

# KIC 005904622

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005904622-01	OBS	No	0.656077	131.802021	13.3	4.494	10.0	11.5	2.39	5446	1.03	24616.53
005904622-03	OBS	No	75.103668	169.021229	281.4	3.154	8.6	8.2	2.39	5446	4.58	44.29
005904622-05	OBS	No	49.234215	160.310722	228.2	1.487	8.8	8.0	2.39	5446	3.62	77.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005904622-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
005904622-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005904622-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

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

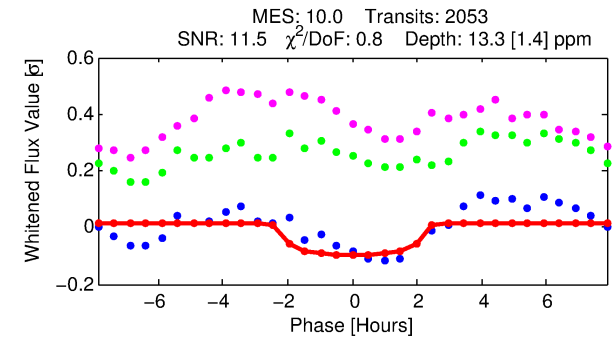
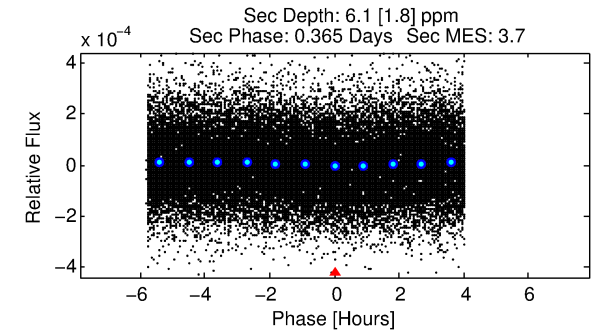
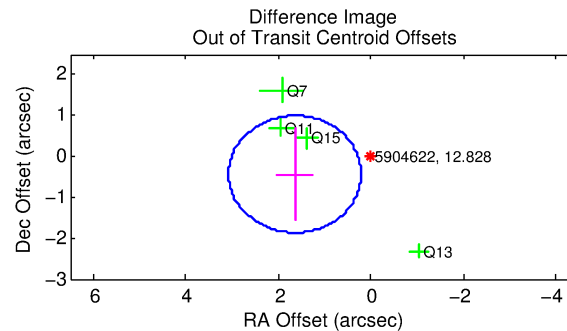
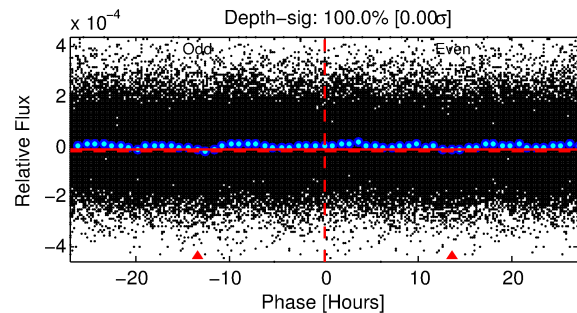
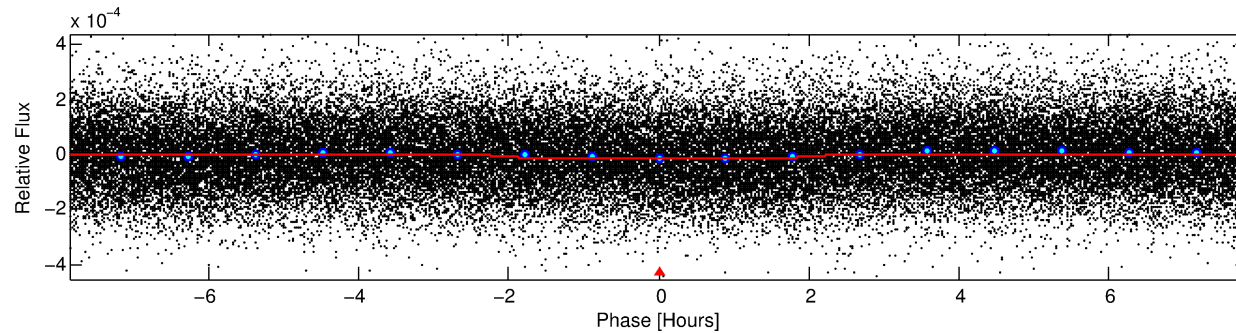
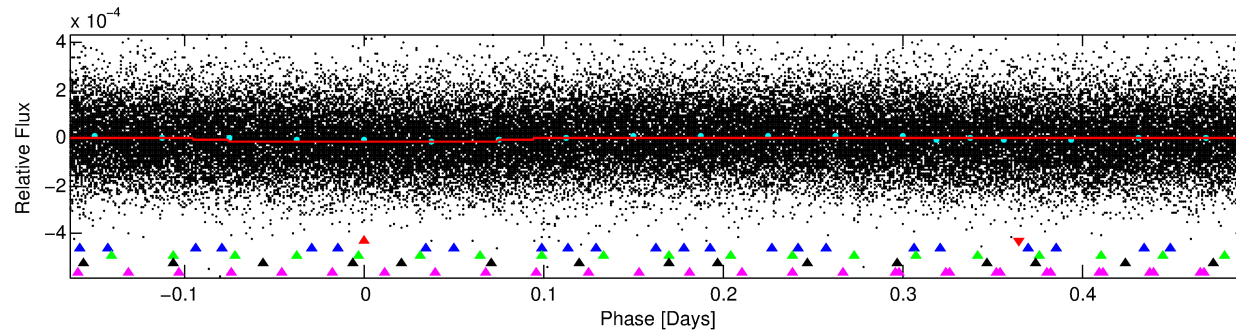
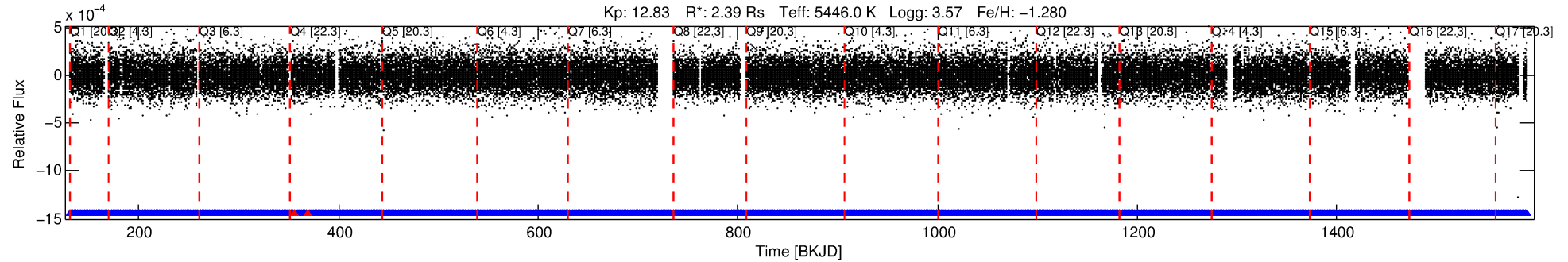
## Ephemeris Match Information For 005904622-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
005904622-01	5904622	005820209-pri	5820209	1:1	388.7	98	0	13.49	12.82	6823.10	Col-Anomaly	0	1.62	1.01

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 5904622 Candidate: 1 of 5 Period: 0.656 d



## DV Fit Results:

Period = 0.65608 [0.00001] d  
Epoch = 131.8020 [0.0039] BKJD  
Rp/R\* = 0.0039 [0.0025]  
a/R\* = 1.06 [0.42]  
b = 0.90 [0.72]  
Seff = 24616.53 [8759.73]  
Teq = 3194 [284] K  
Rp = 1.03 [0.71] Re  
a = 0.0135 [0.0033] AU  
Ag = 0.58 [0.78] [-0.54 $\sigma$ ]  
Teffp = 4315 [1392] K [0.79 $\sigma$ ]

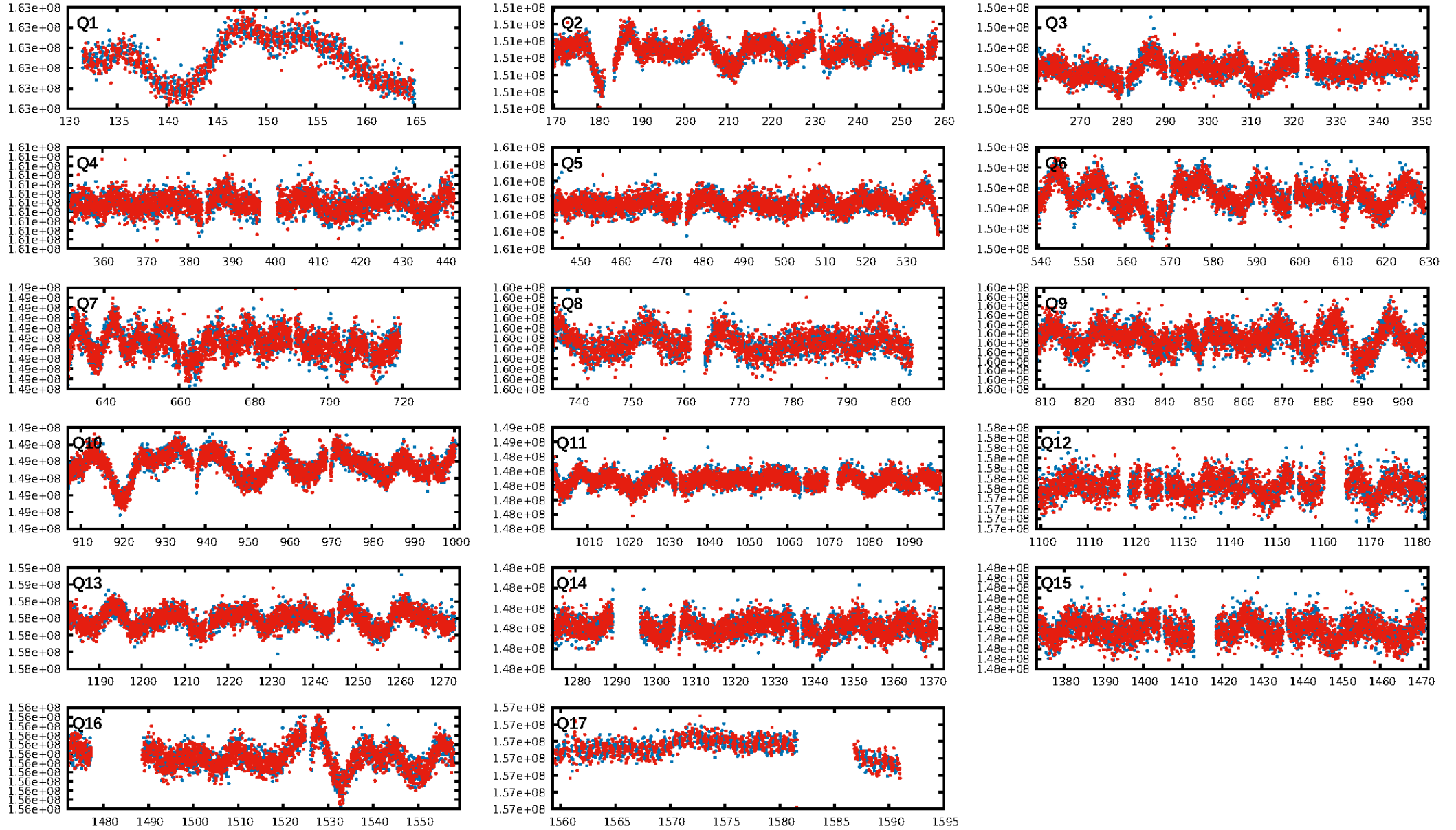
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [246.29 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 9.14e-13  
RollingBand-fgt: 1.00 [1959/1961]  
GhostDiagnostic-chr: -14.03  
Centroid-sig: 29.3%  
Centroid-so: 1.531 arcsec [1.18 $\sigma$ ]  
OotOffset-rm: 1.702 arcsec [3.57 $\sigma$ ]  
KicOffset-rm: 2.021 arcsec [3.39 $\sigma$ ]  
OotOffset-st: 0/3/0/1 [4]  
KicOffset-st: 0/3/0/1 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [17/17]

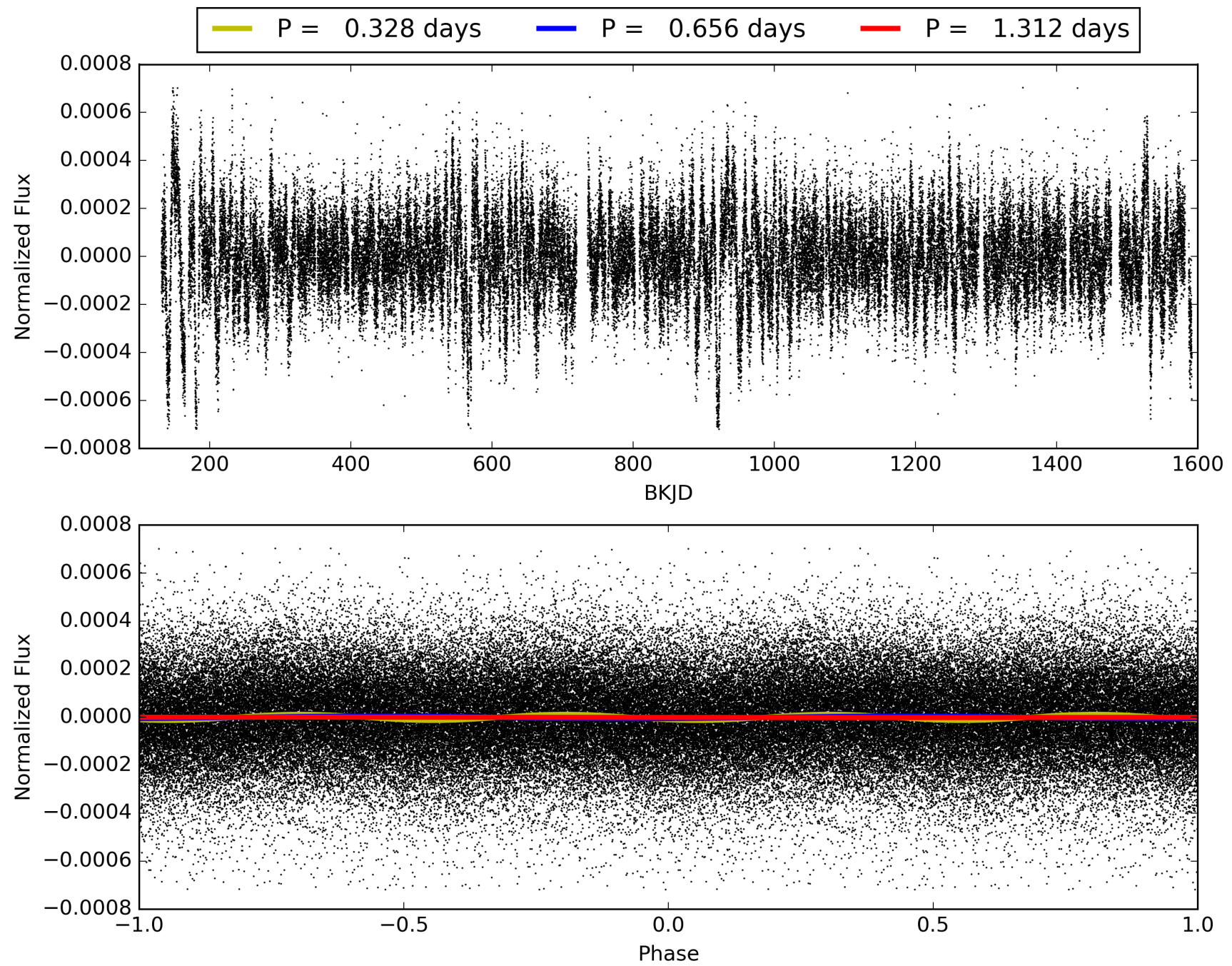
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:44:38 Z

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

# TCE 005904622-01, PDC Light Curves



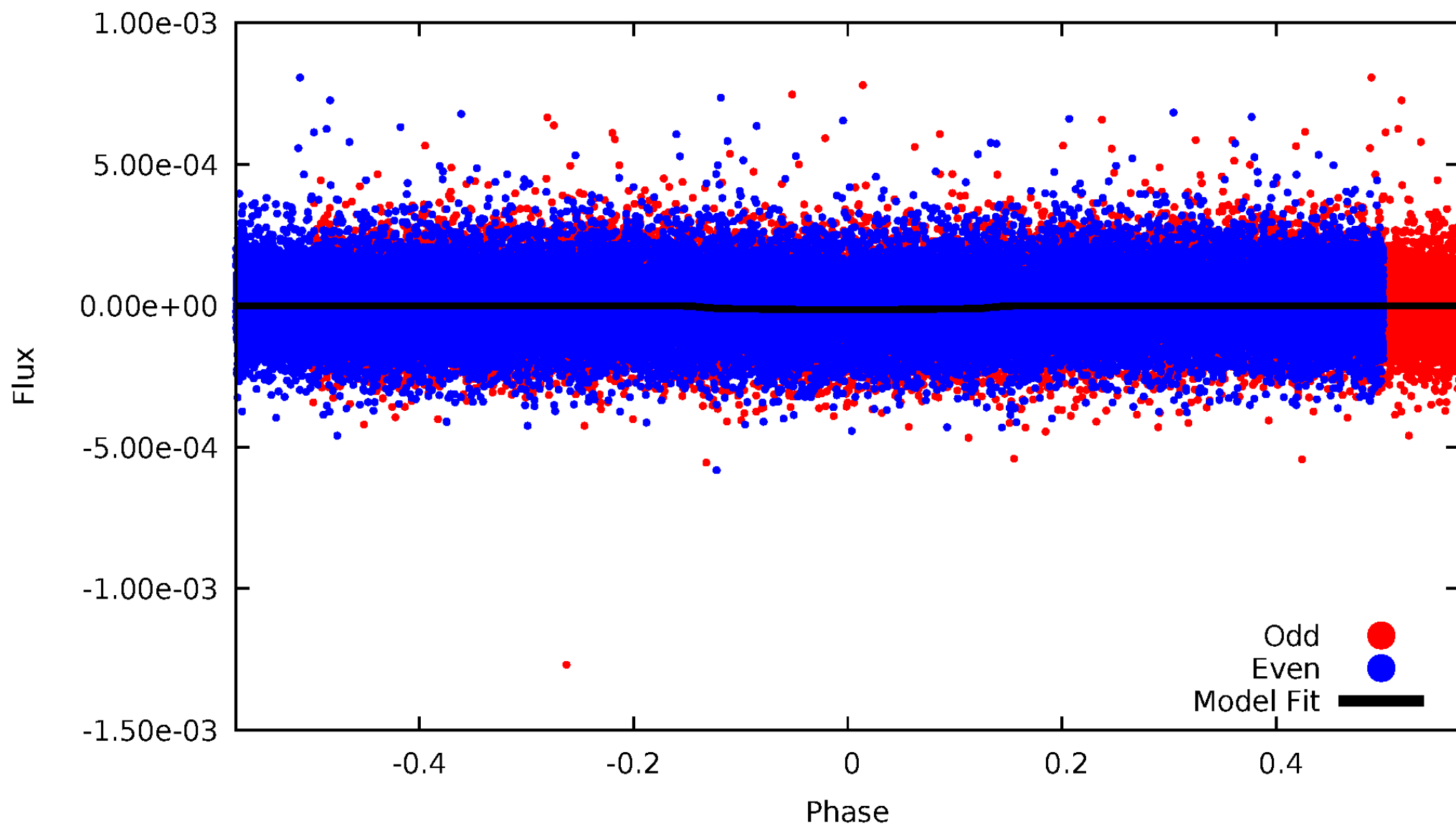
TCE 005904622-01





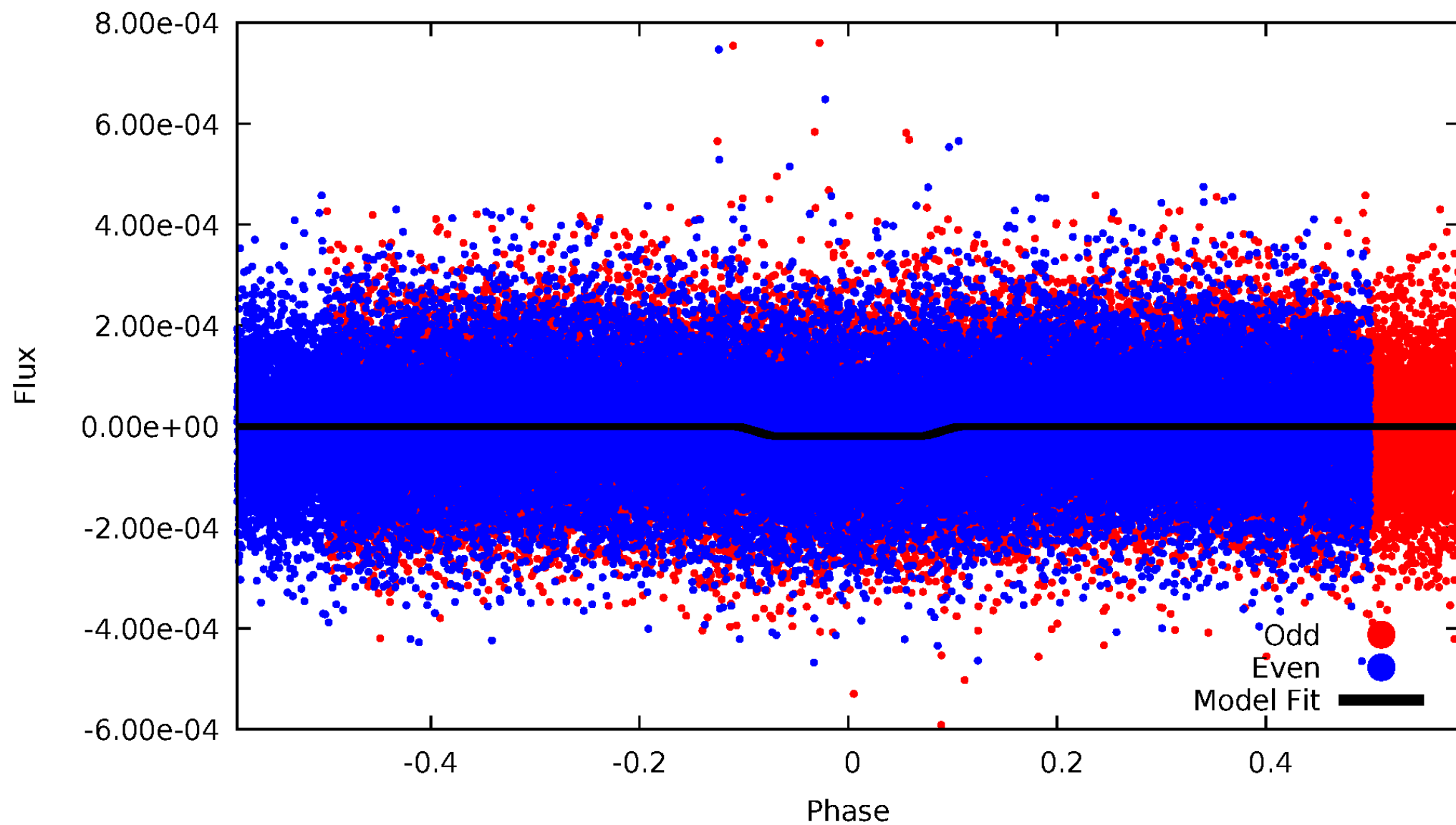
# DV Odd/Even

TCE 005904622-01



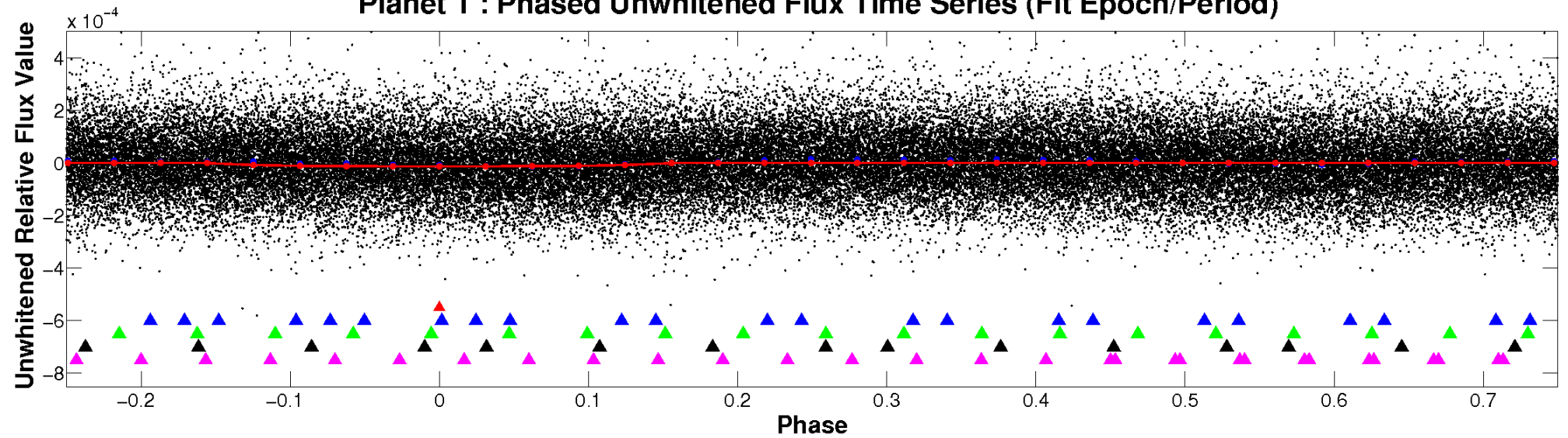
# ALT Odd/Even

TCE 005904622-01

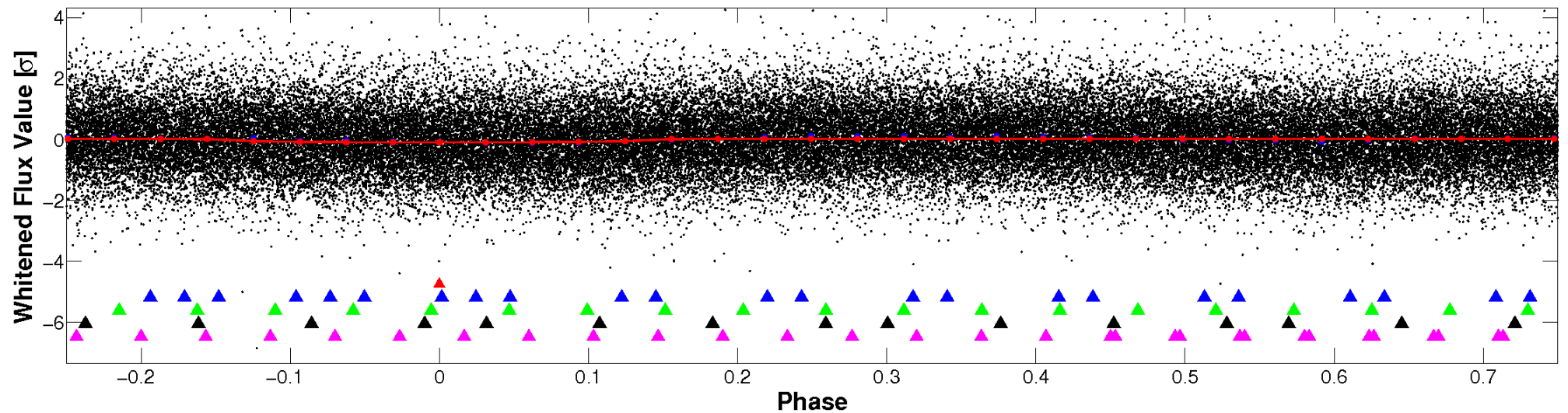


# Non-Whitened Vs. Whitened Light Curve

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

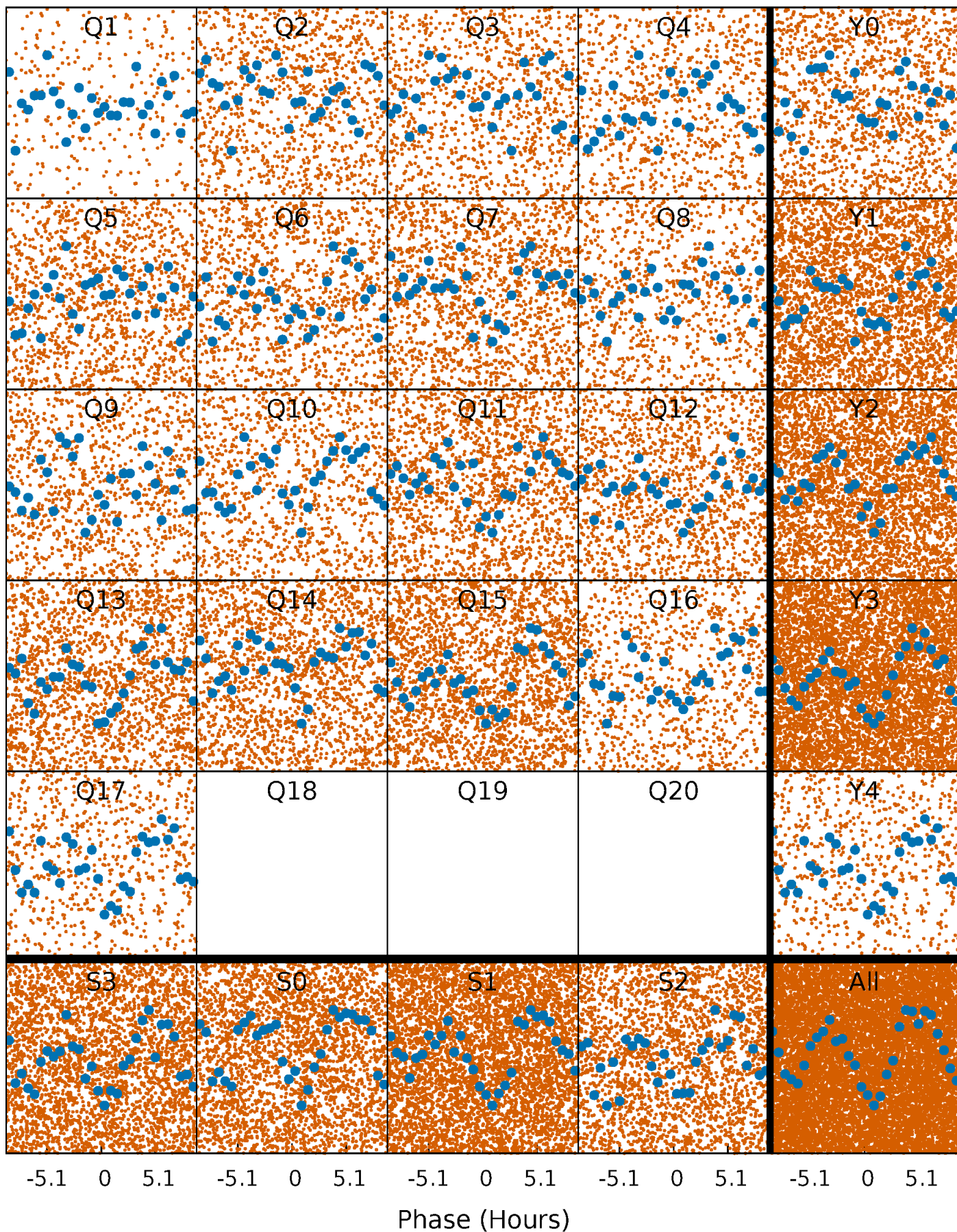


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

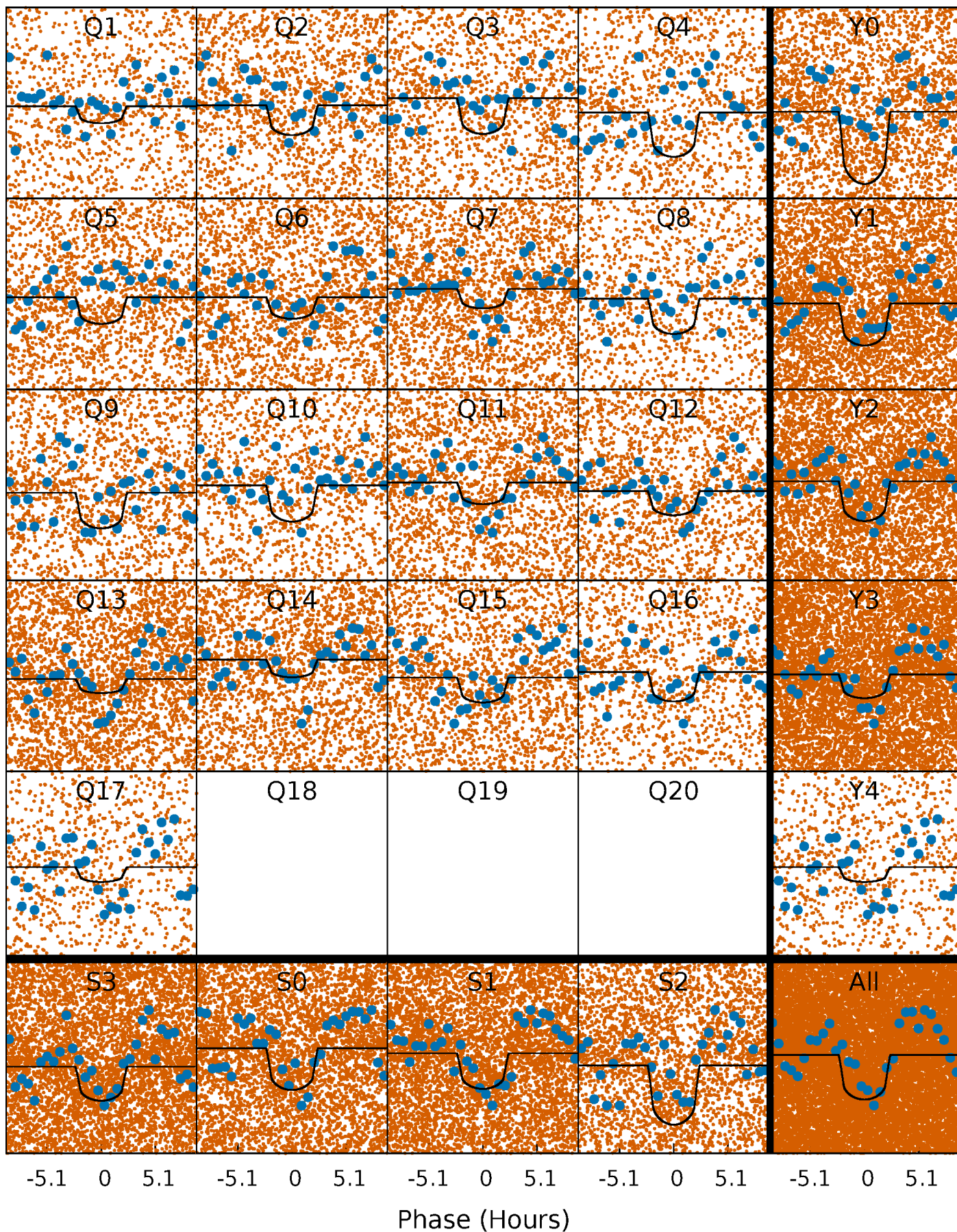
TCE 005904622-01 P= 0.656077 Days  $T_0=131.802020$  (BKJD)





