

KIC 010548172

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})
010548172-01	OBS	No	3.935143	135.076185	16.8	19.610	8.2	7.5	2.01	8141	0.84	4409.25
010548172-02	OBS	No	113.919752	204.341391	111.2	11.826	9.3	6.6	2.01	8141	2.38	49.60
010548172-03	OBS	No	6.558052	135.783060	34.9	20.382	8.2	8.2	2.01	8141	1.40	2231.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010548172-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010548172-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
010548172-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

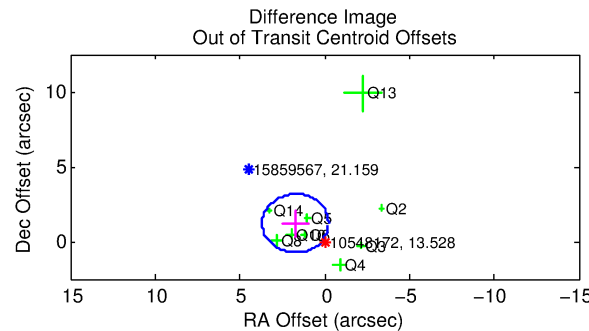
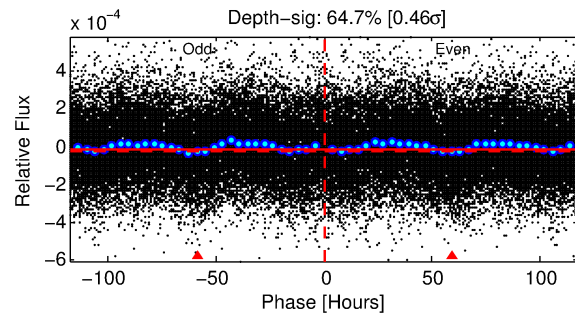
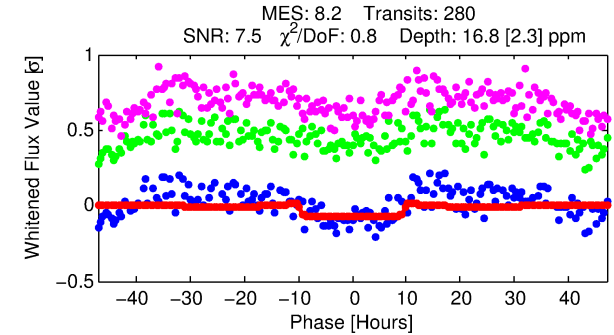
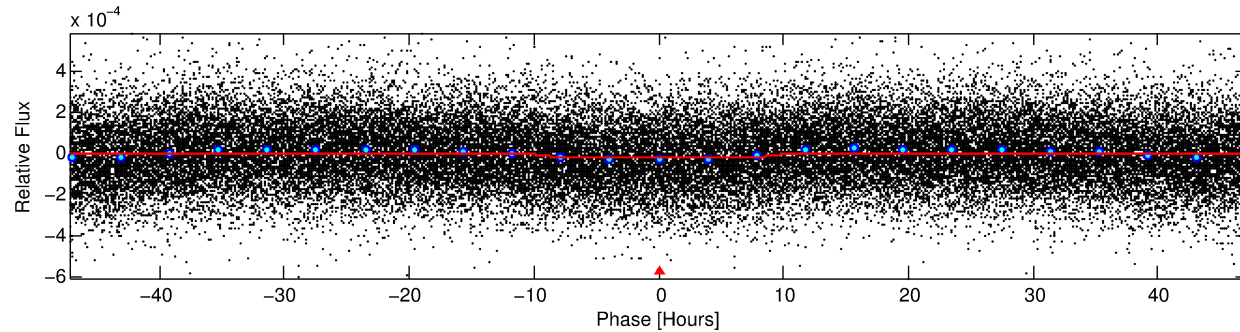
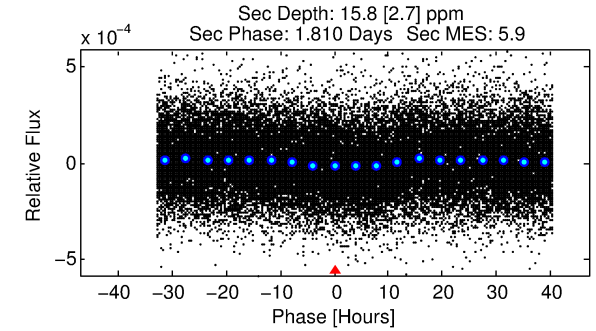
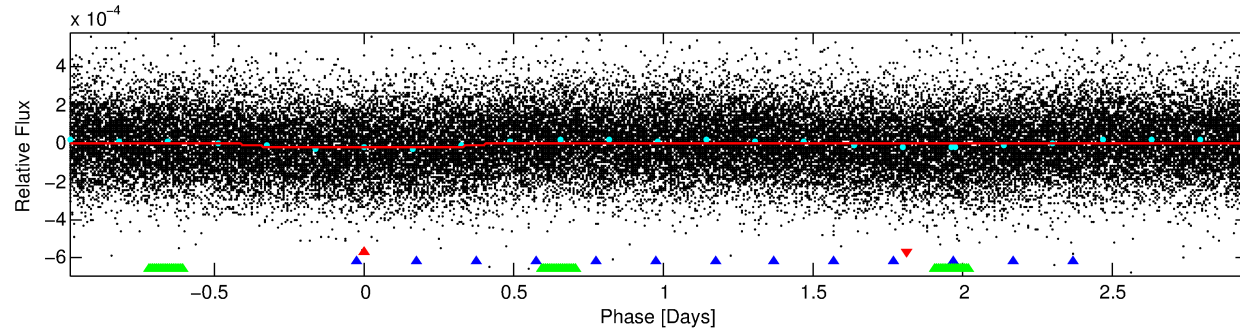
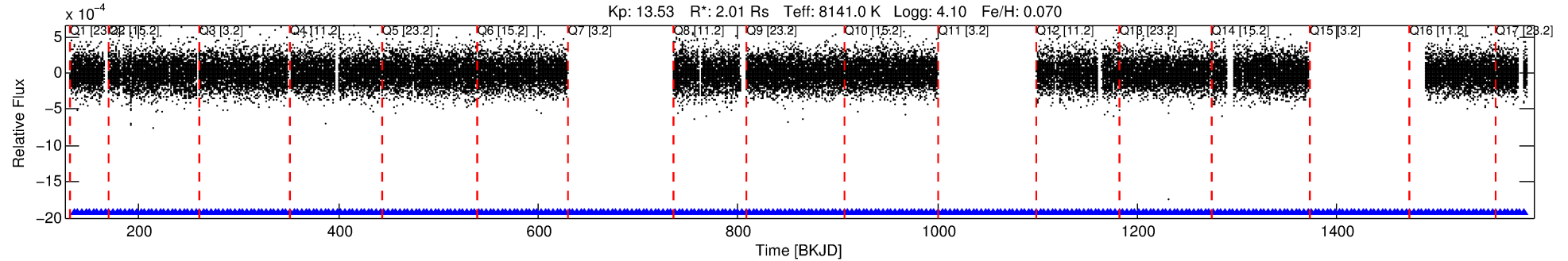
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010548172-01

