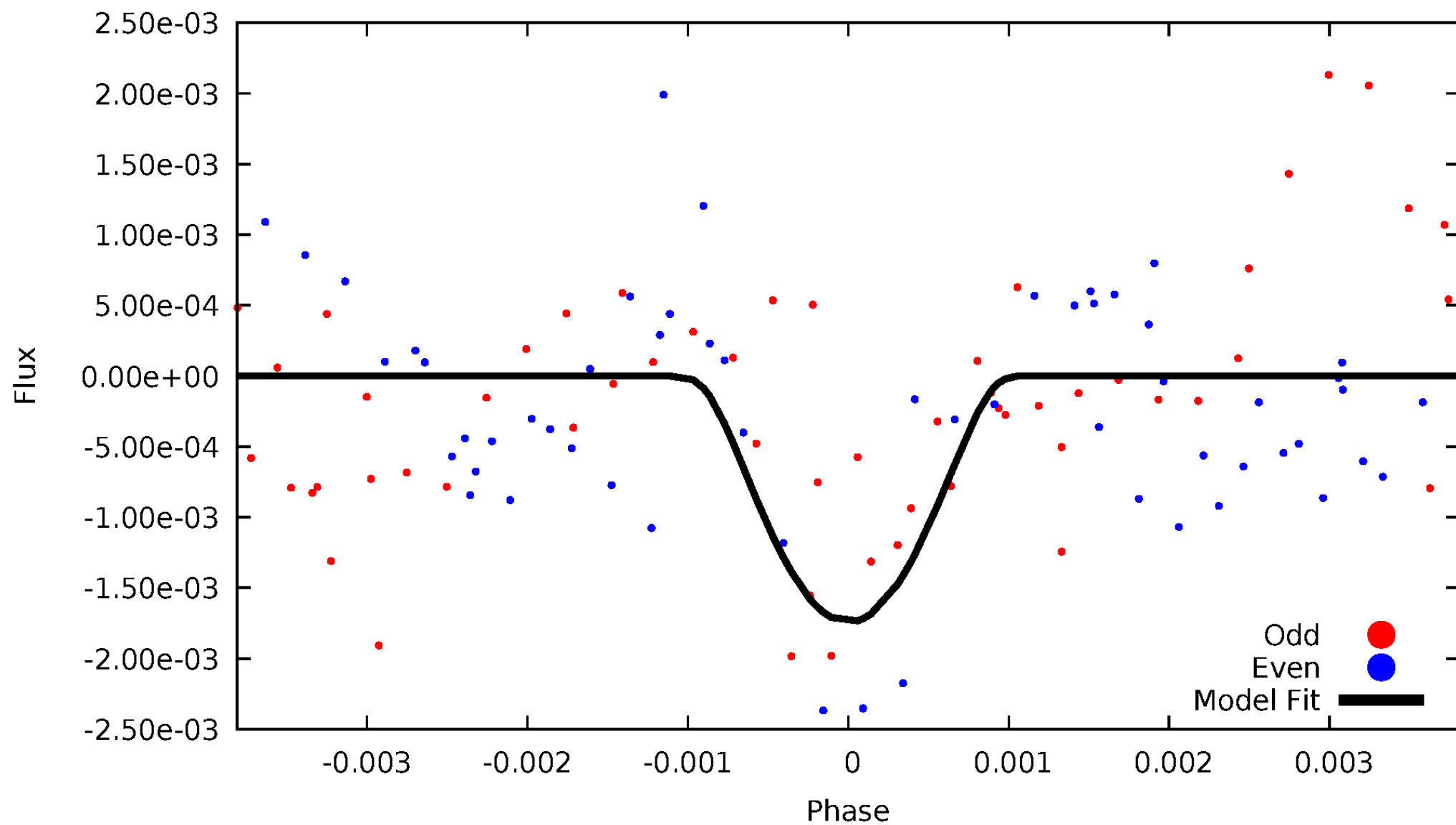


TCE 005446068-04



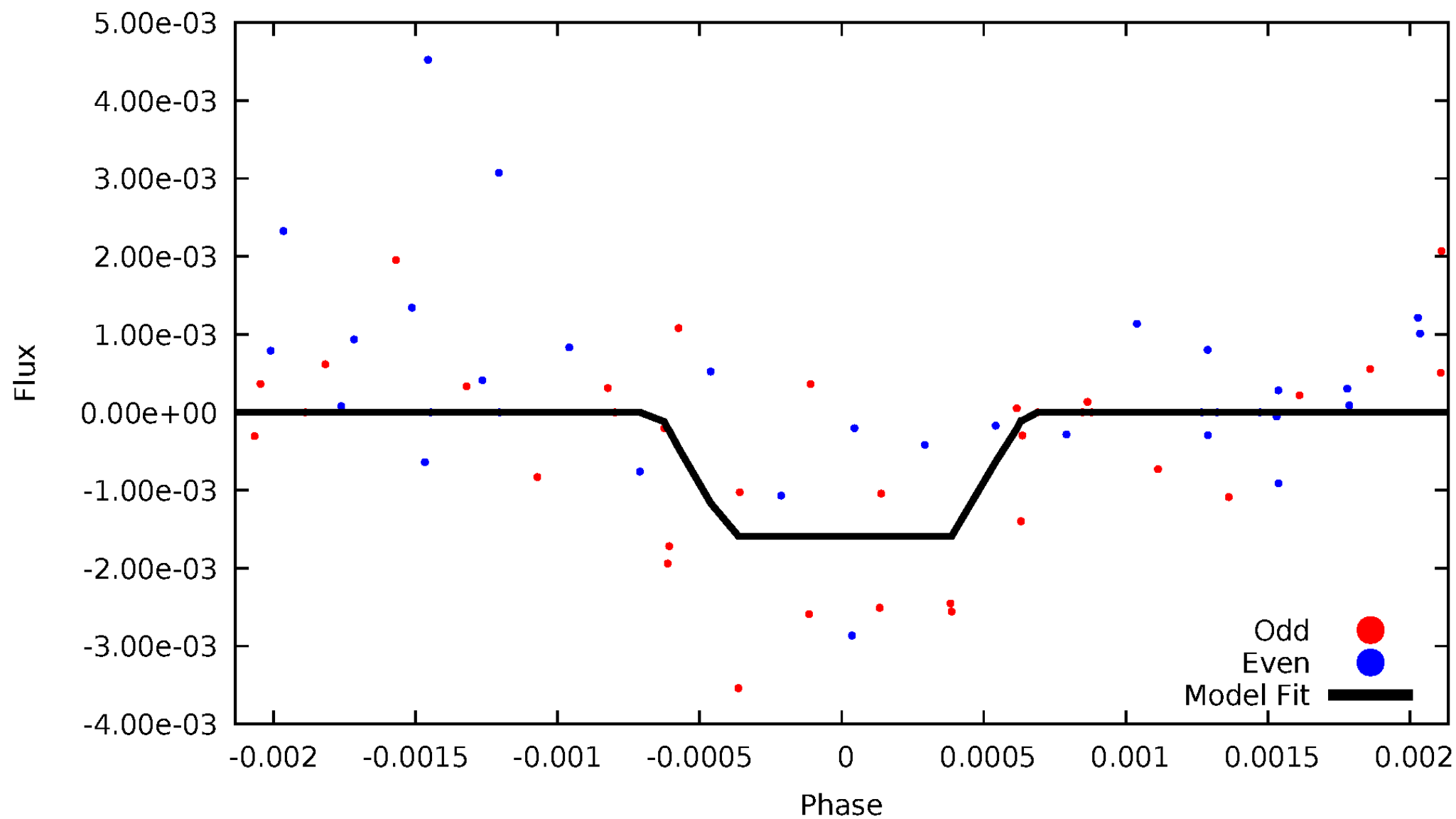
# DV Odd/Even

TCE 005446068-04



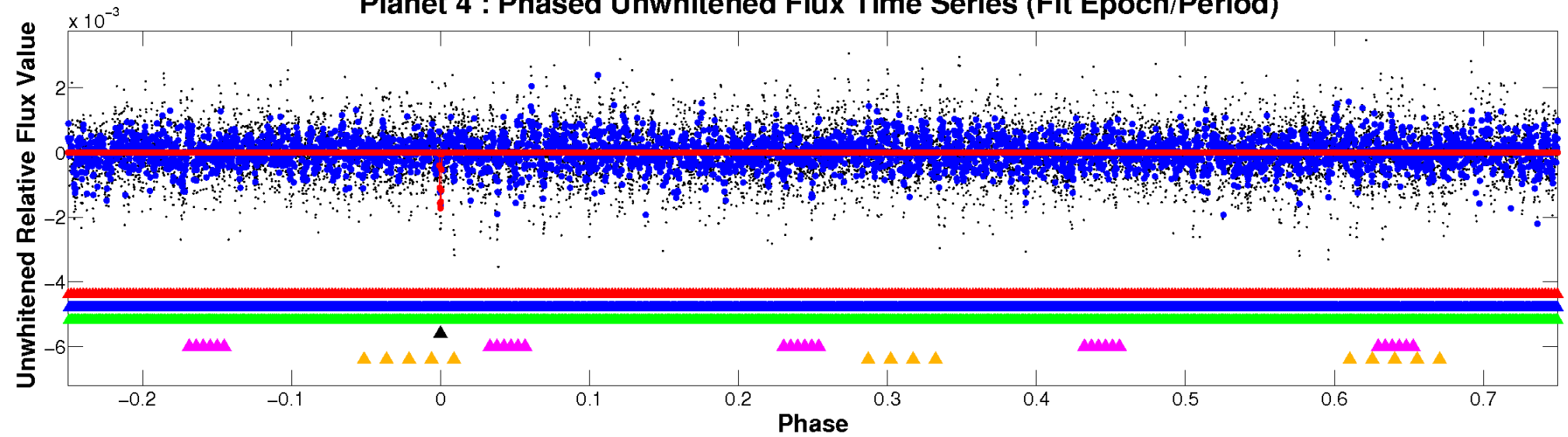
# ALT Odd/Even

TCE 005446068-04

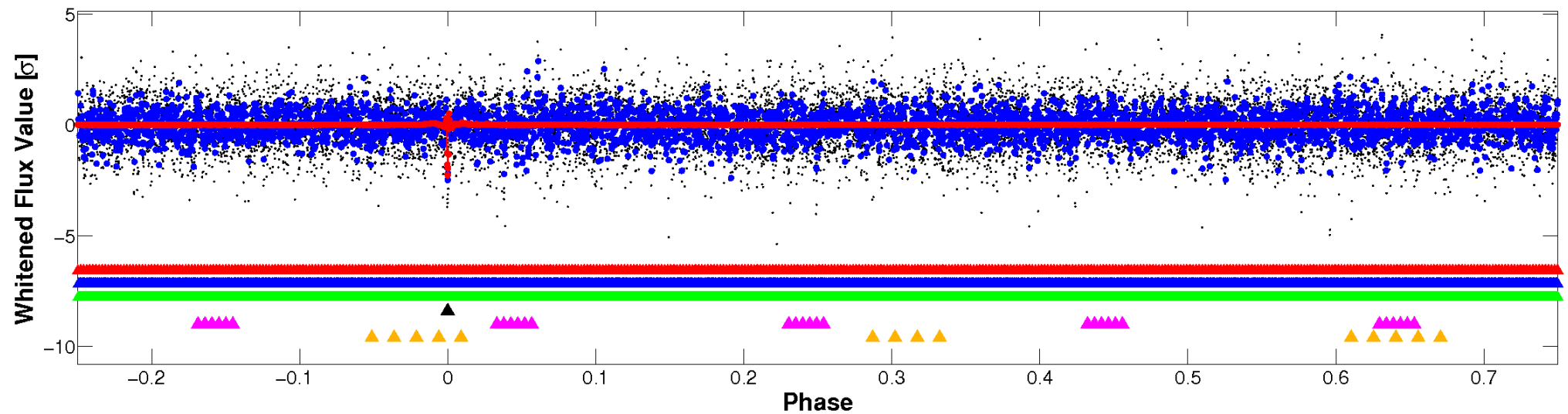


# Non-Whitened Vs. Whitened Light Curve

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

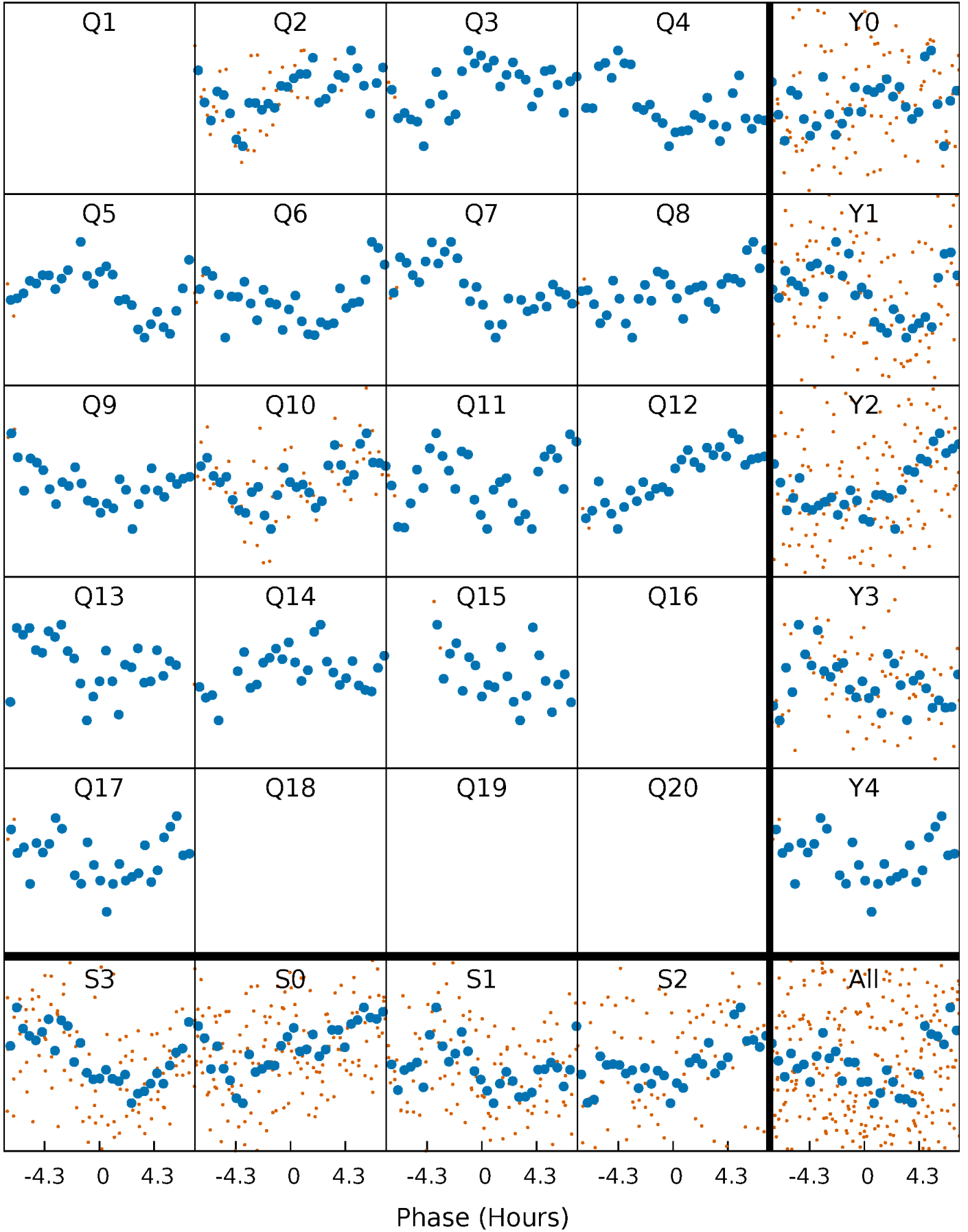


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

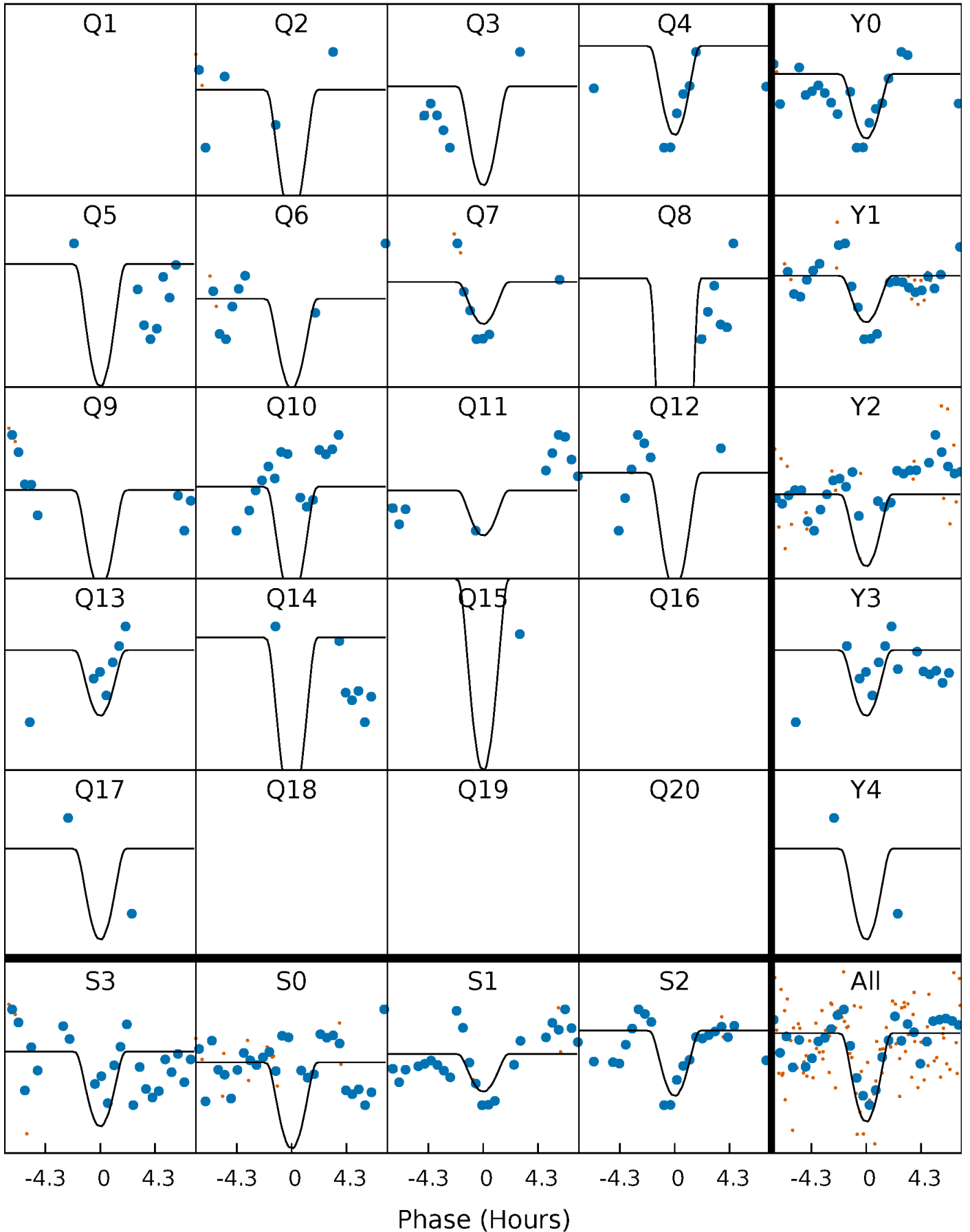
TCE 005446068-04   P= 82.152235 Days    $T_0=173.175060$  (BKJD)