# DV Quarter-Phased Transit Curves

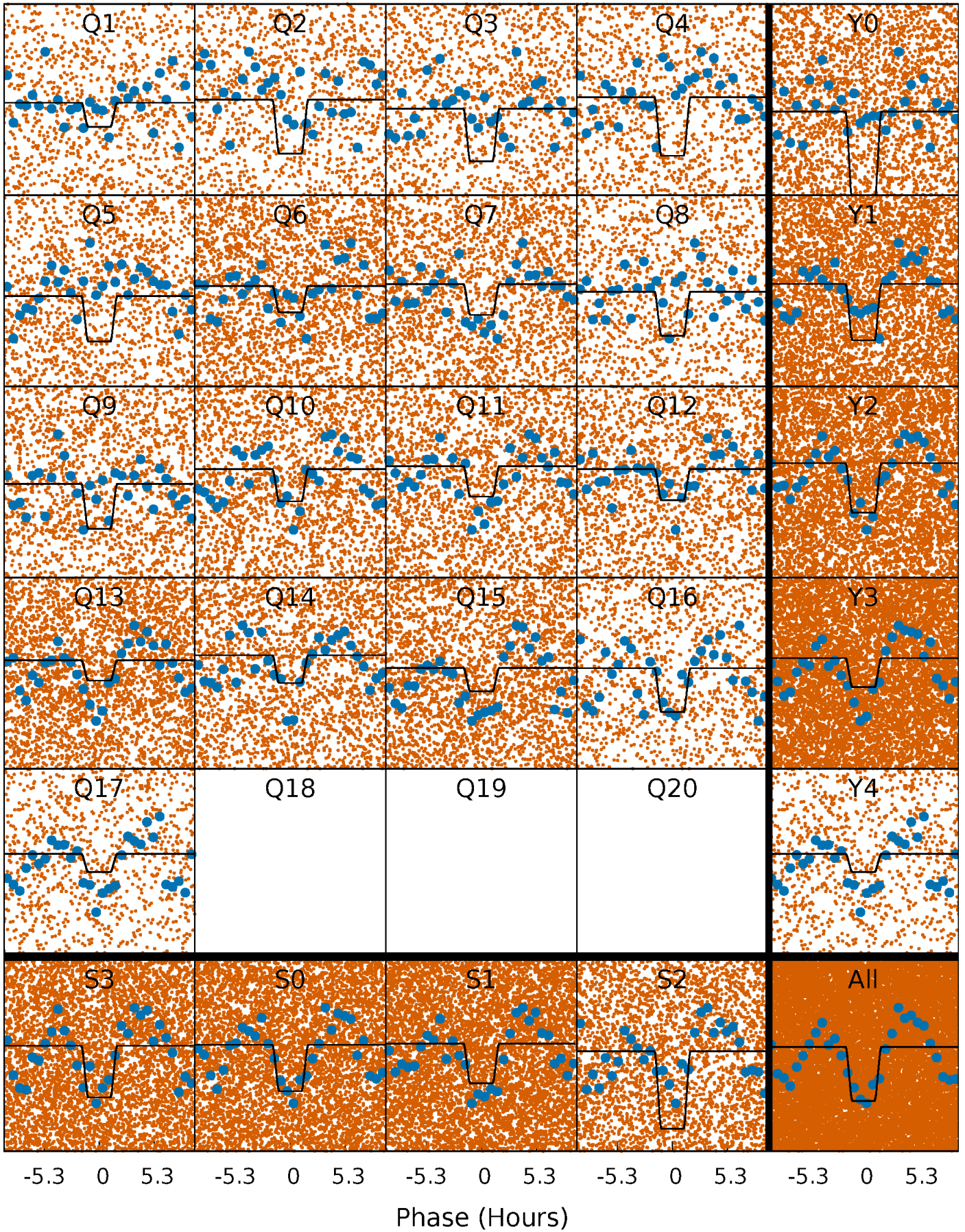
TCE 005904622-01 P= 0.656077 Days  $T_0=131.802020$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

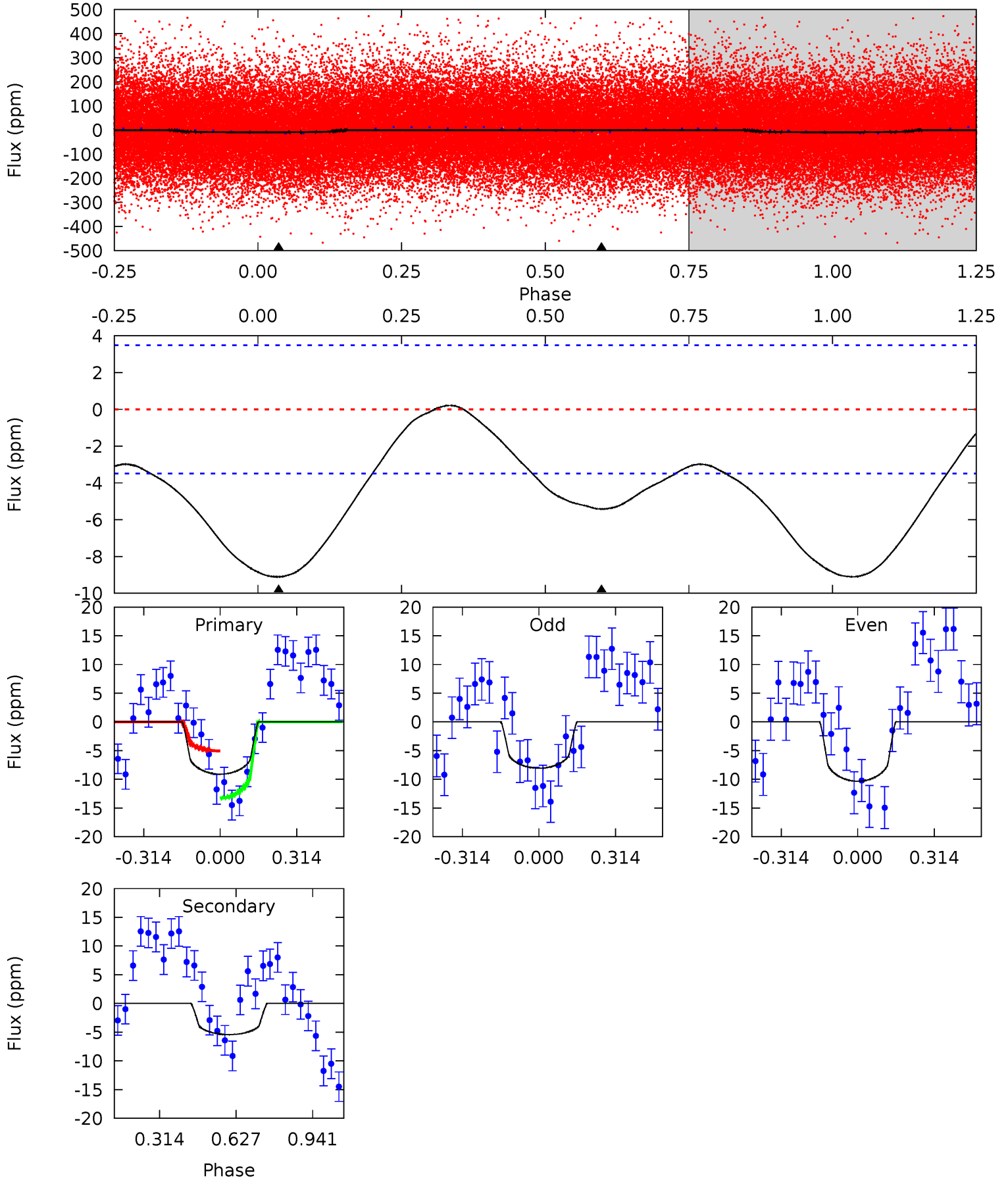
TCE 005904622-01 P= 0.656097 Days  $T_0=131.802250$  (BKJD)



# DV Model-Shift Uniqueness Test

005904622-01, P = 0.656077 Days, E = 131.145943 Days

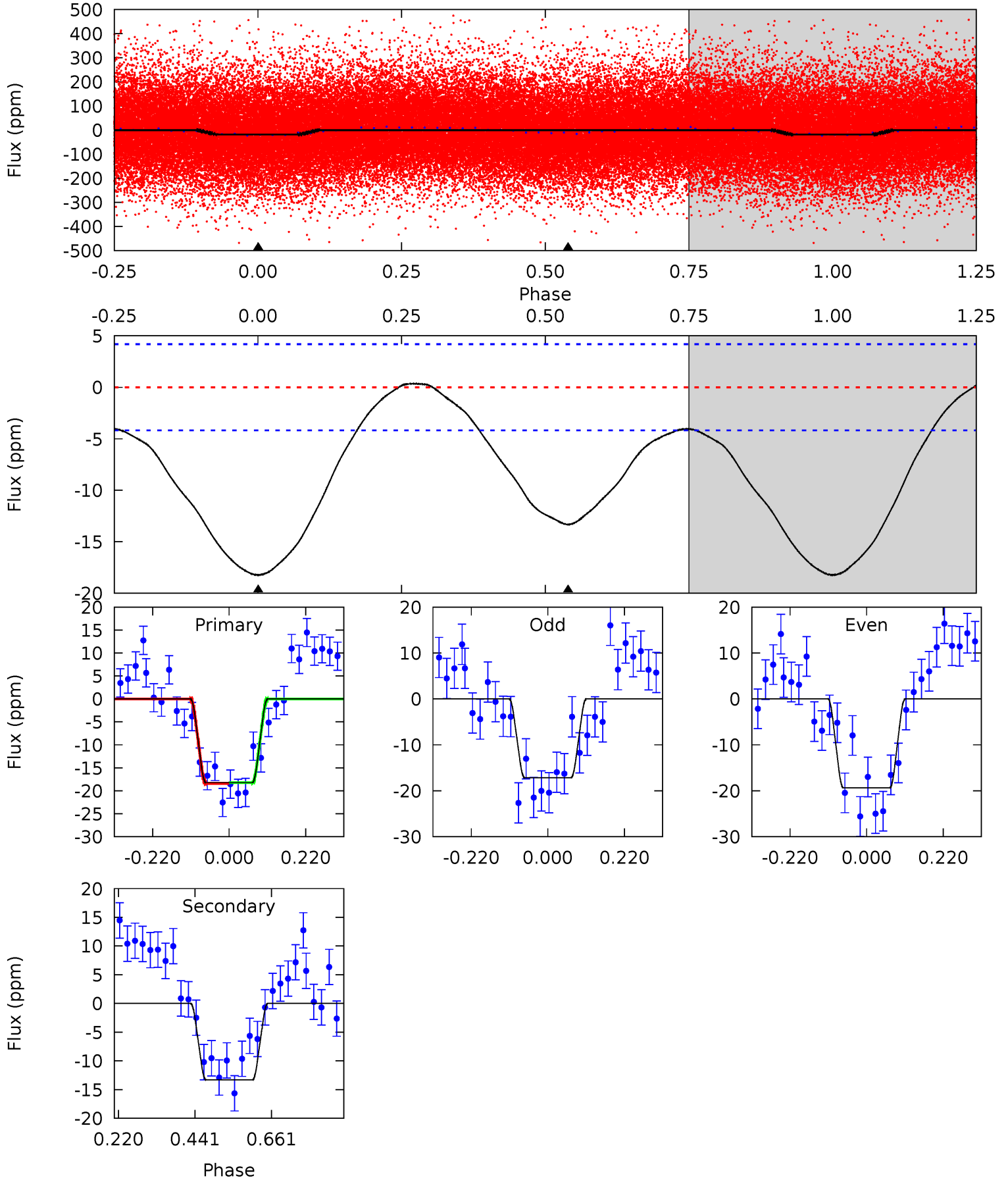
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	6.71	0	0	4.32	1.01	0.32	11.3	11.3	6.71	6.71	1.40	0.96	0.02	5.10



# Alt Model-Shift Uniqueness Test

005904622-01, P = 0.656097 Days, E = 131.146153 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
19.1	14.0	0	0	4.40	1.23	1.76	19.1	19.1	14.0	14.0	1.16	0.99	0.02	0.08





### Stellar Parameters For KIC 005904622

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5446^{+98}_{-98}$	$3.566^{+0.102}_{-0.189}$	$-1.280^{+0.350}_{-0.300}$	$2.393^{+0.693}_{-0.247}$	$0.768^{+0.112}_{-0.012}$	$0.079^{+0.028}_{-0.040}$
	+2%/-2%	+3%/-5%	+27%/-23%	+29%/-10%	+15%/-2%	+36%/-51%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005904622-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-5 \pm 1$	$1.06^{+0.65}_{-0.58}$	$4482^{+339}_{-187}$	$3711^{+2314}_{-7089}$	$0.496^{+1.960}_{-0.302}$
Alt.	$-13 \pm 1$	$1.23^{+0.70}_{-0.63}$	$4493^{+303}_{-204}$	$4558^{+2304}_{-1371}$	$0.907^{+2.943}_{-0.540}$

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

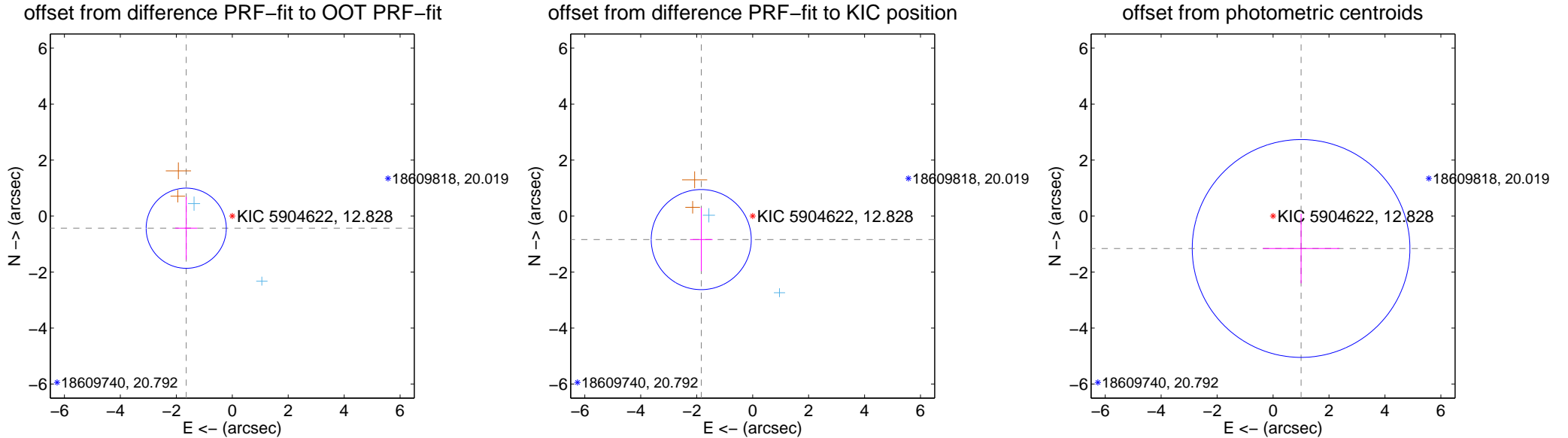
## DV Centroid Data

Supplemental centroid analysis for 005904622-01. Kepler magnitude: 12.83. Transit SNR 11.53

There are 2 quarters with good PRF difference image offsets

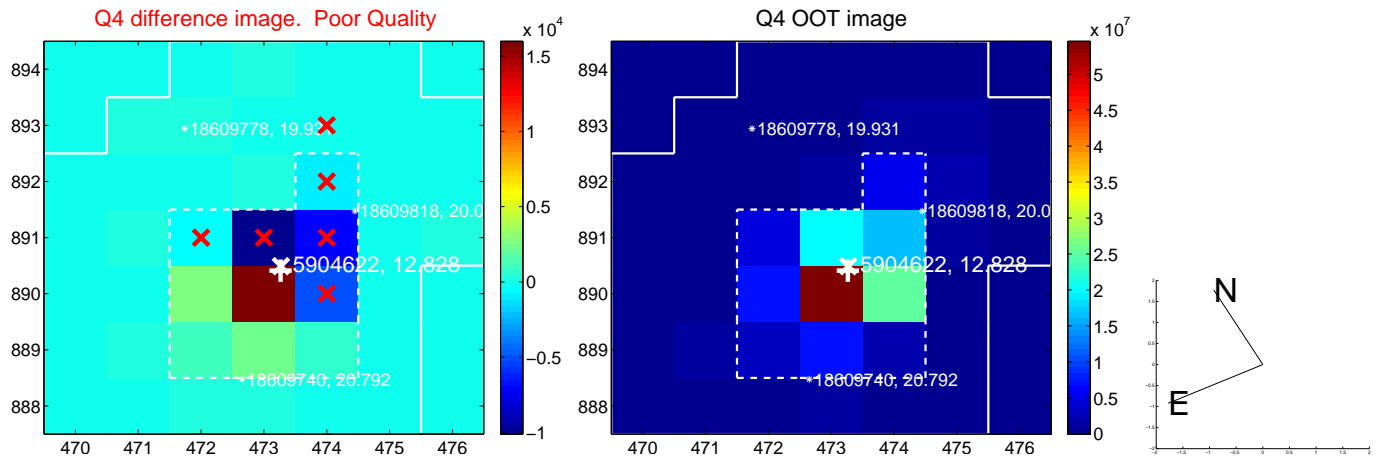
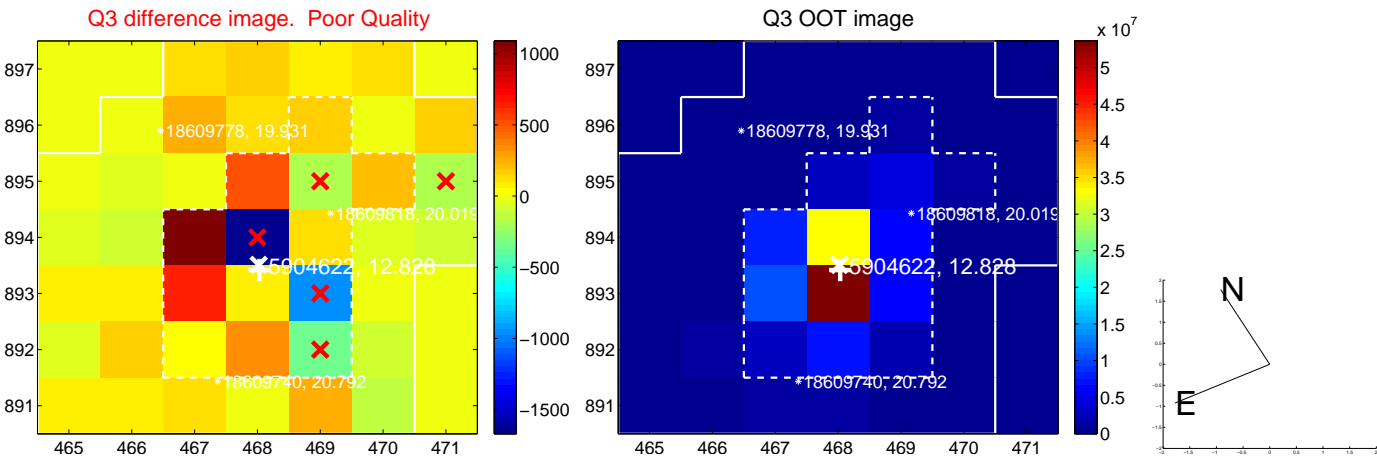
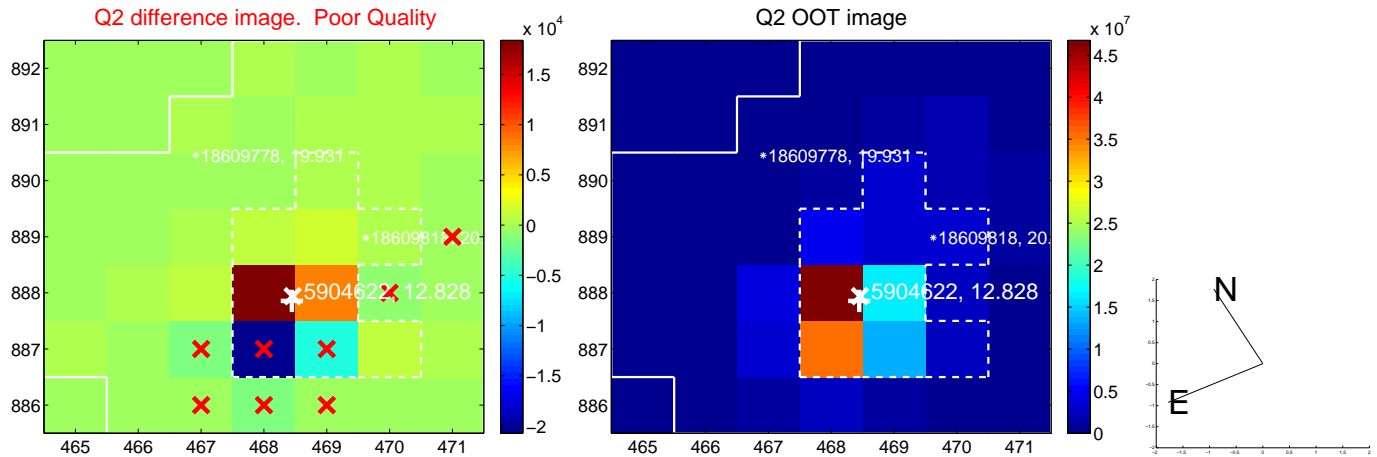
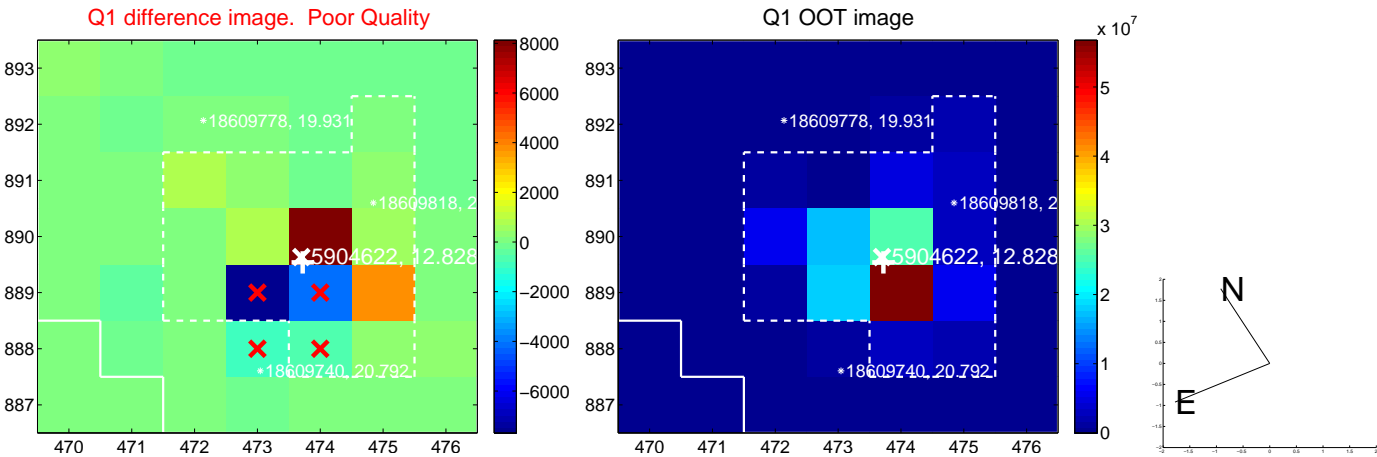
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.702 \pm 0.477$	3.57	$1.646 \pm 0.395$	$-0.434 \pm 1.122$
PRF-fit source offset from KIC position	$2.021 \pm 0.596$	3.39	$1.838 \pm 0.403$	$-0.840 \pm 1.130$
photometric centroid source offset	$1.53 \pm 1.30$	1.18	$-1.00 \pm 1.37$	$-1.16 \pm 1.24$