No Significant Match Found

DV One-Page Summary

KIC: 10548172 Candidate: 1 of 3 Period: 3.935 d



DV Fit Results:

Period = 3.93514 [0.00011] d
Epoch = 135.0762 [0.0173] BKJD
Rp/R* = 0.0038 [0.0062]
a/R* = 1.64 [9.99]
b = 0.14 [66.93]
Seff = 4409.25 [1510.35]
Teff = 2078 [178] K
Rp = 0.84 [1.37] Re
a = 0.0602 [0.0125] AU
Ag = 44.91 [146.42] [0.30σ]
Teffp = 8316 [6762] K [0.92σ]

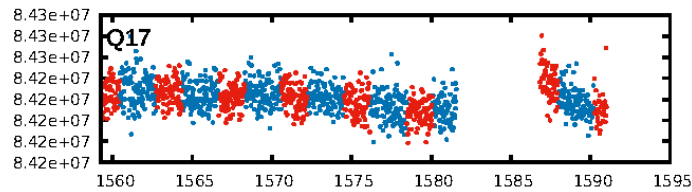
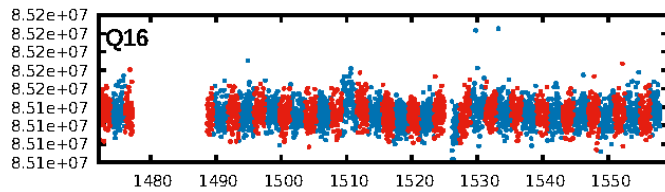
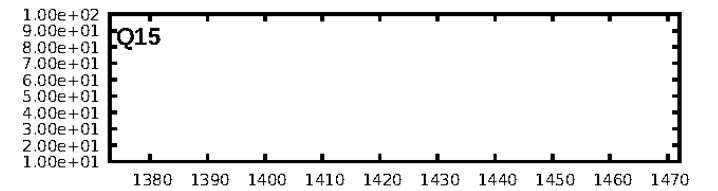
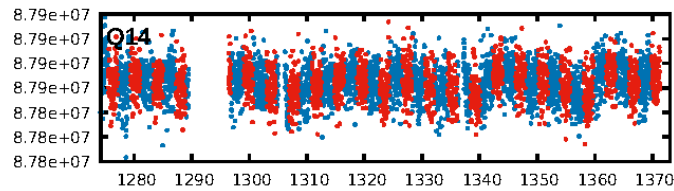
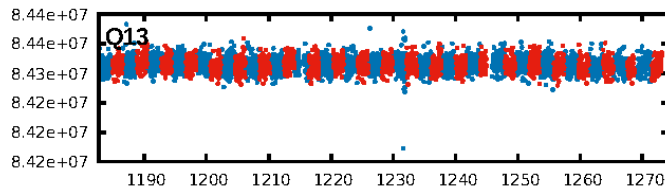
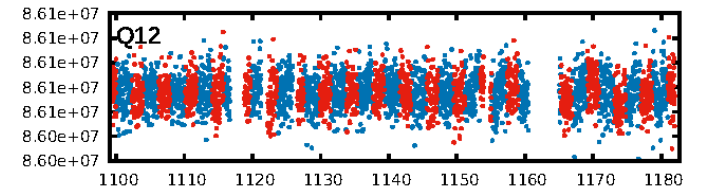
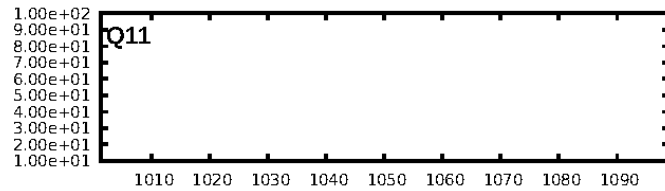
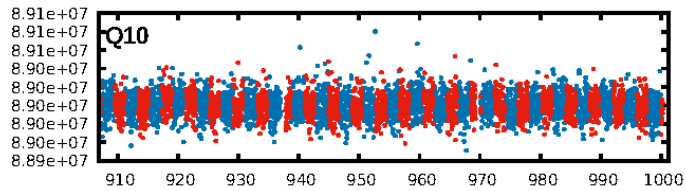
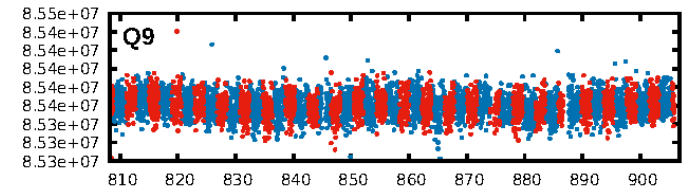
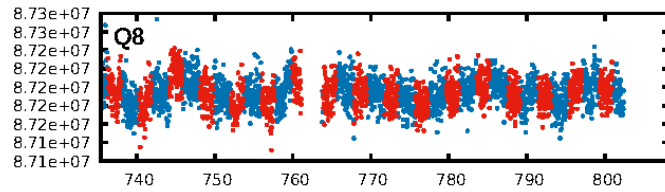
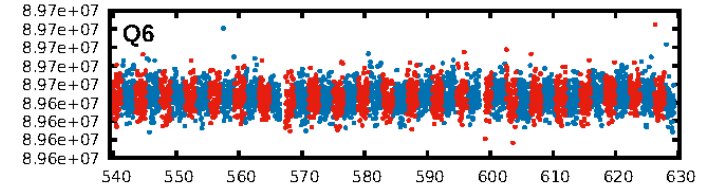
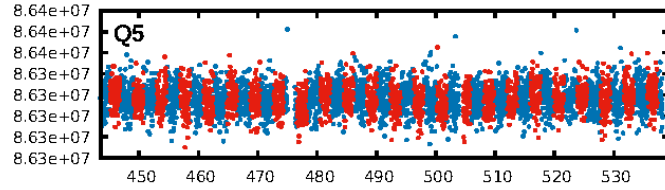
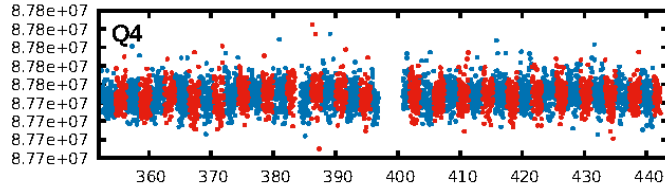
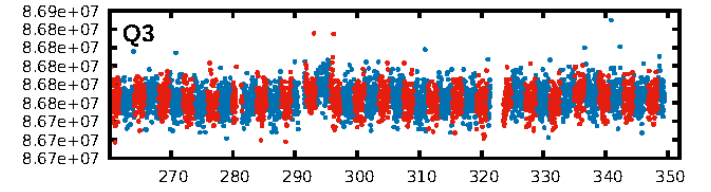
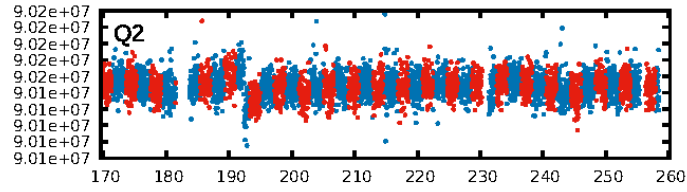
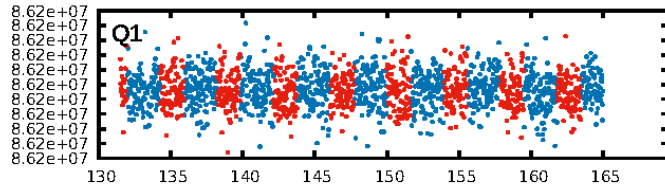
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 97.4% [2.23σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.39e-11
RollingBand-fgt: 1.00 [263/263]
GhostDiagnostic-chr: 9.261
Centroid-sig: 77.3%
Centroid-so: 0.675 arcsec [0.49σ]
OotOffset-rm: 2.110 arcsec [3.23σ]
KicOffset-rm: 1.916 arcsec [2.87σ]
OotOffset-st: 4/1/2/2 [9]
KicOffset-st: 4/1/2/2 [9]
DiffImageQuality-fgm: 0.78 [7/9]
DiffImageOverlap-fno: 1.00 [14/14]