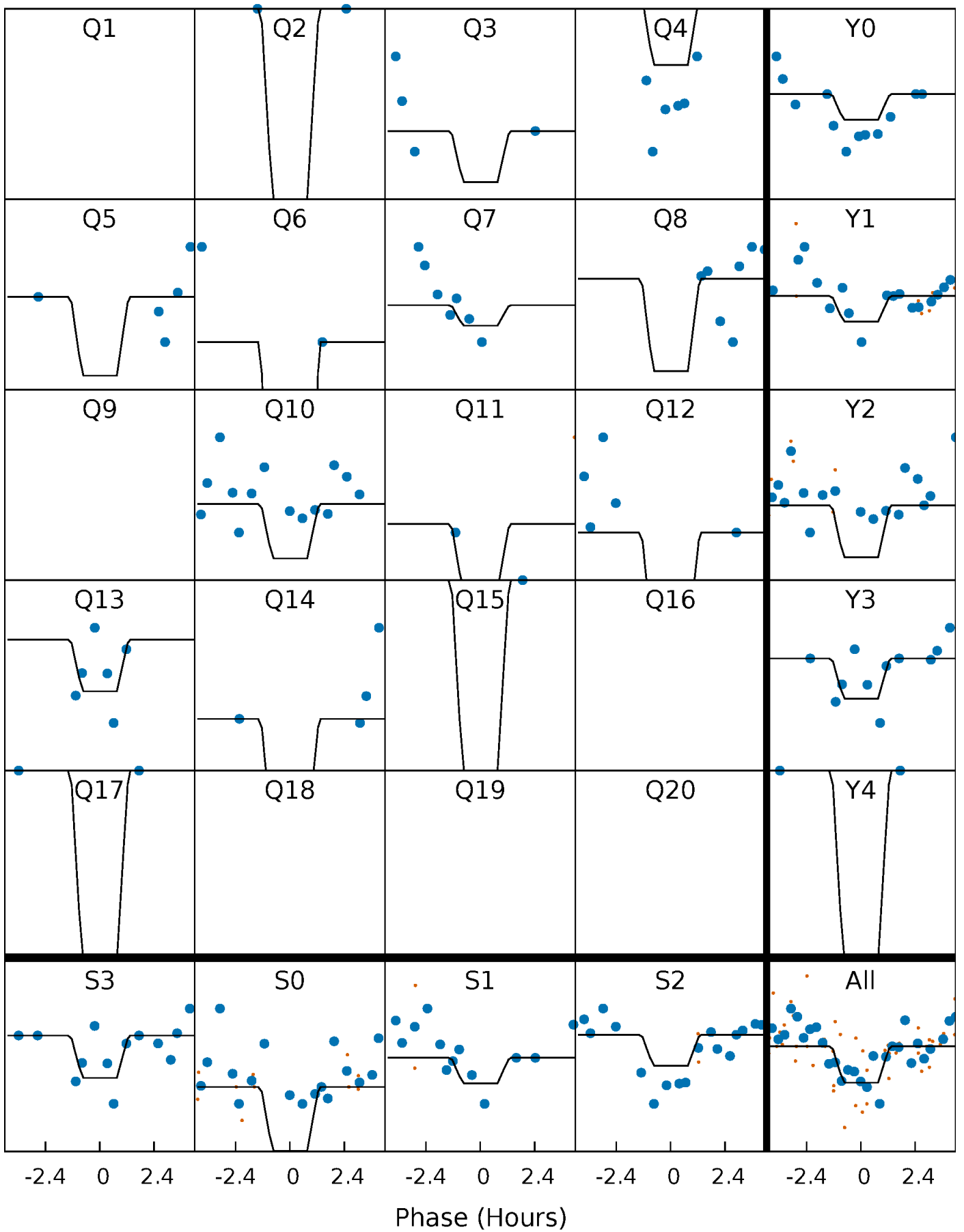
# DV Quarter-Phased Transit Curves

TCE 005446068-04   P= 82.152235 Days    $T_0=173.175060$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

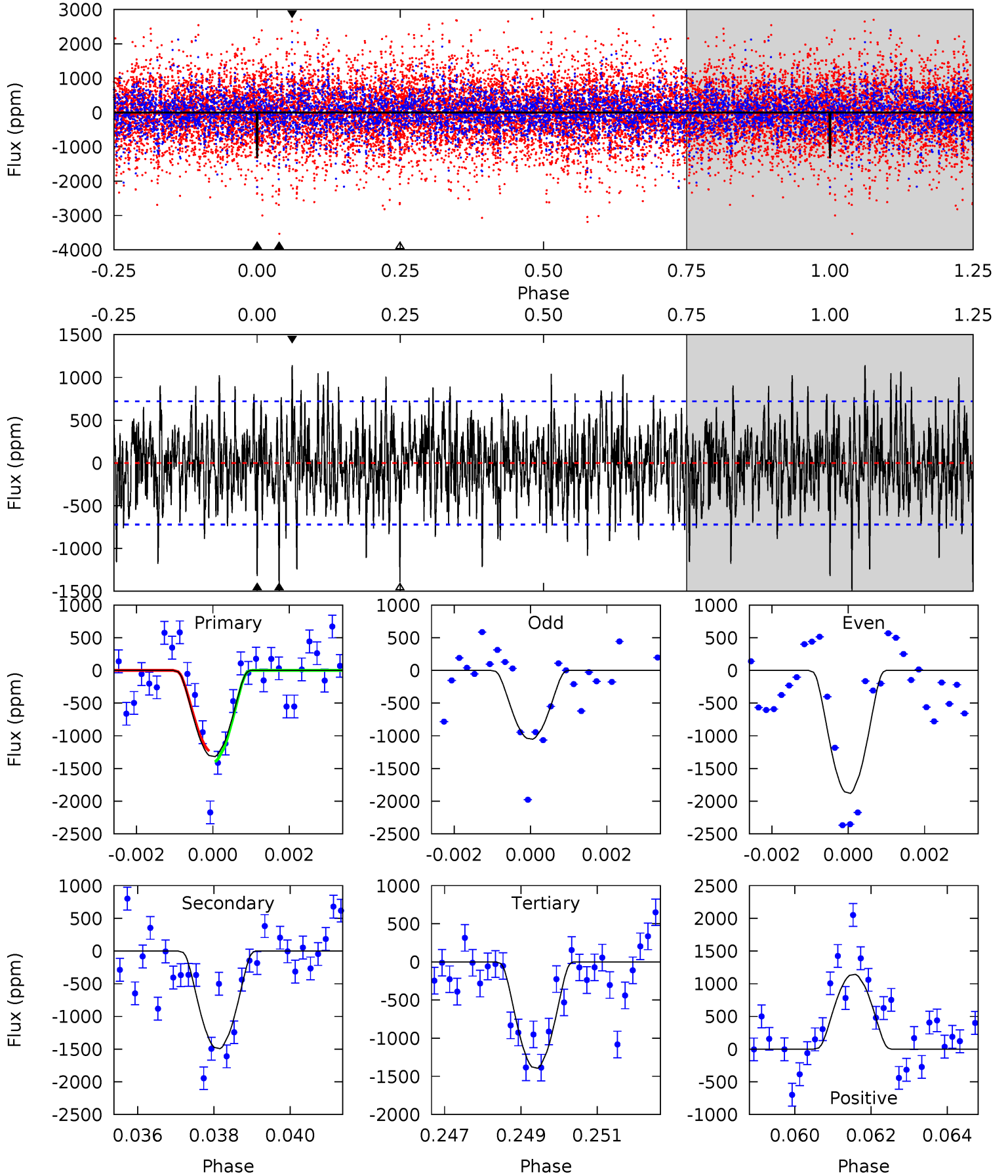
TCE 005446068-04 P= 82.153550 Days  $T_0=173.192233$  (BKJD)



# DV Model-Shift Uniqueness Test

005446068-04, P = 82.152235 Days, E = 91.022825 Days

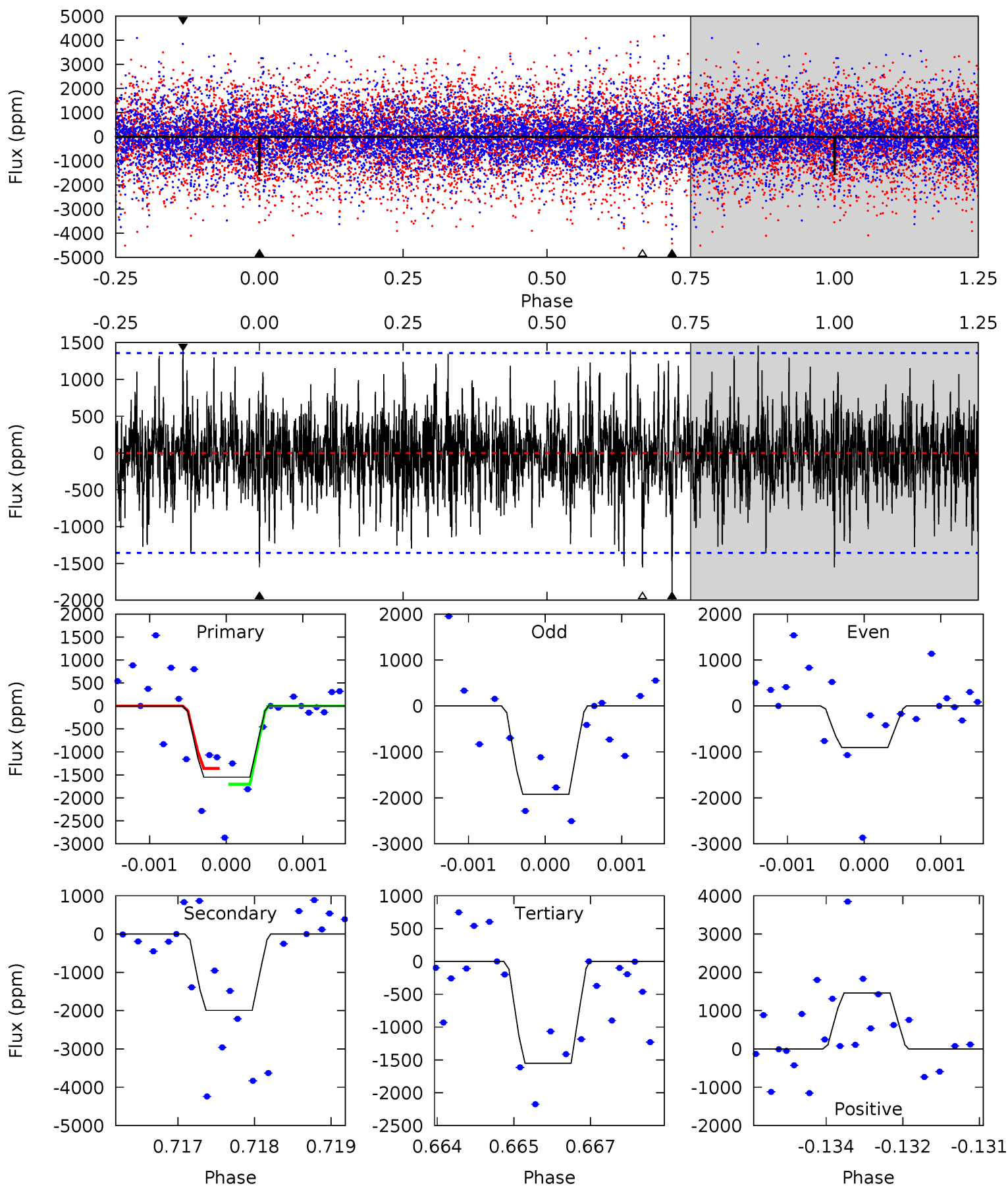
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.73	11.0	10.3	8.43	5.32	3.07	2.65	-0.56	1.30	0.73	2.59	2.96	1.09	0.43	0.61



# Alt Model-Shift Uniqueness Test

005446068-04, P = 82.153550 Days, E = 91.038683 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
6.18	7.95	6.19	5.82	5.41	3.23	1.61	-0.00	0.36	1.77	2.13	1.92	1.13	0.42	0.68



### Stellar Parameters For KIC 005446068

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5985^{+131}_{-119}$	$3.586^{+0.285}_{-0.095}$	$-0.020^{+0.150}_{-0.150}$	$3.350^{+0.588}_{-1.176}$	$1.578^{+0.138}_{-0.321}$	$0.059^{+0.117}_{-0.018}$
	+2%/-2%	+8%/-3%	+750%/-750%	+18%/-35%	+9%/-20%	+198%/-31%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 005446068-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1493 \pm 135$	$64.93^{+71.56}_{-41.90}$	$1017^{+54}_{-92}$	$3269^{+1501}_{-617}$	$37^{+259}_{-28}$
Alt.	$-1995 \pm 251$	$62.94^{+71.64}_{-44.65}$	$1013^{+59}_{-89}$	$3429^{+2047}_{-661}$	$50^{+555}_{-39}$

$T_{max}$  = 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

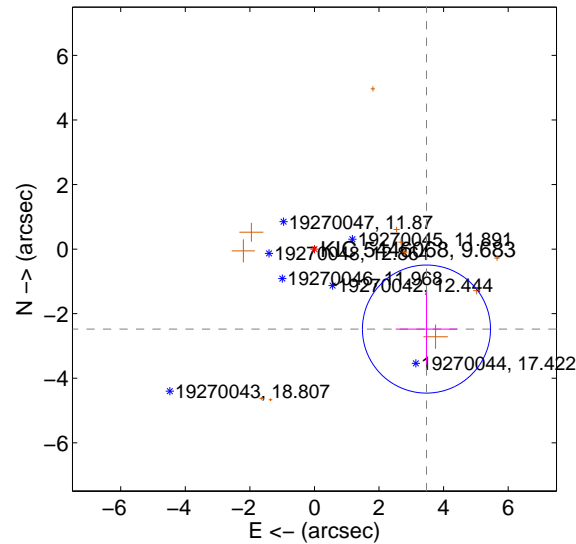
Supplemental centroid analysis for 005446068-04. **Kepler magnitude: 9.68.** Transit SNR 7.15

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

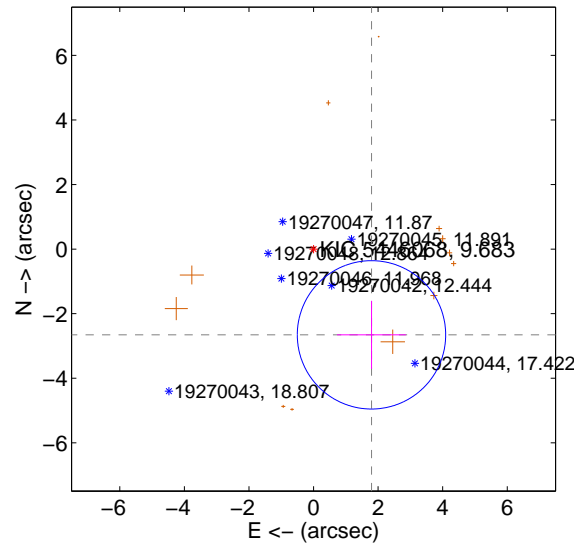
The direct PRF centroid is offset from the target star catalog position by about 1.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>4.263 \pm 0.661</math></b>	<b>6.45</b>	$-3.469 \pm 0.951$	$-2.477 \pm 1.094$
PRF-fit source offset from KIC position	<b><math>3.206 \pm 0.766</math></b>	<b>4.19</b>	$-1.795 \pm 1.067$	$-2.656 \pm 1.054$
photometric centroid source offset	$0.17 \pm 0.14$	1.24	$0.11 \pm 0.11$	$-0.13 \pm 0.15$

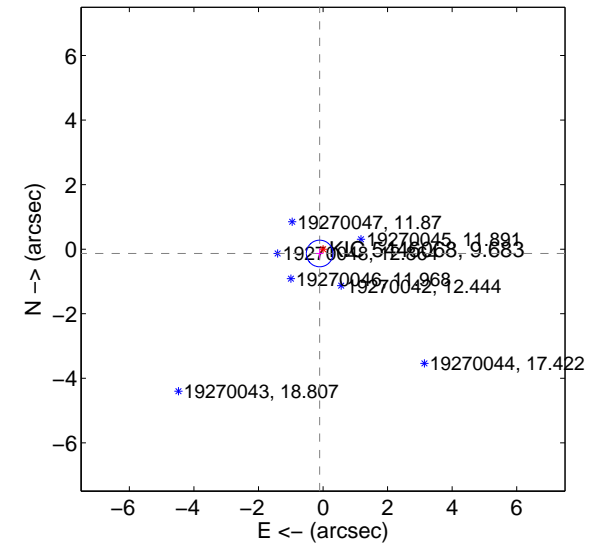
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