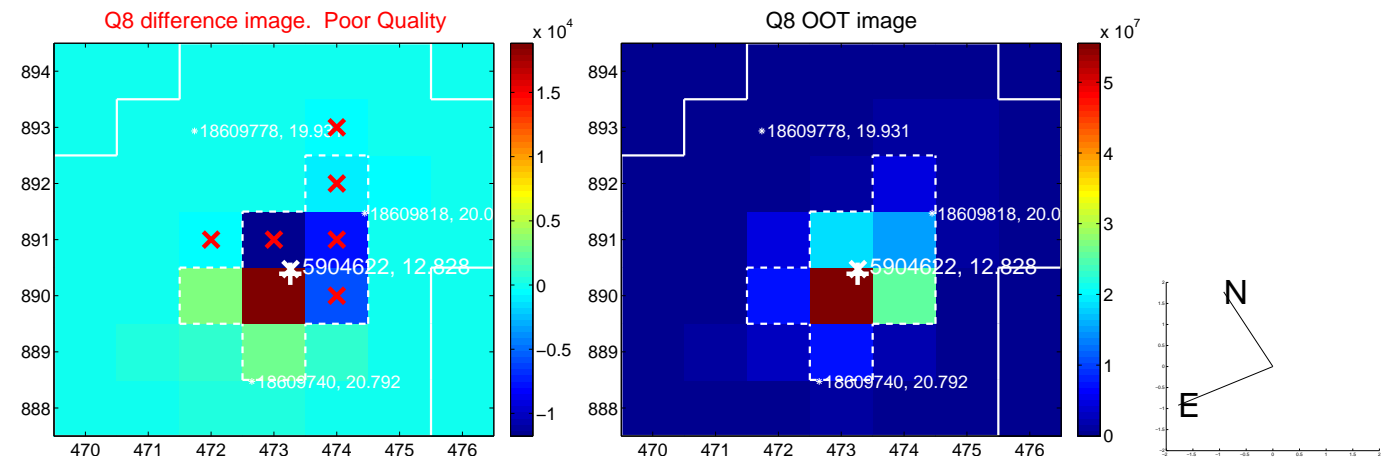
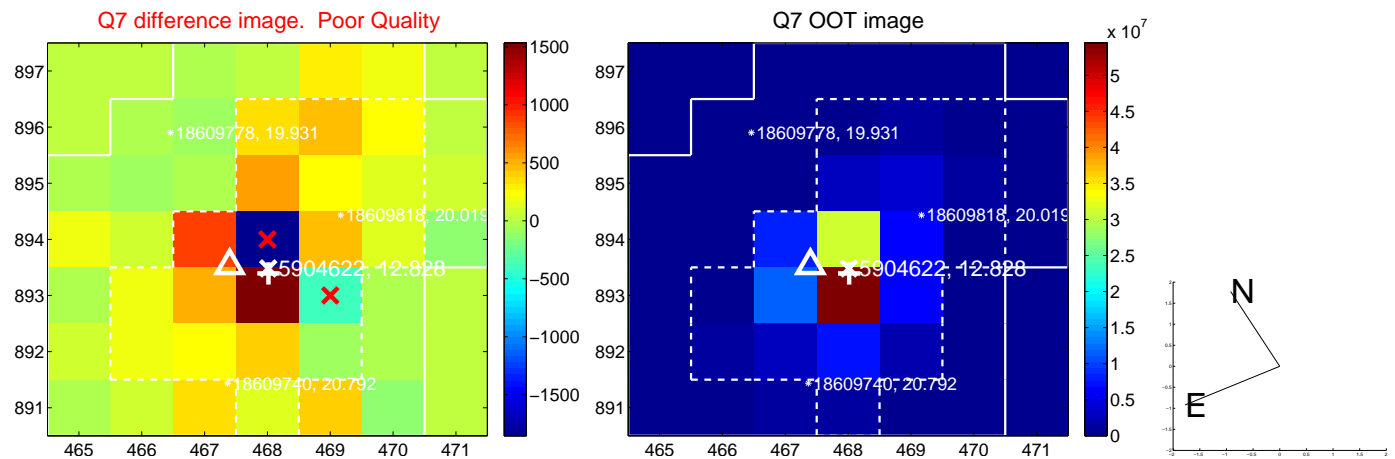
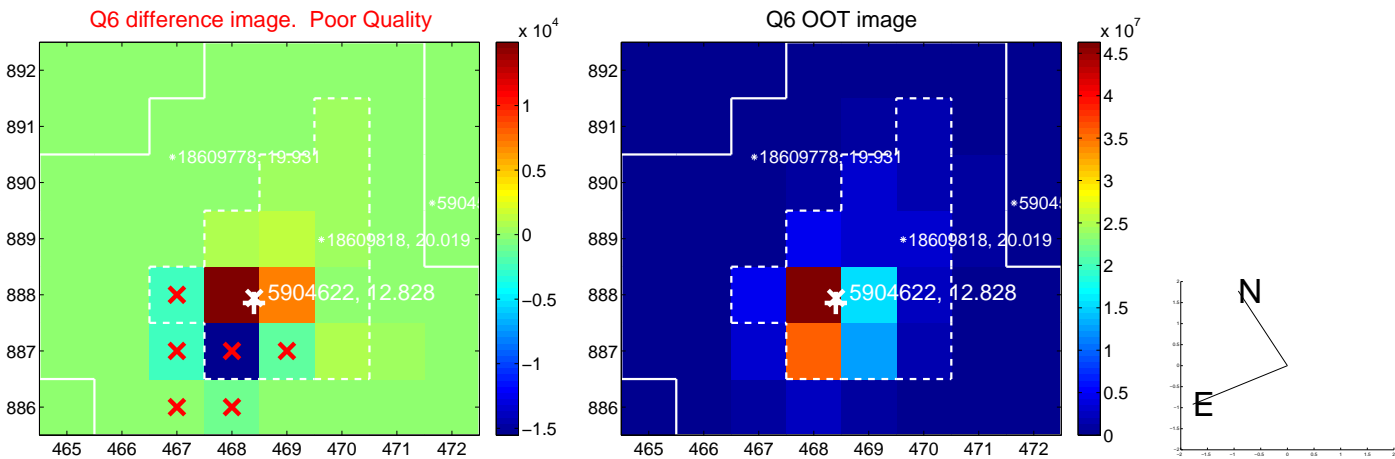
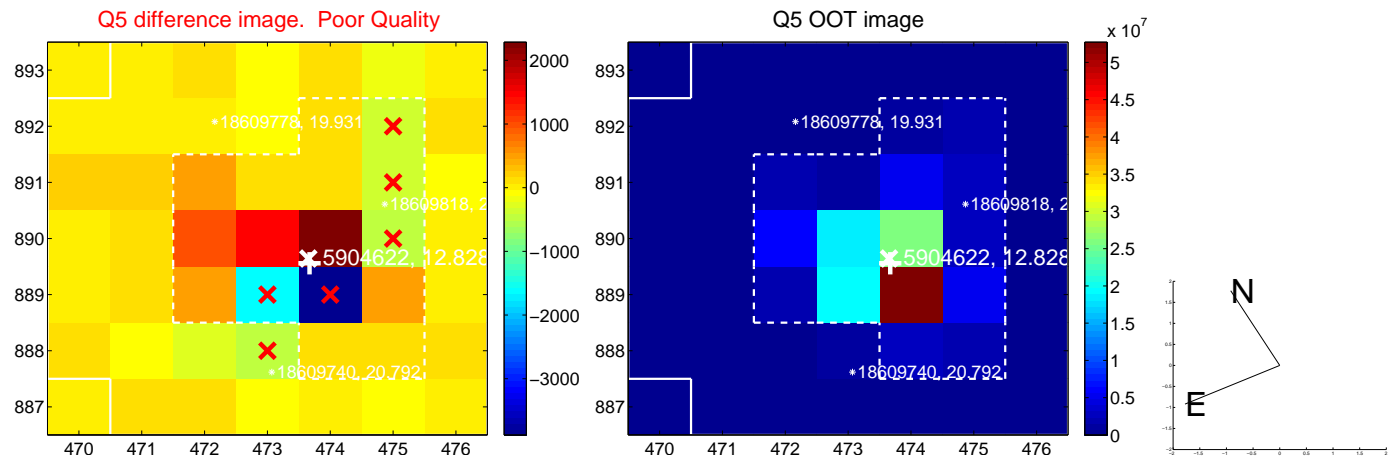


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

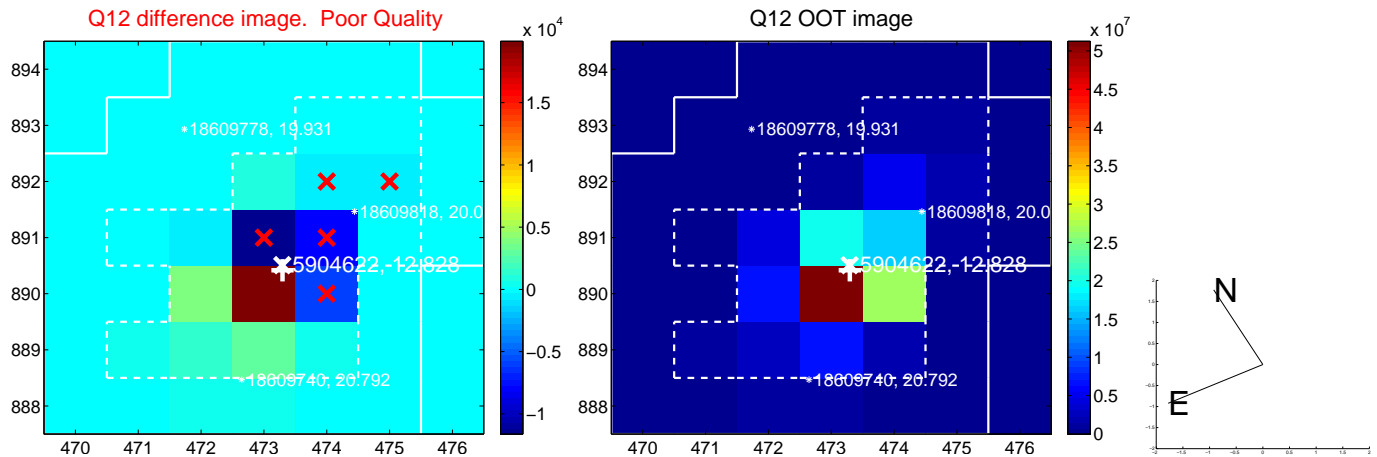
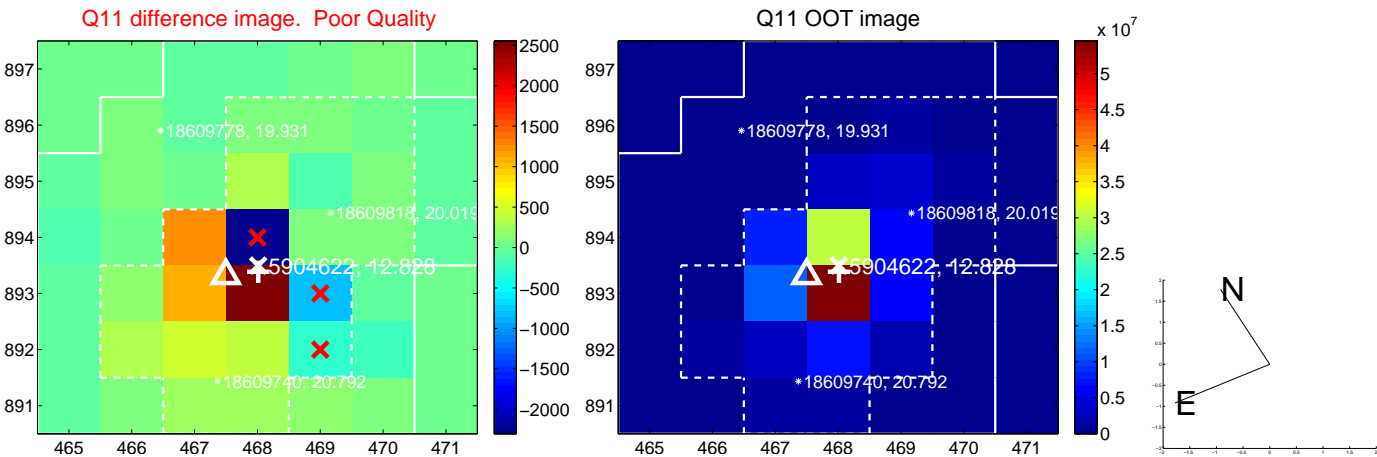
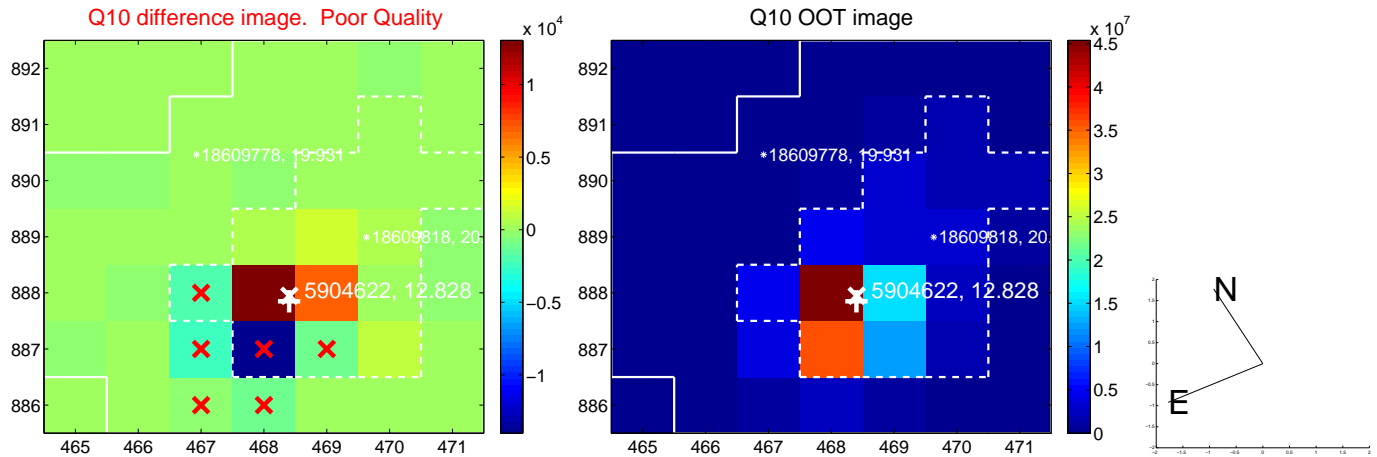
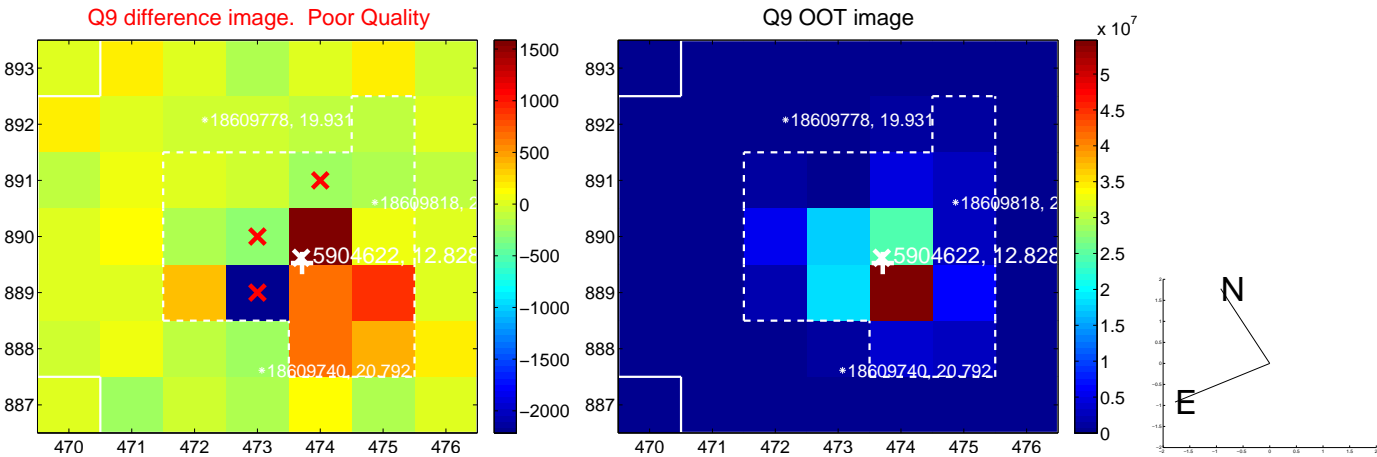


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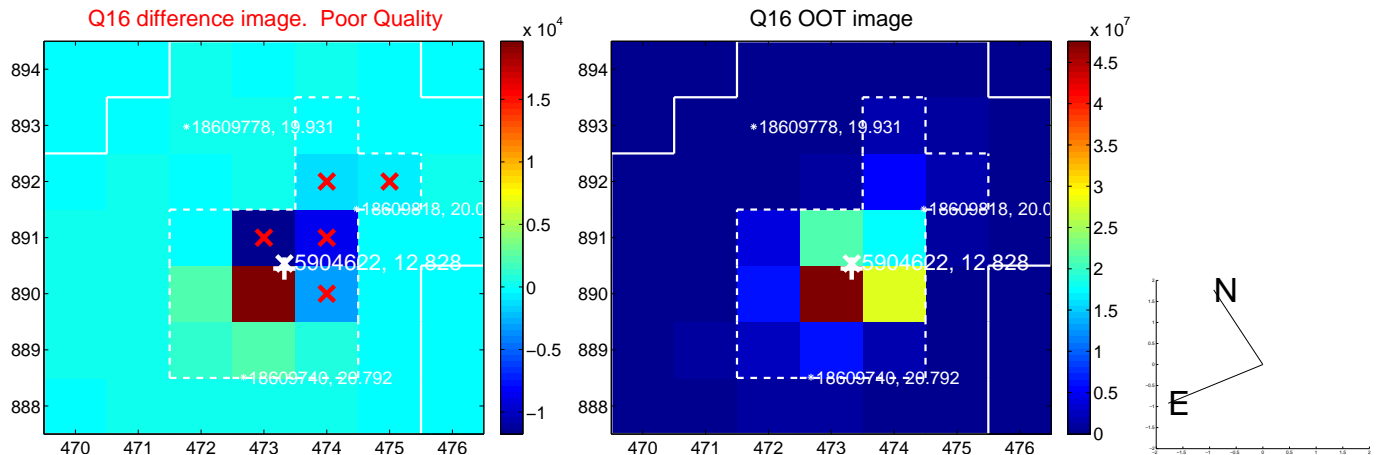
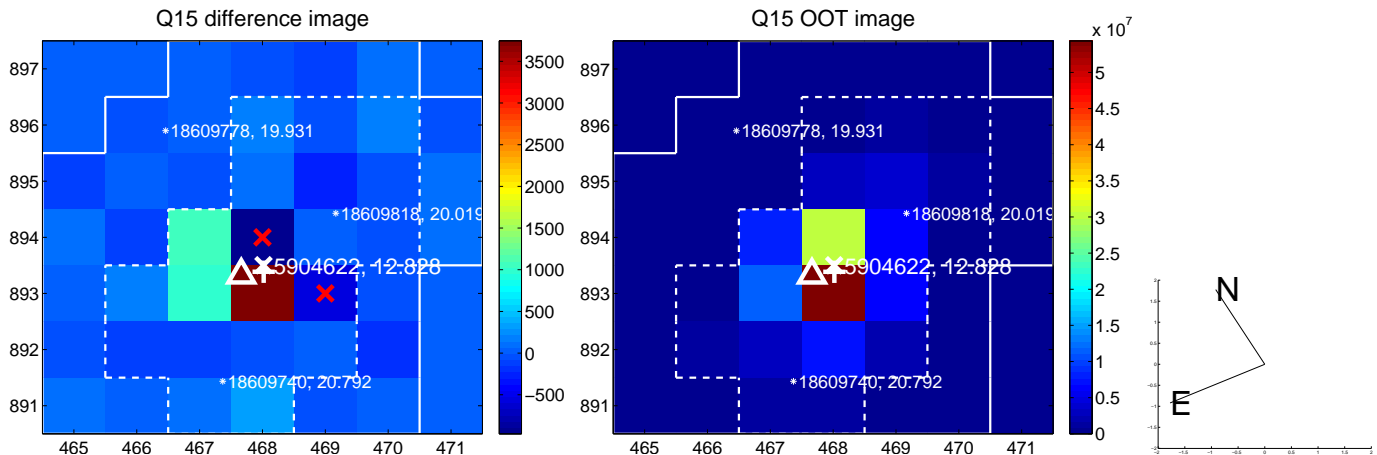
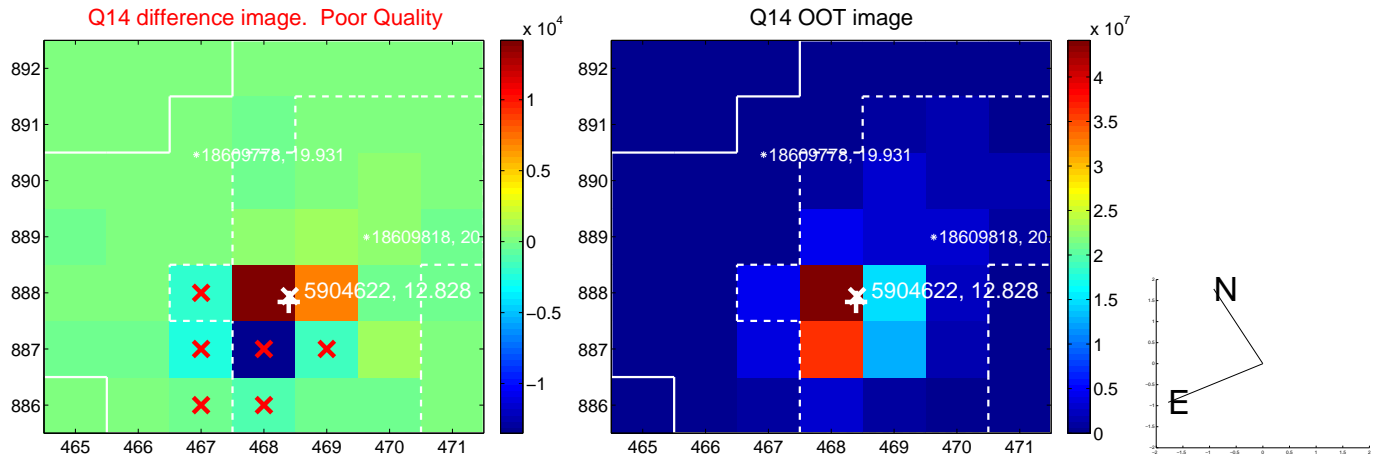
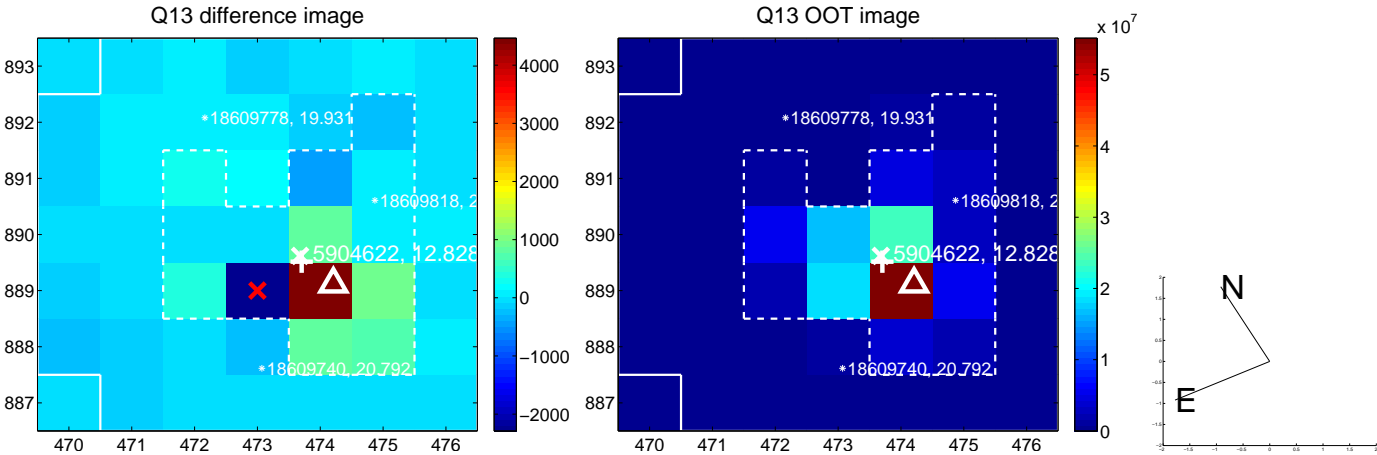




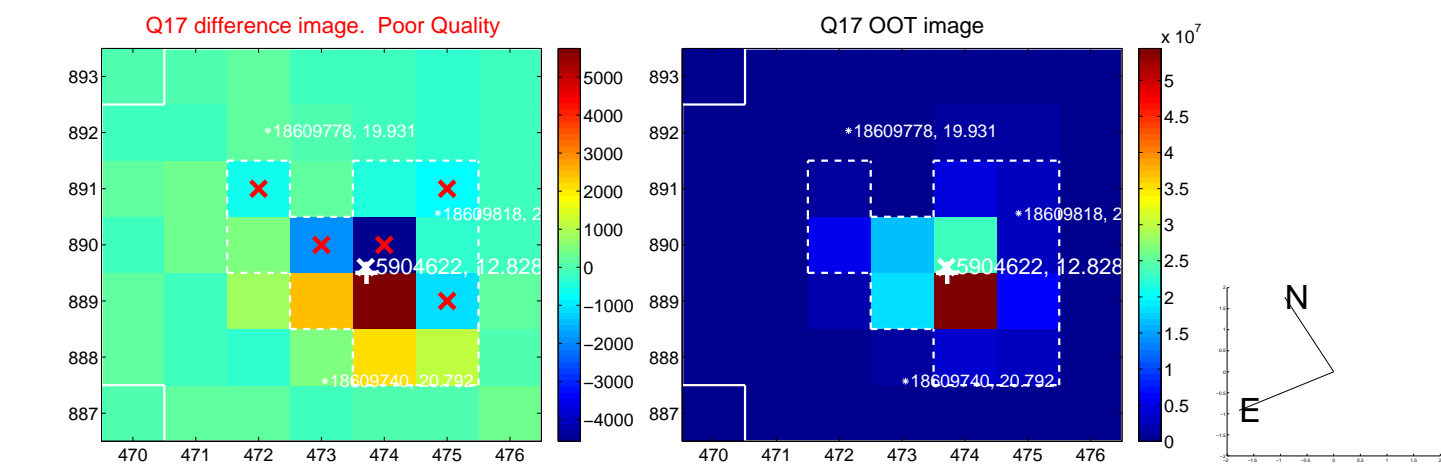
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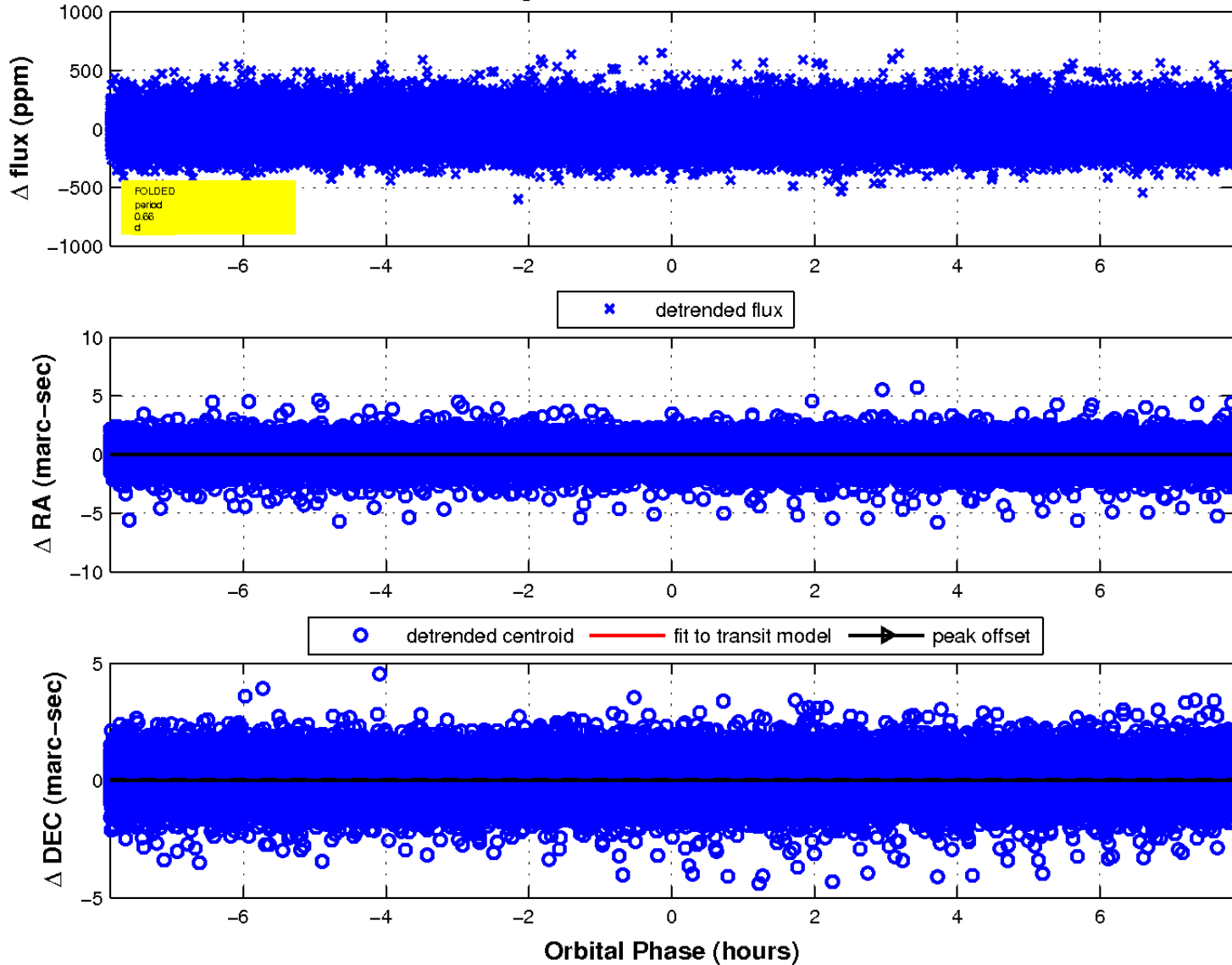
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

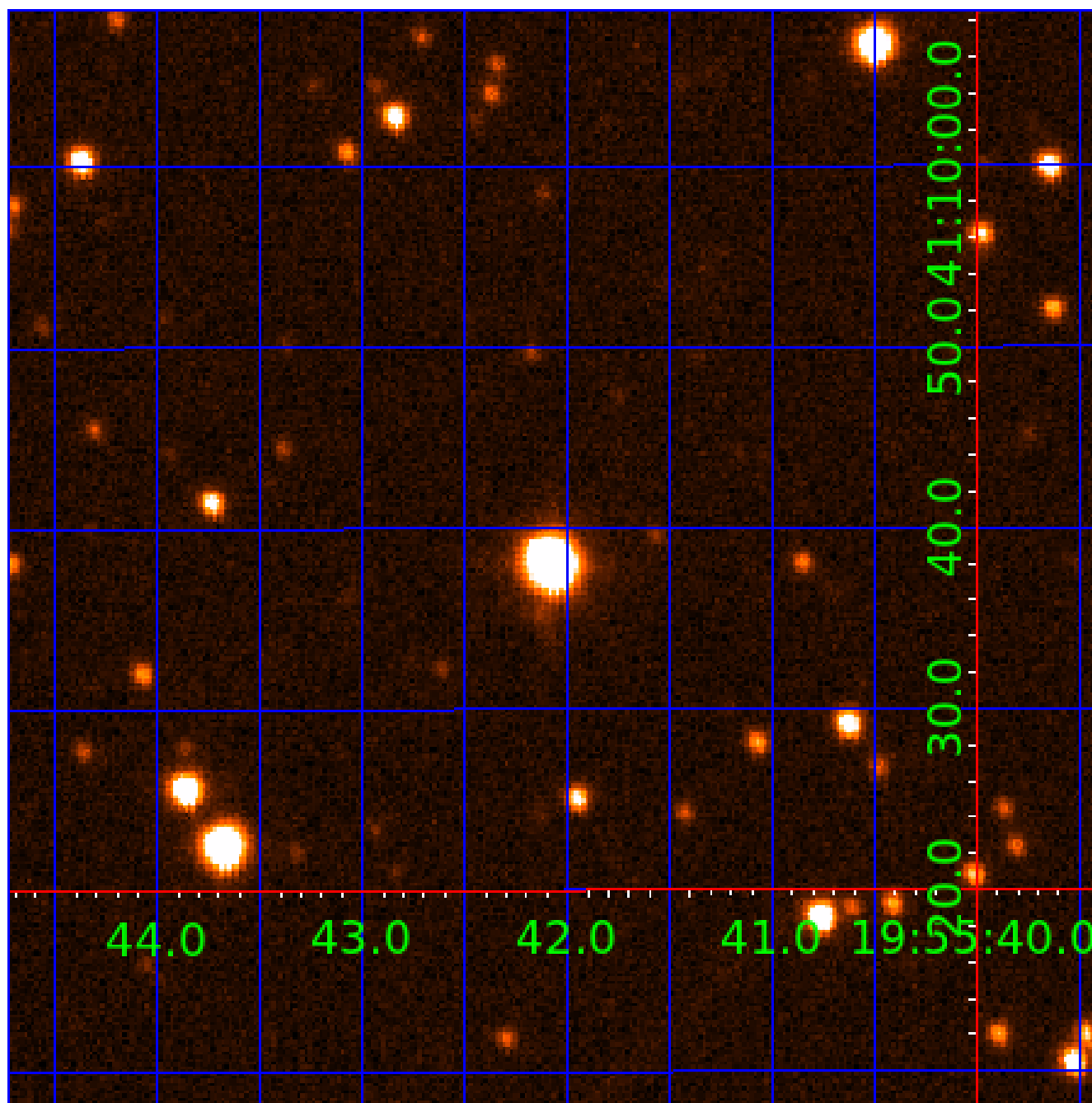


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination





# KIC 005904622

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005904622-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005904622-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