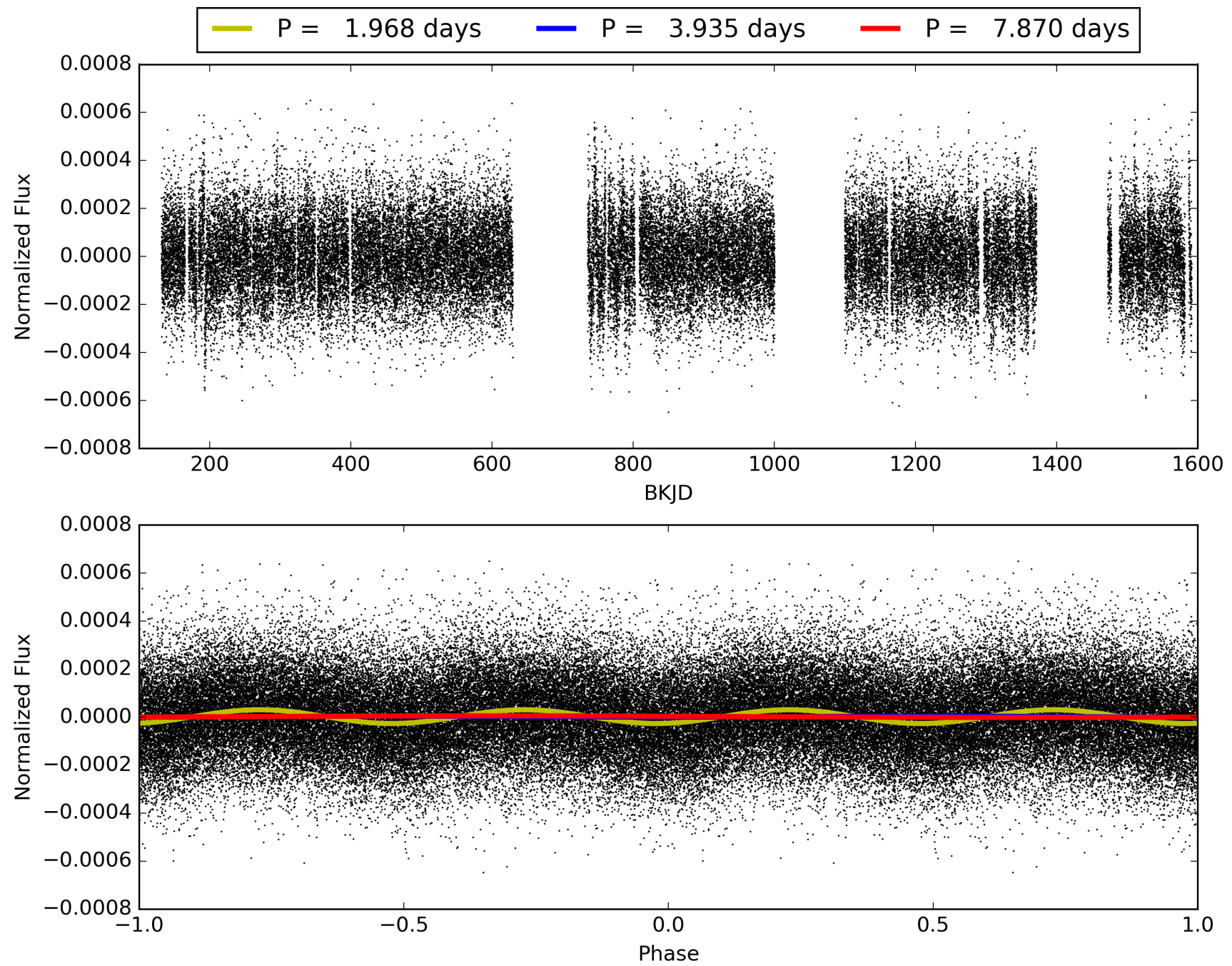
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010548172-01, PDC Light Curves