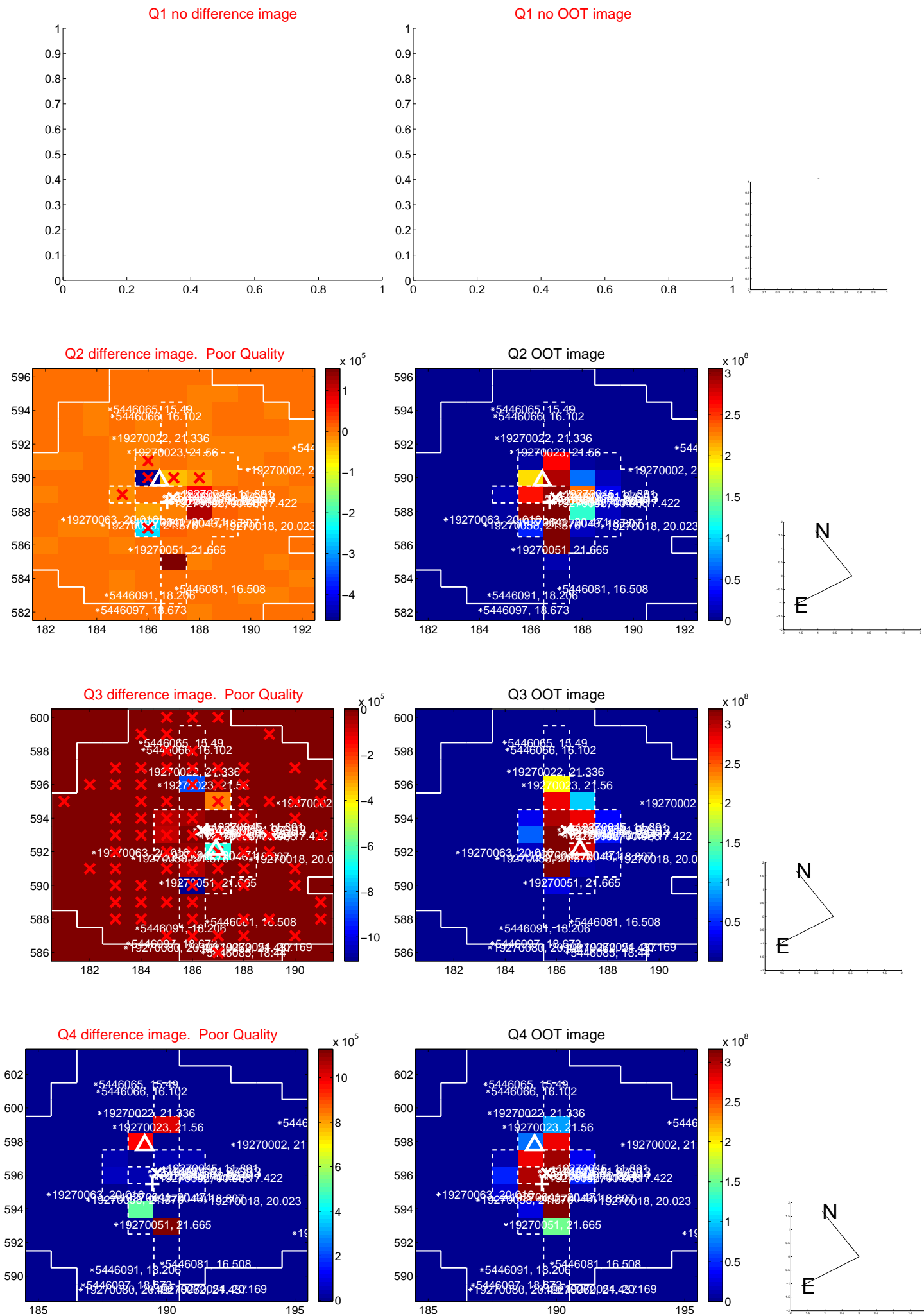


offset from photometric centroids

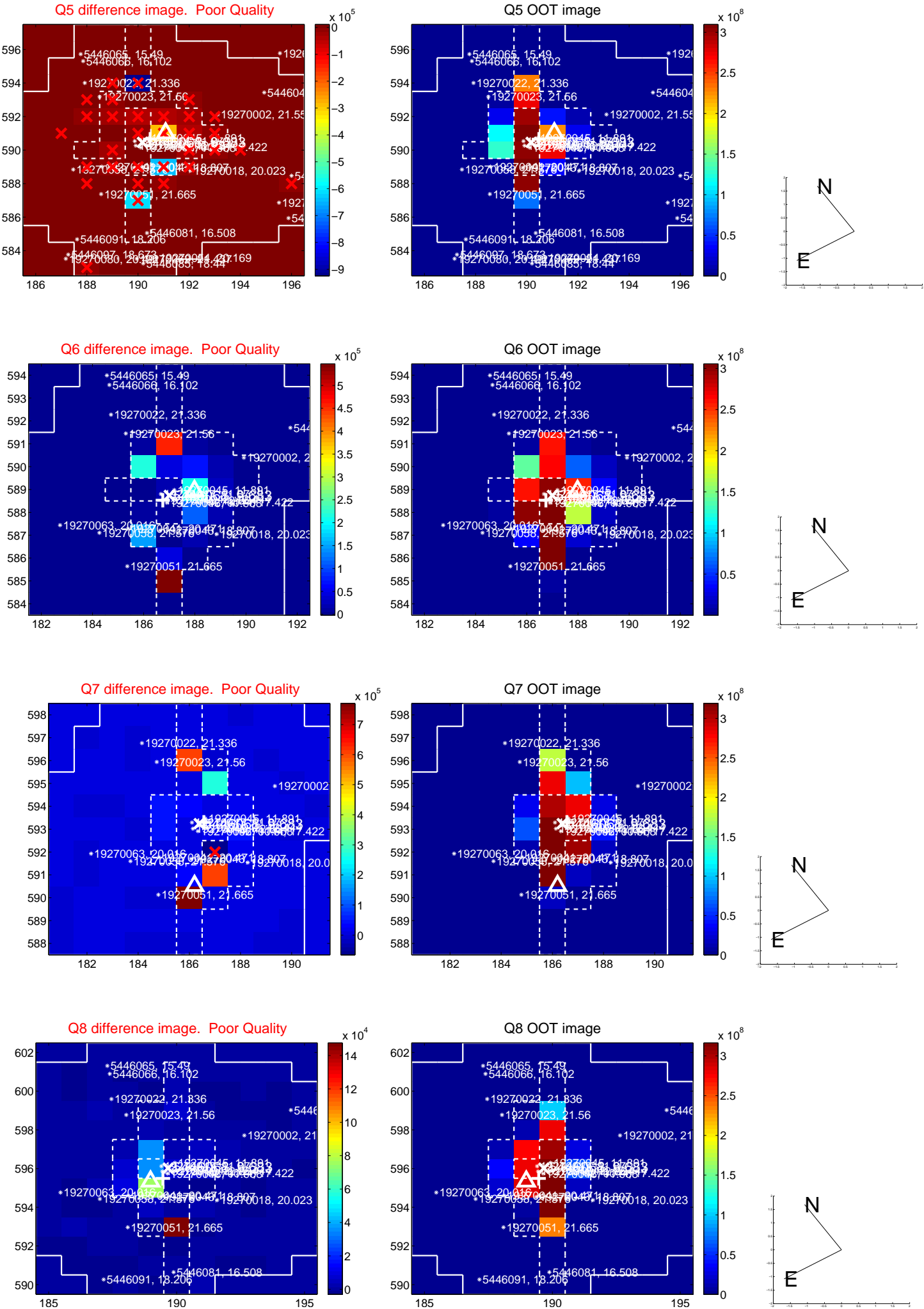


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

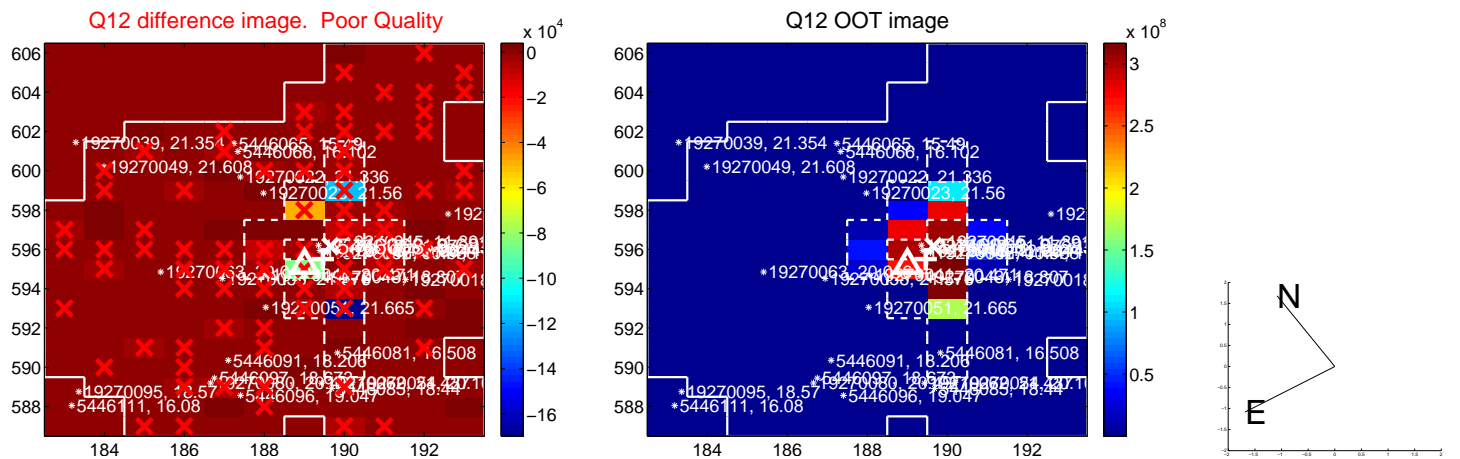
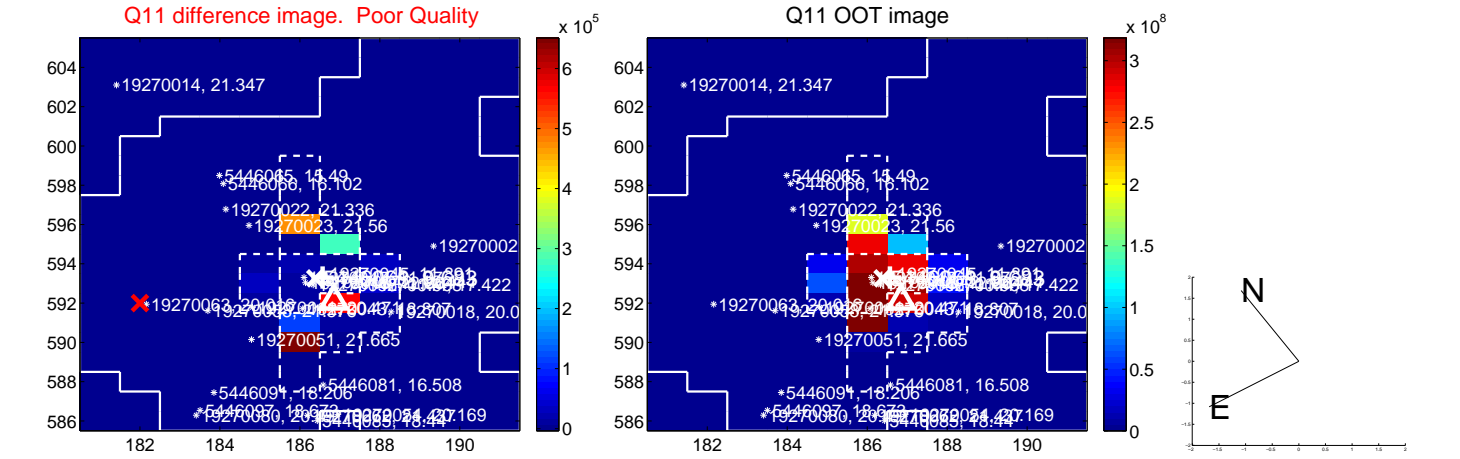
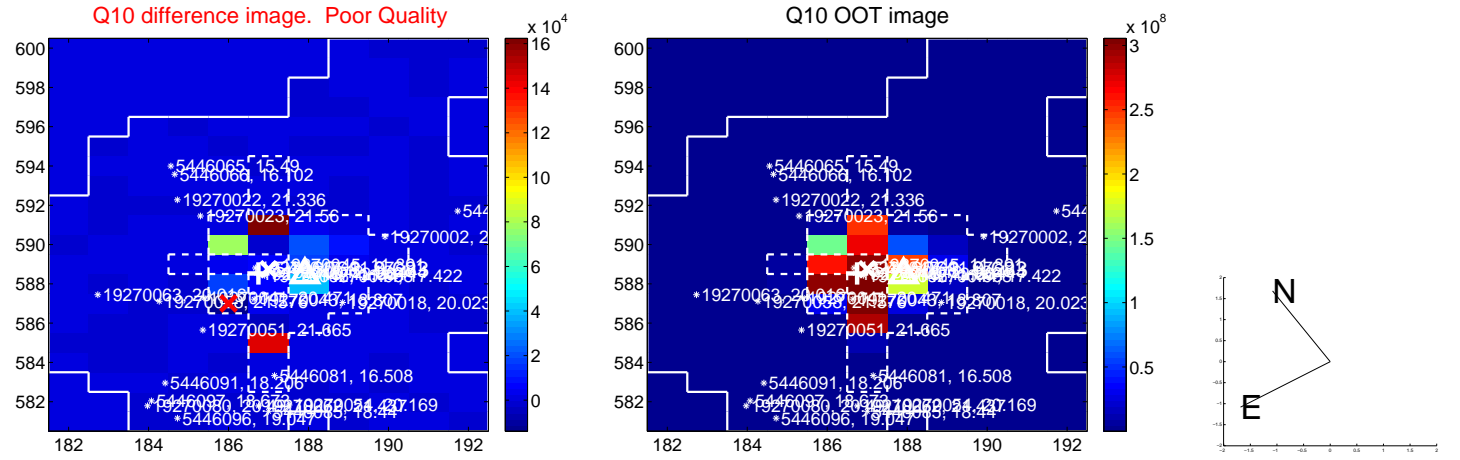
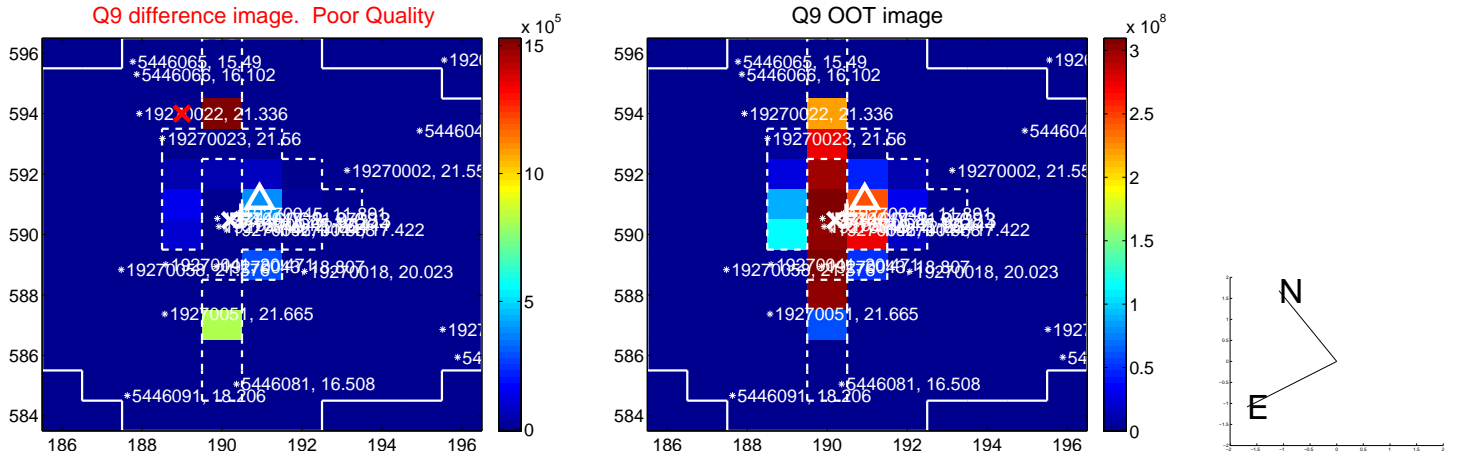
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