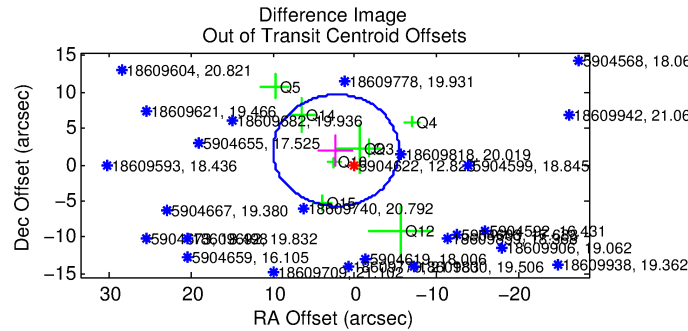
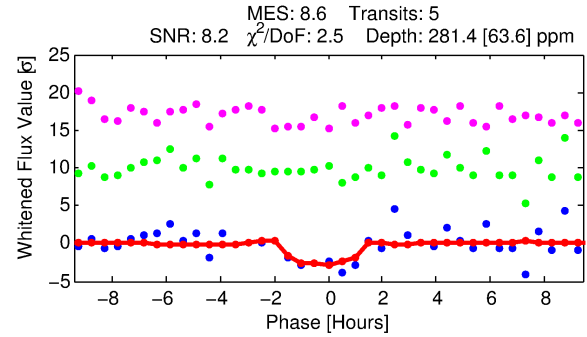
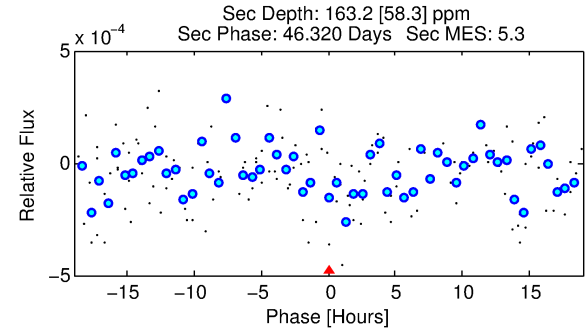
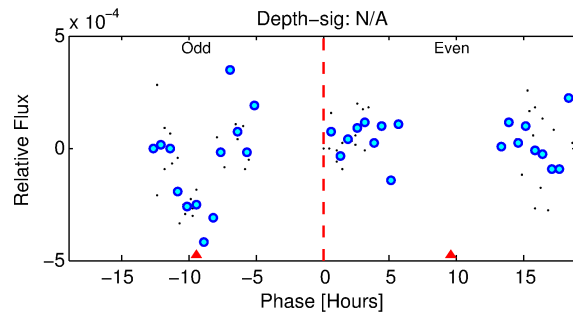
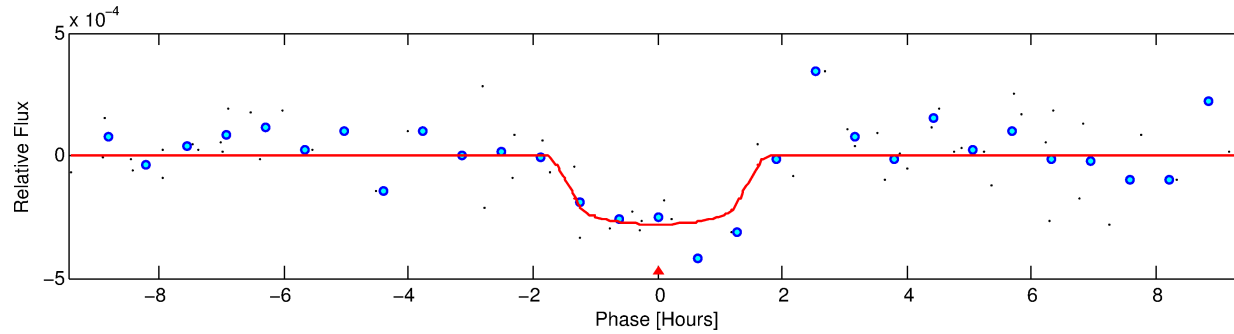
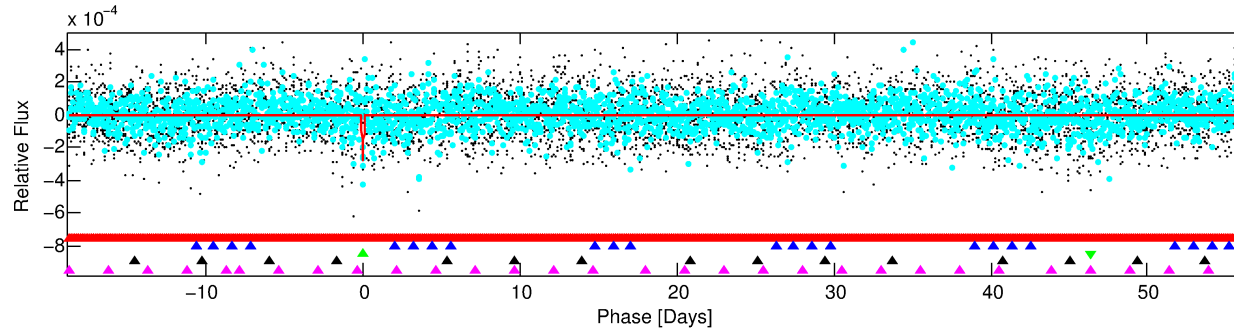
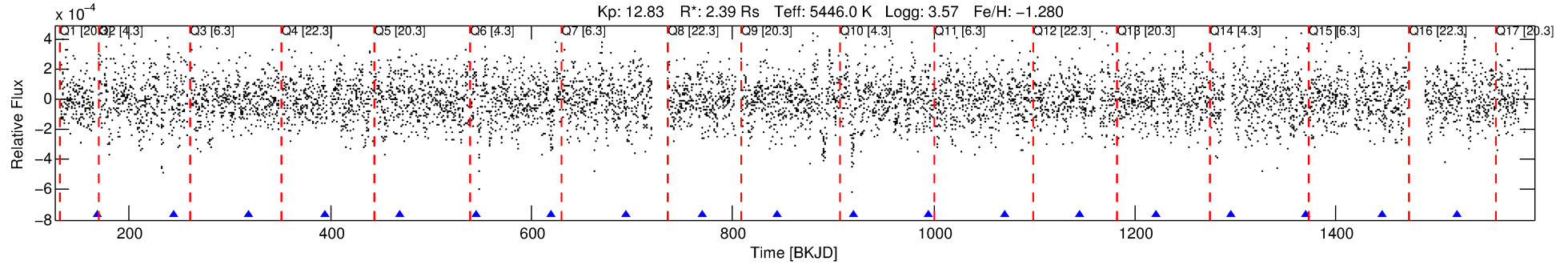
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005904622-03

No Significant Match Found

# DV One-Page Summary

KIC: 5904622 Candidate: 3 of 5 Period: 75.104 d



## DV Fit Results:

Period = 75.10367 [0.00625] d  
Epoch = 169.0212 [0.0567] BKJD  
Rp/R\* = 0.0176 [0.0201]  
a/R\* = 99.17 [564.03]  
b = 0.86 [1.82]  
Seff = 44.29 [15.76]  
Teq = 658 [59] K  
Rp = 4.58 [5.42] Re  
a = 0.3192 [0.0771] AU  
Ag = 435.48 [1021.55] [0.43σ]  
Teffp = 4646 [2696] K [1.48σ]

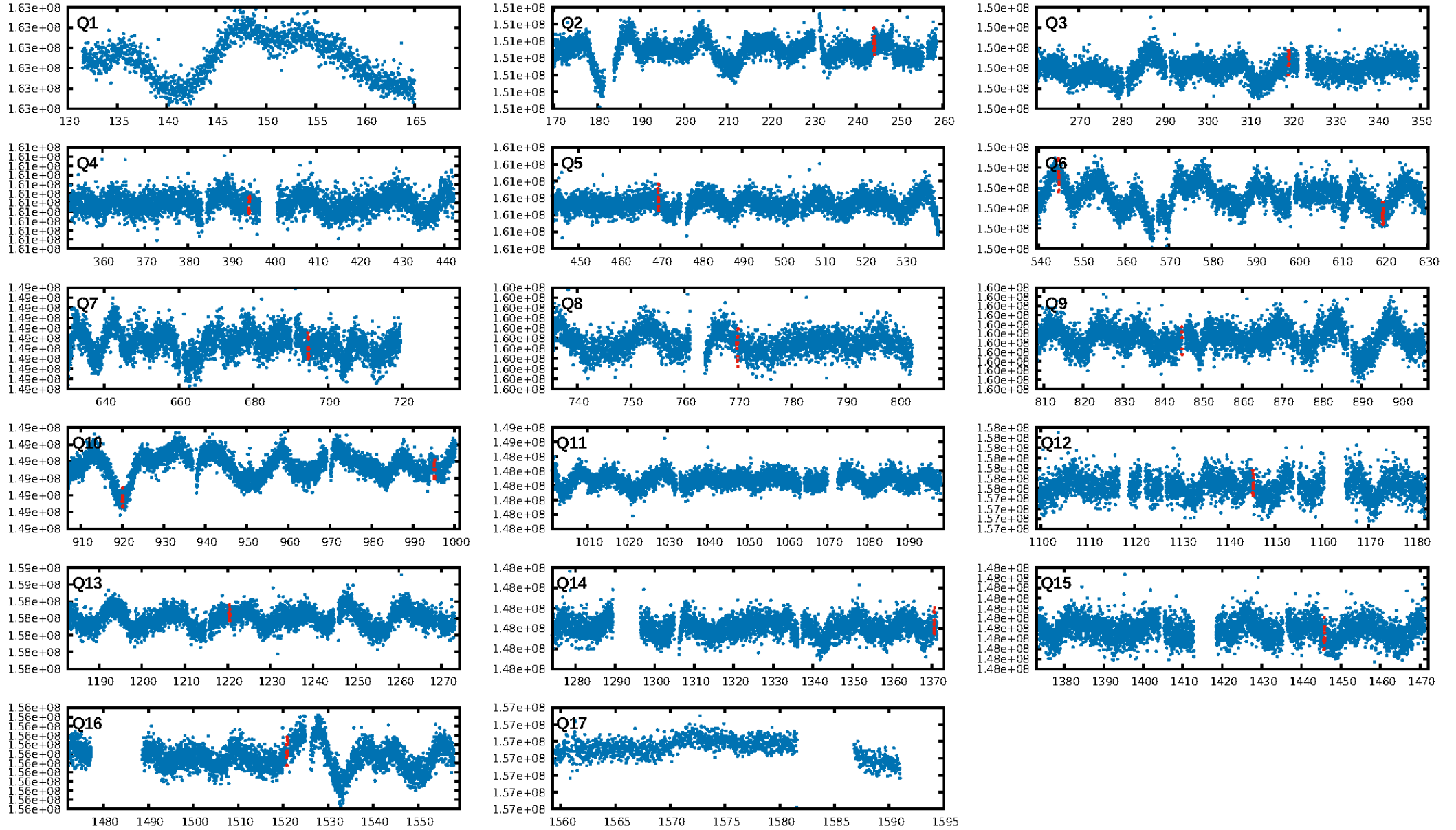
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.61σ]  
LongPeriod-sig: 100.0% [111.51σ]  
ModelChiSquare2-sig: 48.1%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.79e-08**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -0.4033  
Centroid-sig: 7.3%  
Centroid-so: 1.413 arcsec [1.56σ]  
OotOffset-rm: 3.048 arcsec [1.19σ]  
OotOffset-st: 3/2/2/1 [8]  
KicOffset-rm: 2.959 arcsec [1.69σ]  
KicOffset-st: 3/2/2/1 [8]  
DiffImageQuality-fgm: 0.00 [0/8]  
DiffImageOverlap-fno: 0.00 [0/12]

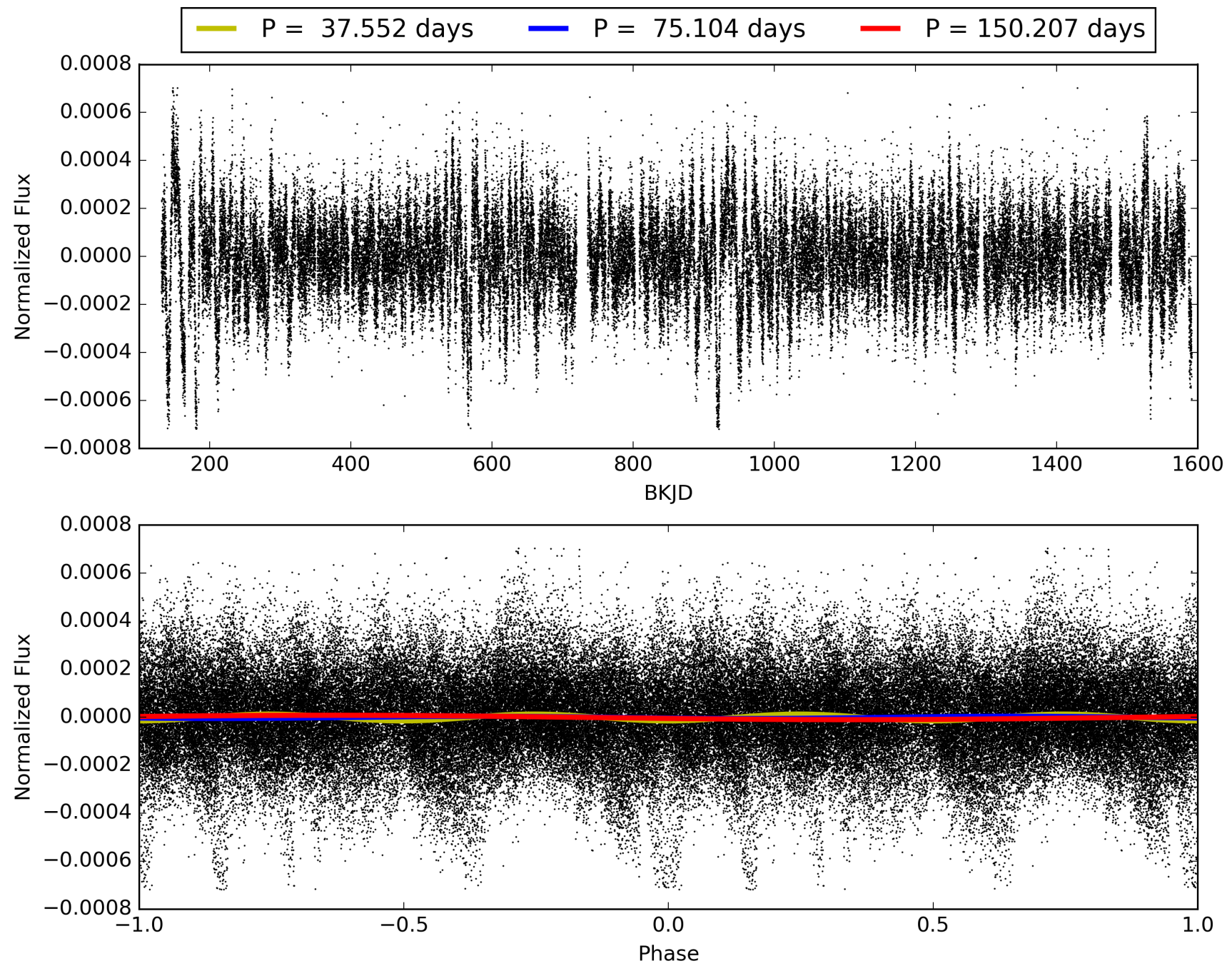
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:44:54 Z

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

# TCE 005904622-03, PDC Light Curves

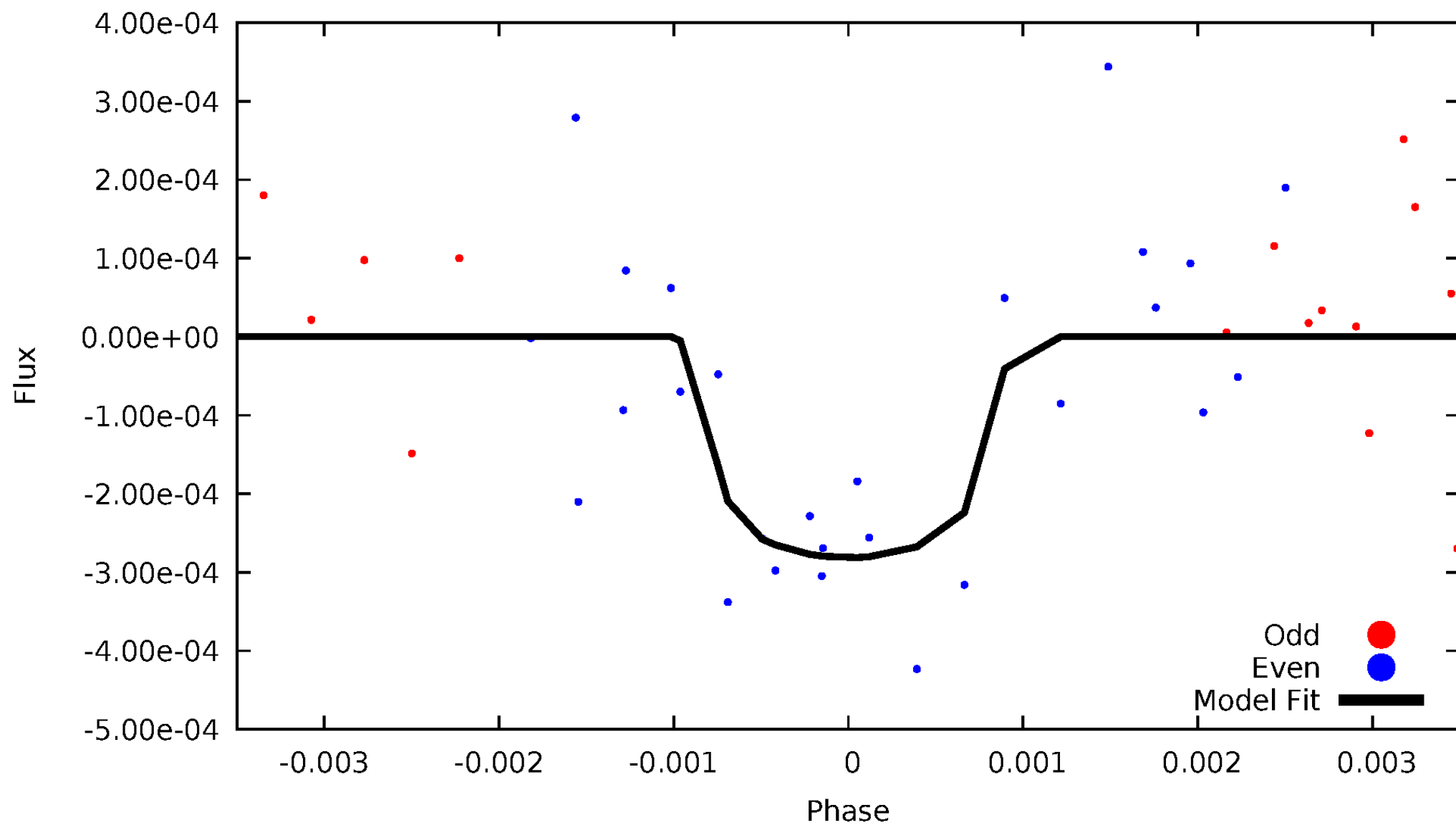


TCE 005904622-03



# DV Odd/Even

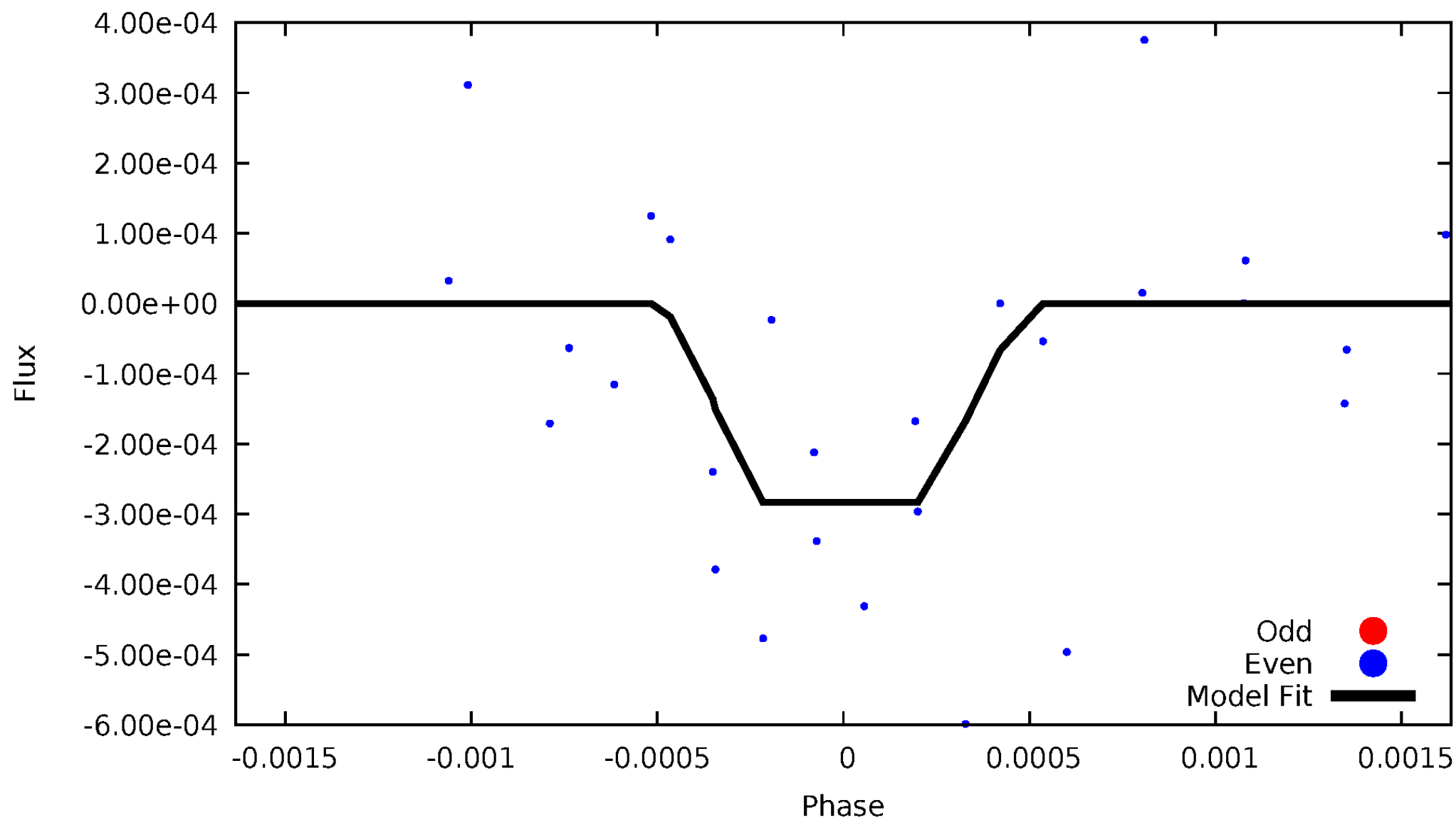
TCE 005904622-03





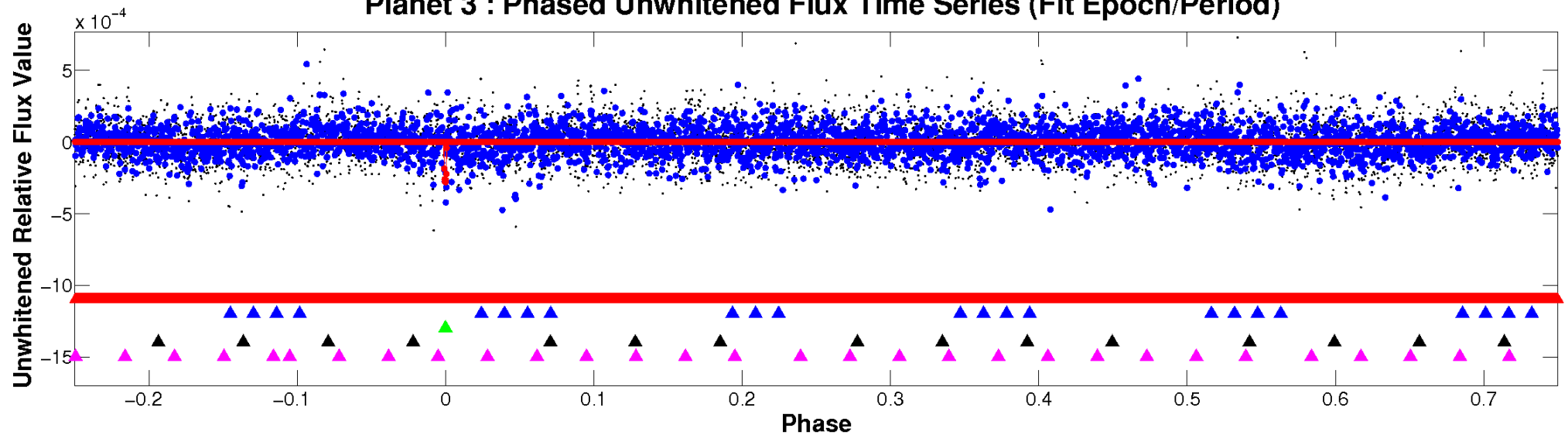
# ALT Odd/Even

TCE 005904622-03

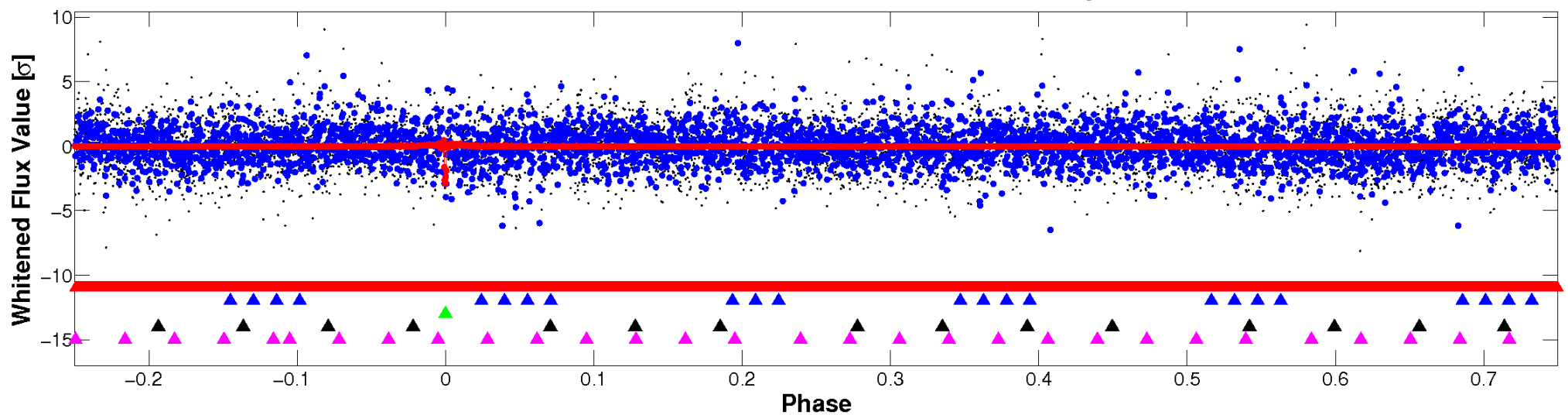


# Non-Whitened Vs. Whitened Light Curve

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

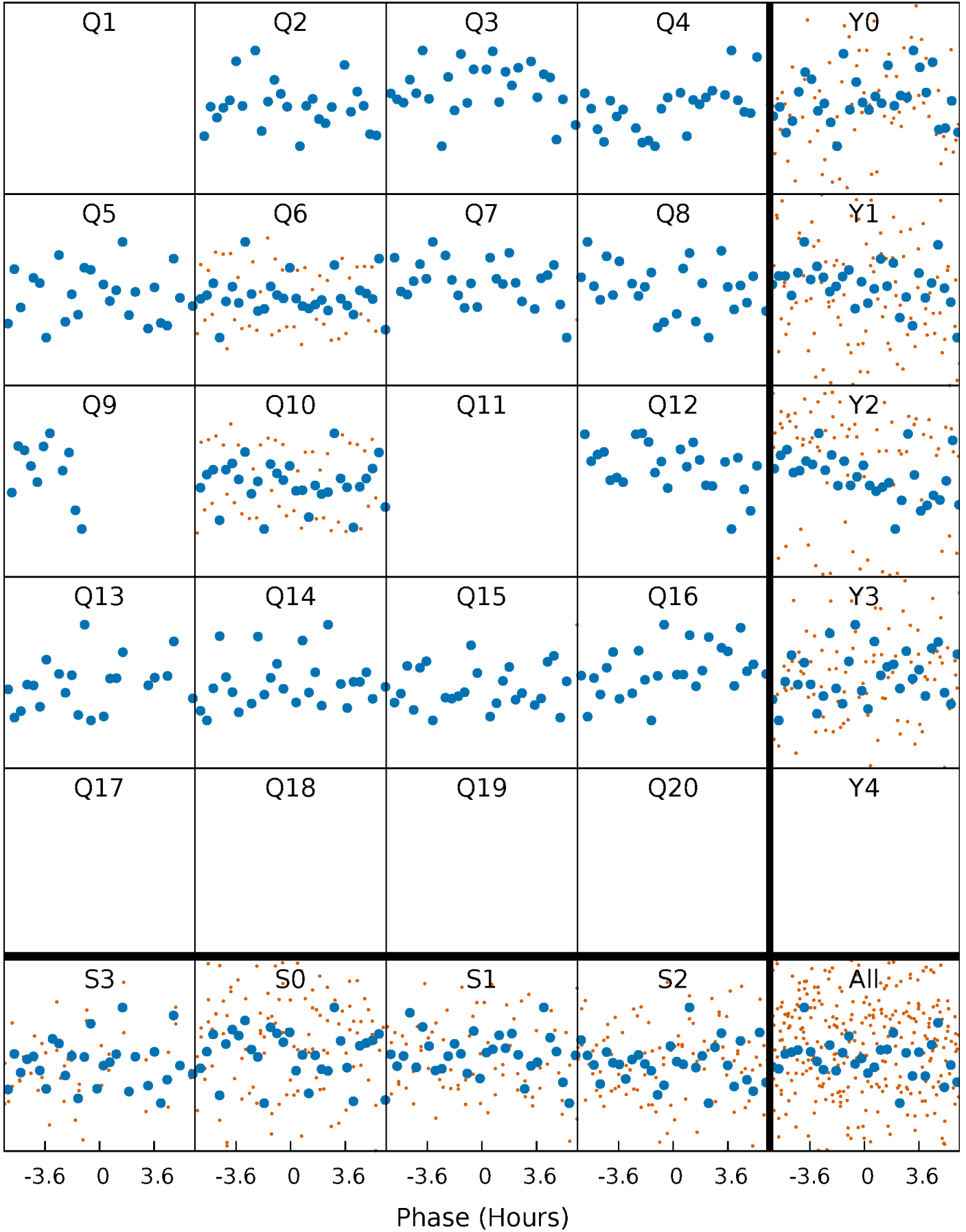


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



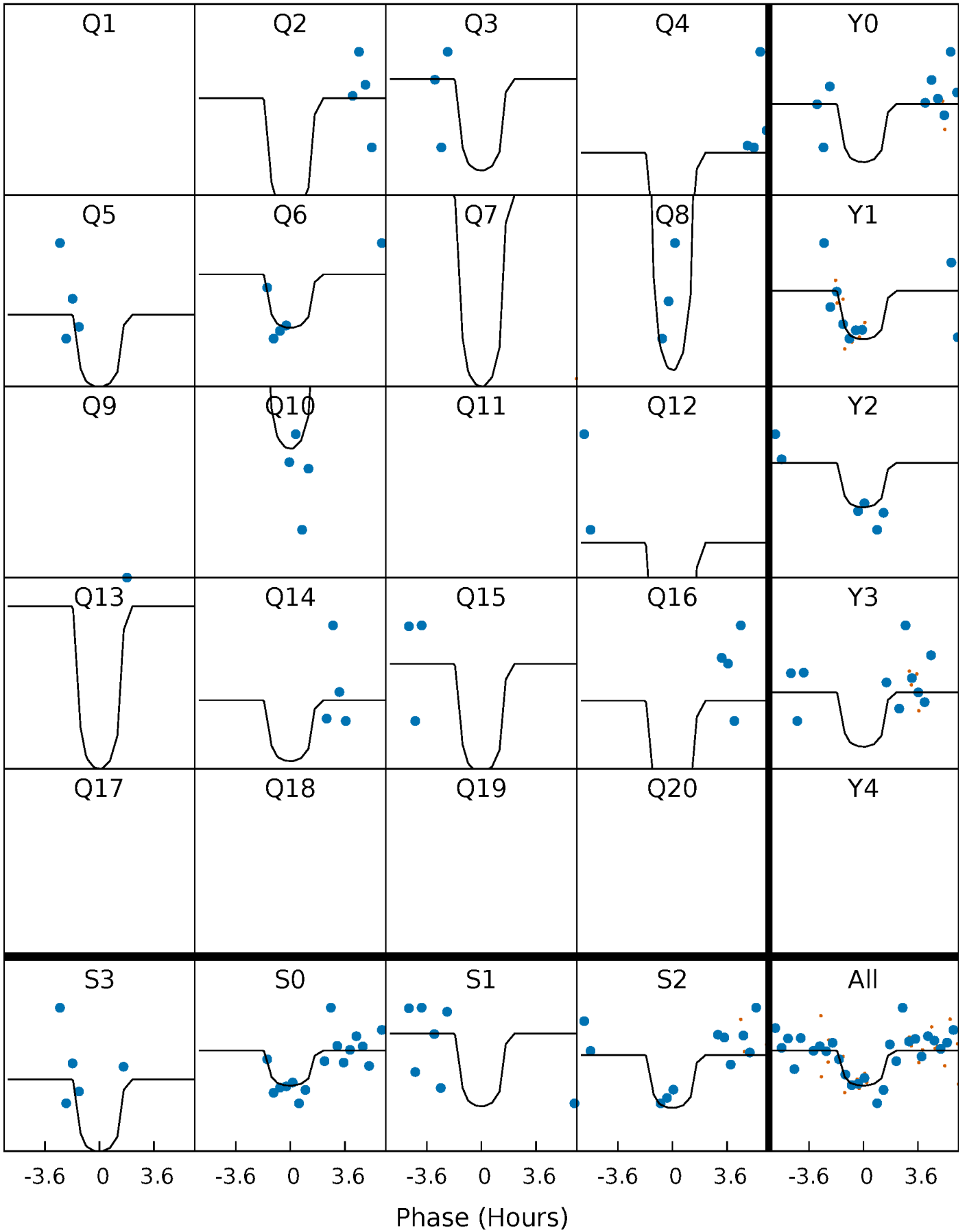
# PDC Quarter-Phased Transit Curves

TCE 005904622-03   P= 75.103668 Days    $T_0=169.021229$  (BKJD)