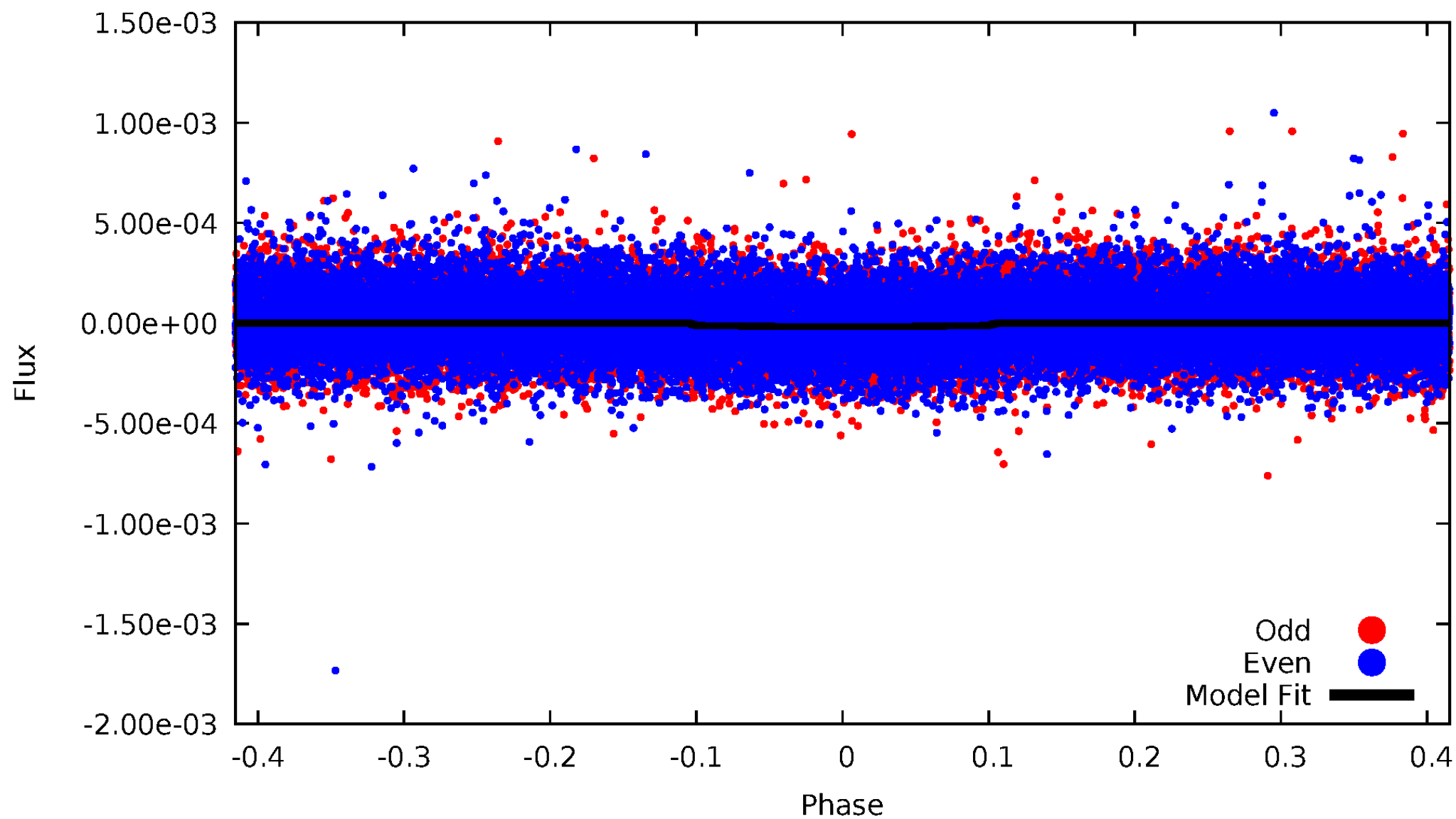


TCE 010548172-01



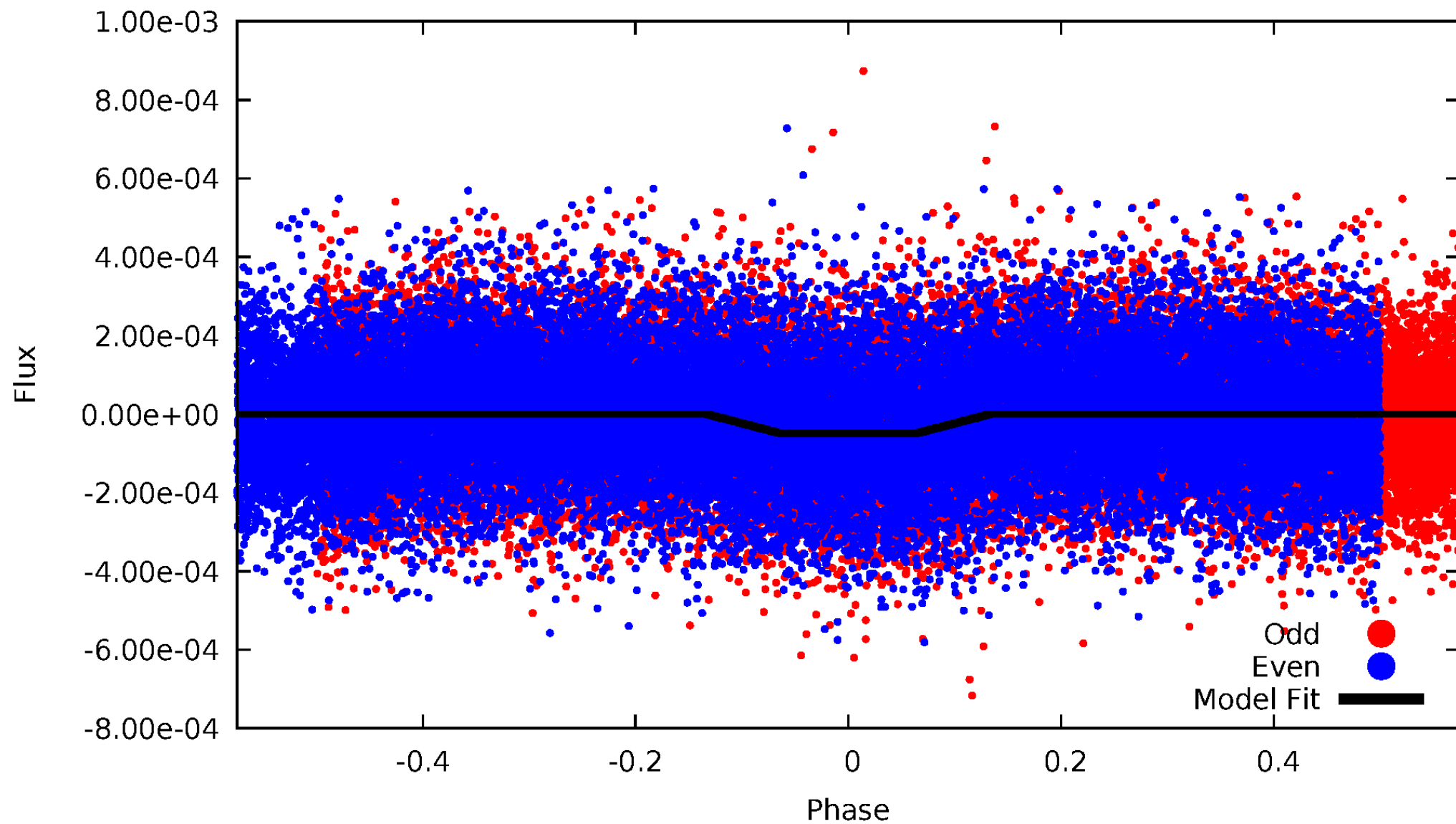
DV Odd/Even

TCE 010548172-01



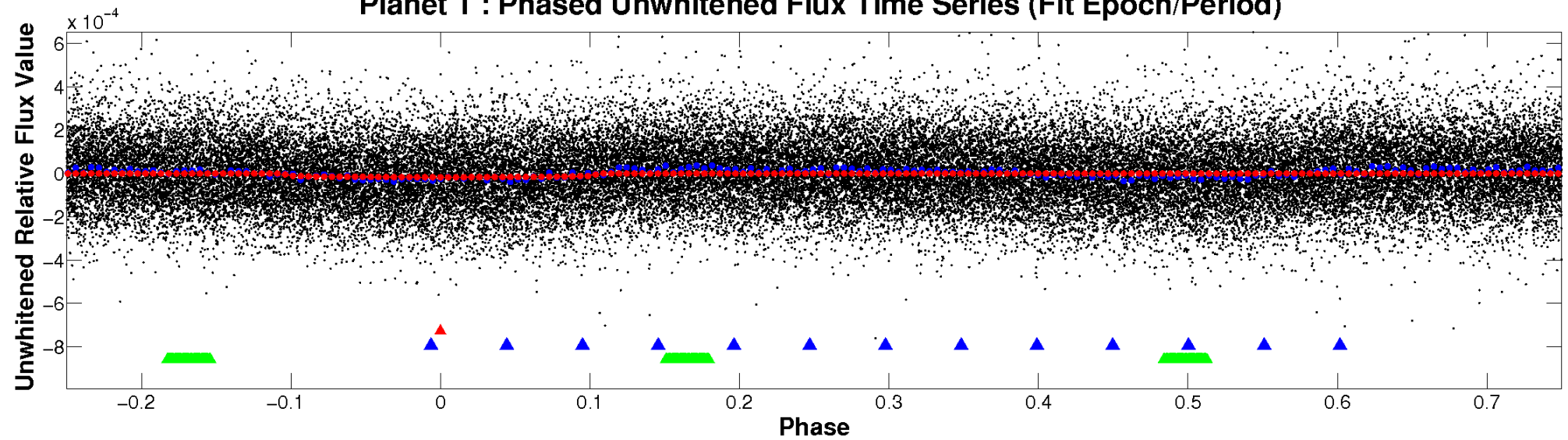
ALT Odd/Even