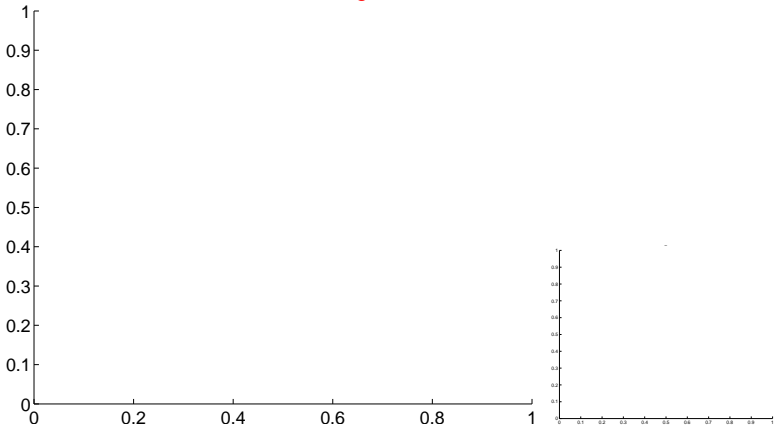


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

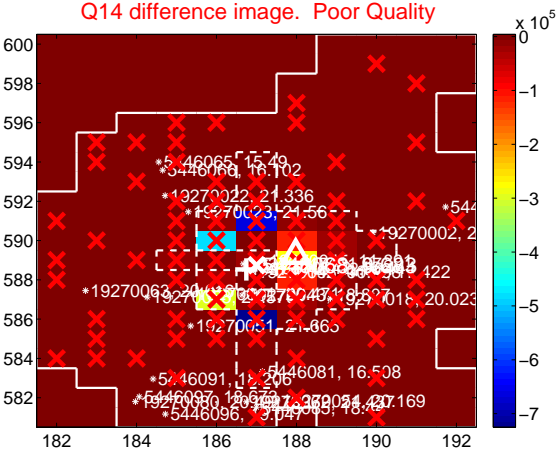
Q13 no difference image



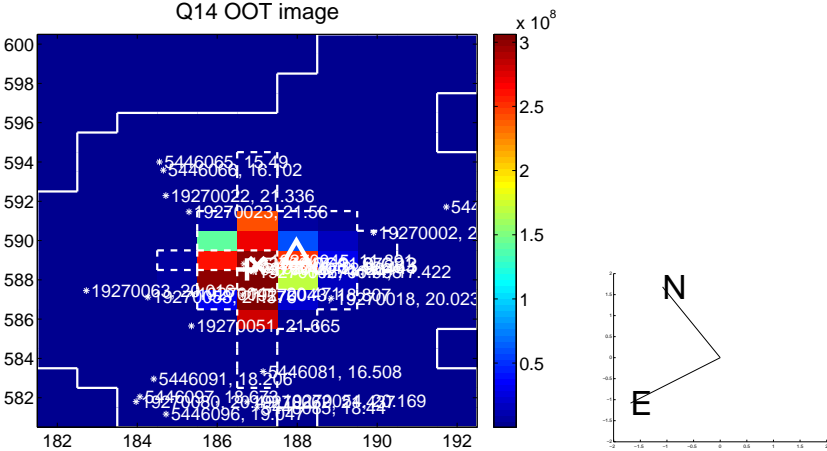
Q13 no OOT image



Q14 difference image. Poor Quality



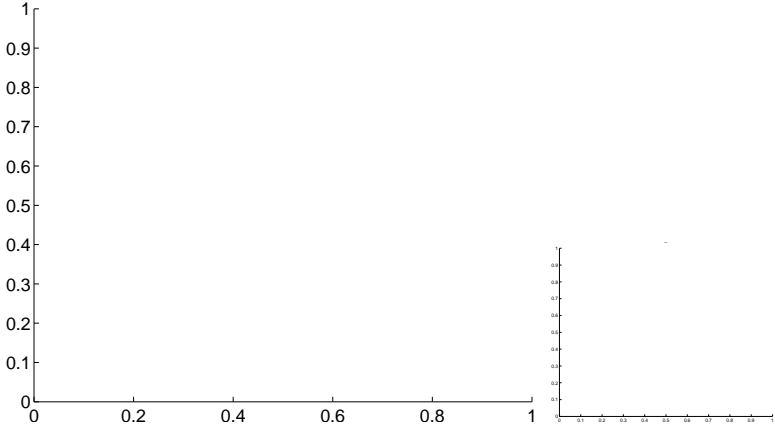
Q14 OOT image



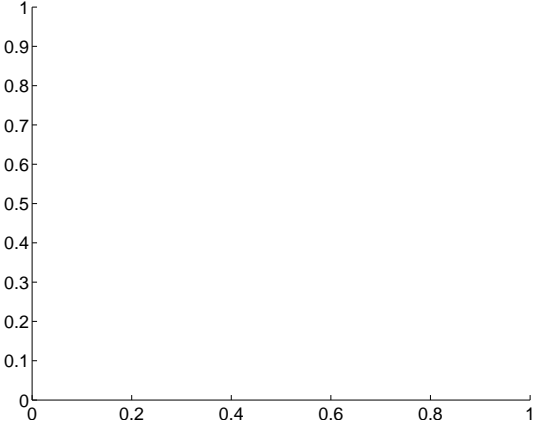
Q15 no difference image



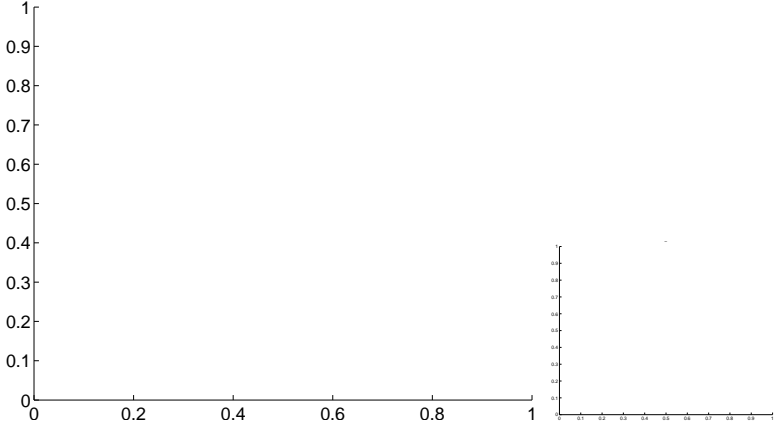
Q15 no OOT image



Q16 no difference image

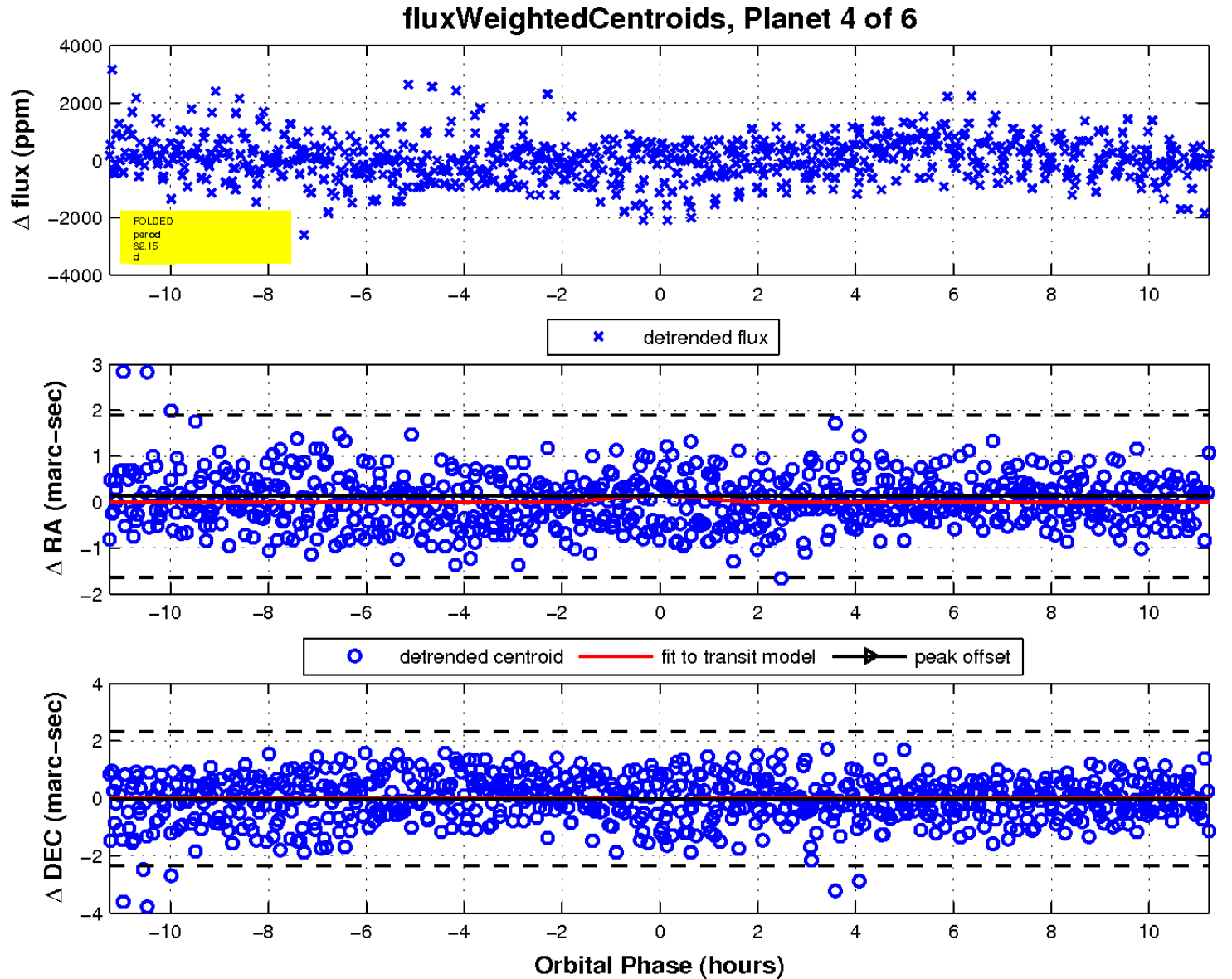
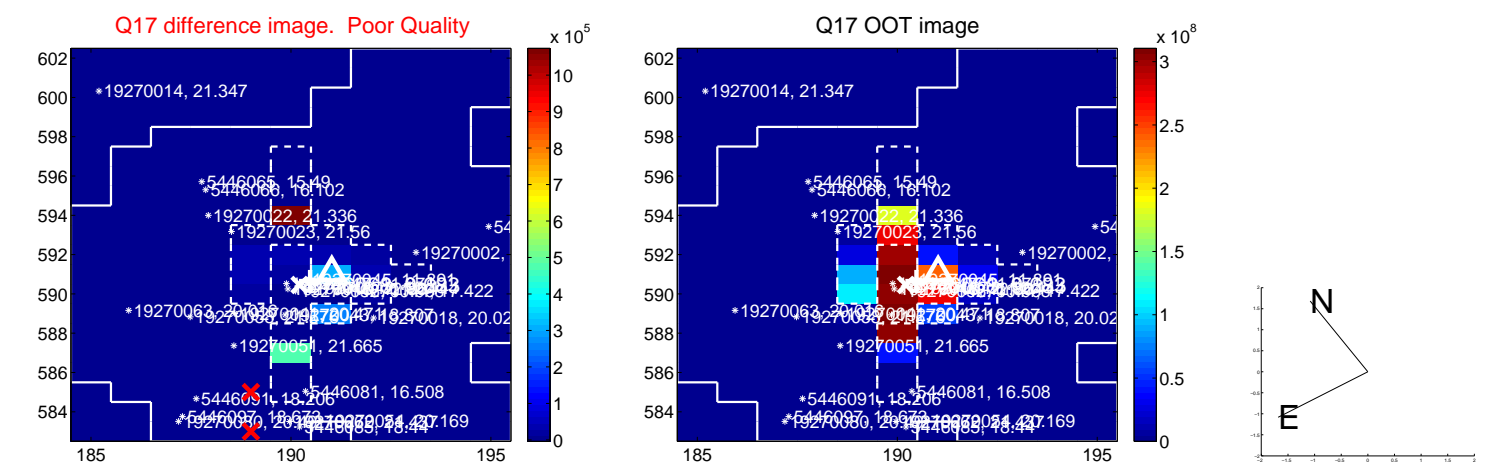


Q16 no OOT image



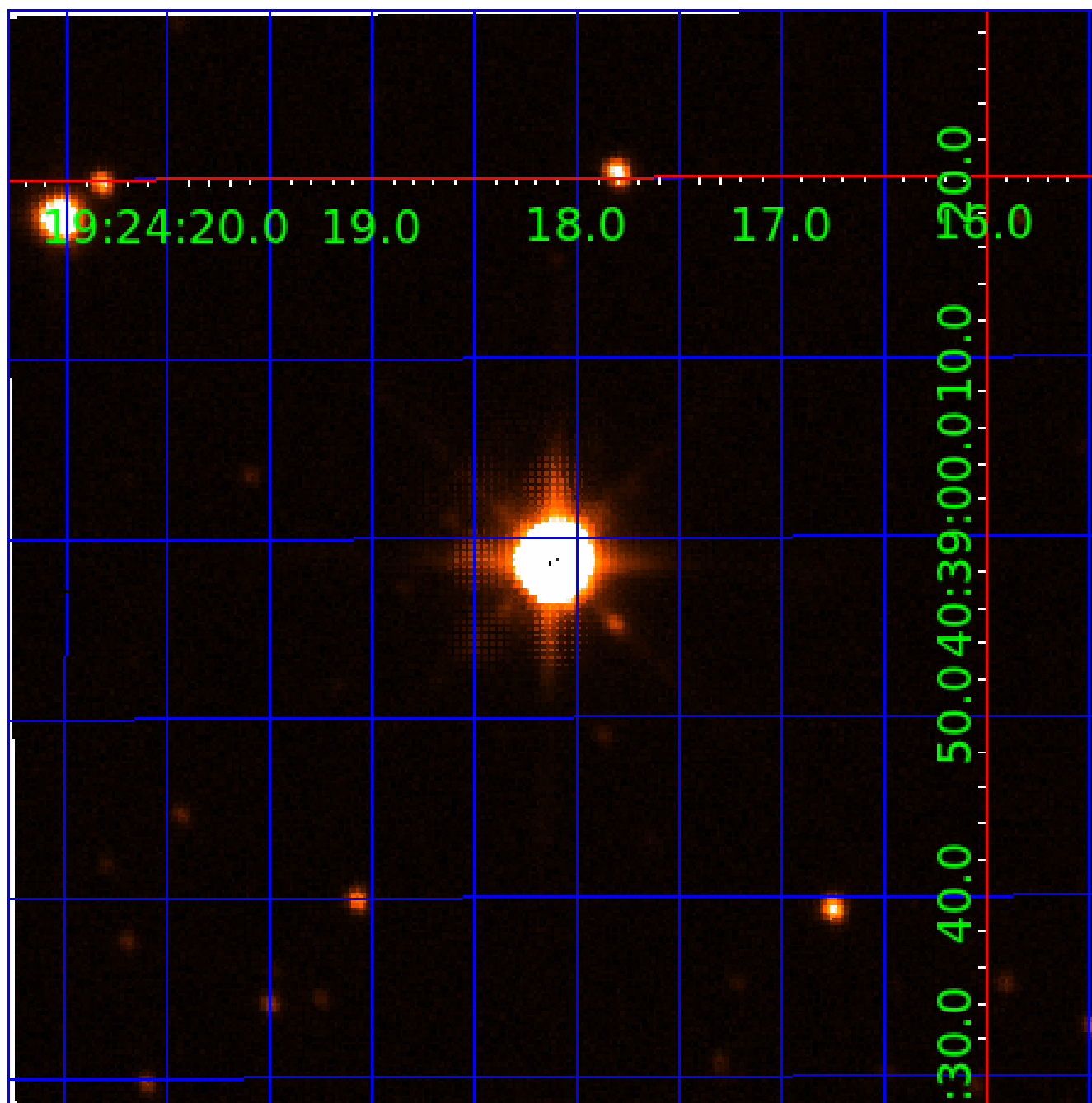


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005446068

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005446068-01	OBS	No	0.686055	132.020320	101.5	1.015	11.9	12.0	3.35	5985	3.42	41055.26
005446068-02	OBS	No	0.571708	131.678847	77.0	0.929	11.6	8.2	3.35	5985	2.96	0.00
005446068-03	OBS	No	0.571707	131.909449	88.7	0.947	10.5	9.1	3.35	5985	3.18	0.00
005446068-04	OBS	No	82.152235	173.175060	1742.4	3.754	8.3	7.2	3.35	5985	26.11	69.56
005446068-05	OBS	No	49.368650	142.734127	1094.8	2.579	8.5	6.1	3.35	5985	11.96	137.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005446068-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005446068-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
005446068-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005446068-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

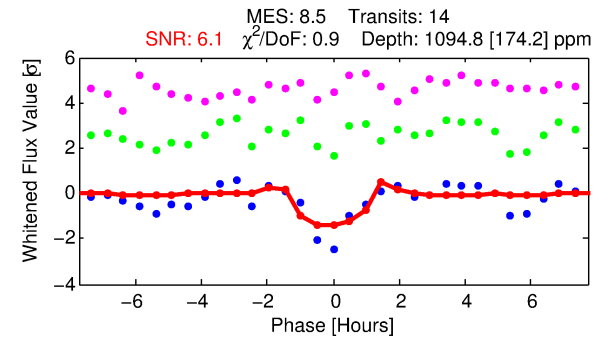
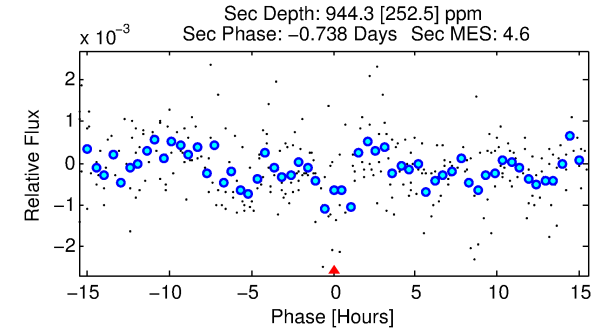
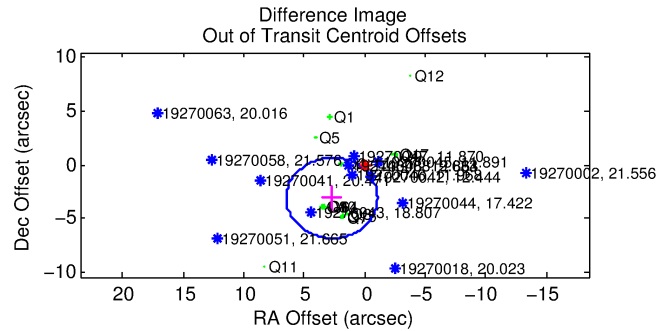
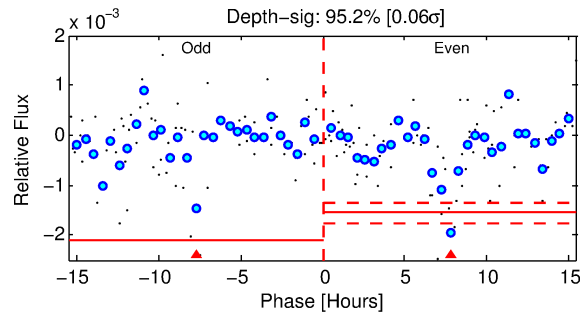
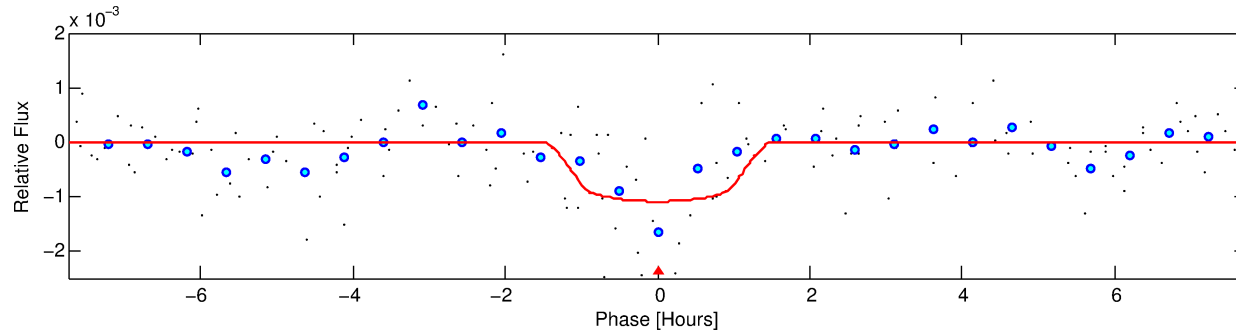
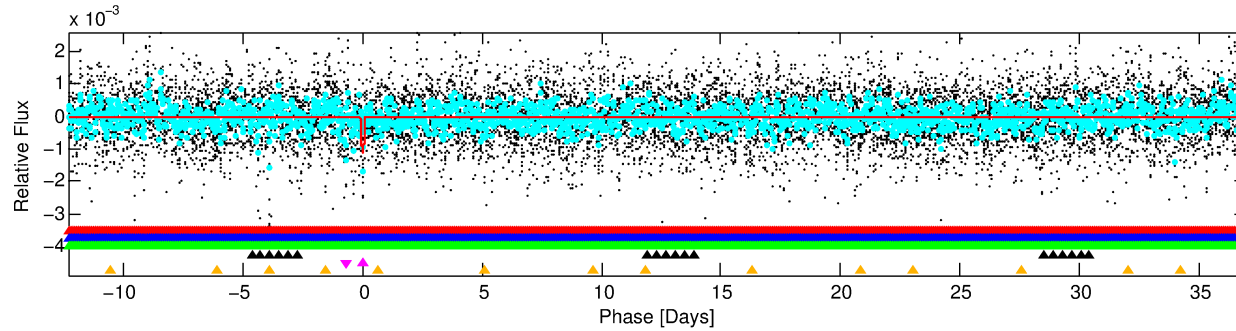
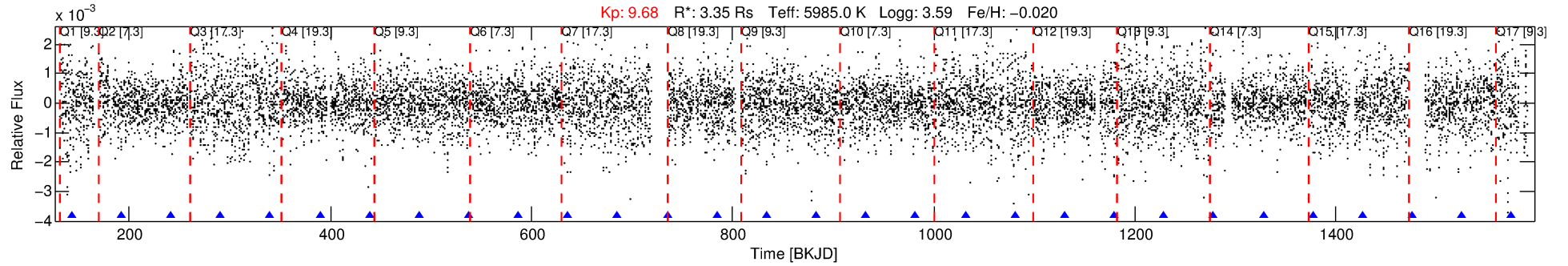
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005446068-05