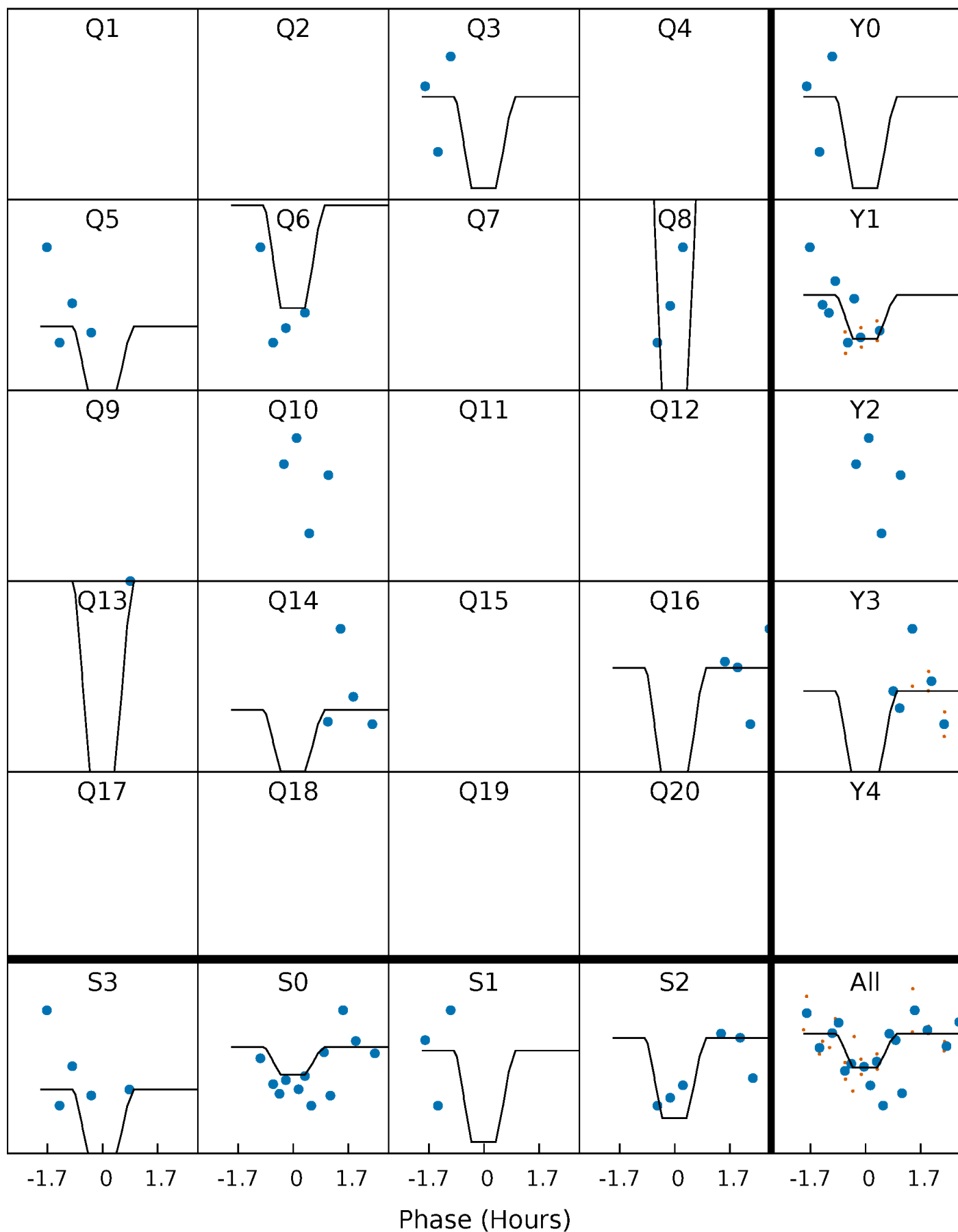
# DV Quarter-Phased Transit Curves

TCE 005904622-03 P= 75.103668 Days  $T_0=169.021229$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005904622-03 P= 75.111369 Days  $T_0=168.949005$  (BKJD)

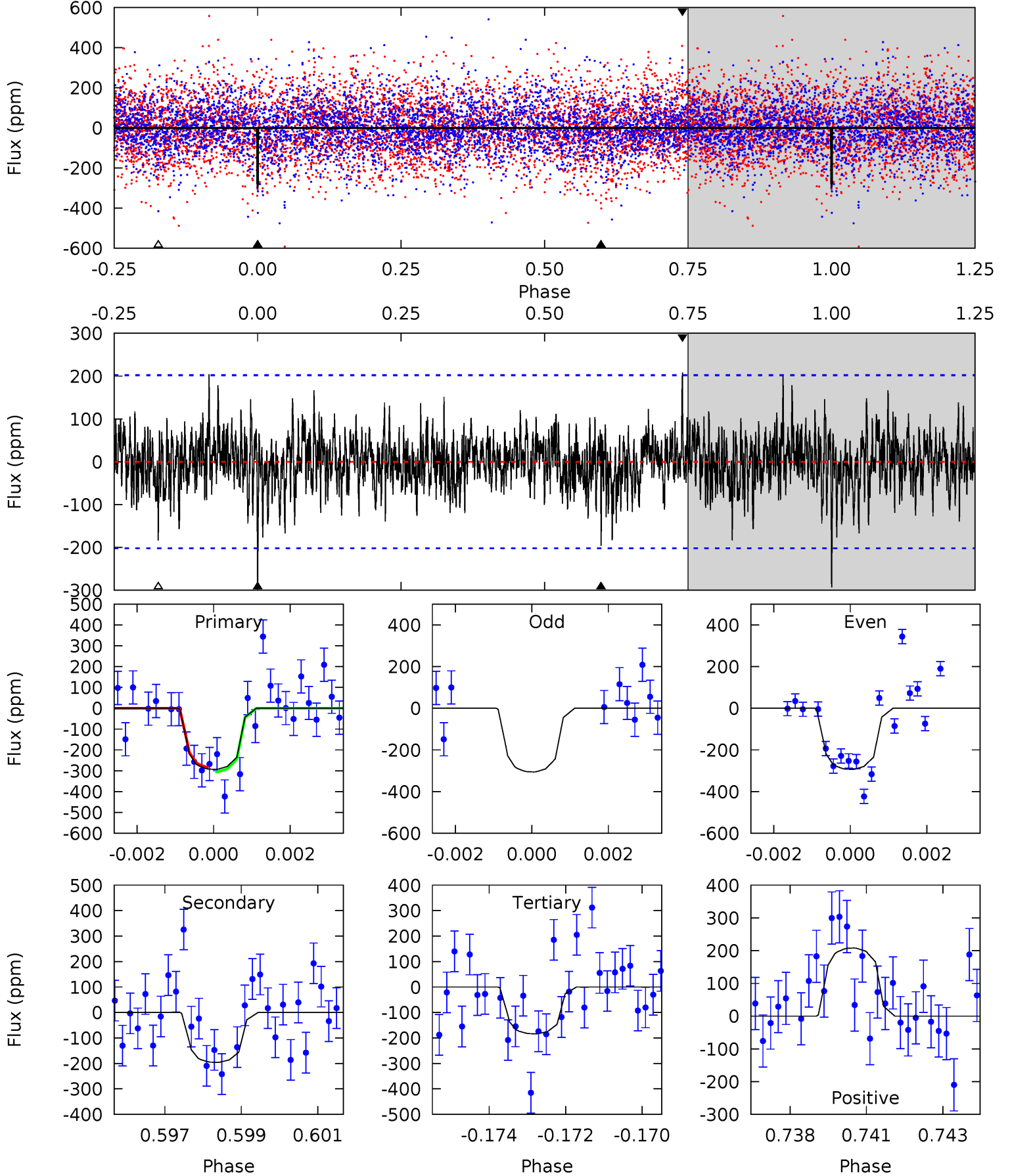




# DV Model-Shift Uniqueness Test

005904622-03, P = 75.103668 Days, E = 93.917561 Days

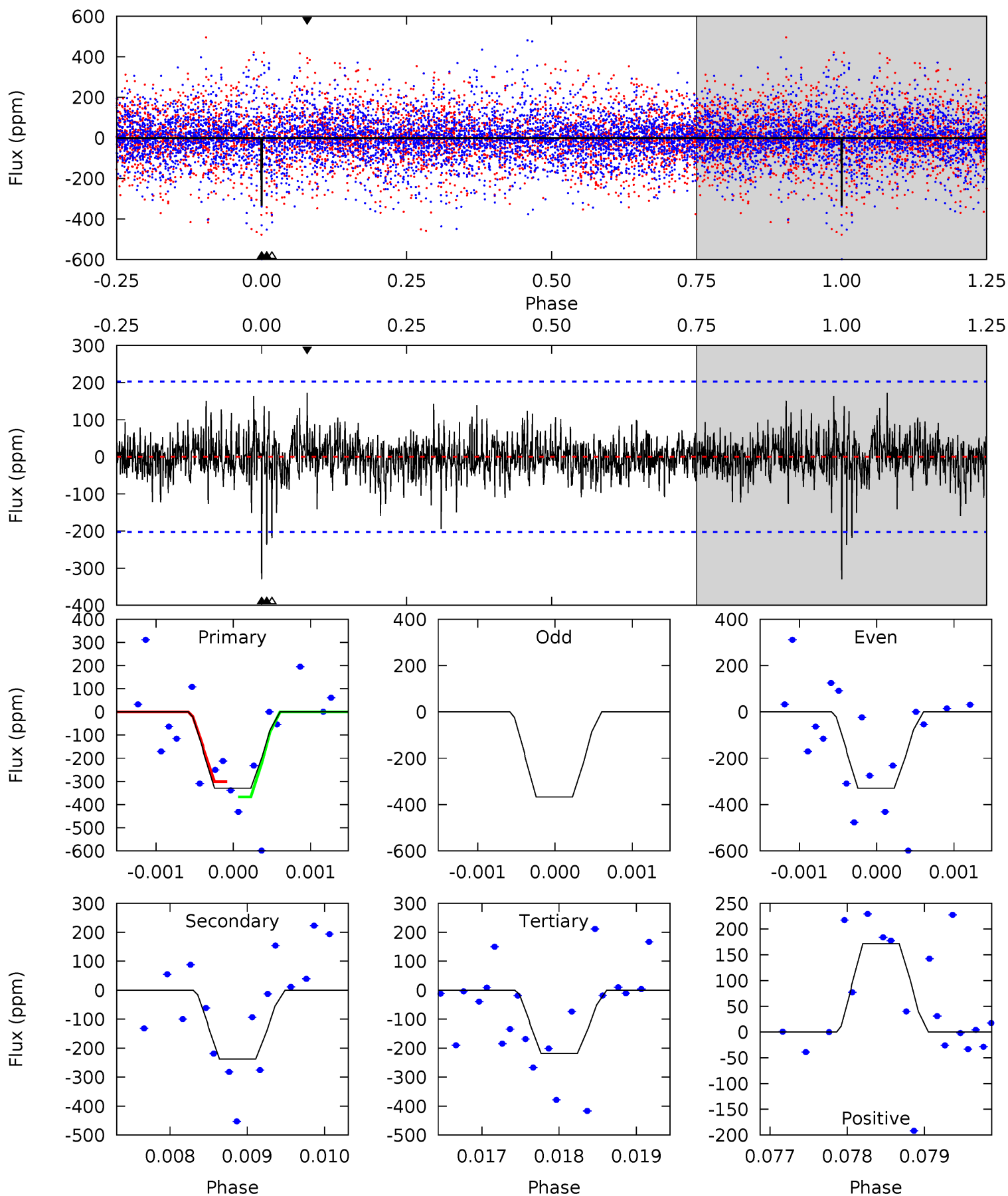
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.72	5.15	4.84	5.47	5.31	3.06	1.34	2.88	2.25	0.32	-0.32	0.17	0.91	0.41	0.28



# Alt Model-Shift Uniqueness Test

005904622-03, P = 75.111369 Days, E = 93.837636 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.89	6.41	5.89	4.63	5.47	3.32	1.14	3.00	4.26	0.51	1.77	0.53	0.97	0.34	0.87



### Stellar Parameters For KIC 005904622

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5446^{+98}_{-98}$	$3.566^{+0.102}_{-0.189}$	$-1.280^{+0.350}_{-0.300}$	$2.393^{+0.693}_{-0.247}$	$0.768^{+0.112}_{-0.012}$	$0.079^{+0.028}_{-0.040}$
	+2%/-2%	+3%/-5%	+27%/-23%	+29%/-10%	+15%/-2%	+36%/-51%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005904622-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-196 \pm 38$	$5.96^{+4.76}_{-3.80}$	$922^{+64}_{-39}$	$4473^{+2725}_{-841}$	$307^{+1925}_{-211}$
Alt.	$-237 \pm 37$	$5.73^{+4.87}_{-3.76}$	$919^{+65}_{-40}$	$4708^{+3299}_{-971}$	$401^{+3036}_{-285}$

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

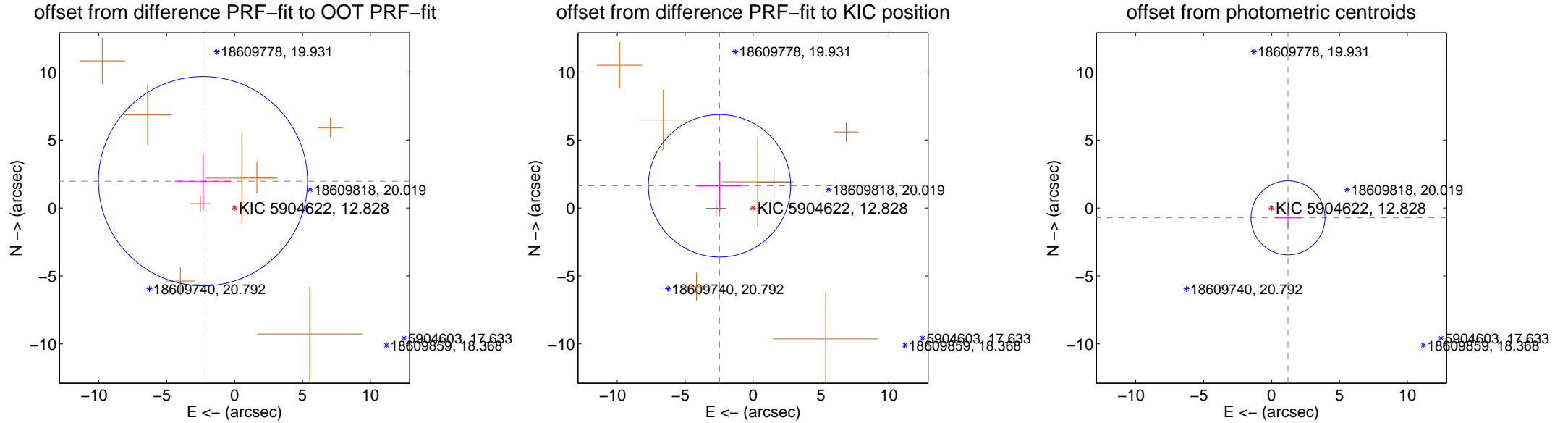
## DV Centroid Data

Supplemental centroid analysis for 005904622-03. Kepler magnitude: 12.83. Transit SNR 8.17

There are 0 quarters with good PRF difference image offsets

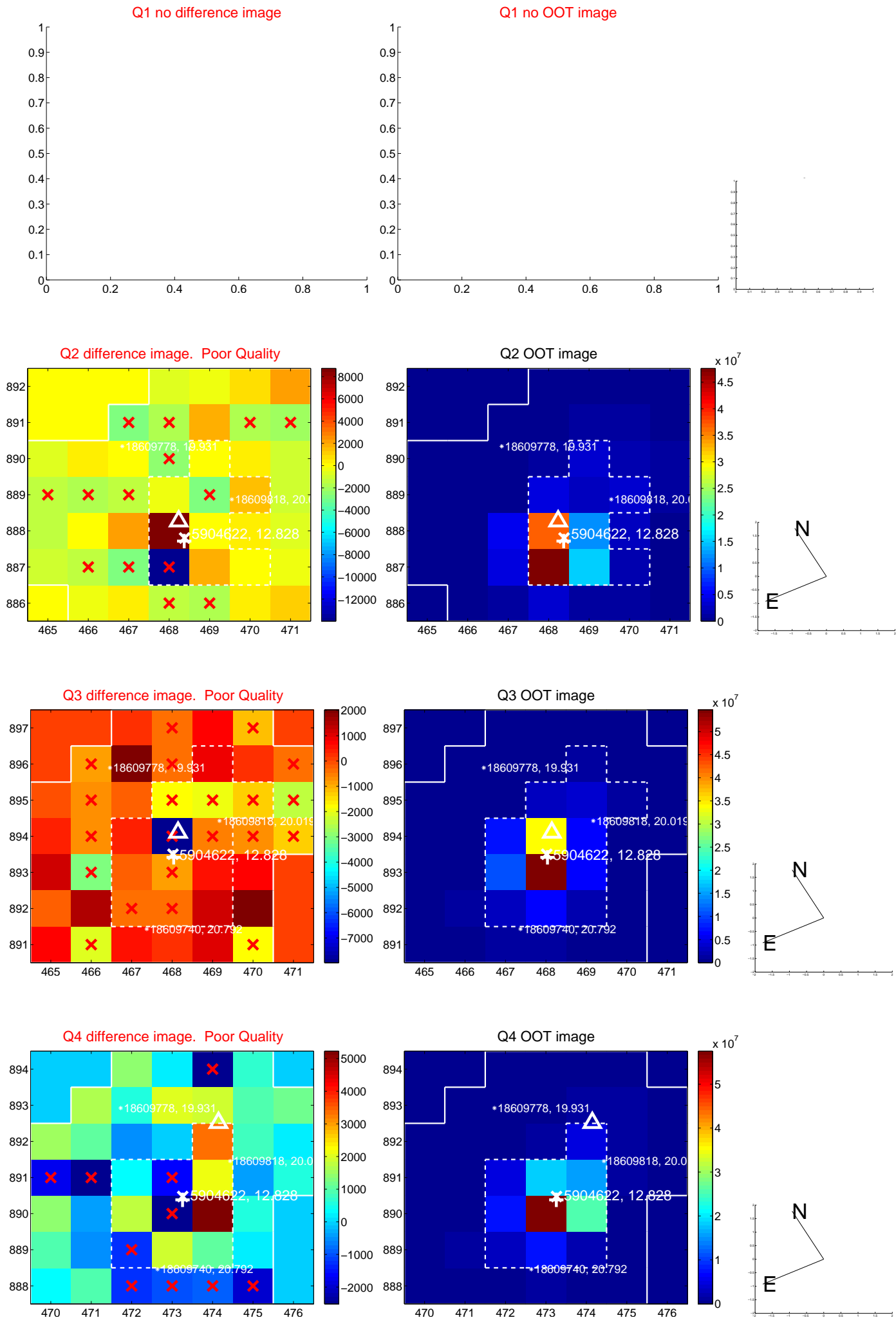
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.048 \pm 2.566$	1.19	$2.325 \pm 2.089$	$1.970 \pm 2.075$
PRF-fit source offset from KIC position	$2.959 \pm 1.746$	1.69	$2.470 \pm 1.708$	$1.629 \pm 1.830$
photometric centroid source offset	$1.41 \pm 0.91$	1.56	$-1.21 \pm 0.94$	$-0.73 \pm 0.83$



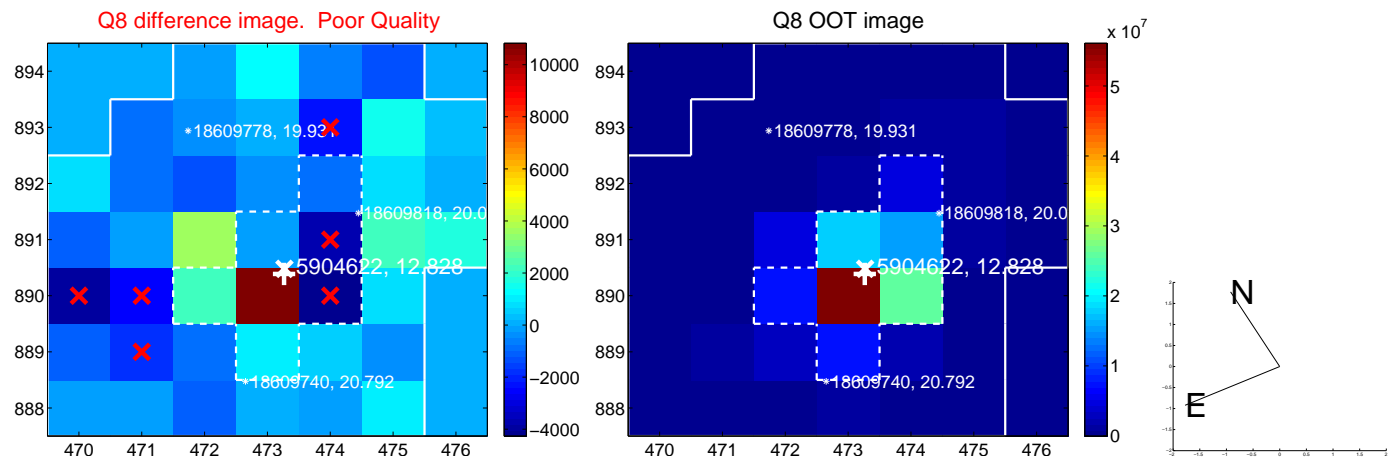
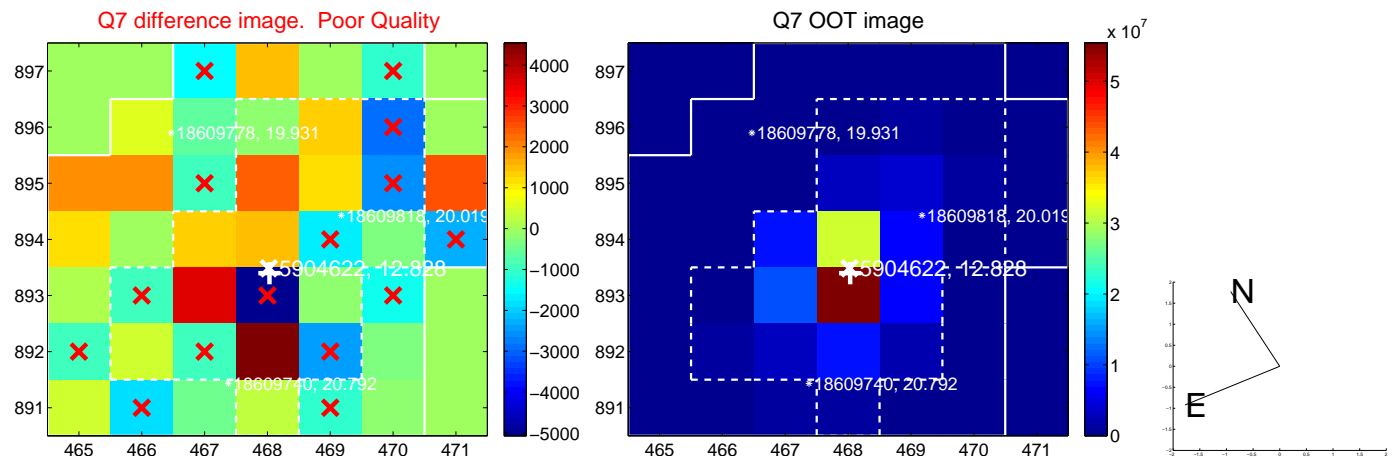
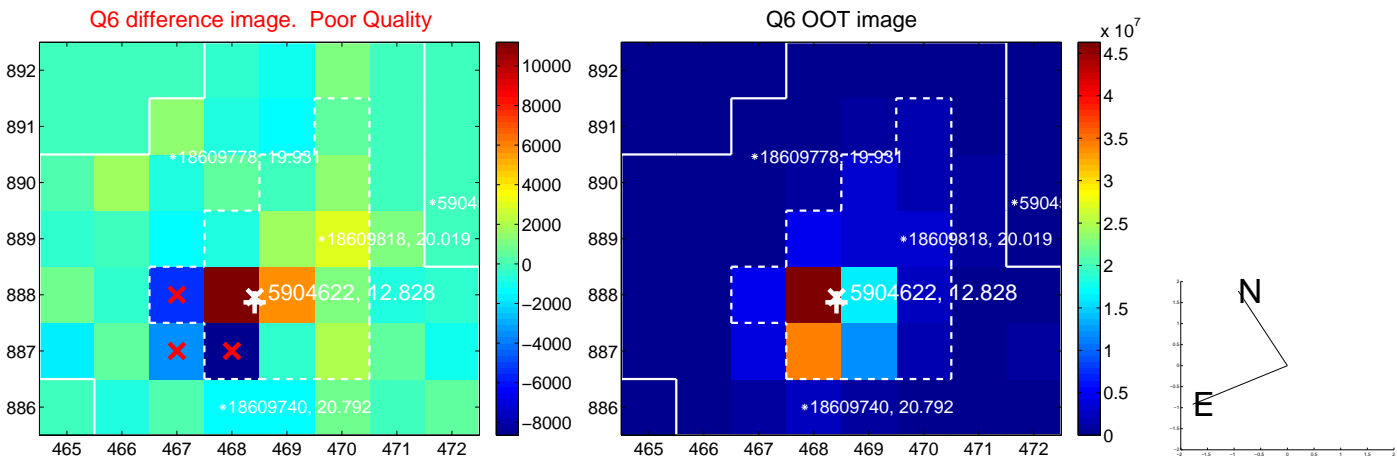
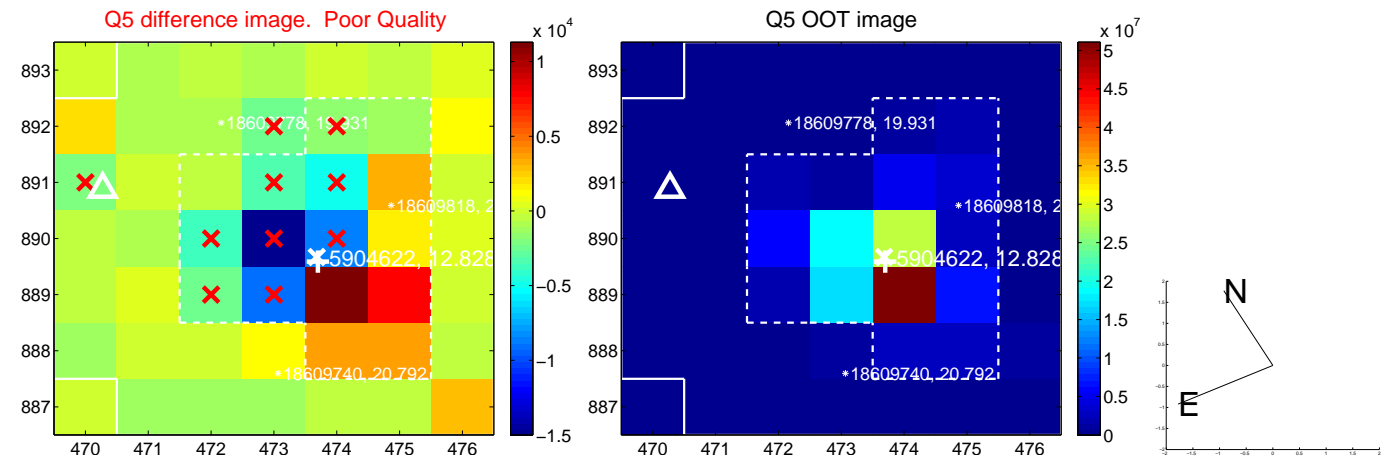
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