TCE 010548172-01

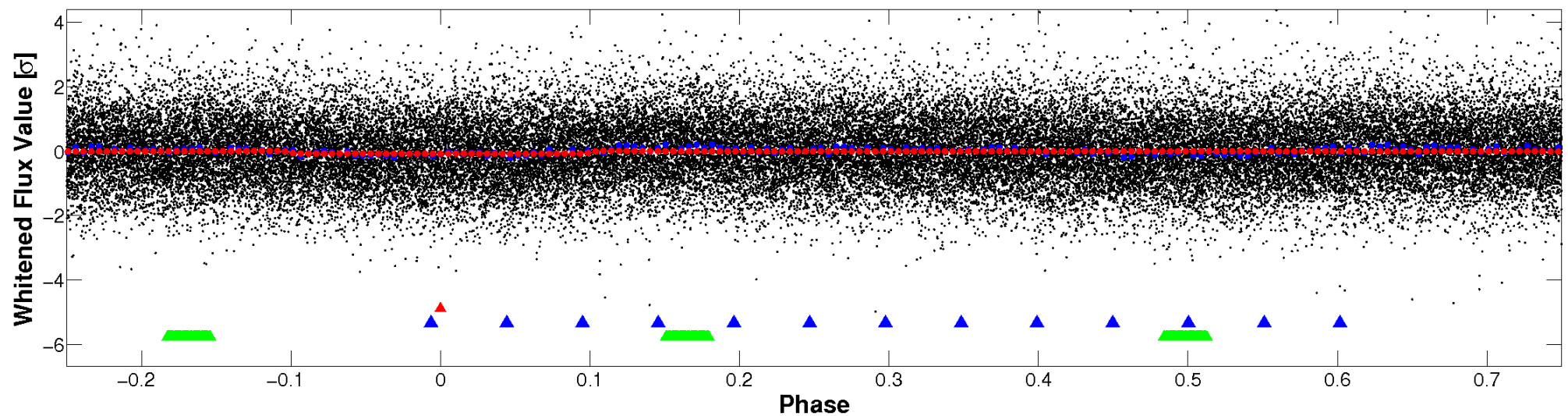


Non-Whitened Vs. Whitened Light Curve

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

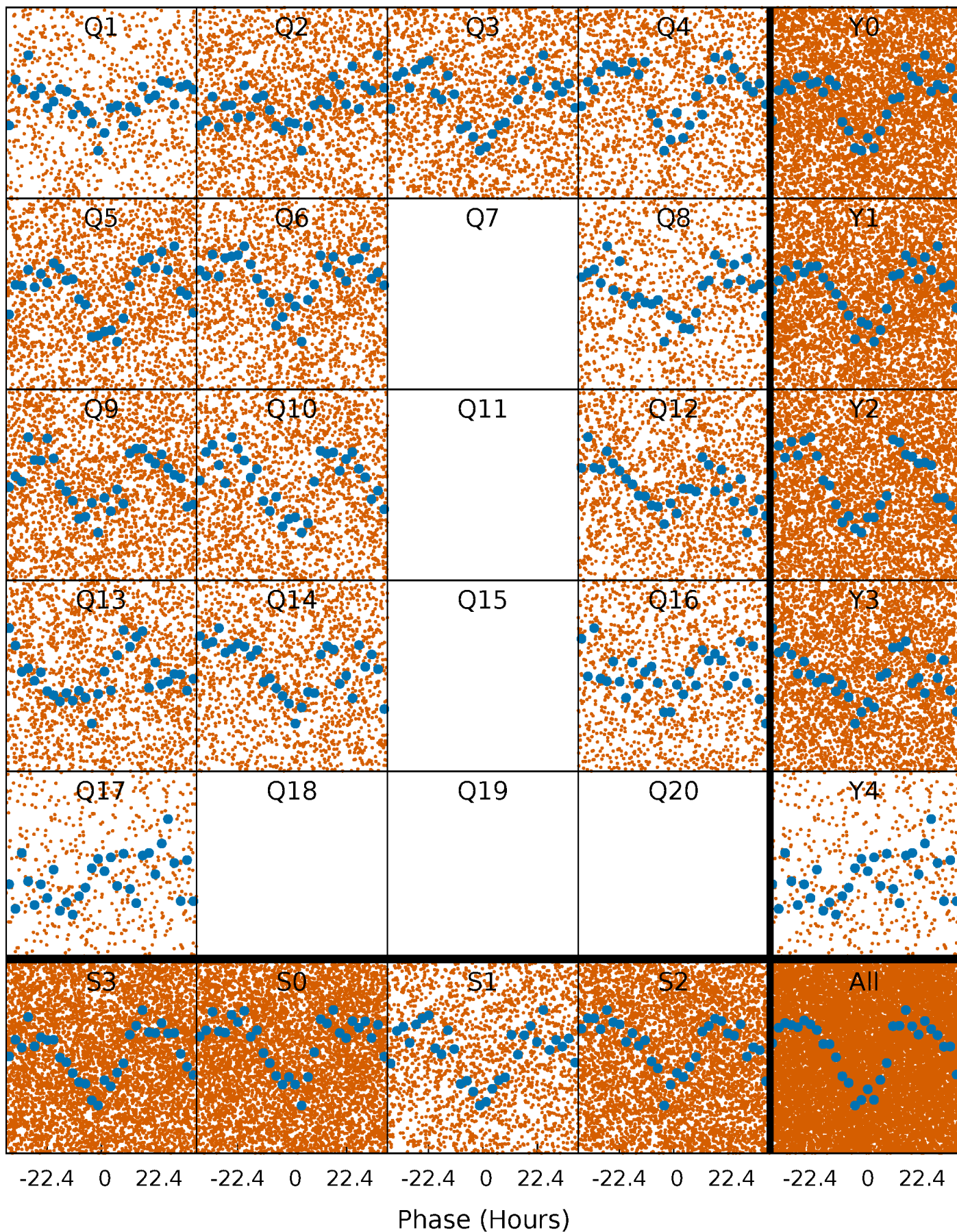