No Significant Match Found

# DV One-Page Summary

KIC: 5446068 Candidate: 5 of 6 Period: 49.369 d



## DV Fit Results:

Period = 49.36865 [0.00034] d  
Epoch = 142.7341 [0.0053] BKJD  
 $R_p/R^* = 0.0327$  [0.0450]  
 $a/R^* = 107.02$  [707.65]  
 $b = 0.73$  [4.31]  
 $\text{Seff} = 137.17$  [69.11]  
 $T_{\text{eq}} = 873$  [110] K  
 $R_p = 11.96$  [16.98]  $R_e$   
 $a = 0.3067$  [0.0982] AU  
 $\text{Ag} = 341.32$  [957.92] [0.36 $\sigma$ ]  
 $T_{\text{eff}} = 5799$  [4007] K [1.23 $\sigma$ ]

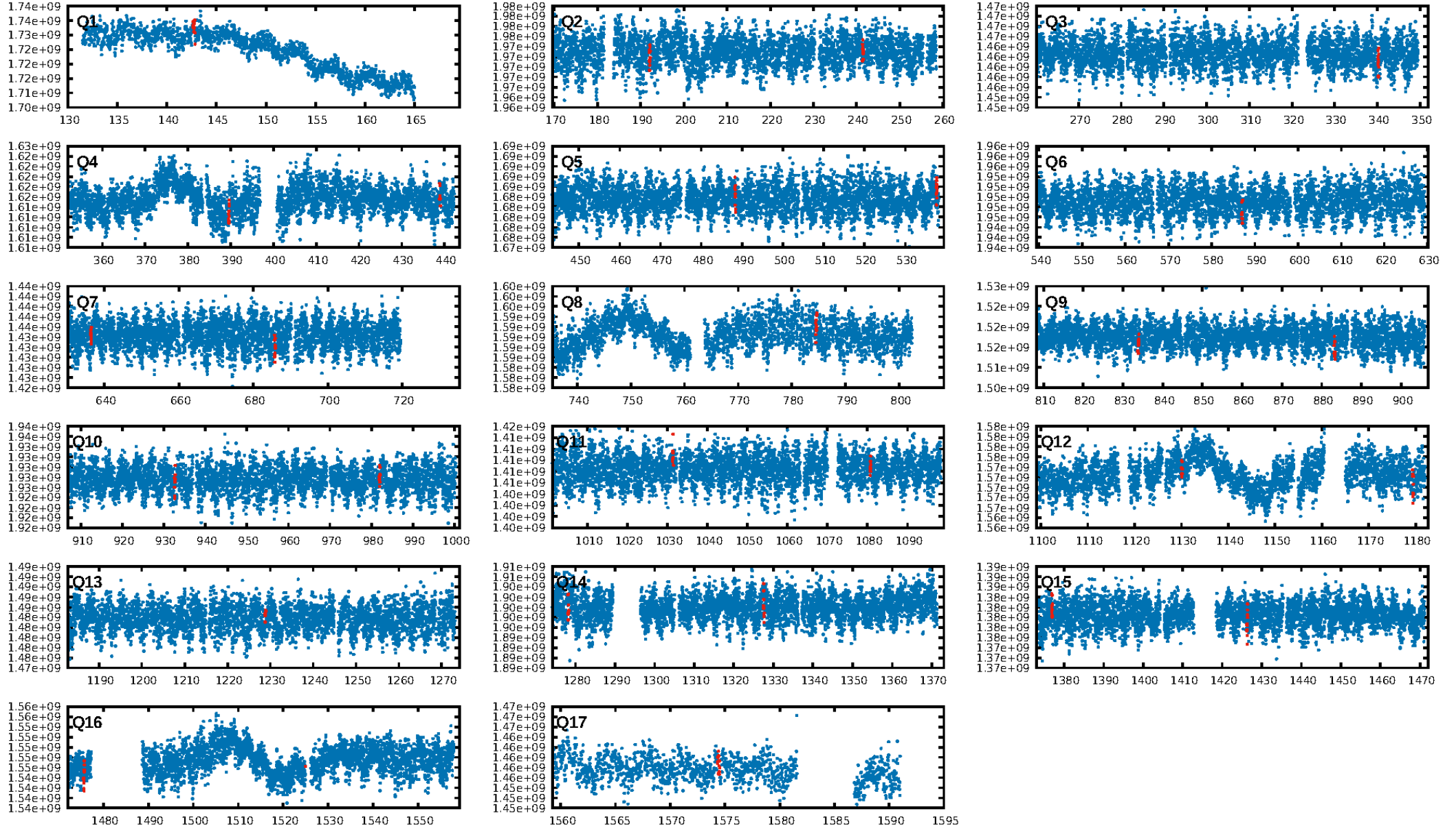
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [421.56 $\sigma$ ]  
LongPeriod-sig: 100.0% [172.75 $\sigma$ ]  
ModelChiSquare2-sig: 5.5%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 7.60e-12**  
RollingBand-fgt: 1.00 [13/13]  
GhostDiagnostic-chr: N/A  
**Centroid-sig: 0.0%**  
Centroid-so: 0.320 arcsec [2.04 $\sigma$ ]  
**OotOffset-rm: 4.128 arcsec [3.29 $\sigma$ ]**  
**KicOffset-rm: 4.233 arcsec [3.13 $\sigma$ ]**  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.07 [1/15]  
DiffImageOverlap-fno: 0.00 [0/15]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:46:30 Z

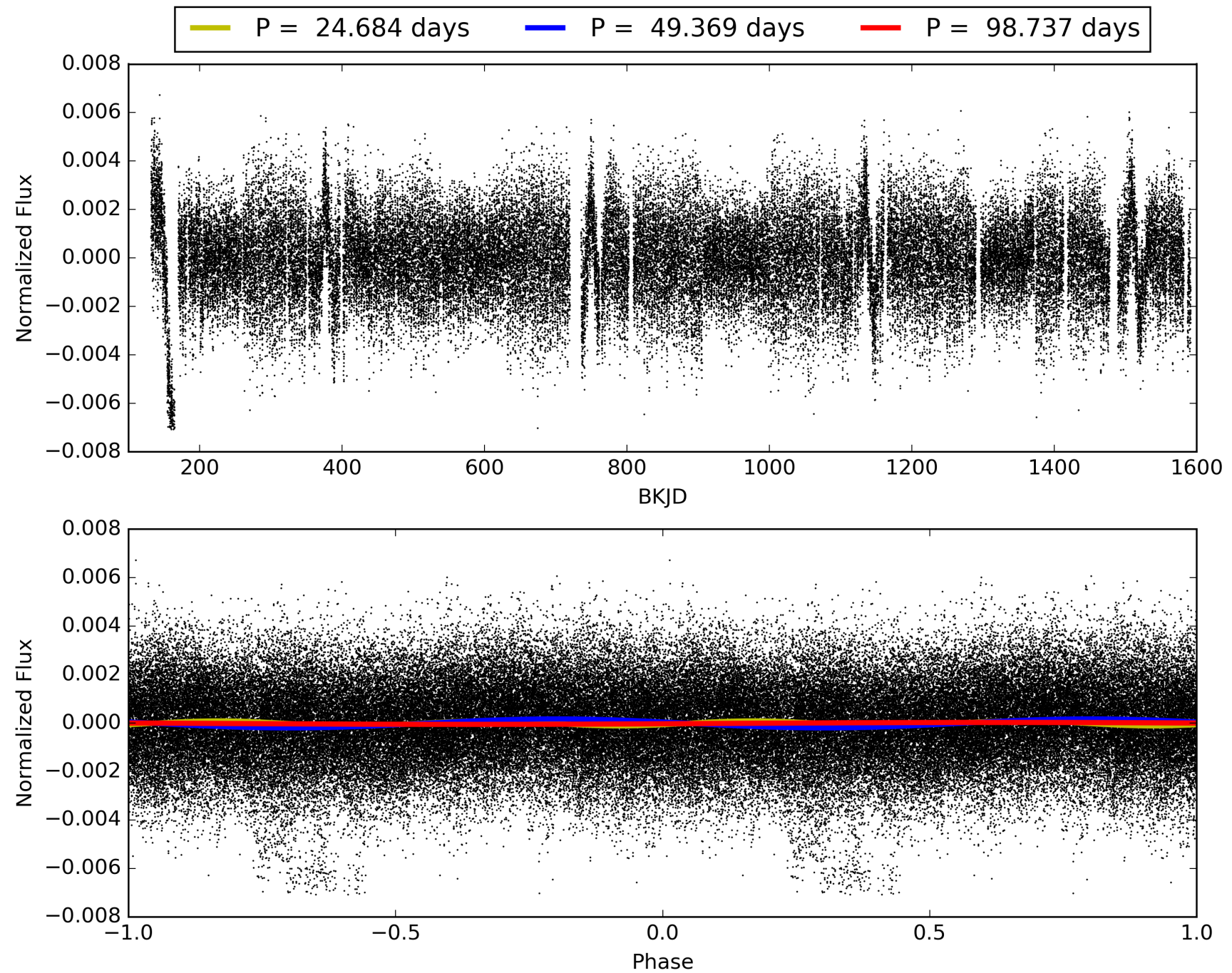
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005446068-05, PDC Light Curves