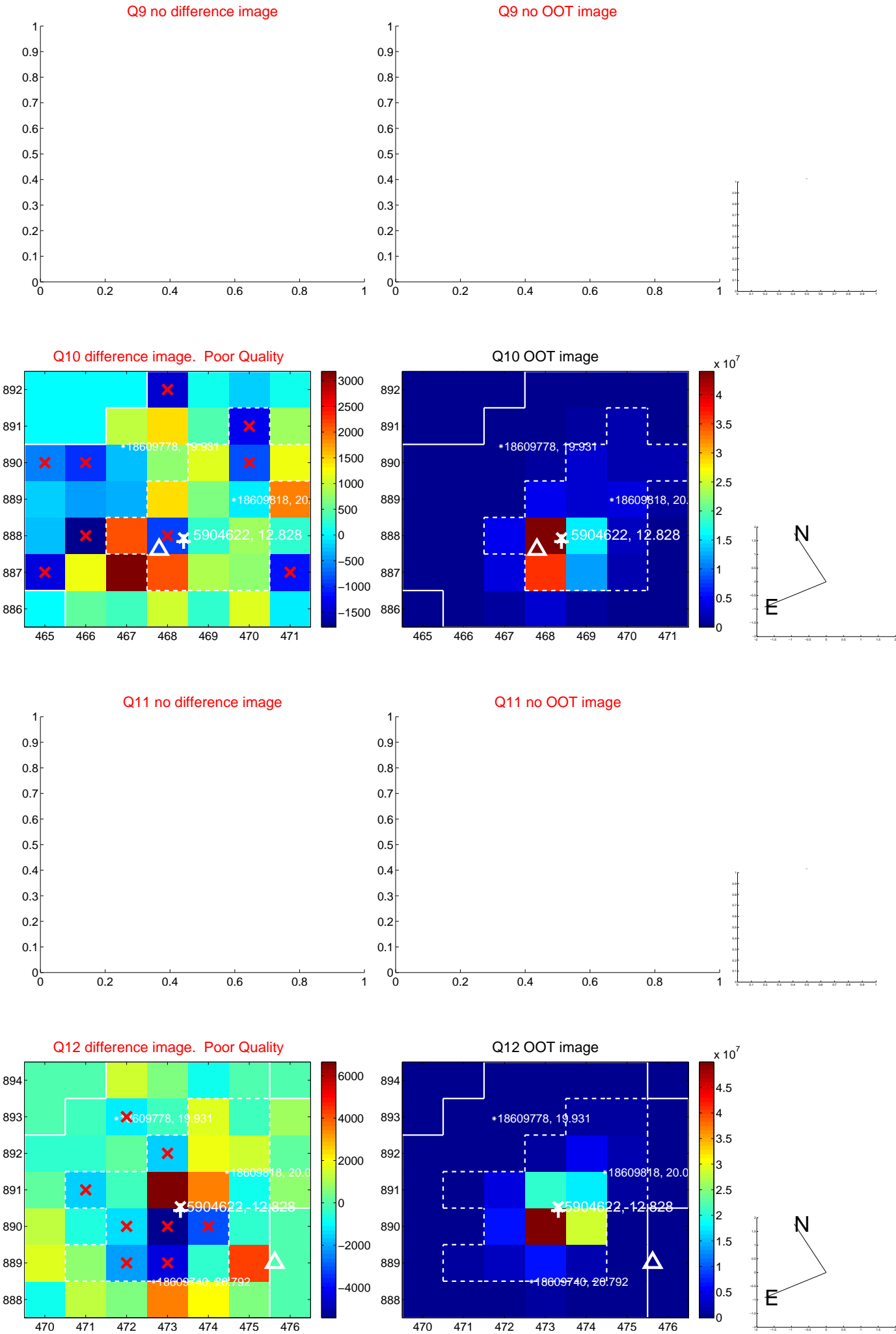




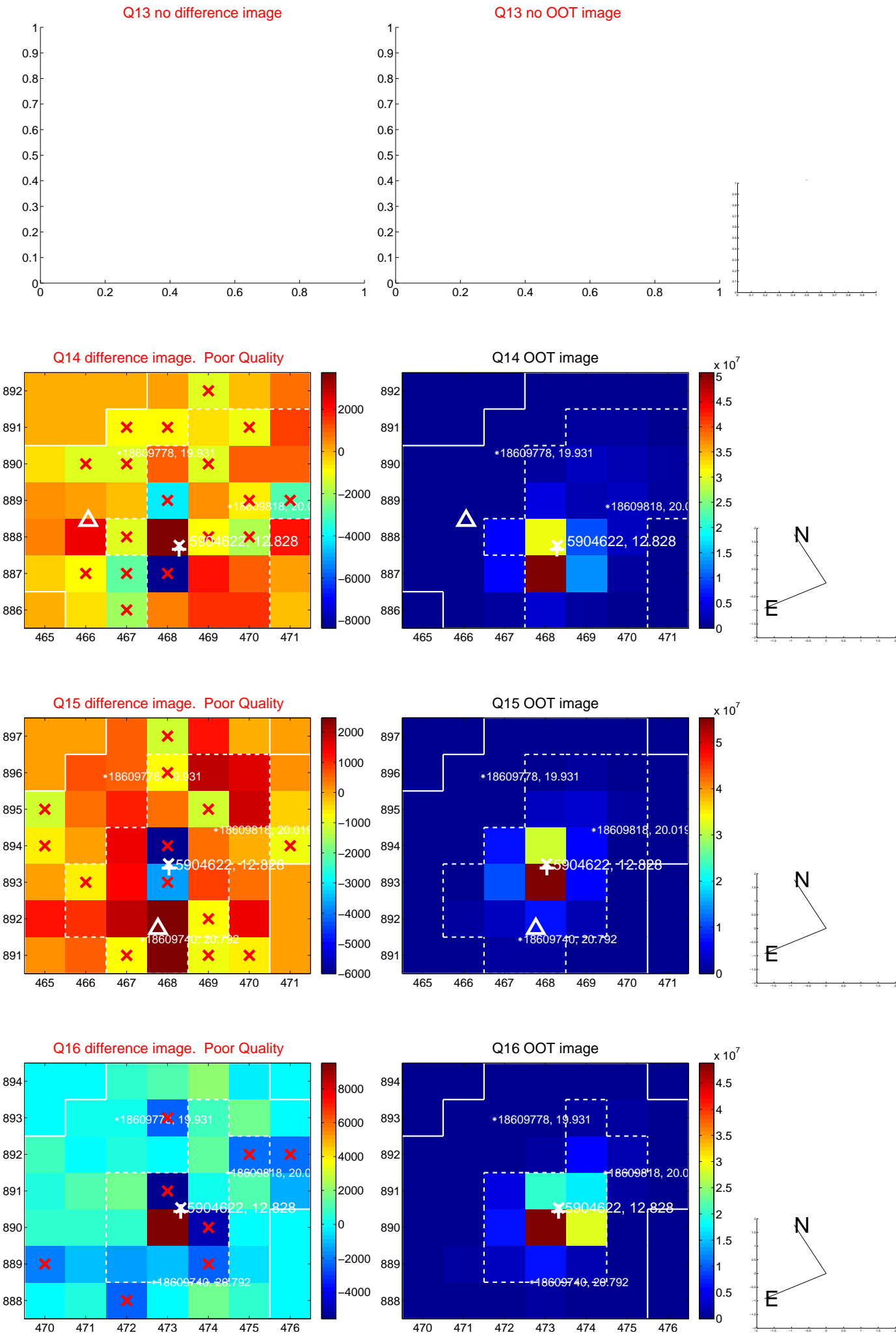
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



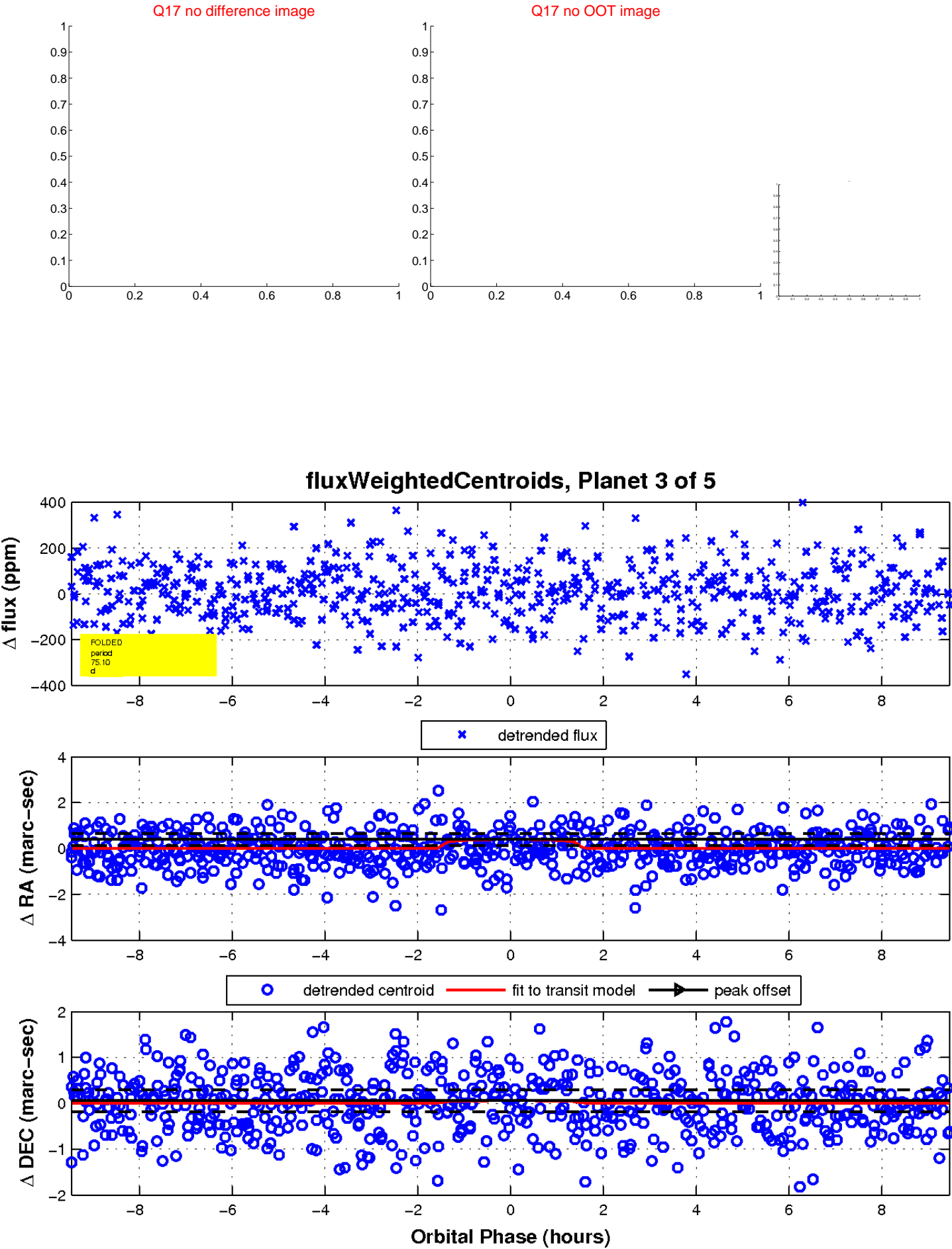
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

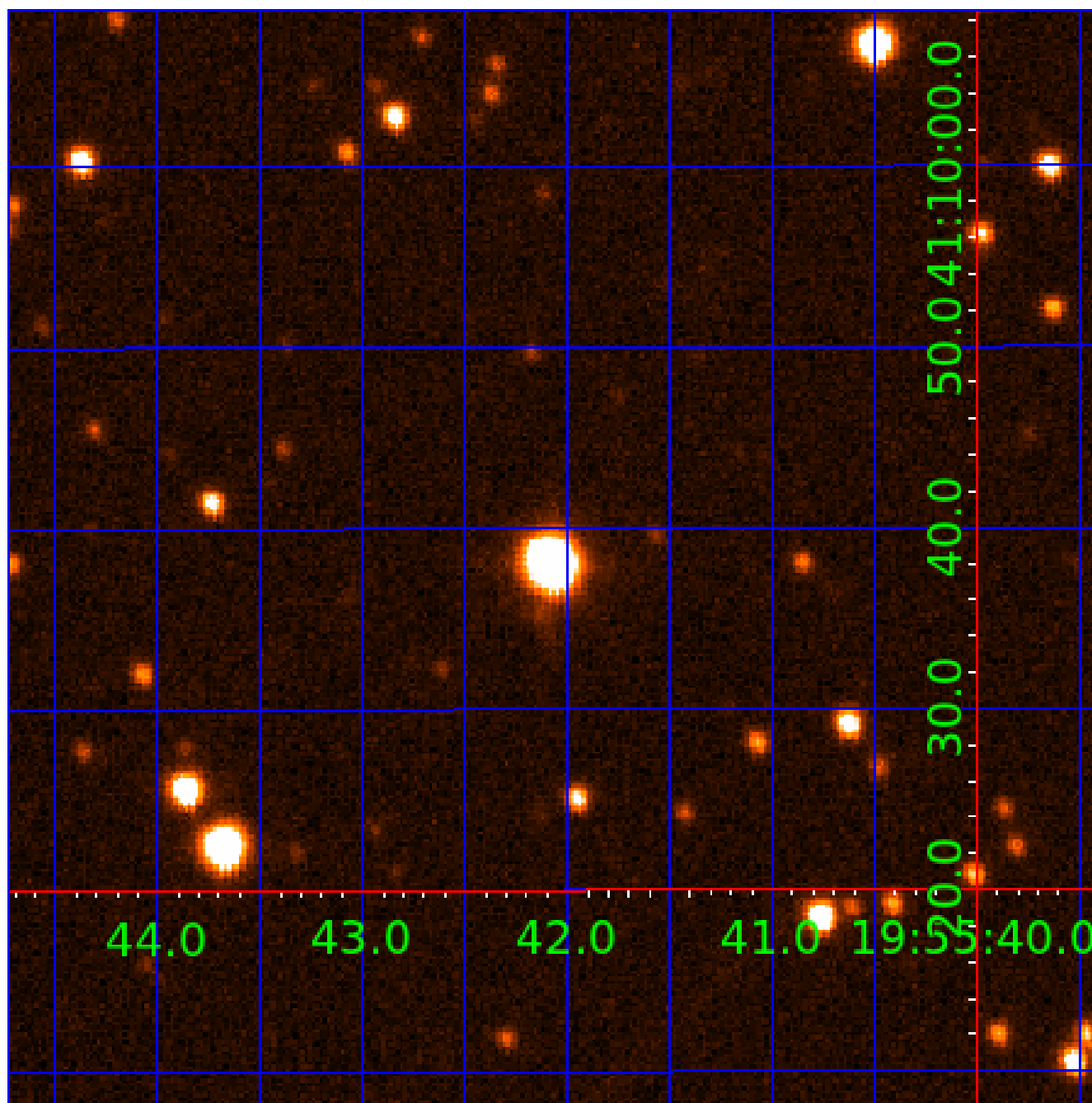


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005904622

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005904622-01	OBS	No	0.656077	131.802021	13.3	4.494	10.0	11.5	2.39	5446	1.03	24616.53
005904622-03	OBS	No	75.103668	169.021229	281.4	3.154	8.6	8.2	2.39	5446	4.58	44.29
005904622-05	OBS	No	49.234215	160.310722	228.2	1.487	8.8	8.0	2.39	5446	3.62	77.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005904622-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
005904622-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005904622-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

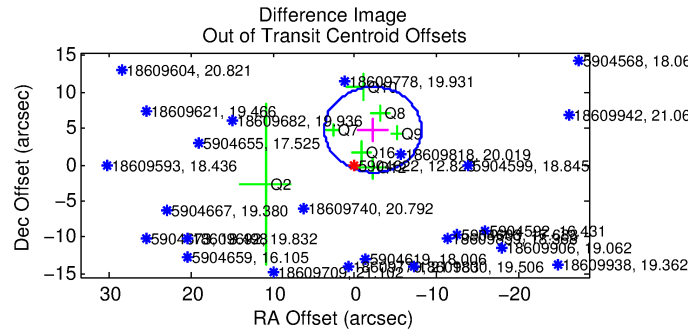
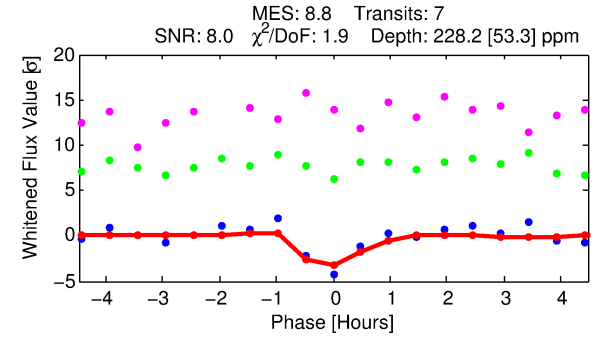
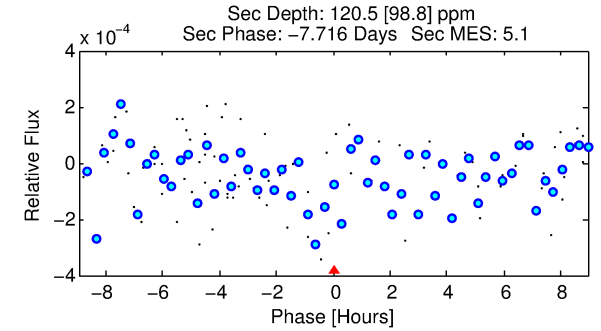
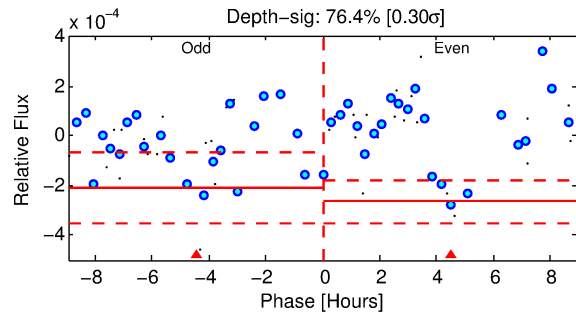
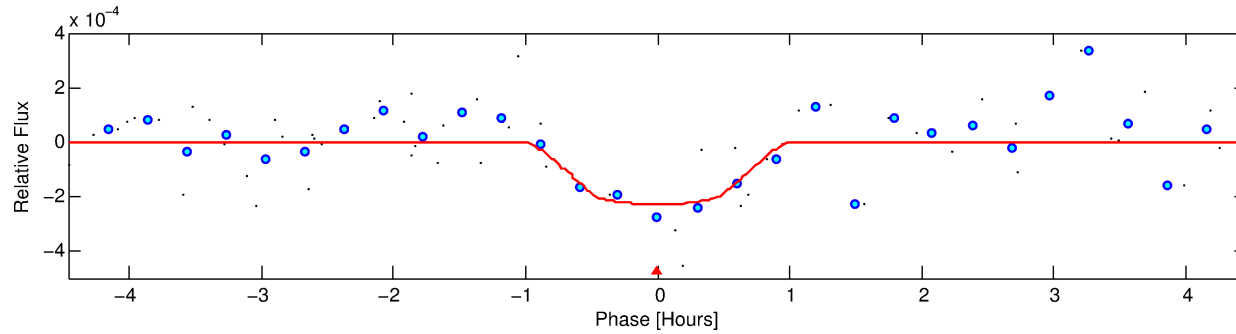
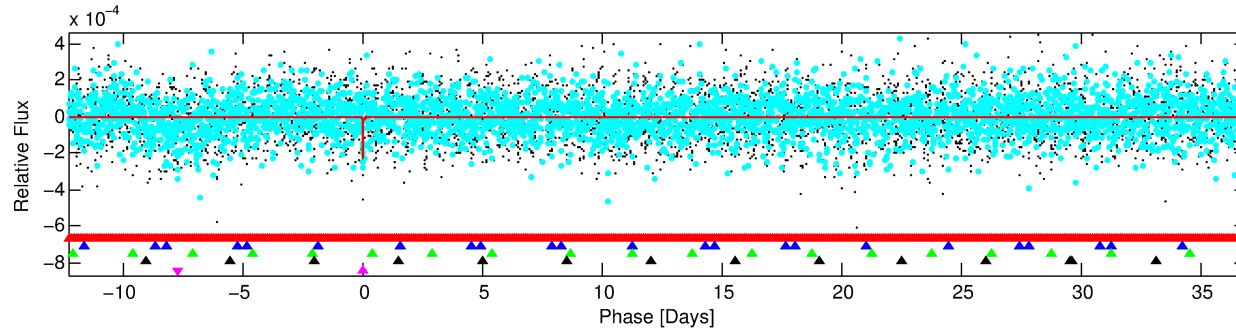
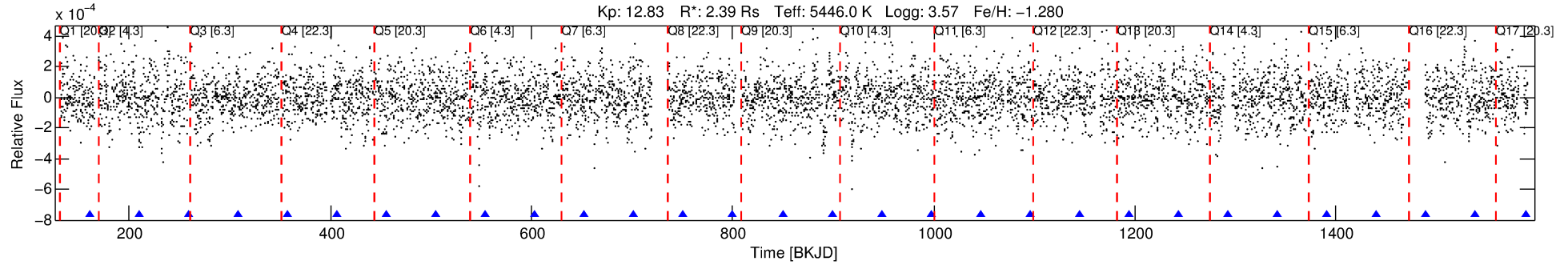
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005904622-05

No Significant Match Found

# DV One-Page Summary

KIC: 5904622 Candidate: 5 of 5 Period: 49.234 d



## DV Fit Results:

Period = 49.23422 [0.00048] d  
Epoch = 160.3107 [0.0075] BKJD  
Rp/R\* = 0.0139 [0.0523]  
a/R\* = 256.13 [4521.94]  
b = 0.05 [326.14]  
Seff = 77.77 [27.67]  
Teq = 757 [67] K  
Rp = 3.62 [13.69] Re  
a = 0.2409 [0.0582] AU  
Ag = 293.54 [2228.10] [0.13 $\sigma$ ]  
Teffp = 4846 [9187] K [0.45 $\sigma$ ]

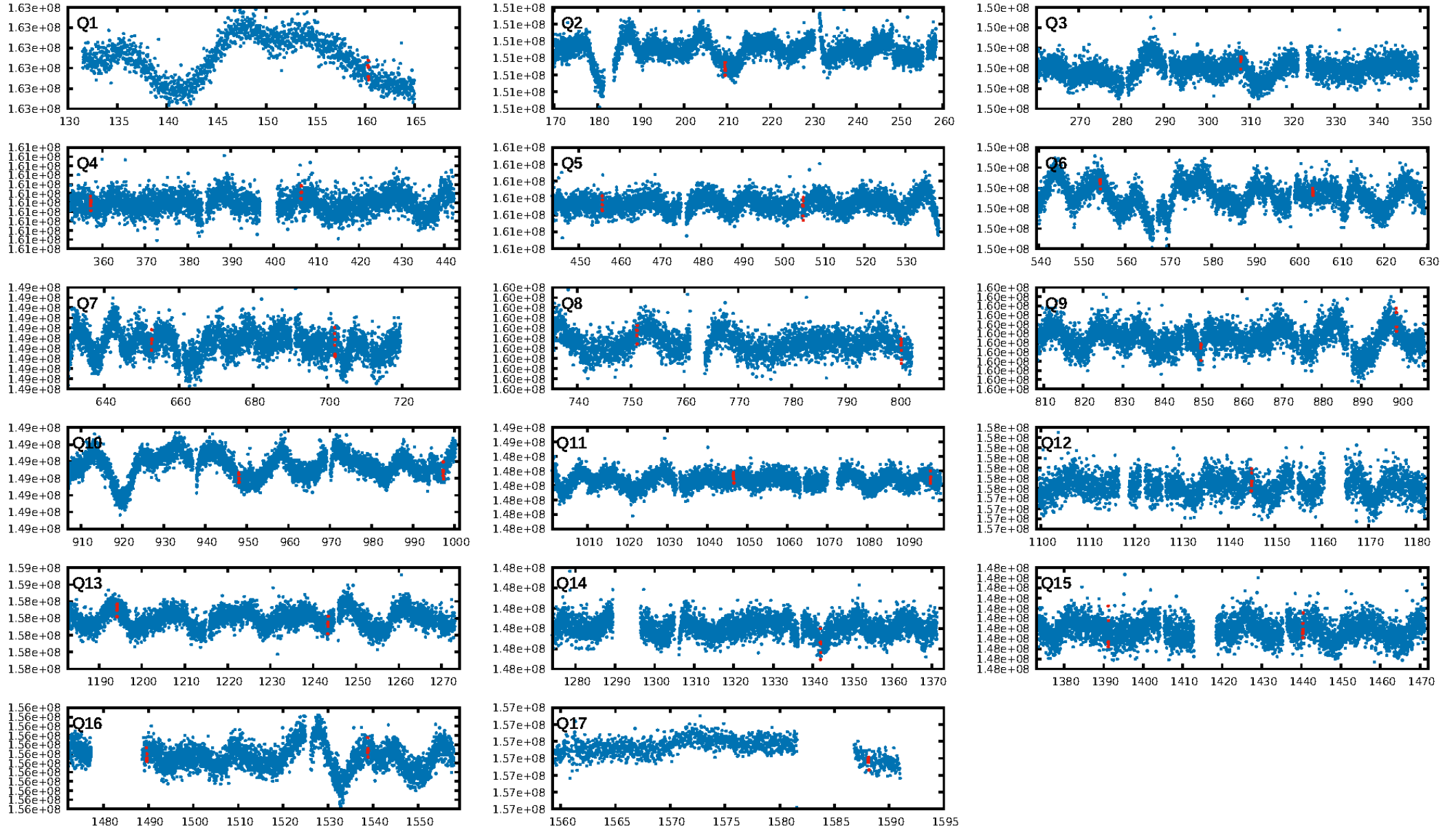
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [246.29 $\sigma$ ]  
LongPeriod-sig: 100.0% [60.54 $\sigma$ ]  
ModelChiSquare2-sig: 10.1%  
ModelChiSquareGof-sig: 99.1%  
**Bootstrap-pfa: 6.15e-08**  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 0.9642  
Centroid-sig: 6.2%  
Centroid-so: 1.775 arcsec [1.70 $\sigma$ ]  
OotOffset-rm: 5.286 arcsec [2.69 $\sigma$ ]  
KicOffset-rm: 4.712 arcsec [2.57 $\sigma$ ]  
OotOffset-st: 2/1/3/1 [7]  
KicOffset-st: 2/1/3/1 [7]  
DiffImageQuality-fgm: 0.00 [0/7]  
DiffImageOverlap-fno: 0.12 [2/17]

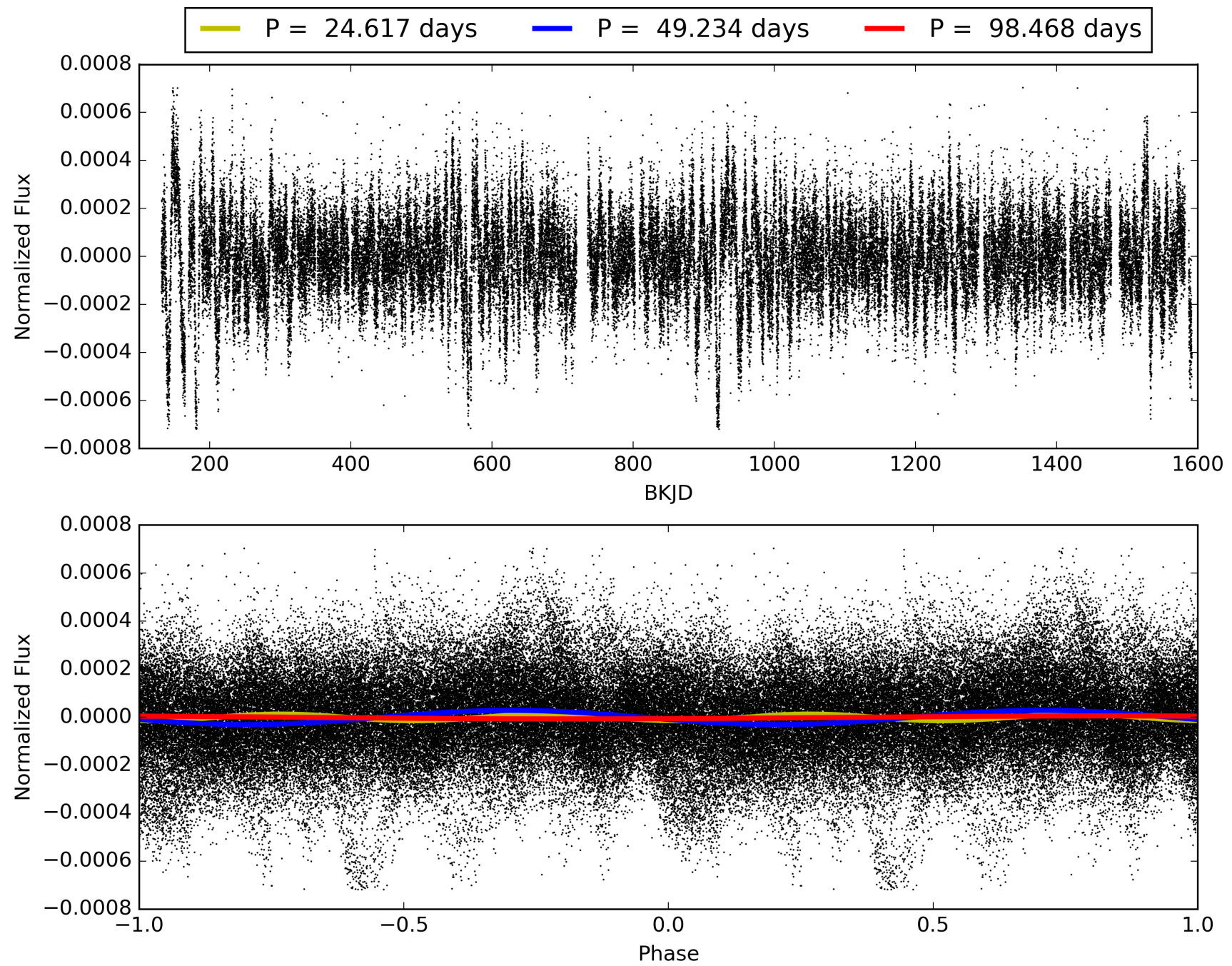
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:45:01 Z