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



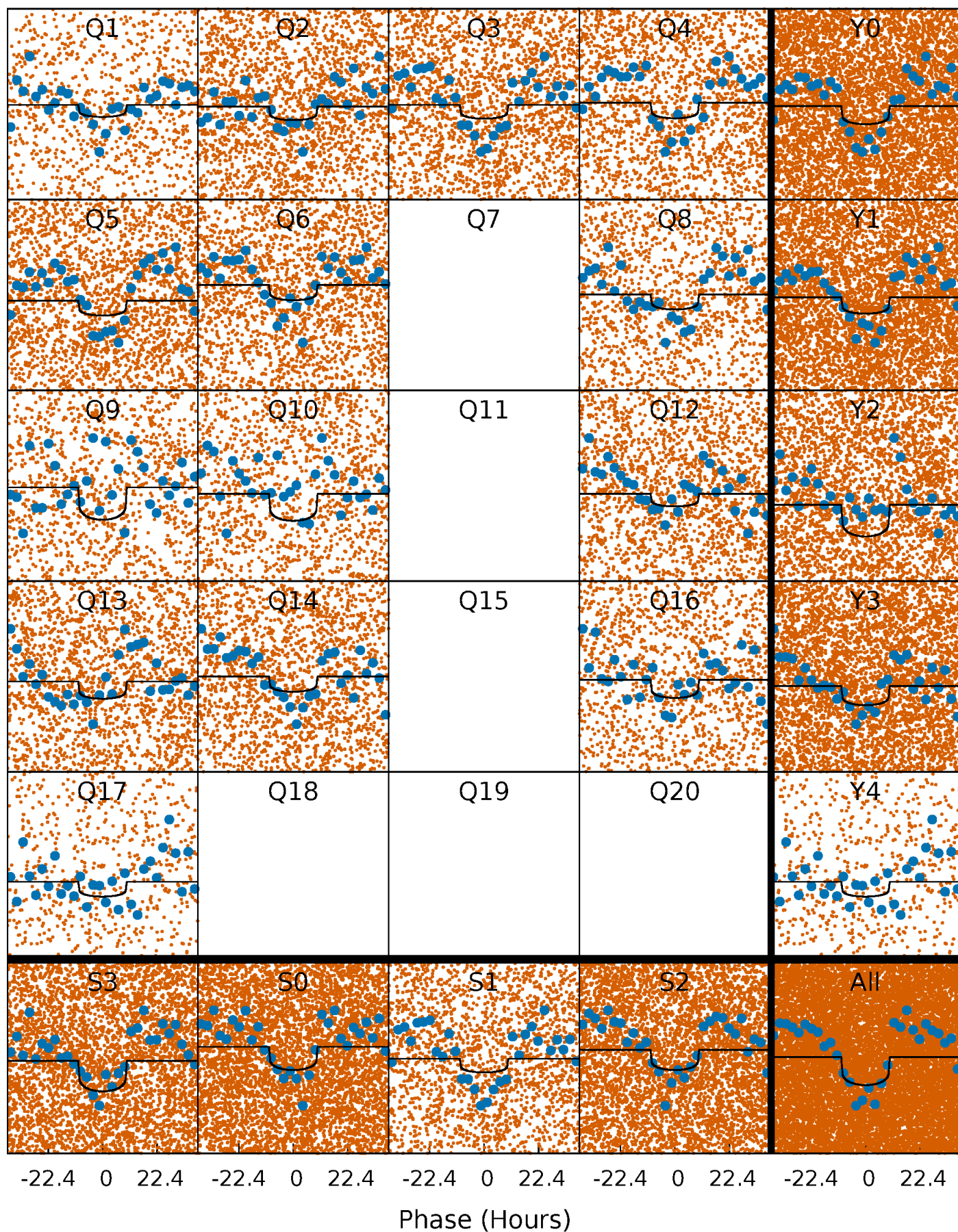
PDC Quarter-Phased Transit Curves

TCE 010548172-01 P= 3.935143 Days $T_0=135.076185$ (BKJD)