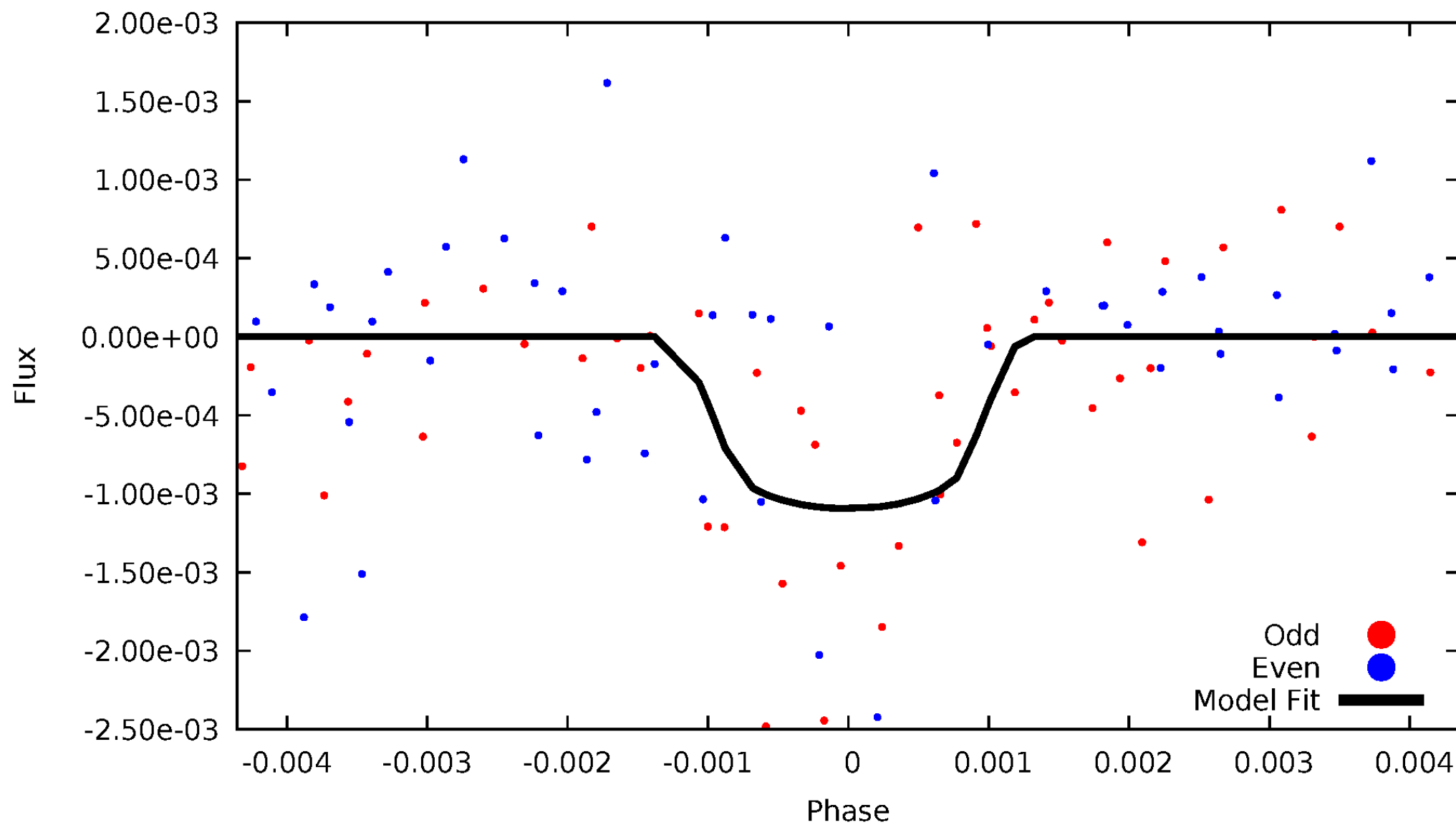


TCE 005446068-05



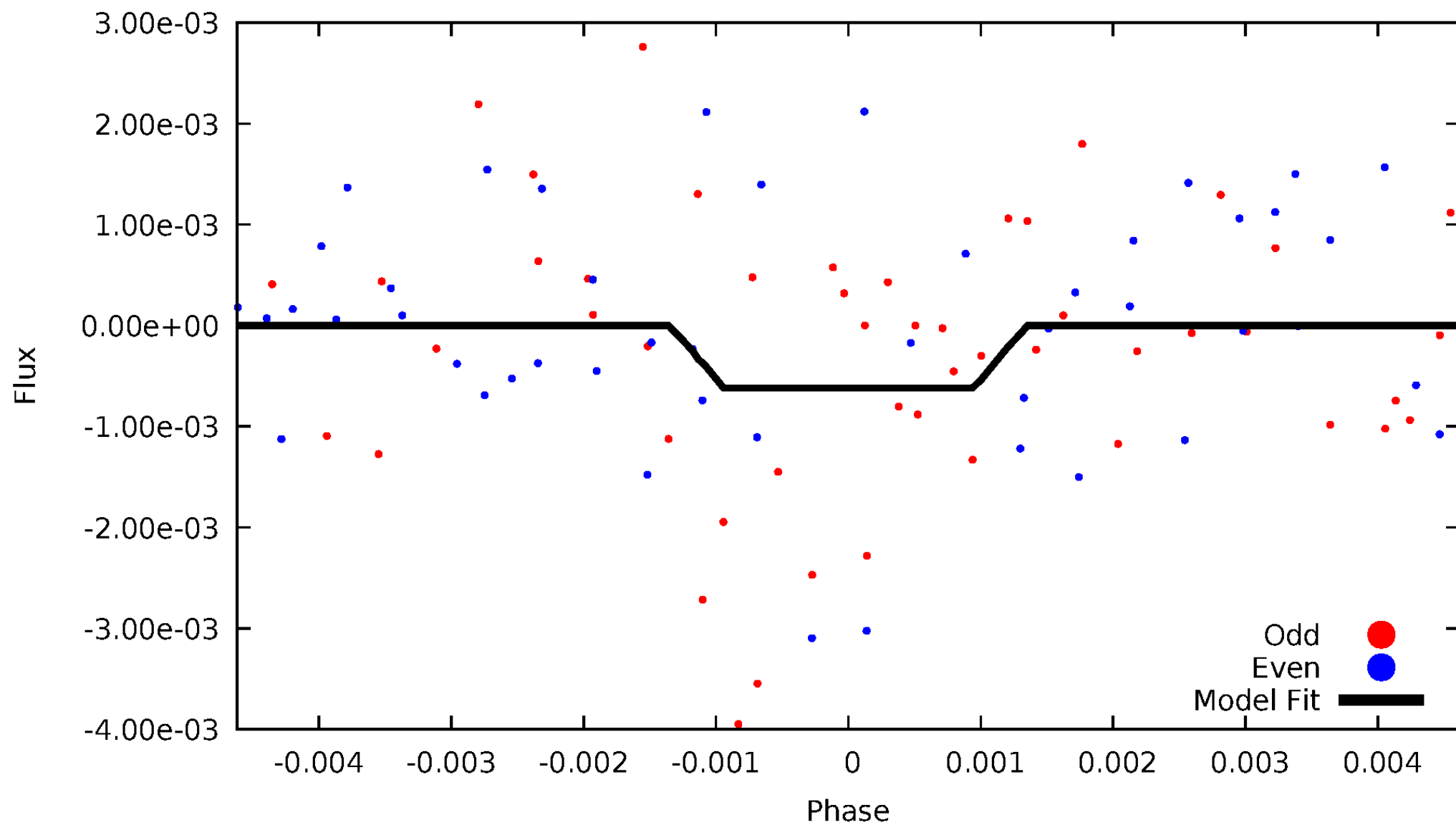
# DV Odd/Even

TCE 005446068-05



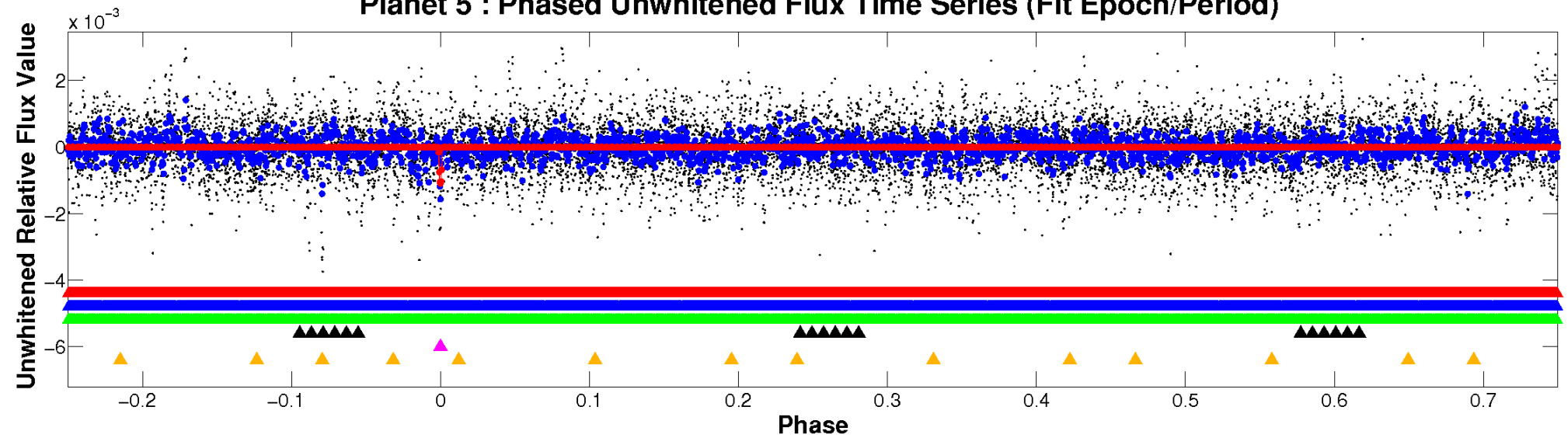
# ALT Odd/Even

TCE 005446068-05

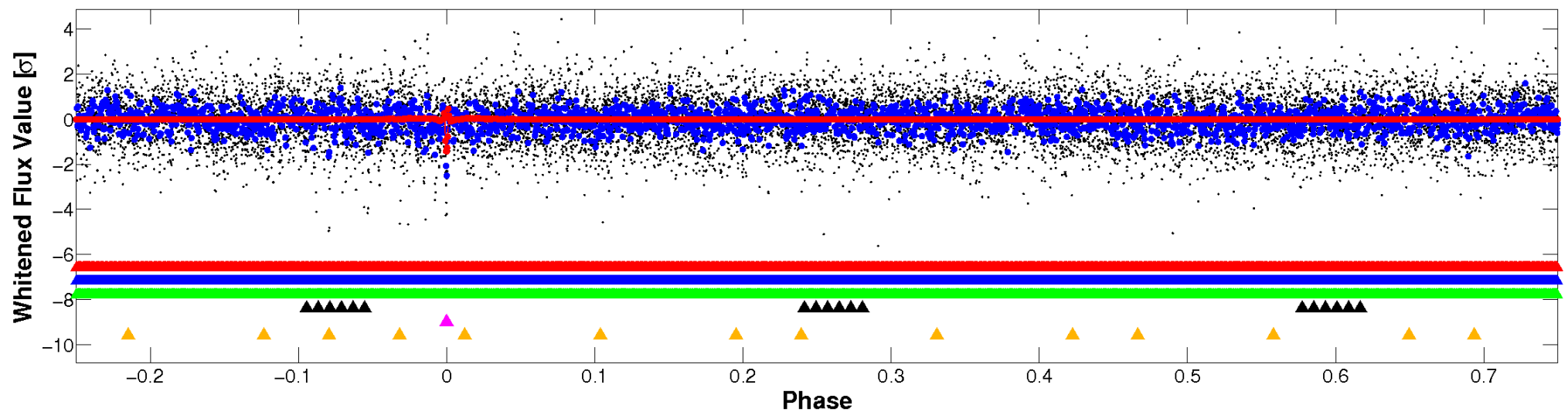


# Non-Whitened Vs. Whitened Light Curve

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

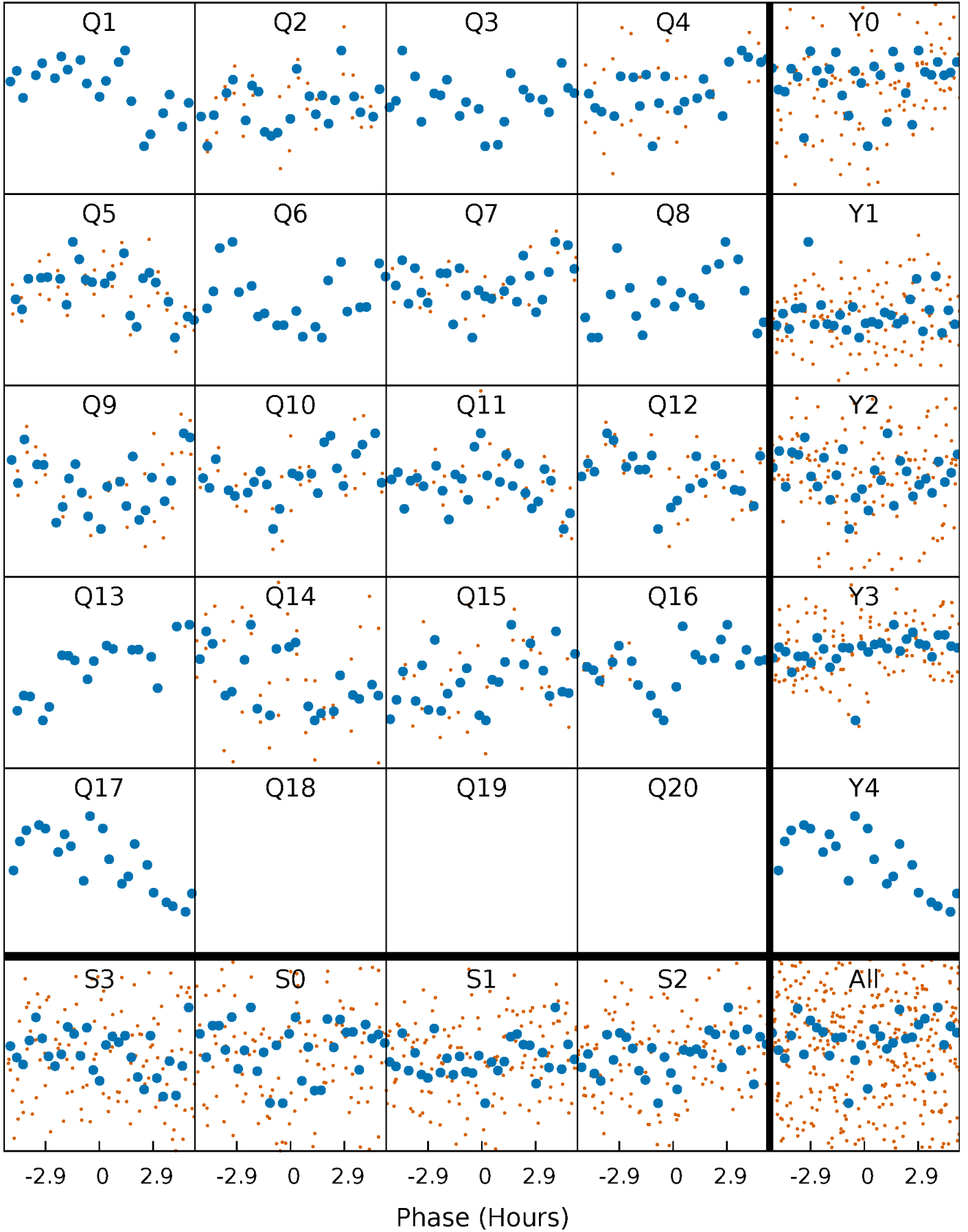


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

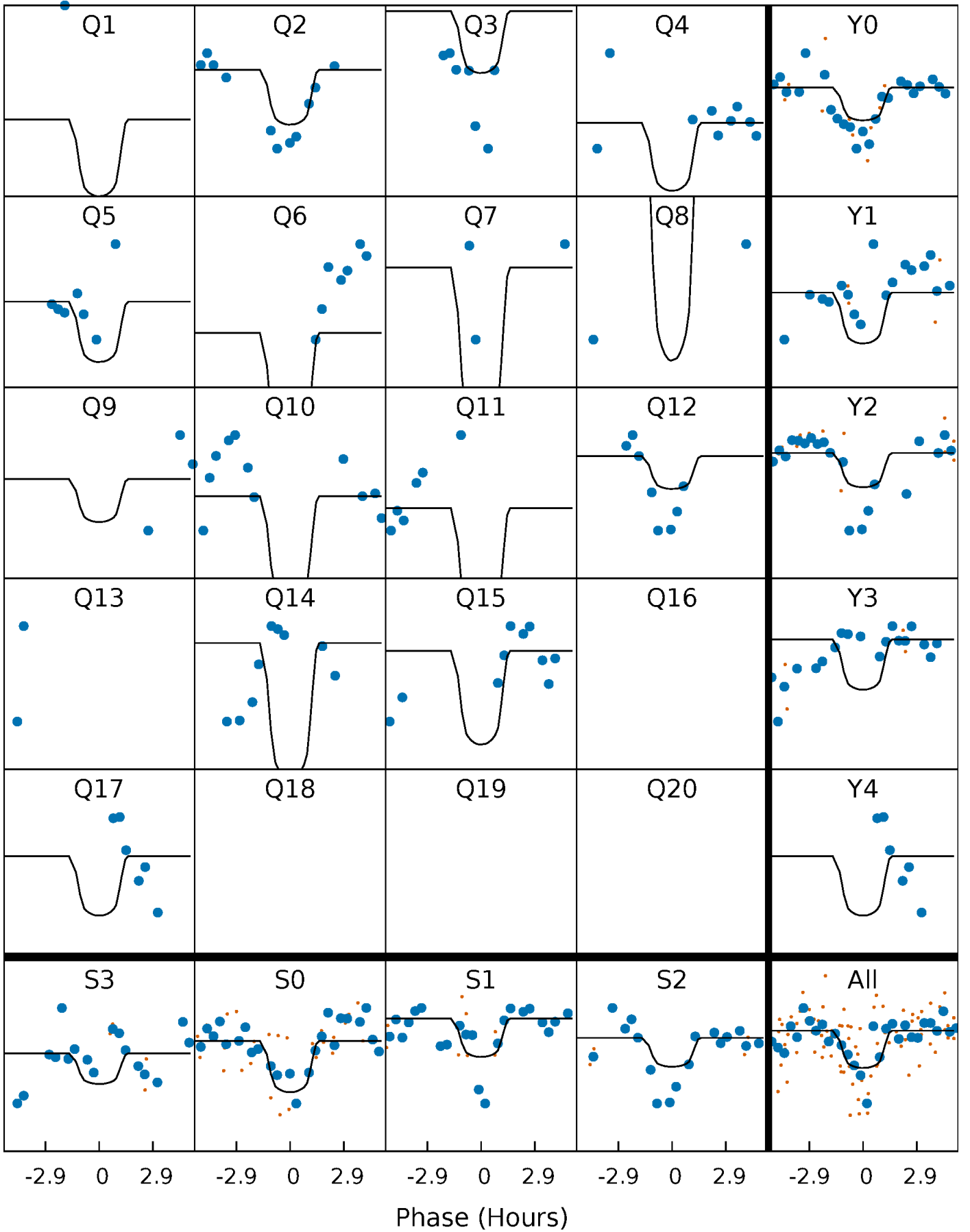
TCE 005446068-05   P= 49.368650 Days    $T_0=142.734127$  (BKJD)





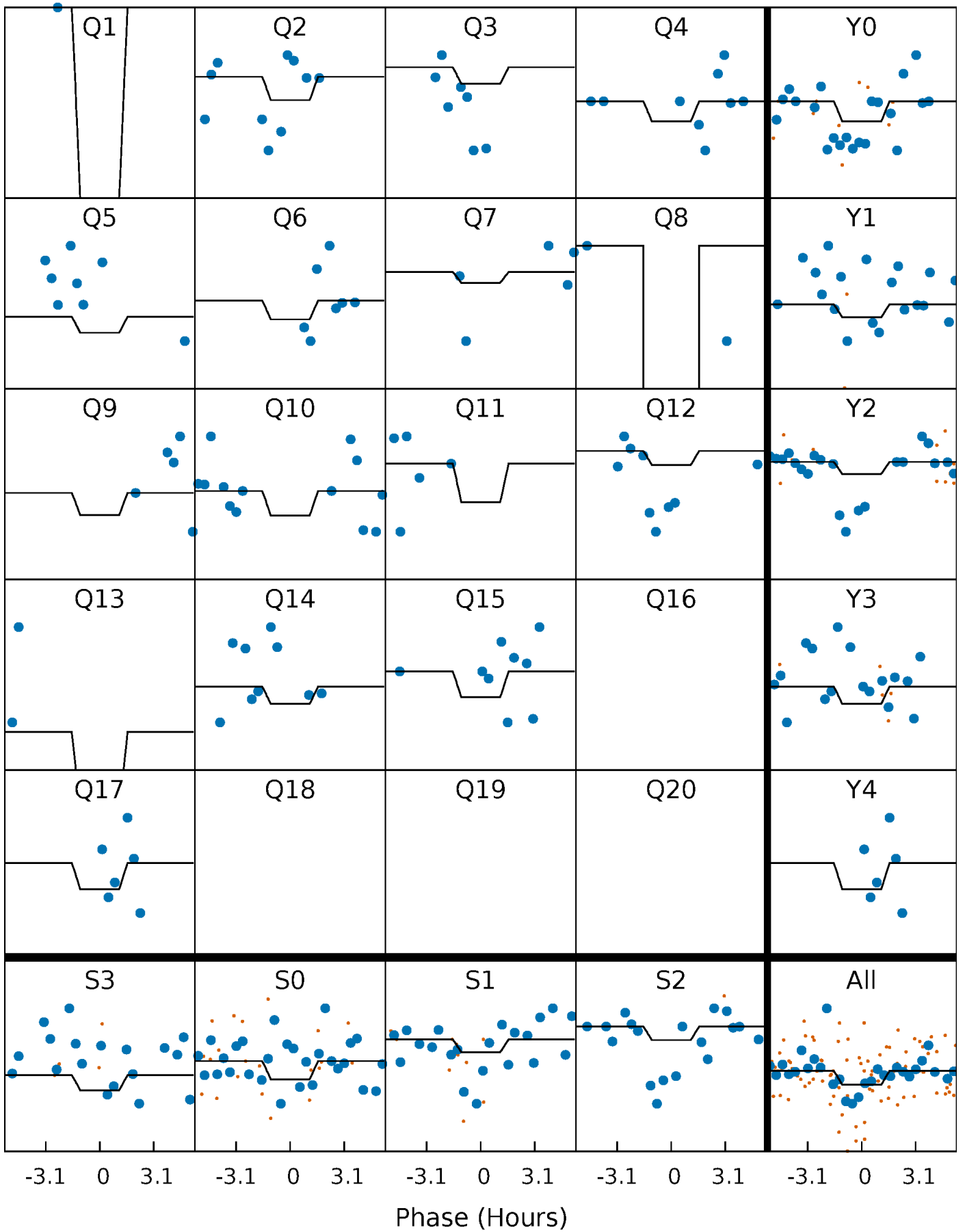
# DV Quarter-Phased Transit Curves

TCE 005446068-05   P= 49.368650 Days    $T_0=142.734127$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

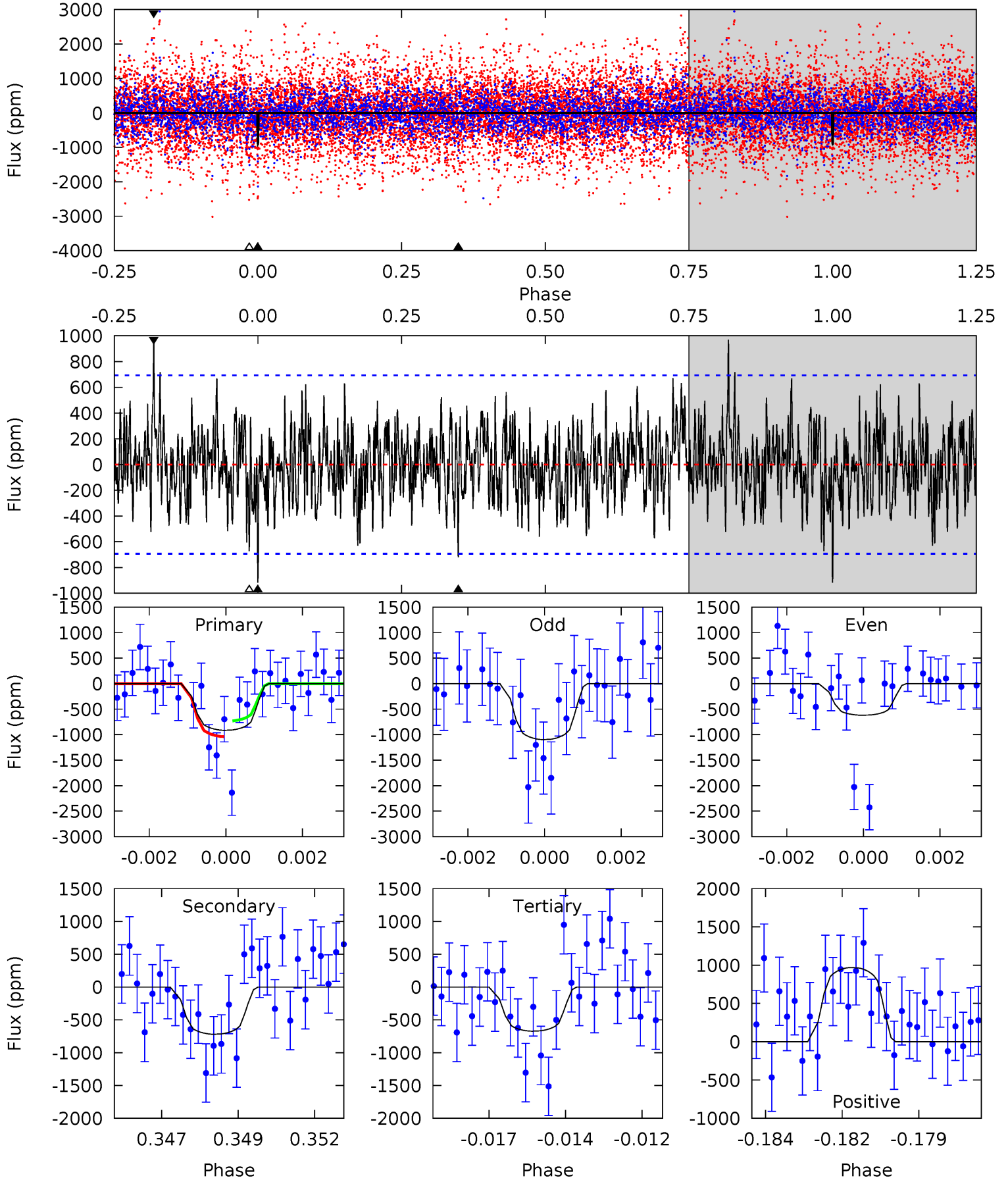
TCE 005446068-05     $P = 49.368746$  Days     $T_0 = 142.757493$  (BKJD)