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

# TCE 005904622-05, PDC Light Curves

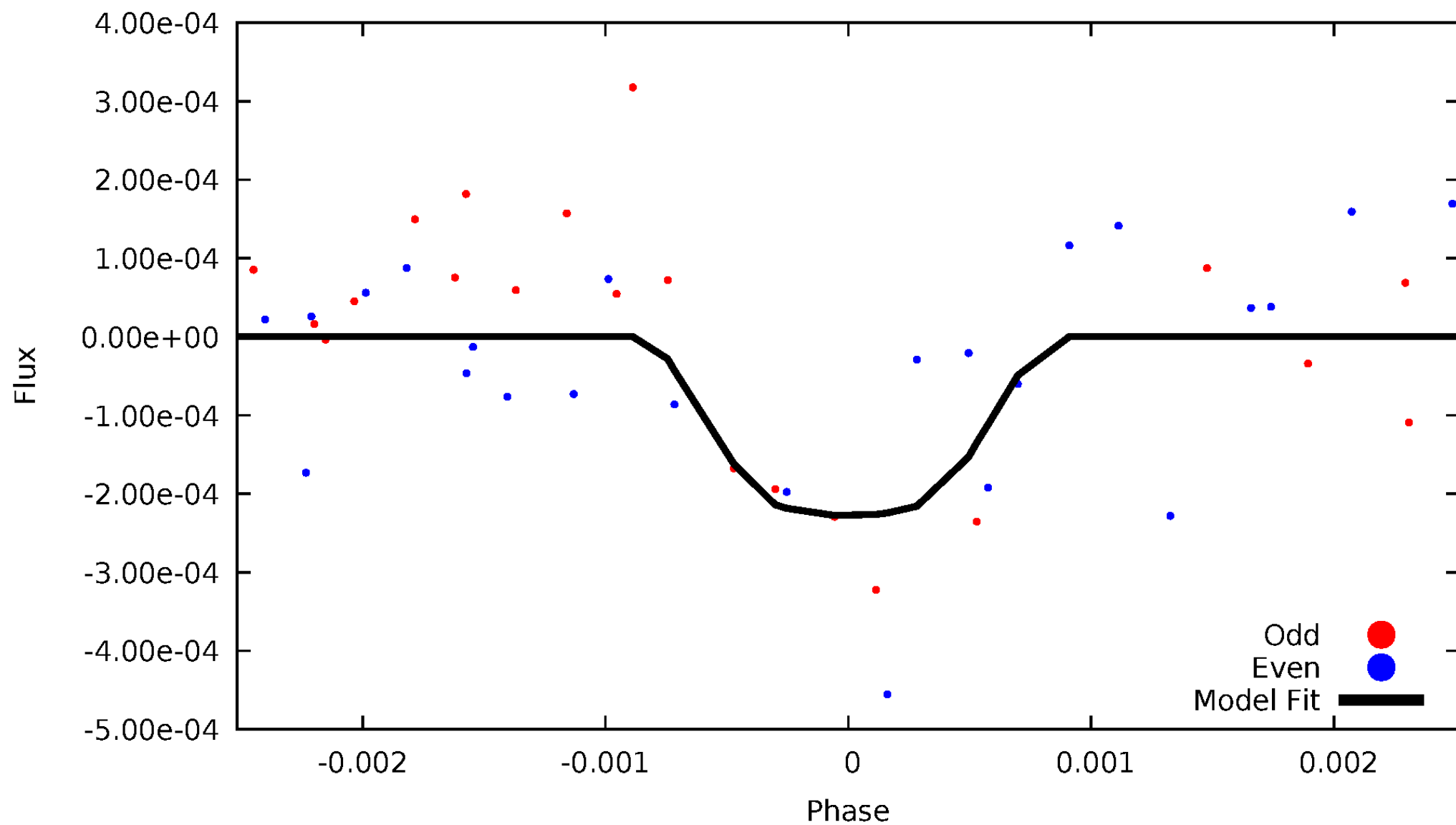


TCE 005904622-05



# DV Odd/Even

TCE 005904622-05



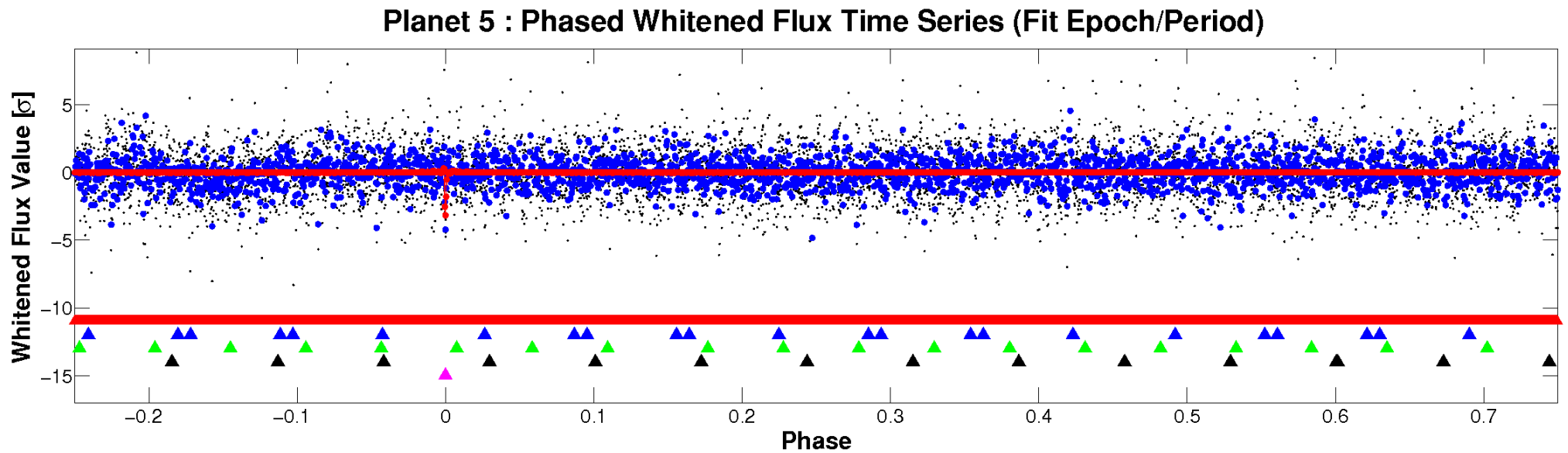
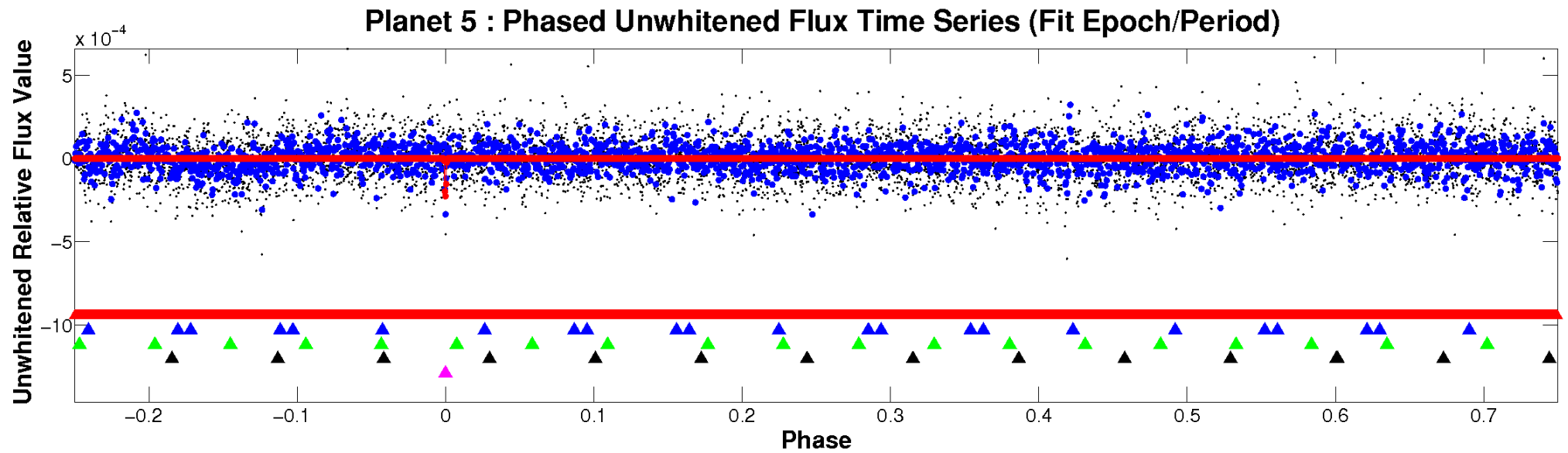




ALT Odd/Even

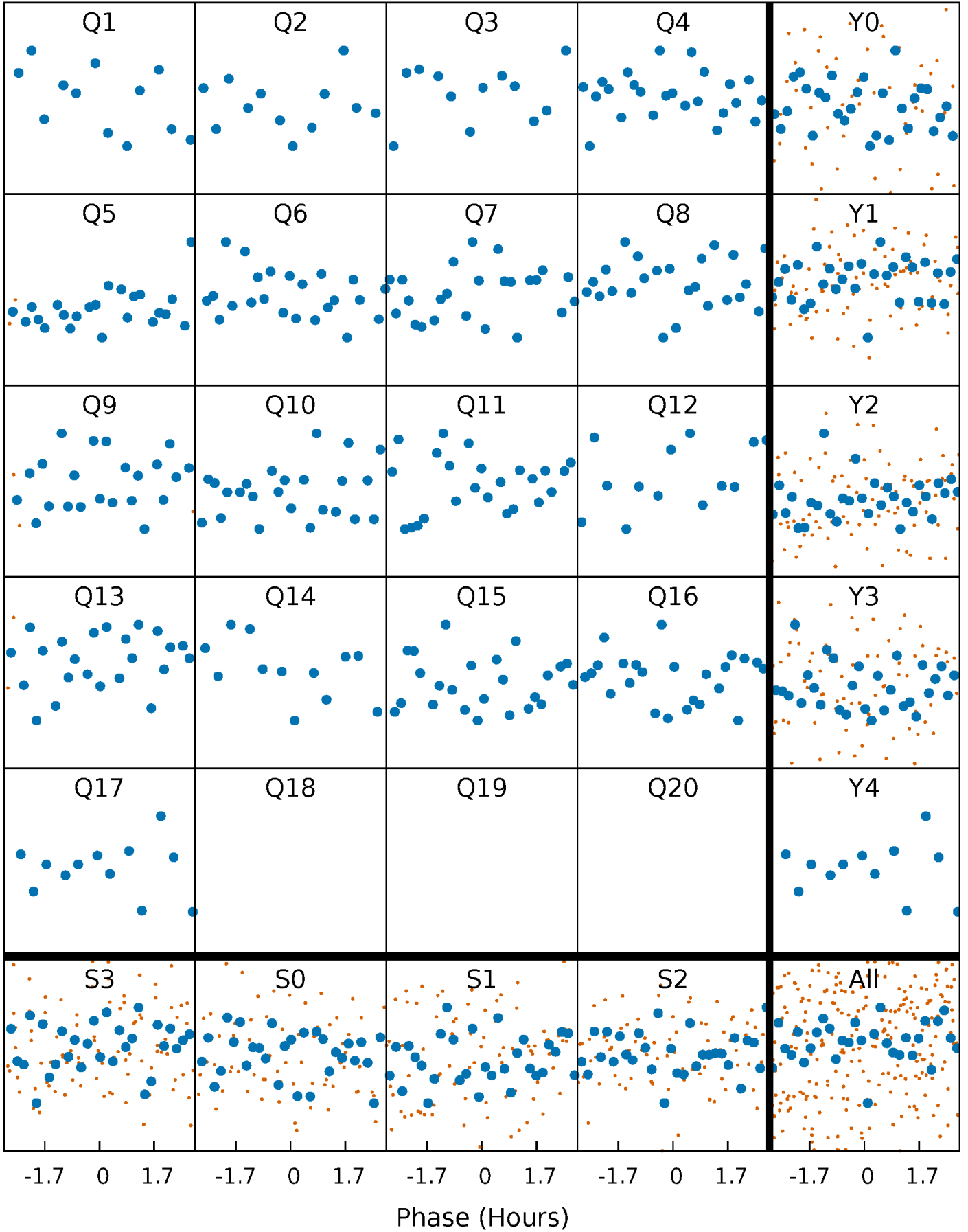
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve



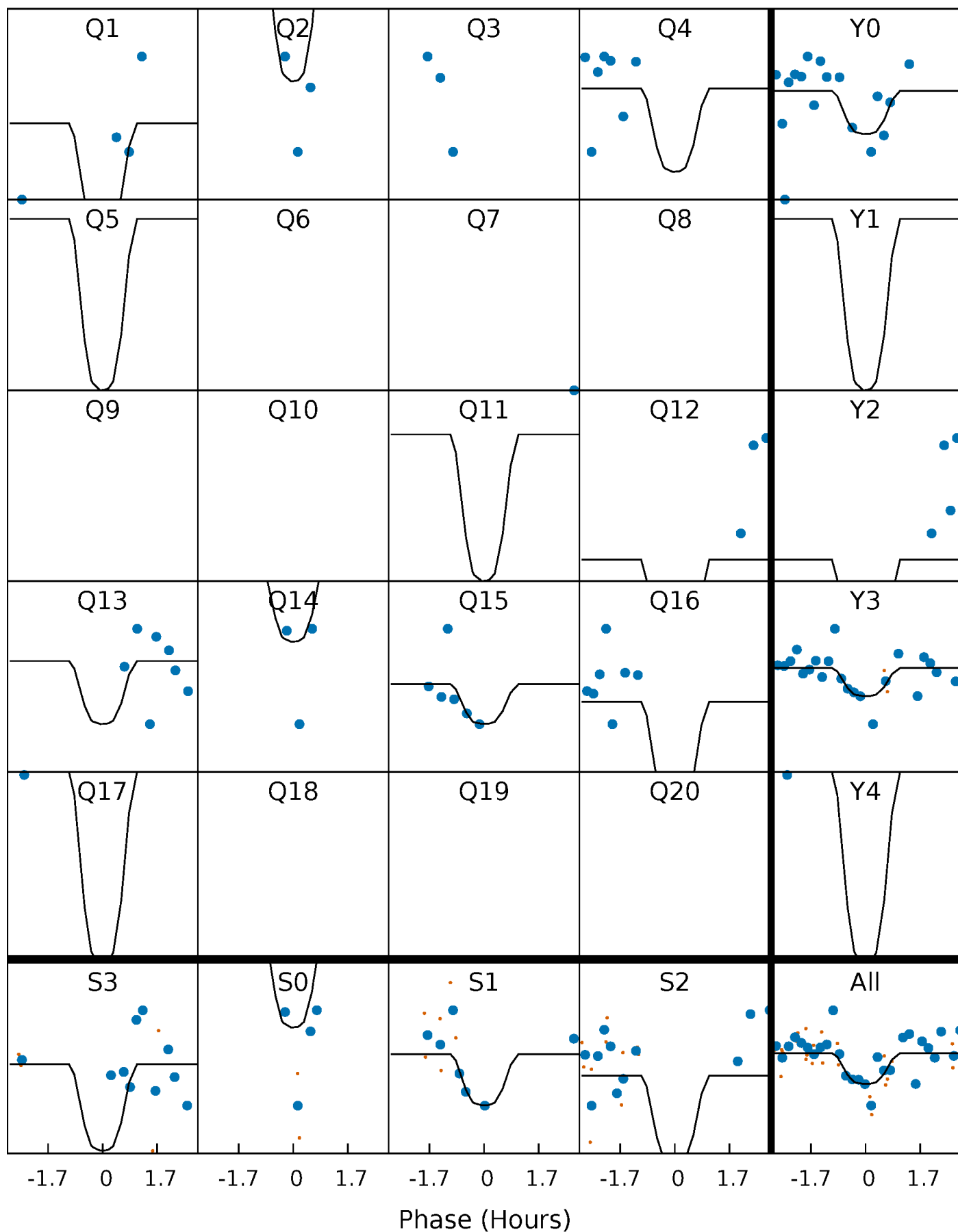
# PDC Quarter-Phased Transit Curves

TCE 005904622-05     $P = 49.234215$  Days     $T_0 = 160.310722$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 005904622-05   P= 49.234215 Days    $T_0=160.310722$  (BKJD)

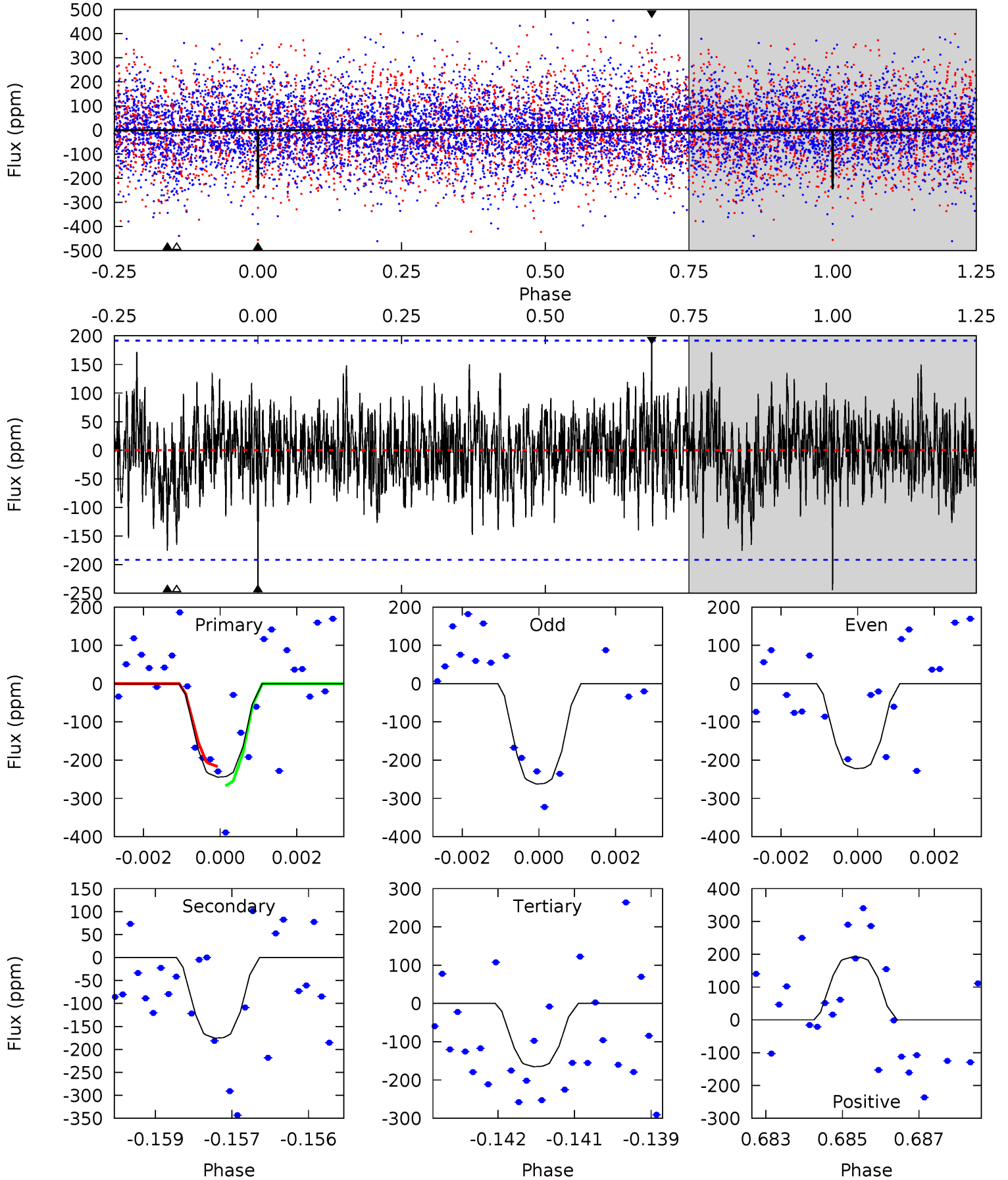


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

005904622-05, P = 49.234215 Days, E = 111.076507 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
6.84	4.92	4.62	5.37	5.36	3.15	1.35	2.22	1.47	0.29	-0.45	0.56	0.87	0.44	0.69





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 005904622

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5446_{-98}^{+98}$	$3.566_{-0.189}^{+0.102}$	$-1.280_{-0.300}^{+0.350}$	$2.393_{-0.247}^{+0.693}$	$0.768_{-0.012}^{+0.112}$	$0.079_{-0.040}^{+0.028}$
	+2%/-2%	+3%/-5%	+27%/-23%	+29%/-10%	+15%/-2%	+36%/-51%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005904622-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-176 \pm 36$	$11.19_{-7.82}^{+11.21}$	$1060_{-44}^{+82}$	$3533_{-652}^{+2140}$	$45_{-34}^{+503}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

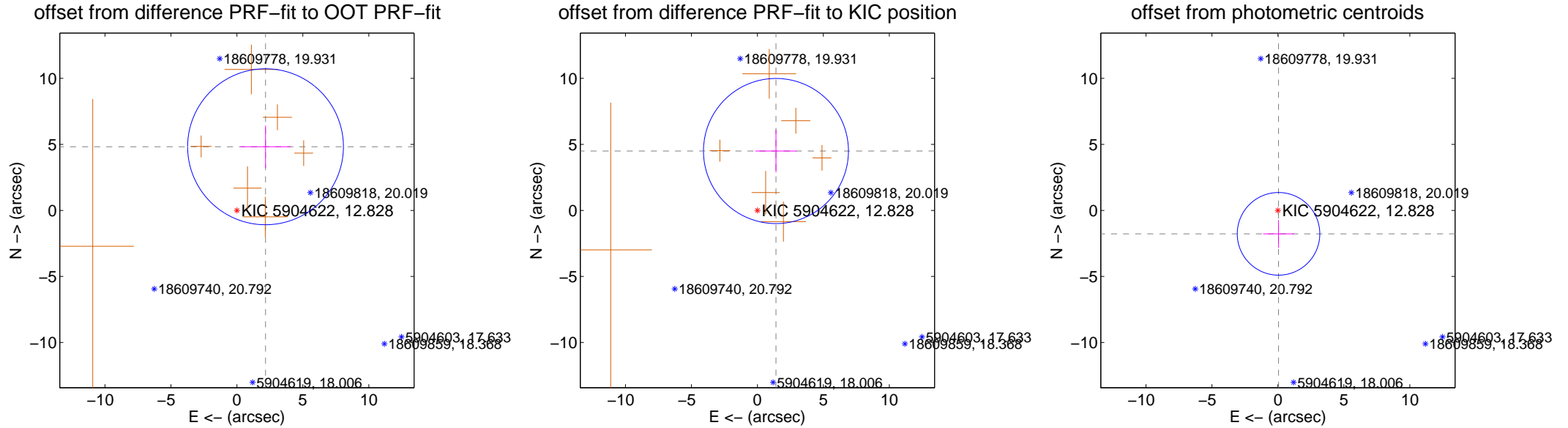
## DV Centroid Data

Supplemental centroid analysis for 005904622-05. Kepler magnitude: 12.83. Transit SNR 8.04

There are 0 quarters with good PRF difference image offsets

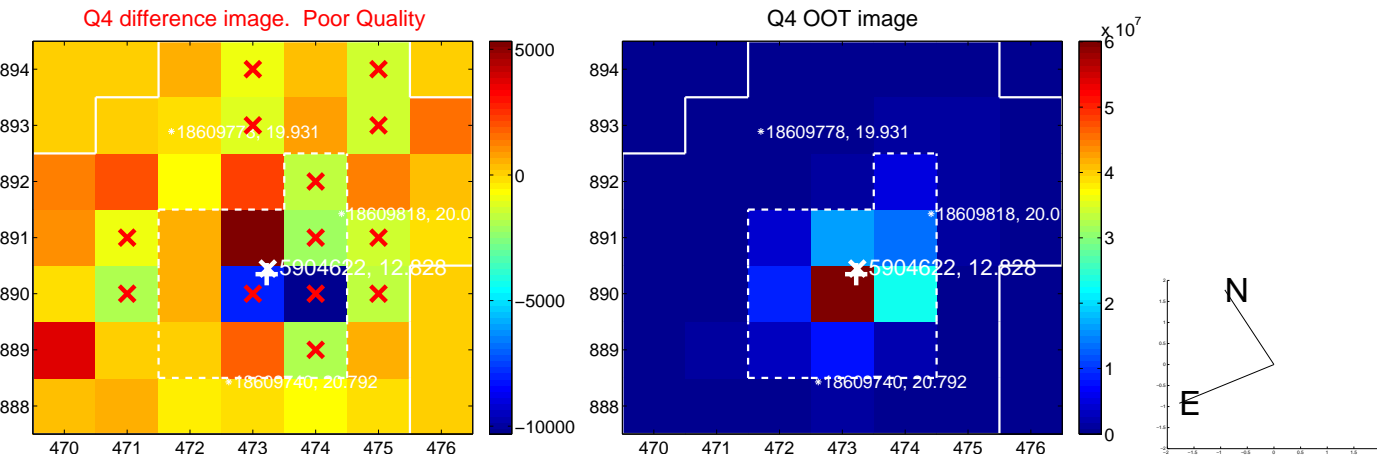
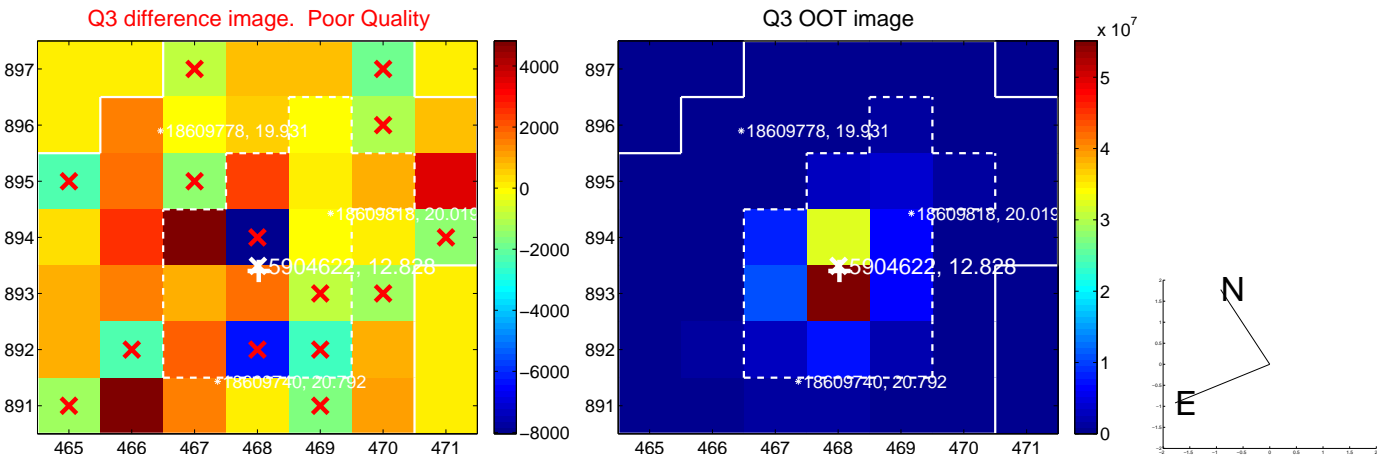
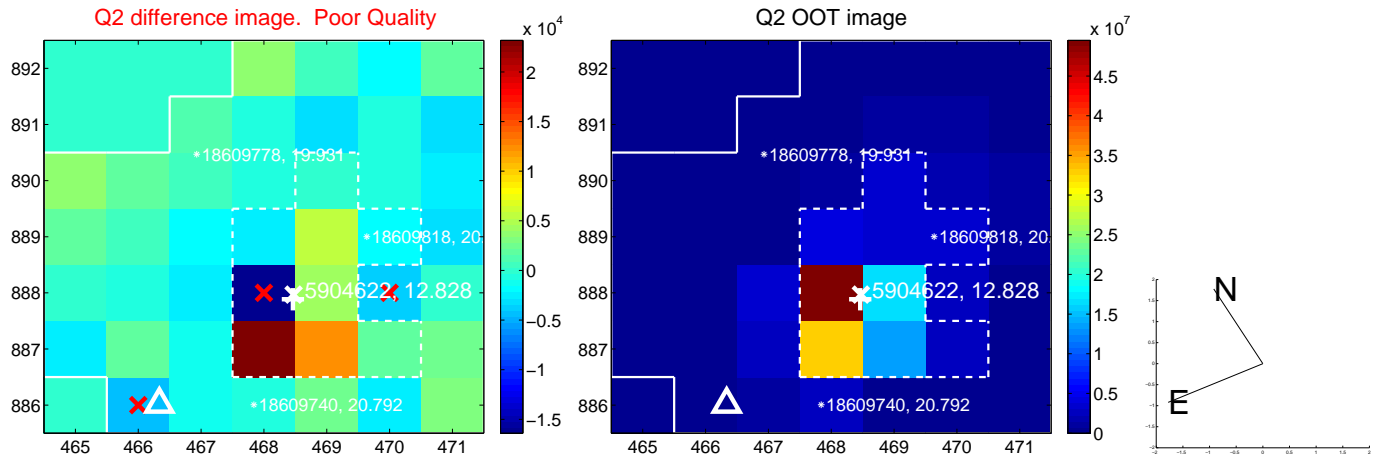
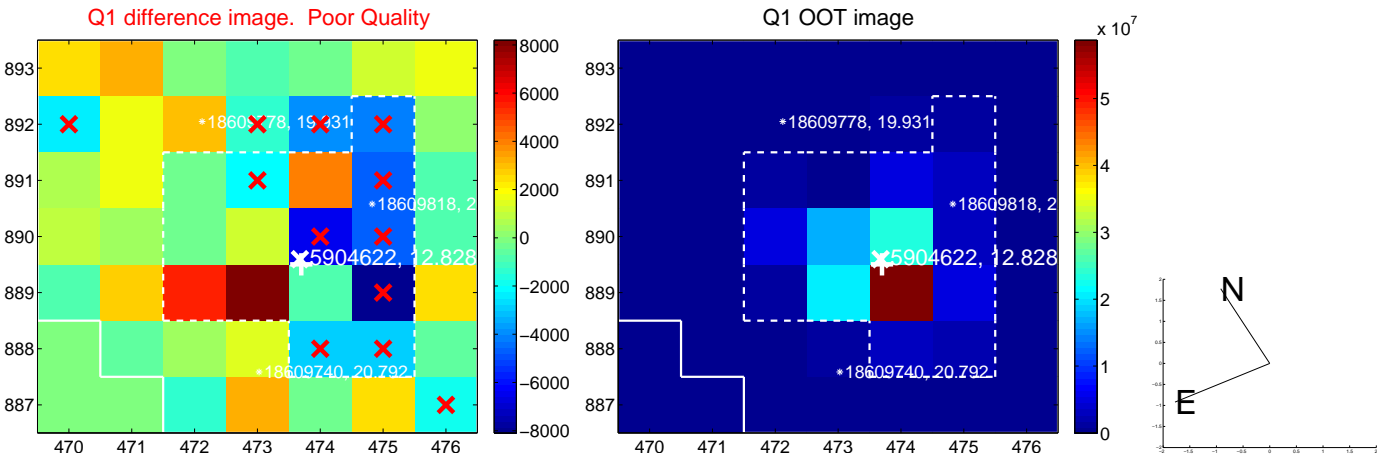
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.286 \pm 1.968$	2.69	$-2.169 \pm 1.908$	$4.820 \pm 1.604$
PRF-fit source offset from KIC position	$4.712 \pm 1.831$	2.57	$-1.407 \pm 1.558$	$4.497 \pm 1.608$
photometric centroid source offset	$1.77 \pm 1.04$	1.70	$-0.05 \pm 1.17$	$-1.77 \pm 1.04$