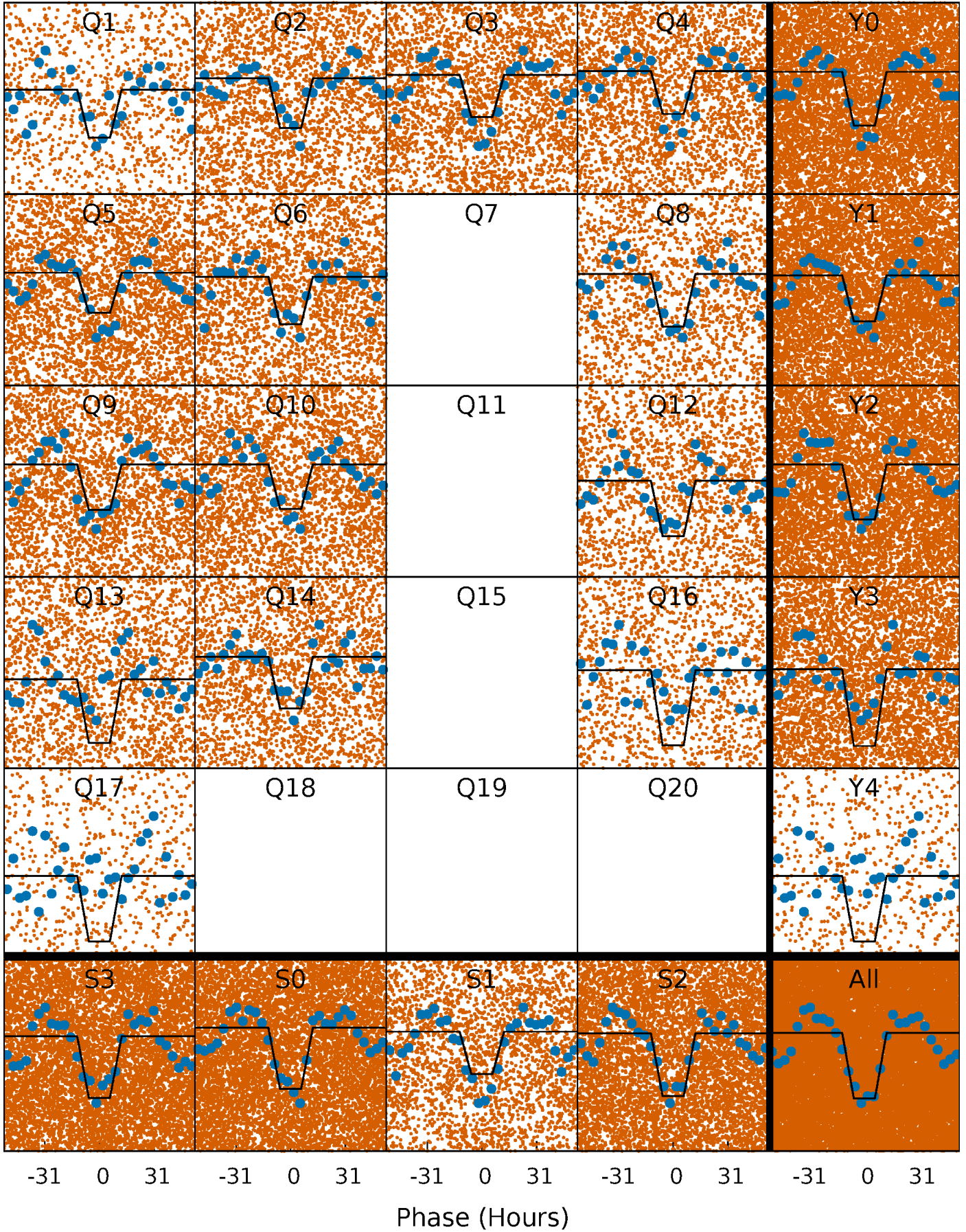
DV Quarter-Phased Transit Curves

TCE 010548172-01 P= 3.935143 Days $T_0=135.076185$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

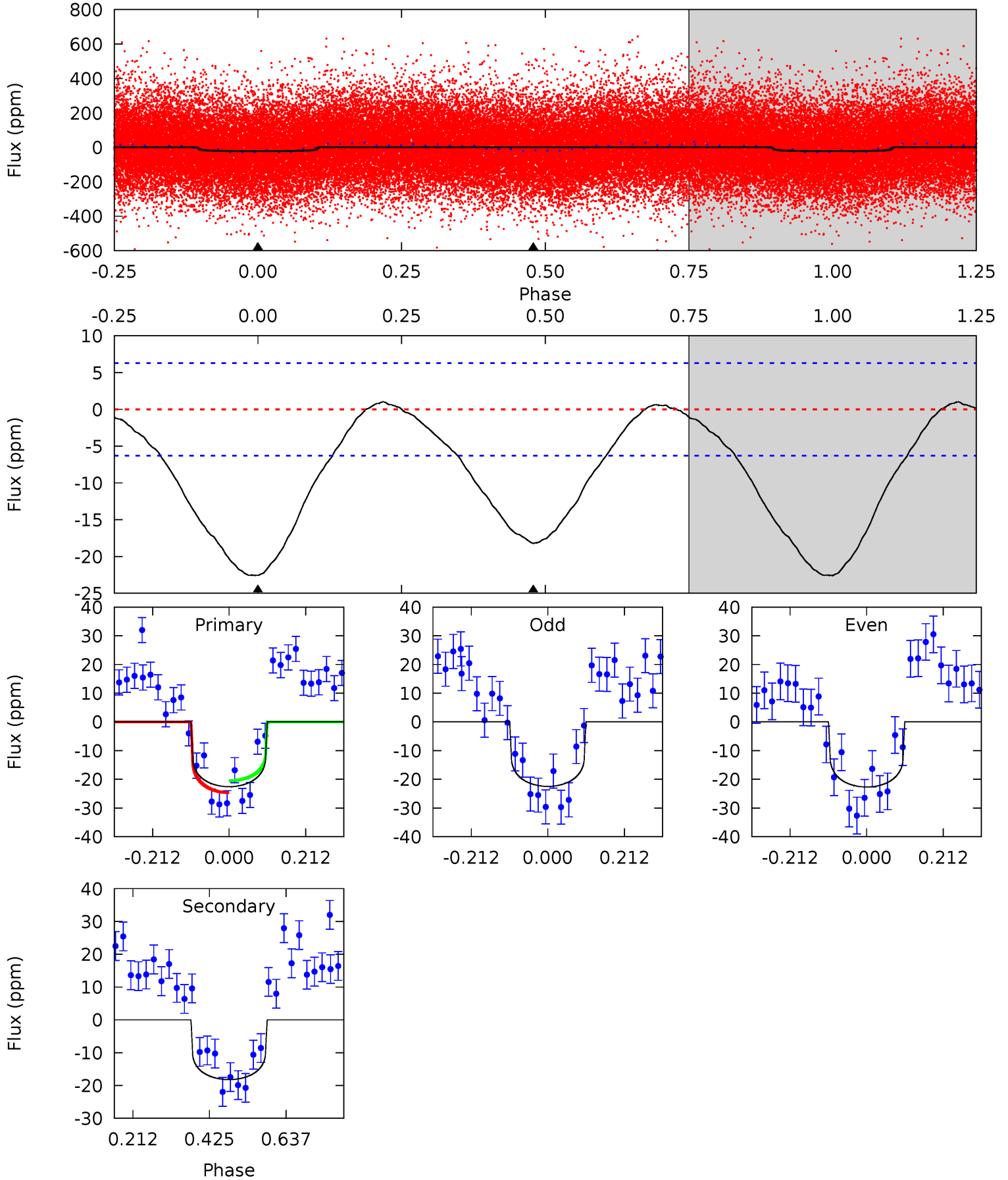
TCE 010548172-01 $P = 3.935086$ Days $T_0 = 135.054866$ (BKJD)