# DV Model-Shift Uniqueness Test

005446068-05, P = 49.368650 Days, E = 93.365477 Days

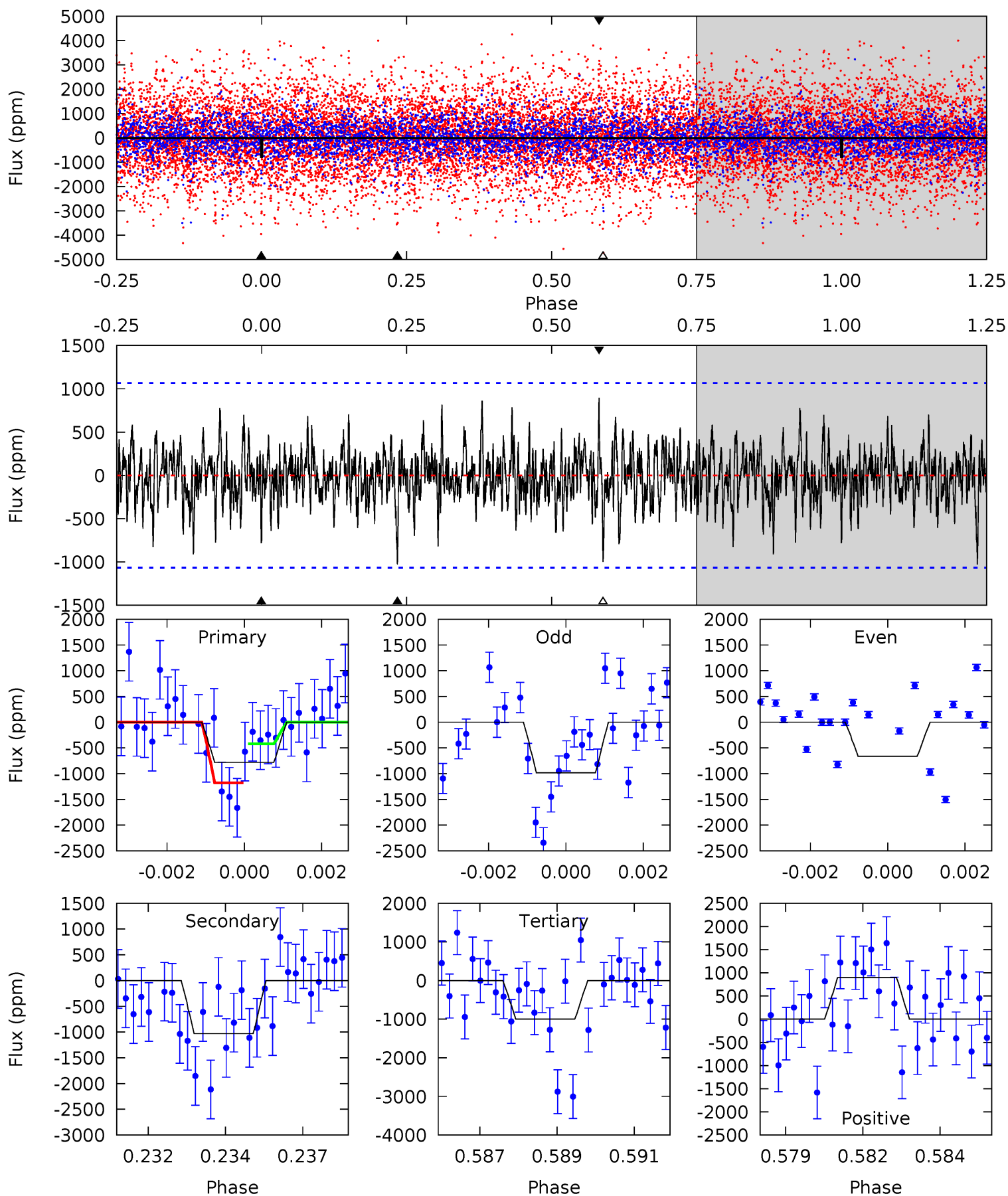
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.00	5.50	5.14	7.41	5.30	3.04	1.78	1.86	-0.41	0.36	-1.91	1.77	0.85	0.51	1.18



# Alt Model-Shift Uniqueness Test

005446068-05, P = 49.368746 Days, E = 93.388747 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
3.87	5.10	4.94	4.43	5.29	3.03	1.28	-1.07	-0.56	0.16	0.67	0.73	1.48	0.47	1.89



### Stellar Parameters For KIC 005446068

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5985^{+131}_{-119}$	$3.586^{+0.285}_{-0.095}$	$-0.020^{+0.150}_{-0.150}$	$3.350^{+0.588}_{-1.176}$	$1.578^{+0.138}_{-0.321}$	$0.059^{+0.117}_{-0.018}$
	+2%/-2%	+8%/-3%	+750%/-750%	+18%/-35%	+9%/-20%	+198%/-31%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 005446068-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-720 \pm 131$	$14.00^{+14.20}_{-9.19}$	$1197^{+70}_{-110}$	$4865^{+4049}_{-1057}$	$178^{+1489}_{-131}$
Alt.	$-1029 \pm 202$	$14.10^{+12.97}_{-9.41}$	$1199^{+72}_{-103}$	$5268^{+4413}_{-1190}$	$263^{+2136}_{-192}$

$T_{max}$  = 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

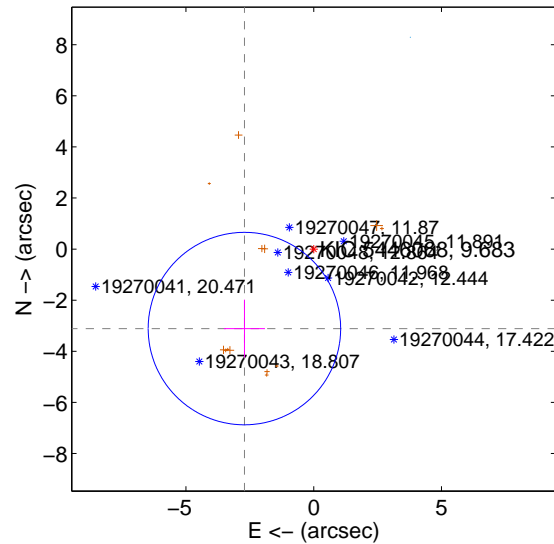
Supplemental centroid analysis for 005446068-05. **Kepler magnitude: 9.68.** Transit SNR 6.09

**There are 1 quarters with good PRF difference image offsets**

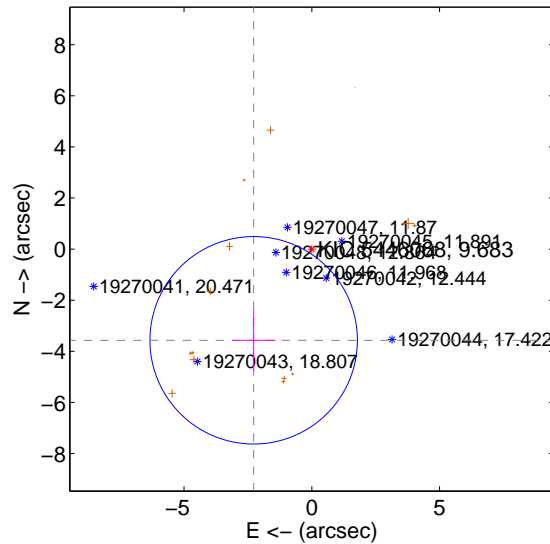
The direct PRF centroid is offset from the target star catalog position by about 1.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>4.128 <math>\pm</math> 1.256</b>	<b>3.29</b>	2.712 $\pm$ 0.806	-3.112 $\pm$ 1.132
PRF-fit source offset from KIC position	<b>4.233 <math>\pm</math> 1.354</b>	<b>3.13</b>	2.275 $\pm$ 0.852	-3.570 $\pm$ 1.195
photometric centroid source offset	0.32 $\pm$ 0.16	2.04	0.18 $\pm$ 0.12	0.27 $\pm$ 0.17

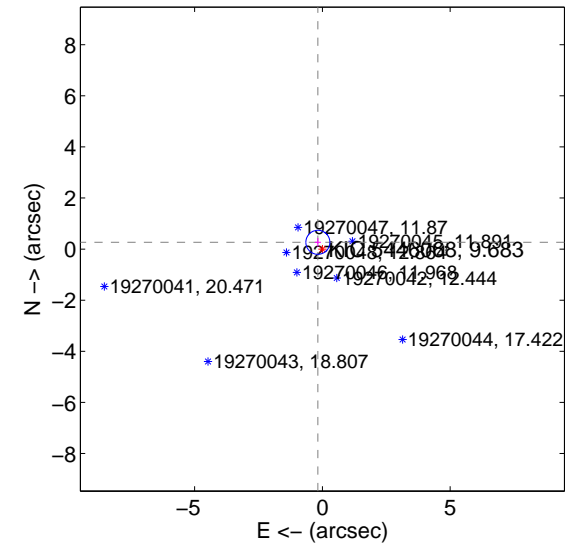
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

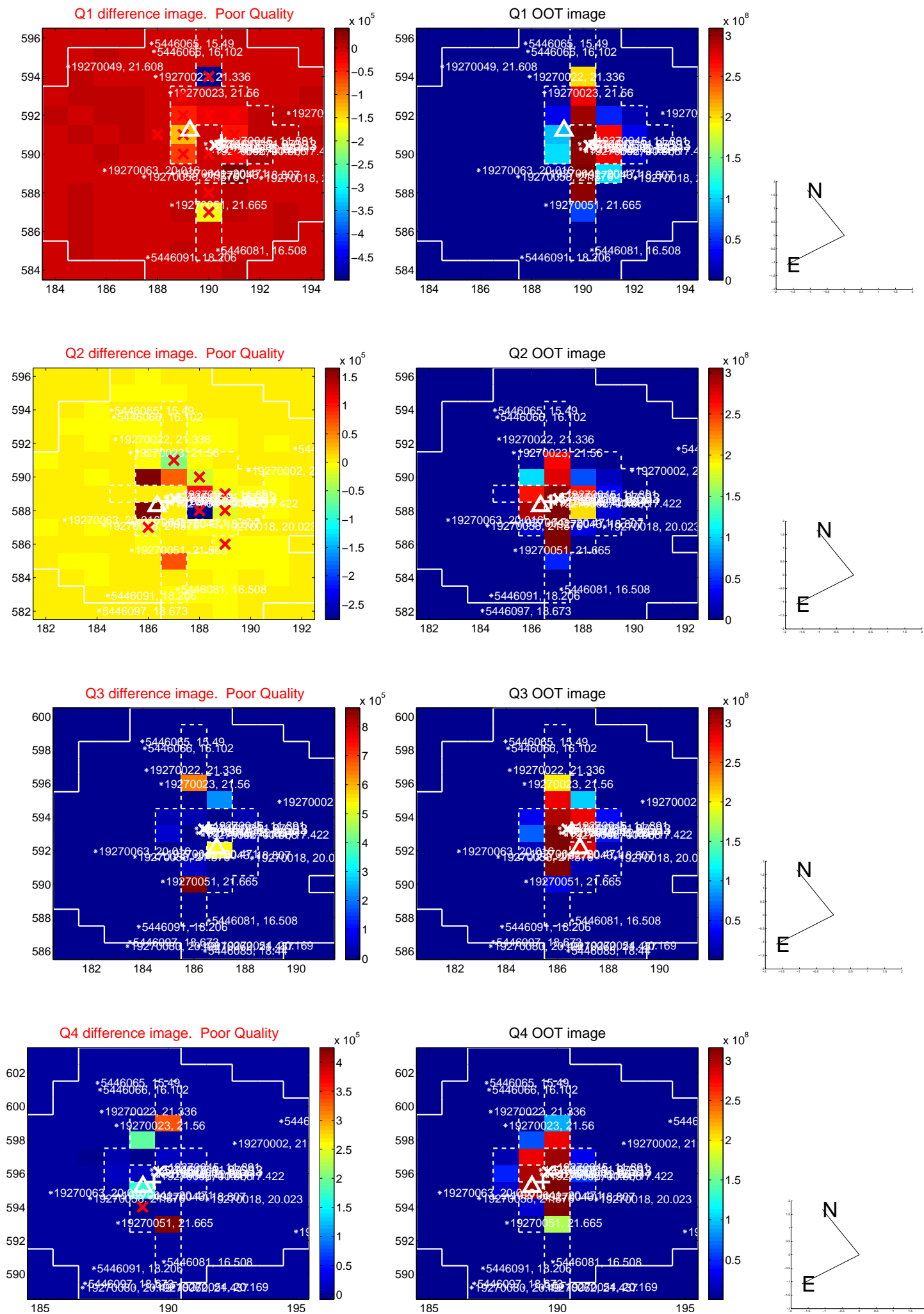


offset from photometric centroids

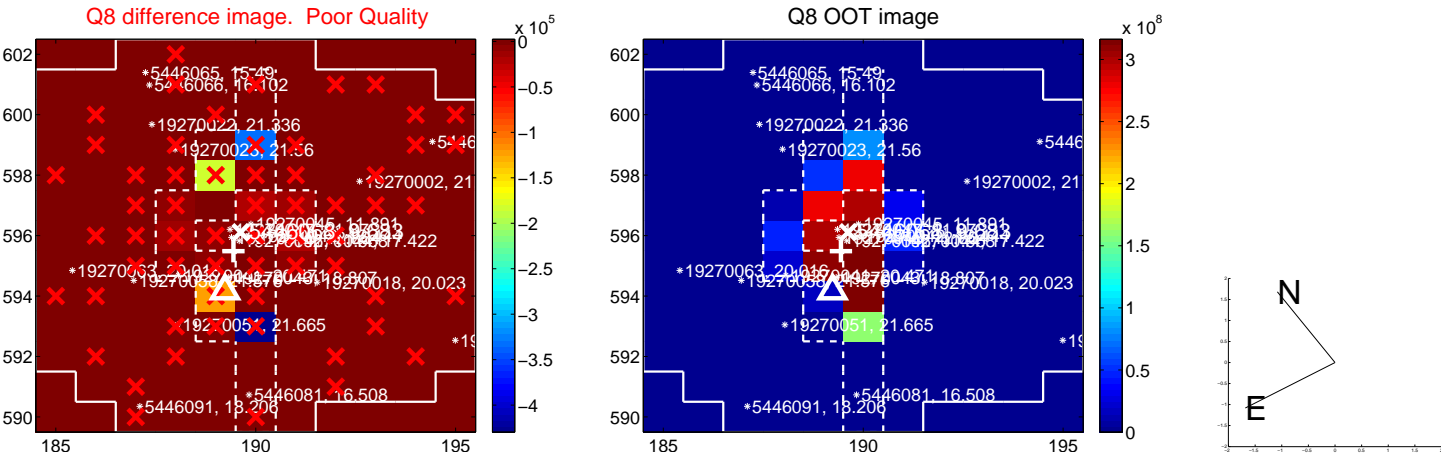
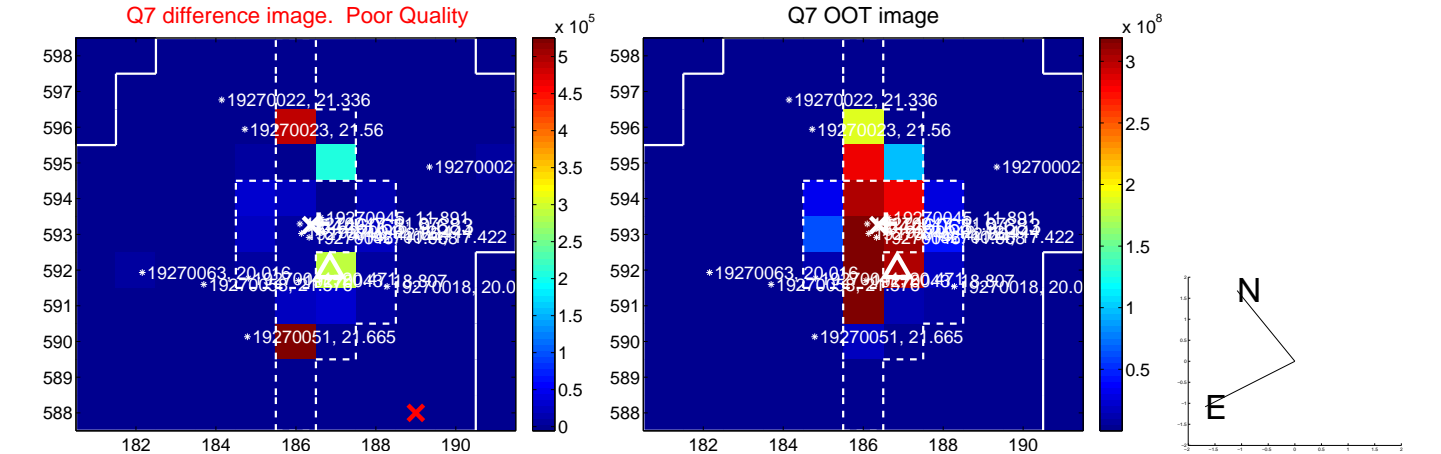
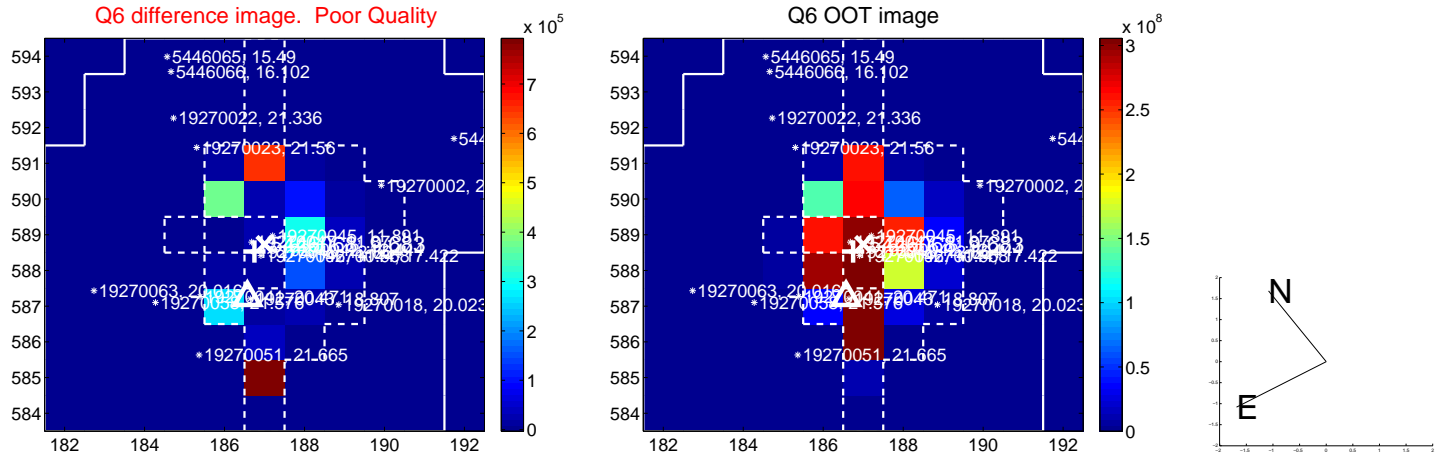
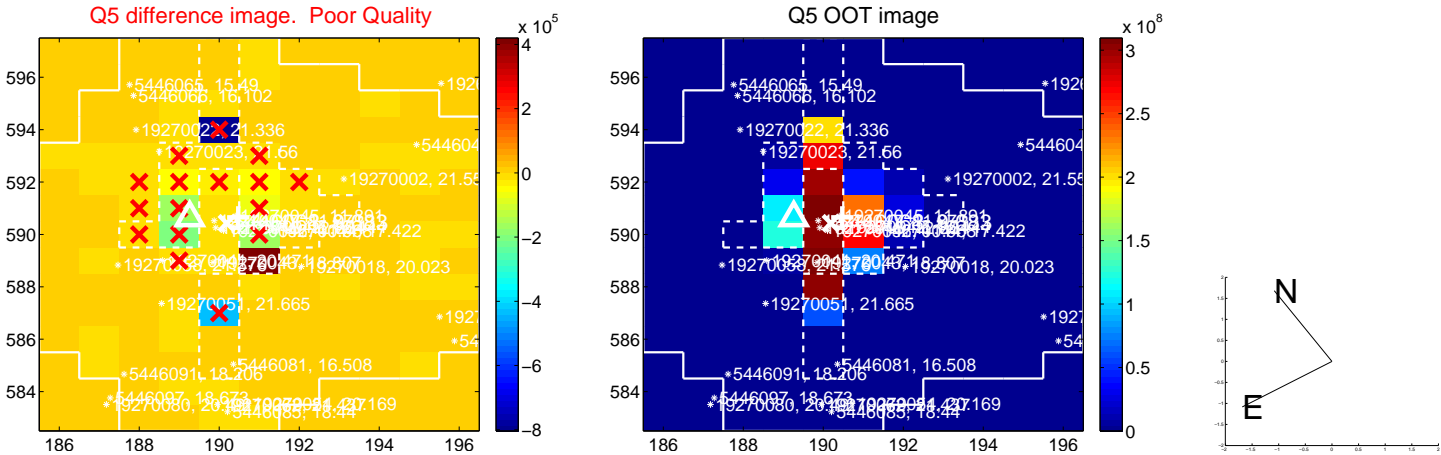