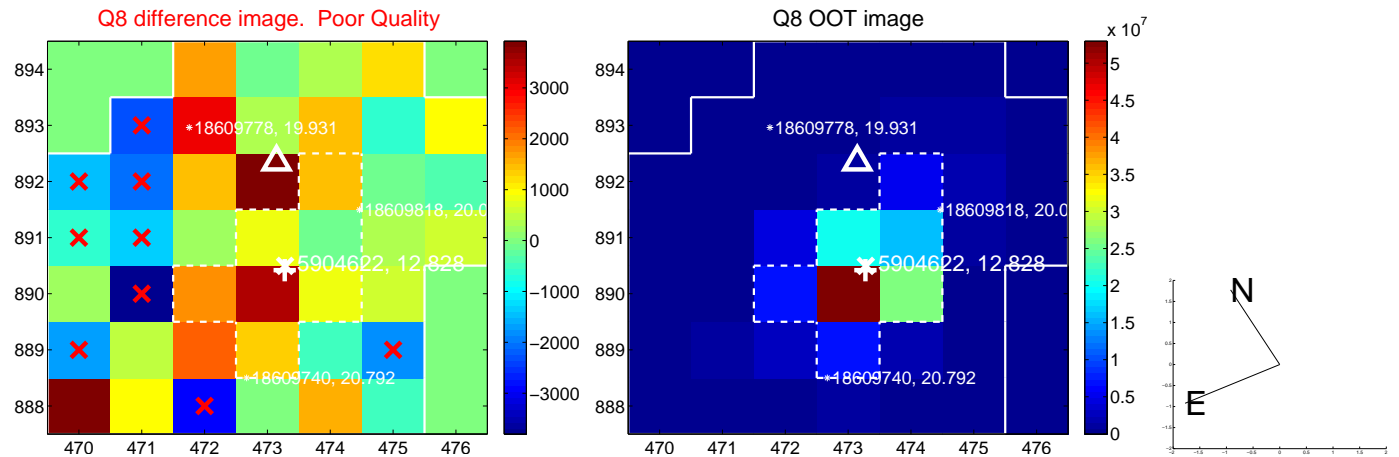
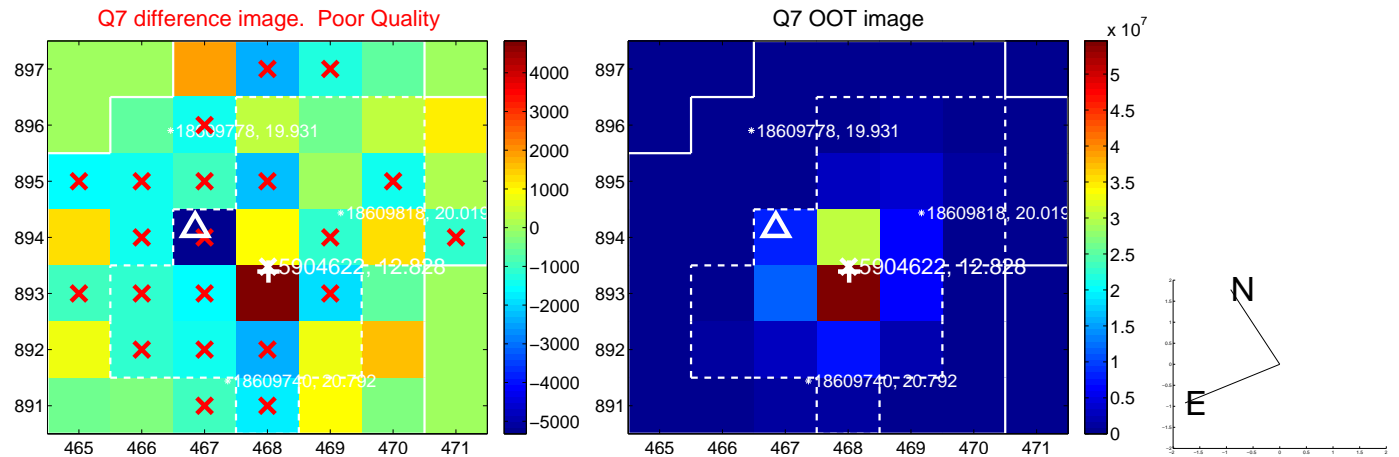
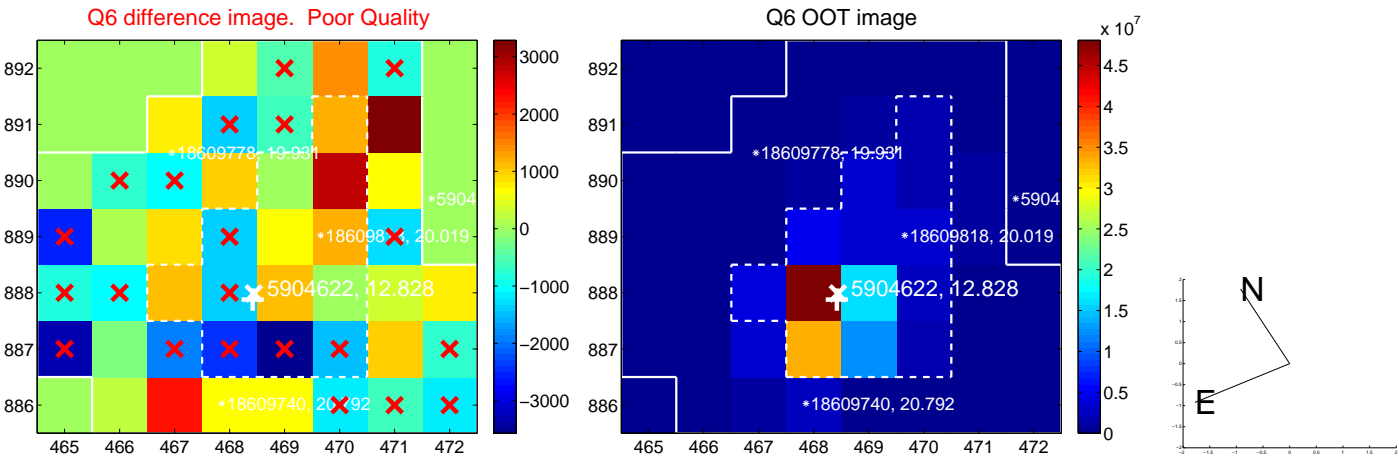
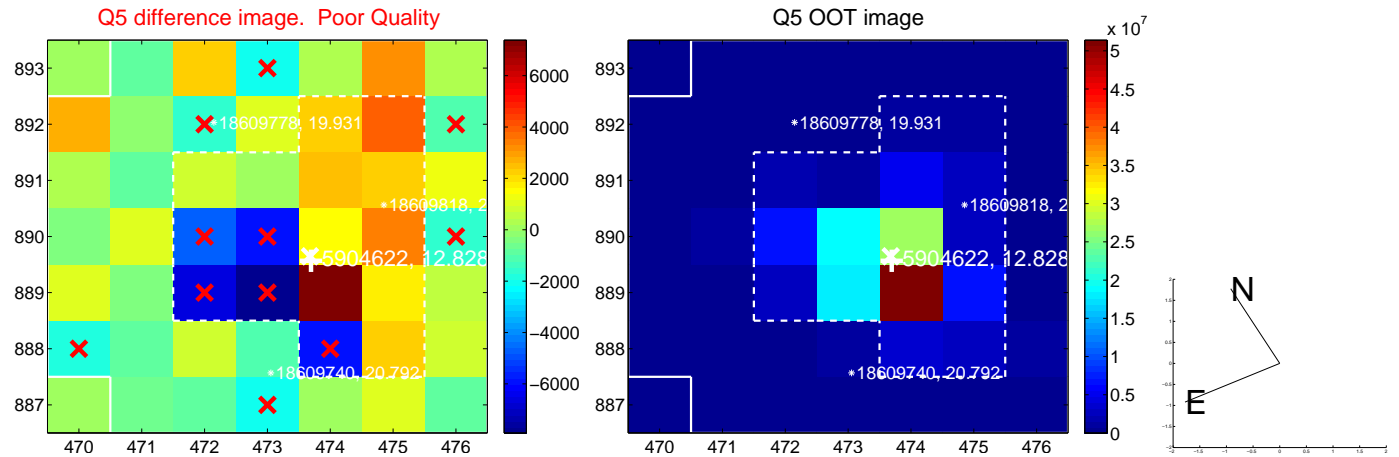


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

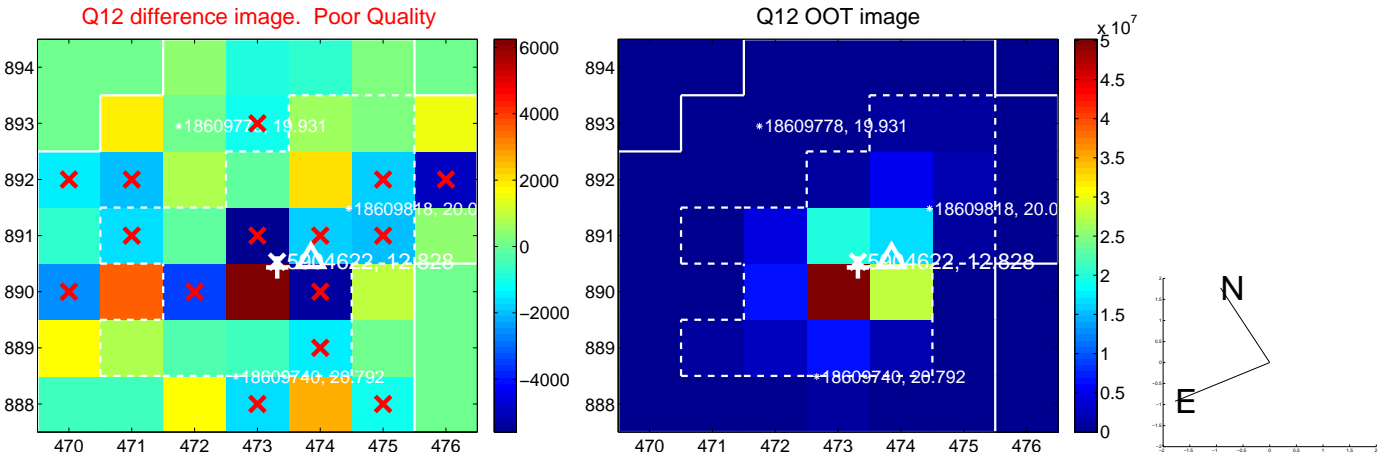
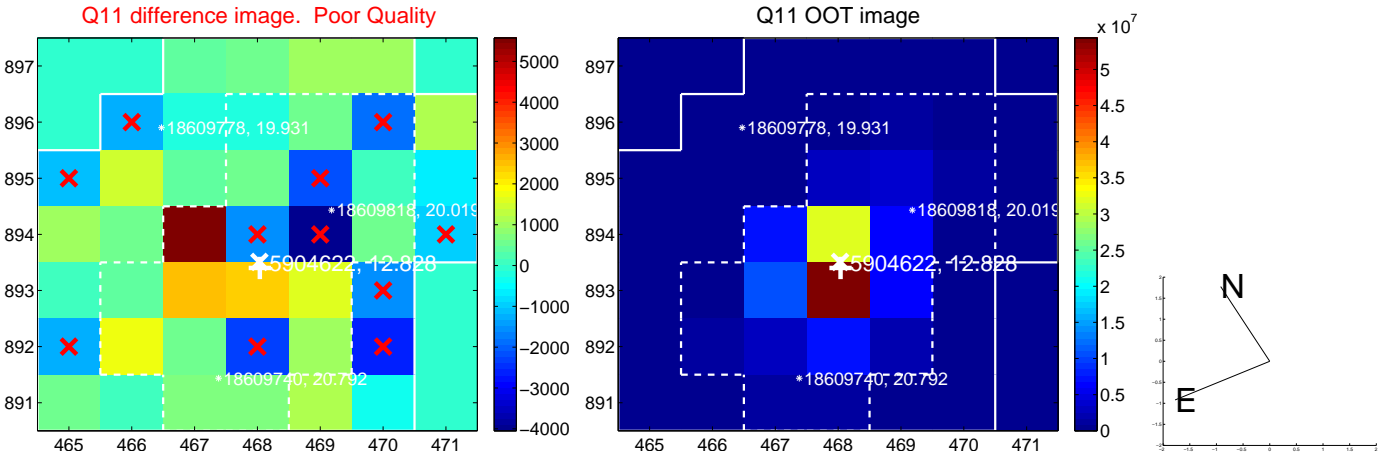
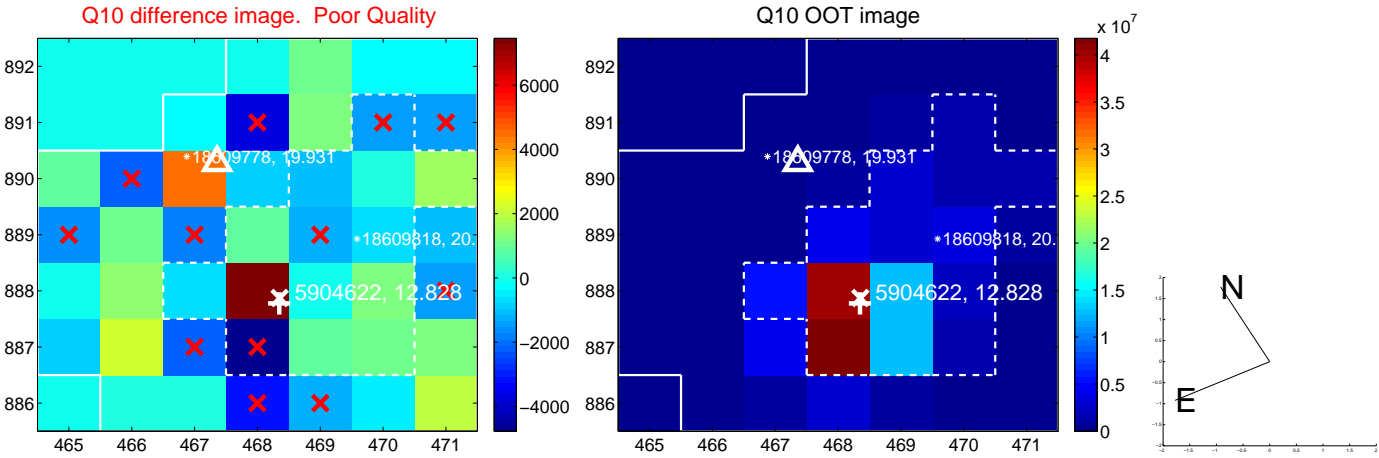
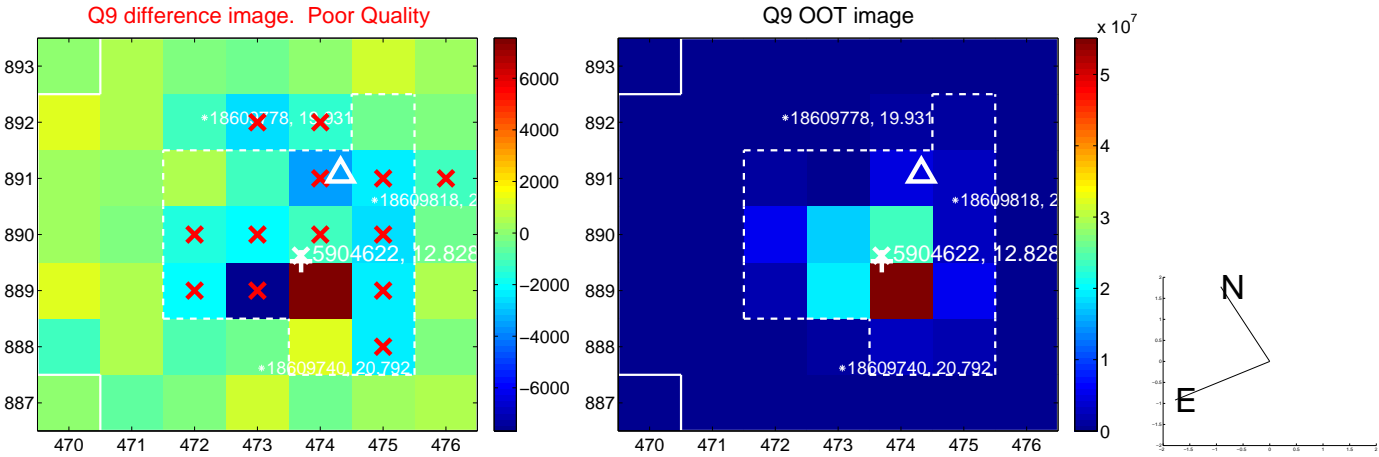
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

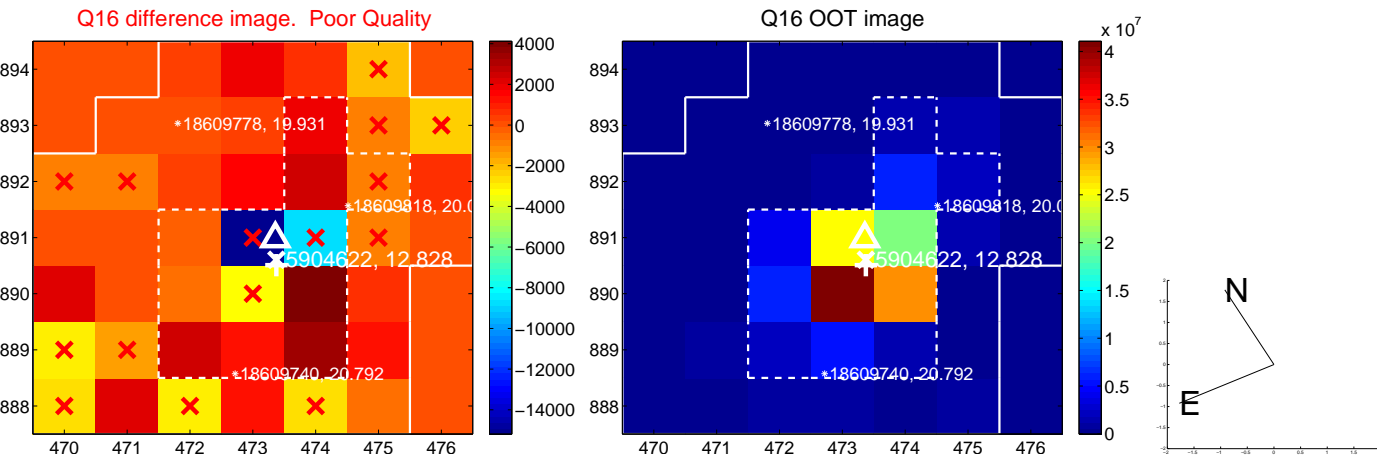
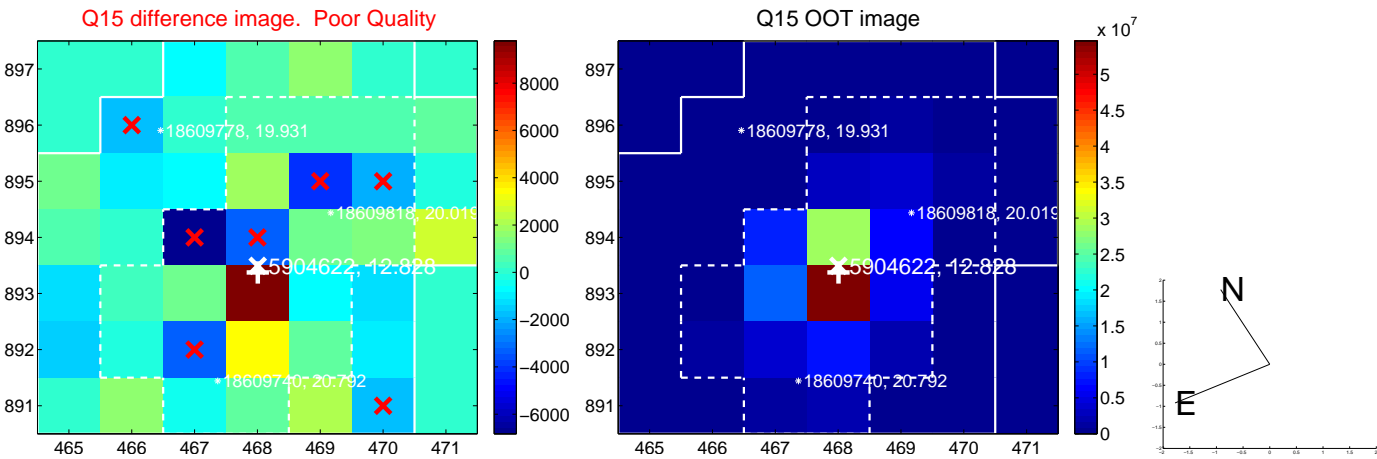
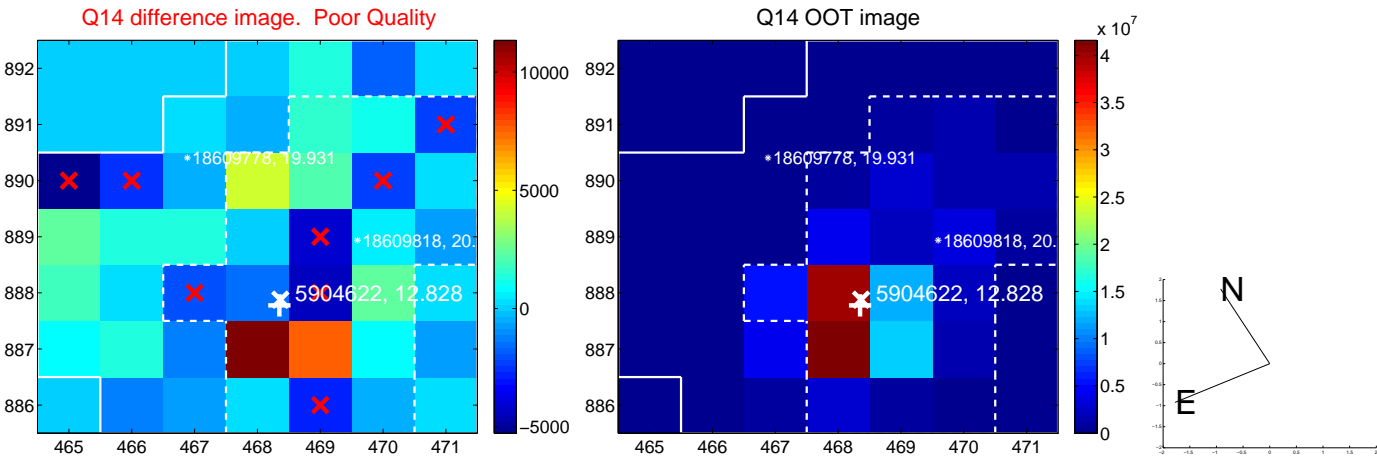
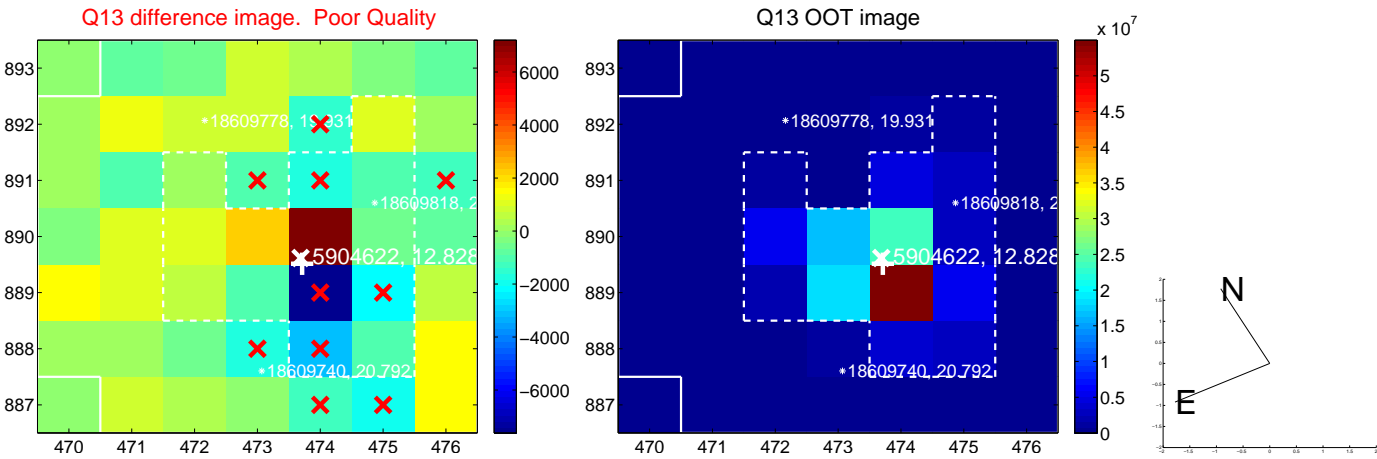


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

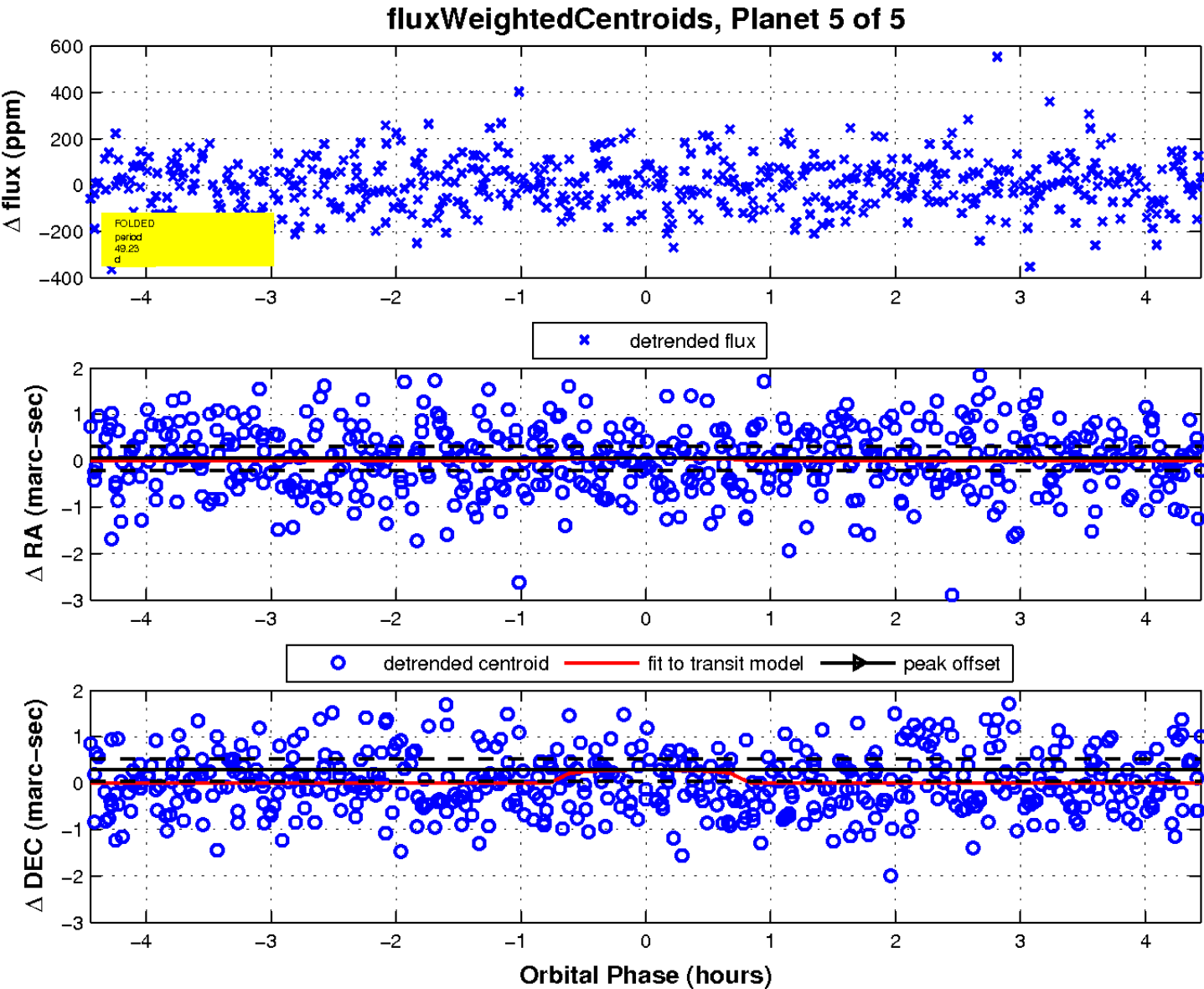
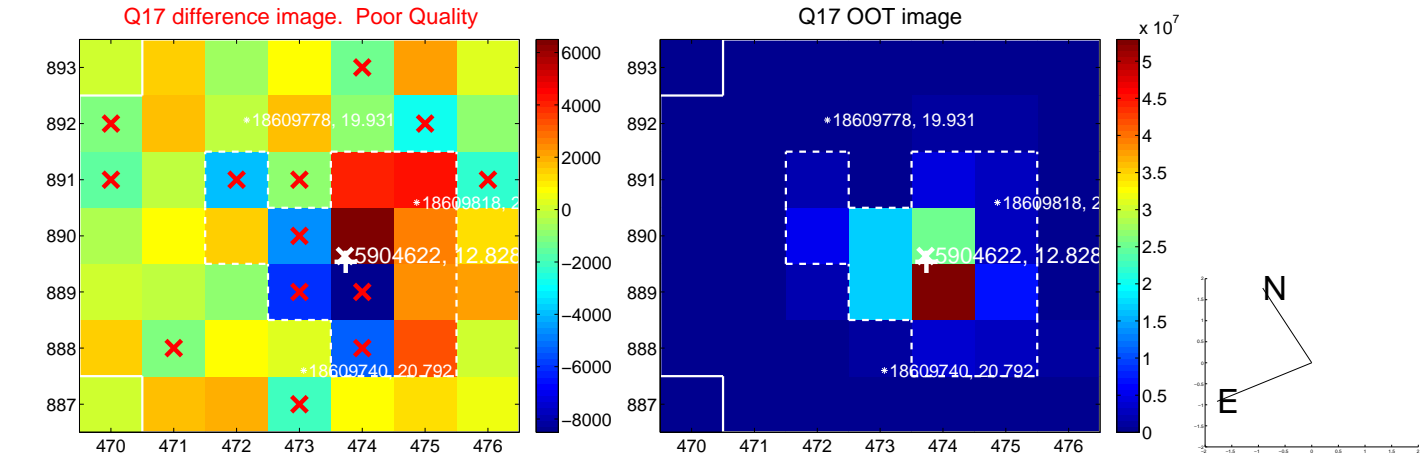




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