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

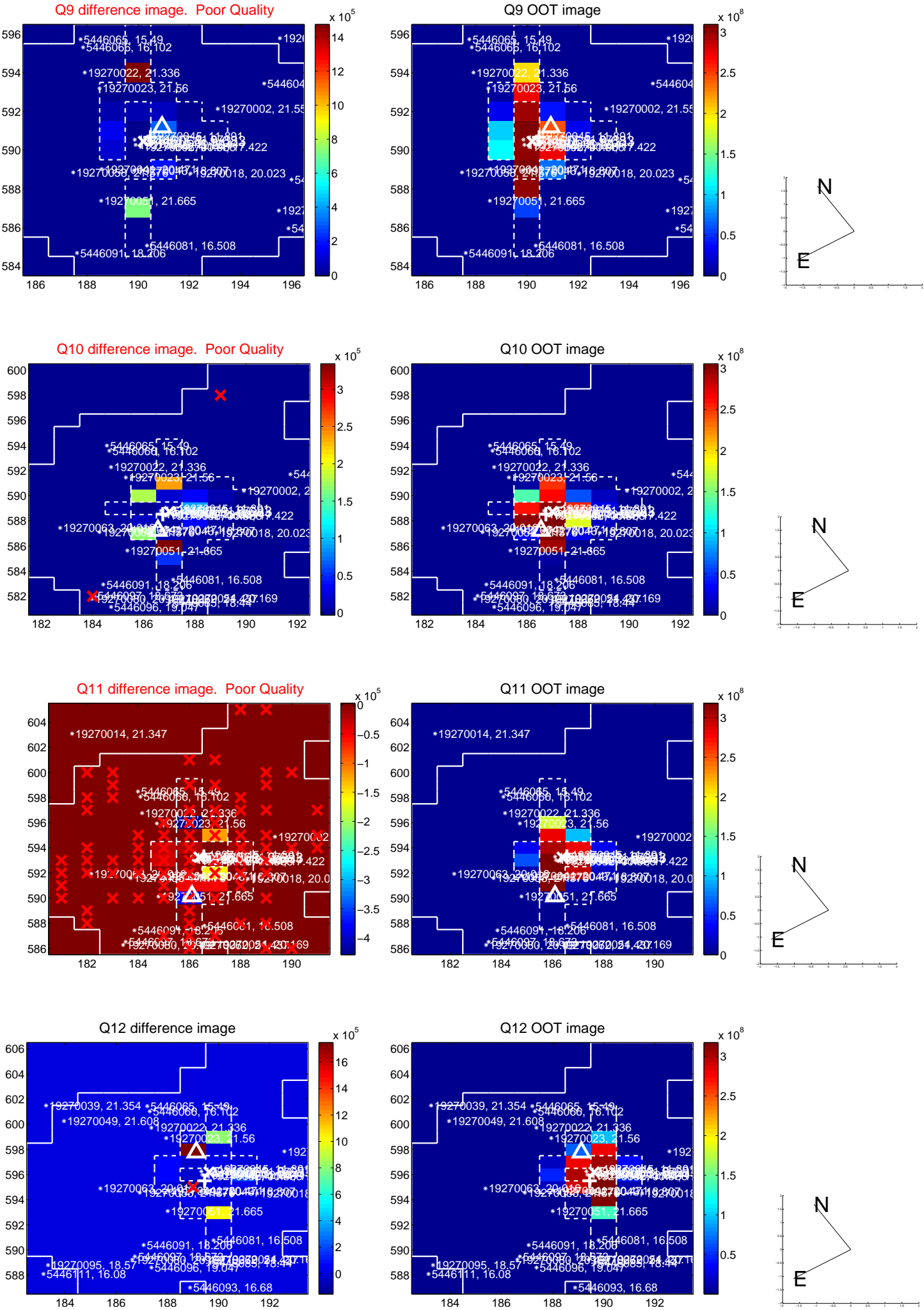
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



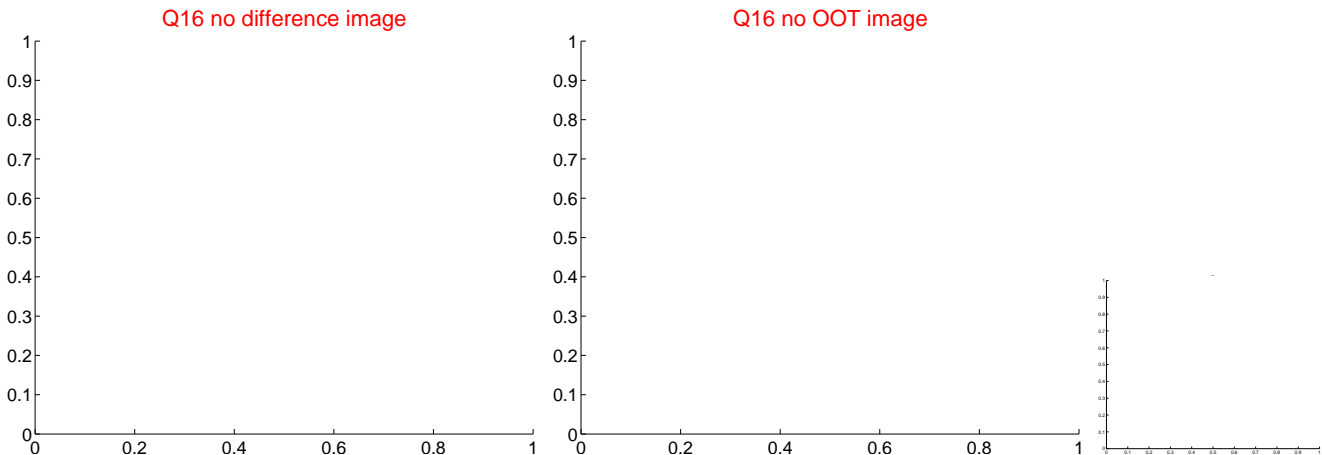
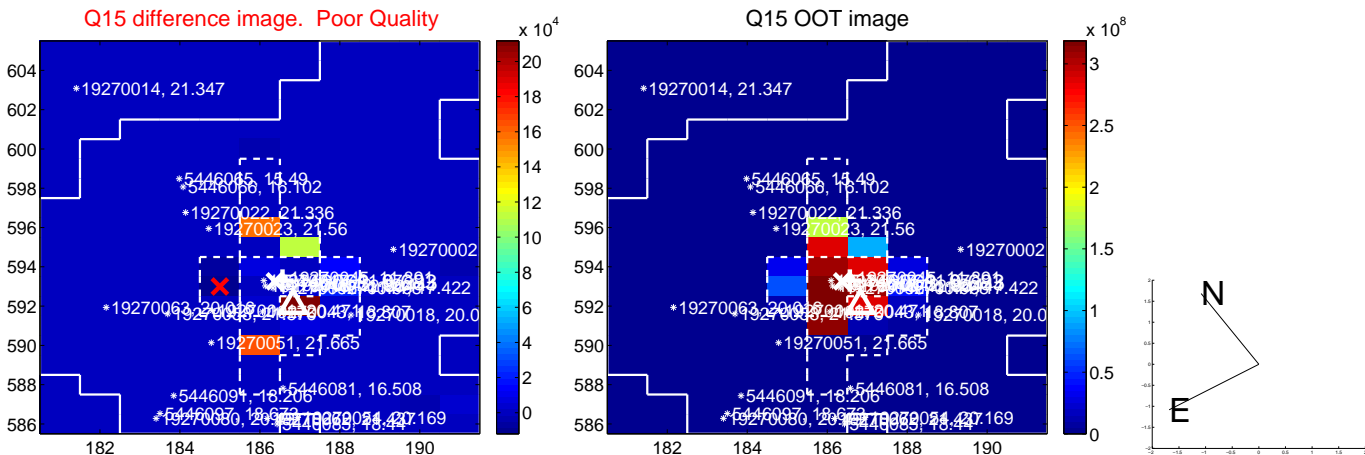
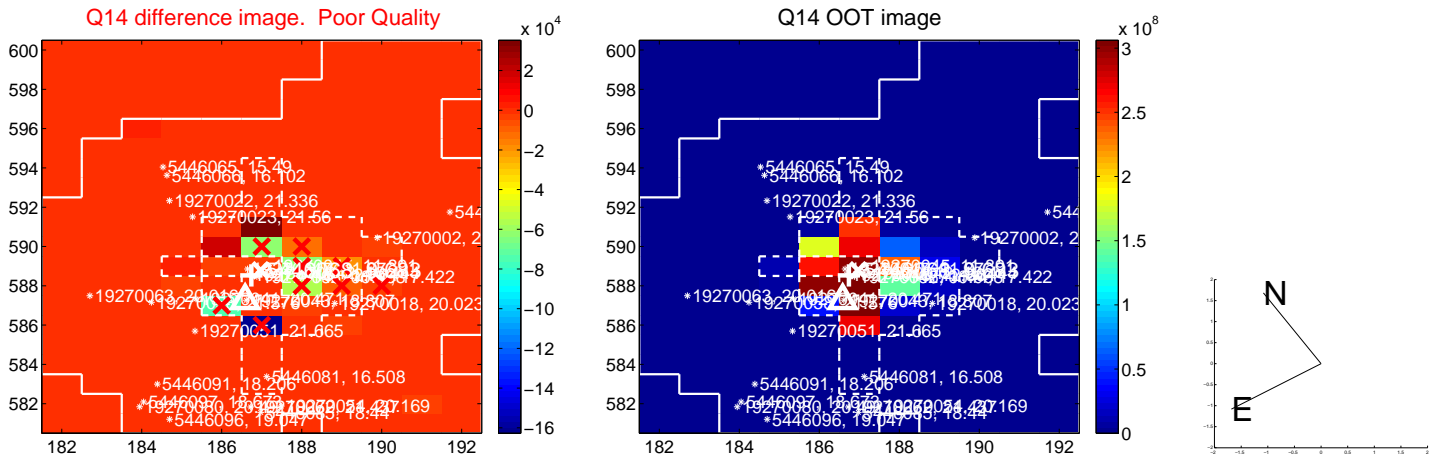
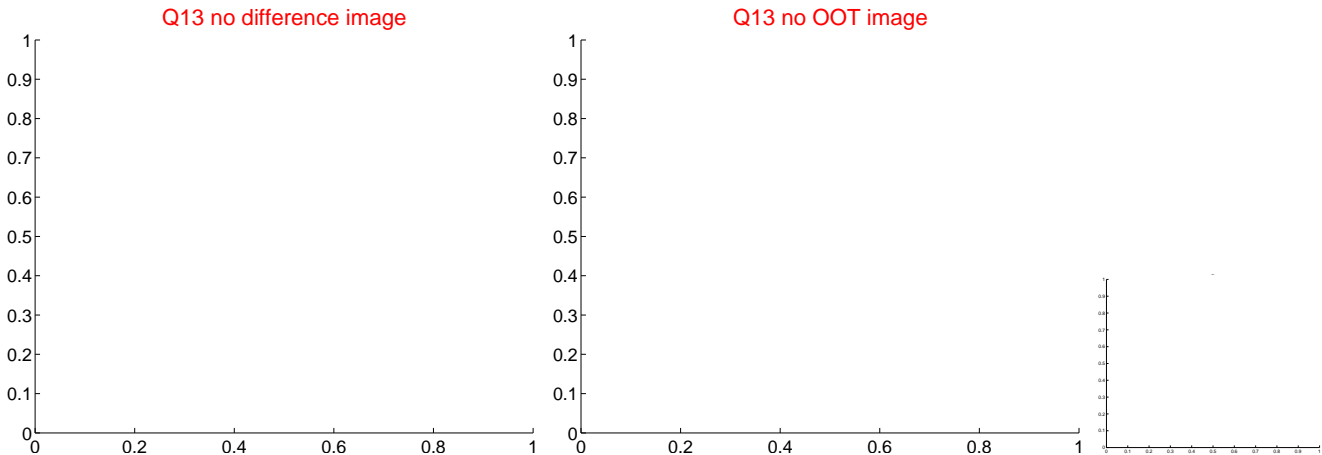
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

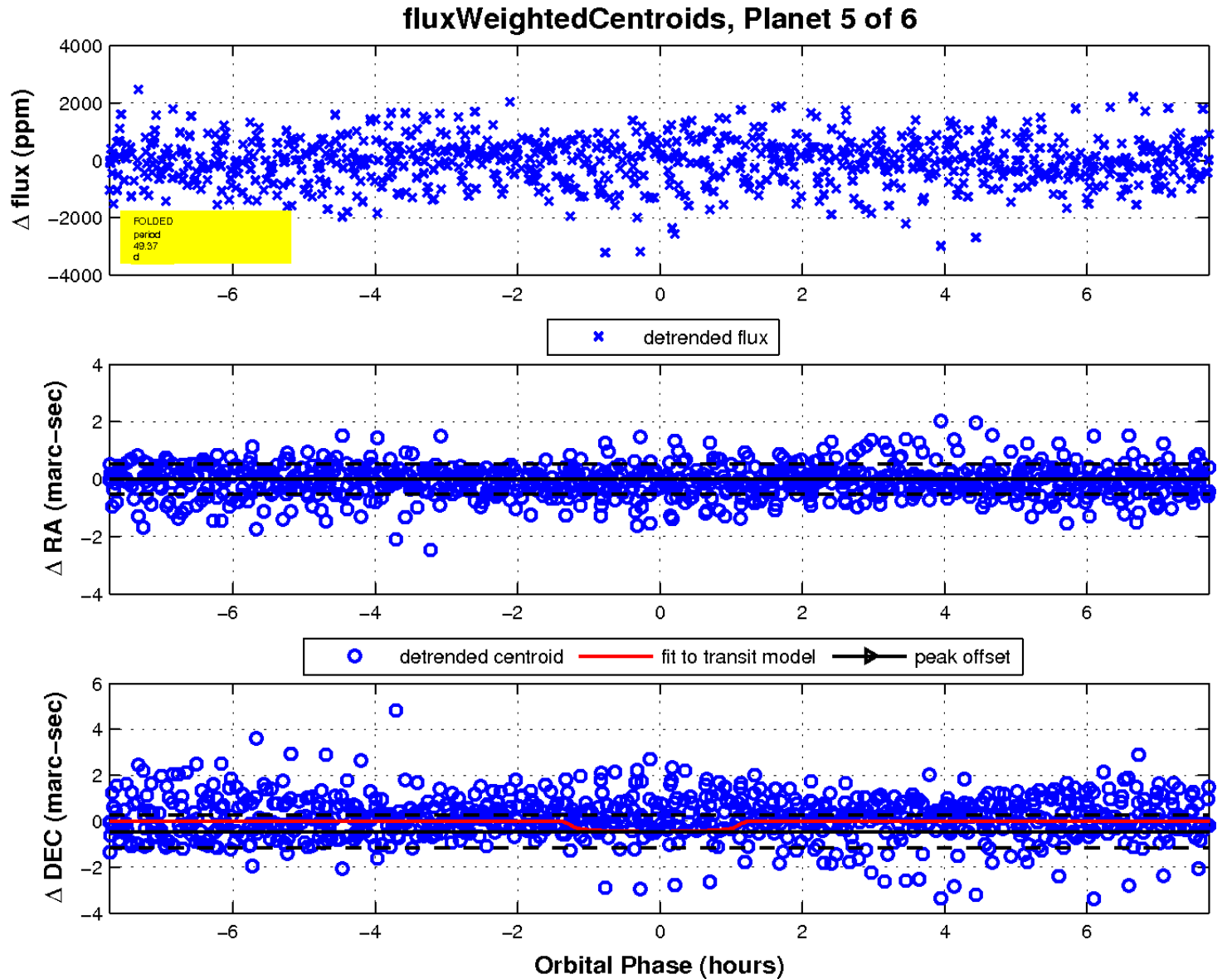
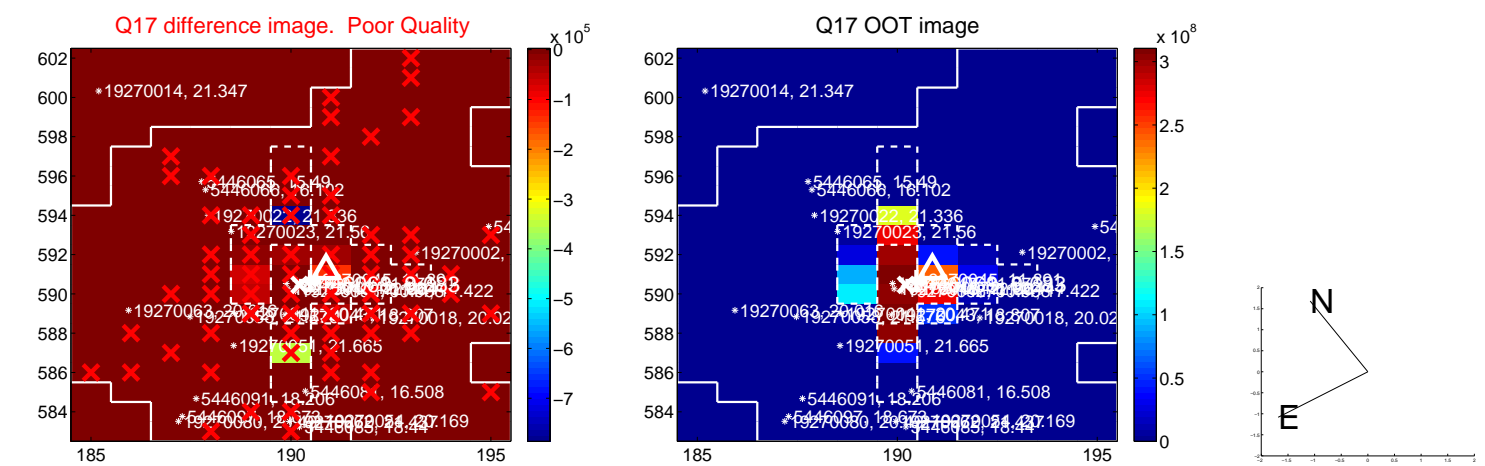


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