DV Model-Shift Uniqueness Test

010548172-01, P = 3.935143 Days, E = 131.141042 Days

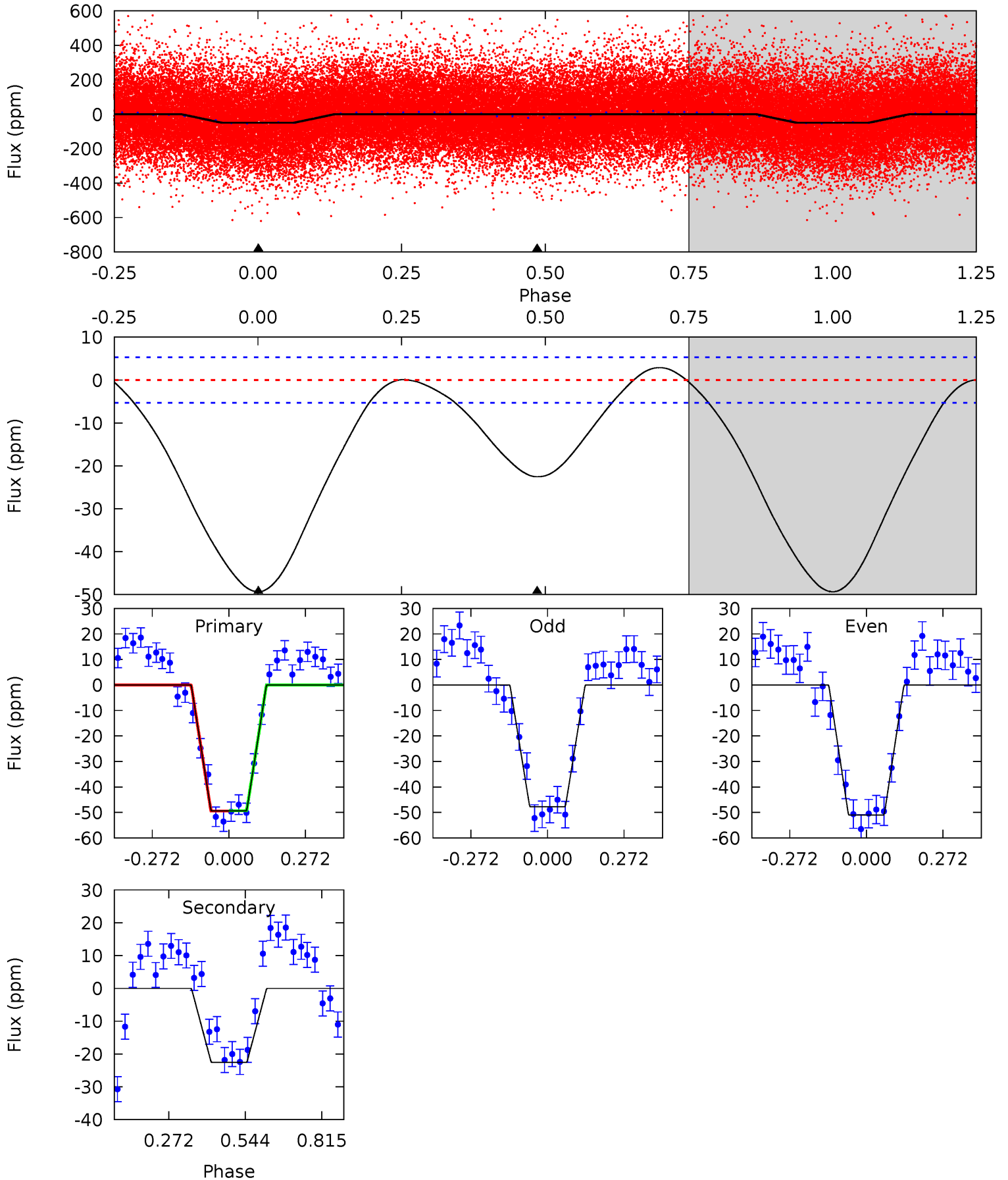
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	12.7	0	0	4.40	1.25	0.73	15.8	15.8	12.7	12.7	0.08	1.01	0.04	1.48



Alt Model-Shift Uniqueness Test

010548172-01, P = 3.935086 Days, E = 131.119780 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.5	18.5	0	0	4.35	1.10	1.35	40.5	40.5	18.5	18.5	1.36	1.01	0.06	0.07



Stellar Parameters For KIC 010548172

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8141^{+224}_{-365}	$4.103^{+0.112}_{-0.154}$	$0.070^{+0.250}_{-0.400}$	$2.014^{+0.517}_{-0.387}$	$1.872^{+0.271}_{-0.332}$	$0.323^{+0.193}_{-0.139}$
	+3%/-4%	+3%/-4%	+357%/-571%	+26%/-19%	+14%/-18%	+60%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010548172-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-18 ± 1	$1.29^{+1.24}_{-0.89}$	2914^{+188}_{-164}	6832^{+8571}_{-1924}	23^{+197}_{-17}
Alt.	-23 ± 1	$1.79^{+1.23}_{-1.15}$	2924^{+181}_{-182}	6028^{+5607}_{-1236}	14^{+95}_{-9}

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

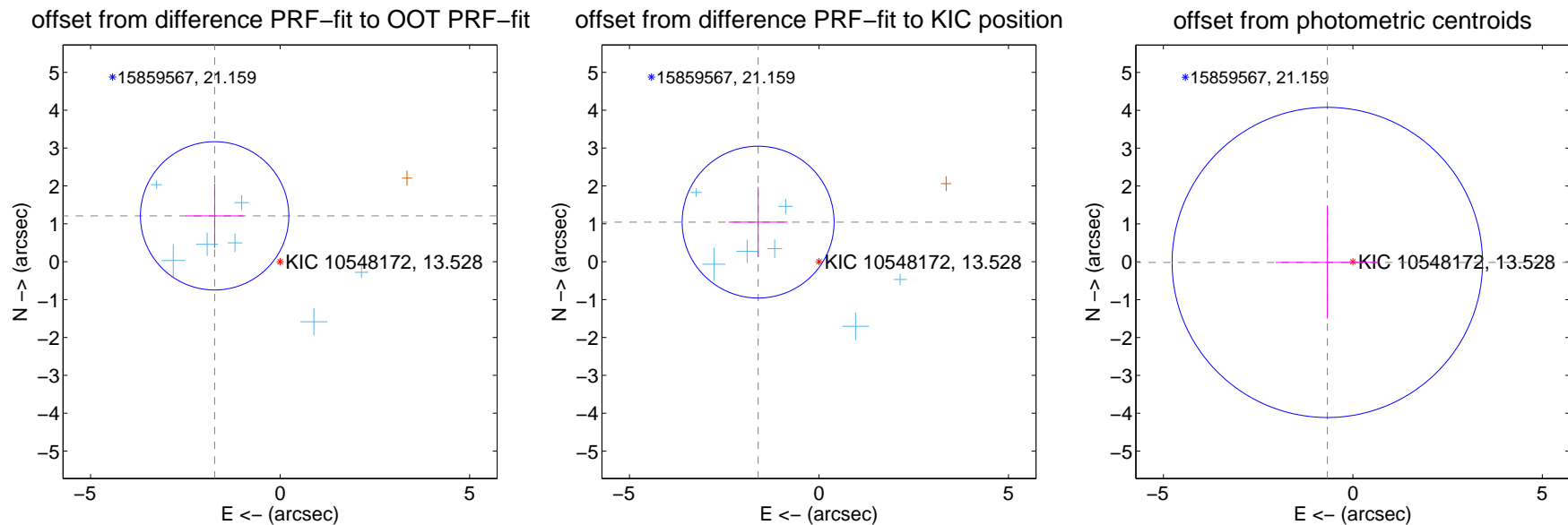
DV Centroid Data

Supplemental centroid analysis for 010548172-01. Kepler magnitude: 13.53. Transit SNR 7.53

There are 7 quarters with good PRF difference image offsets

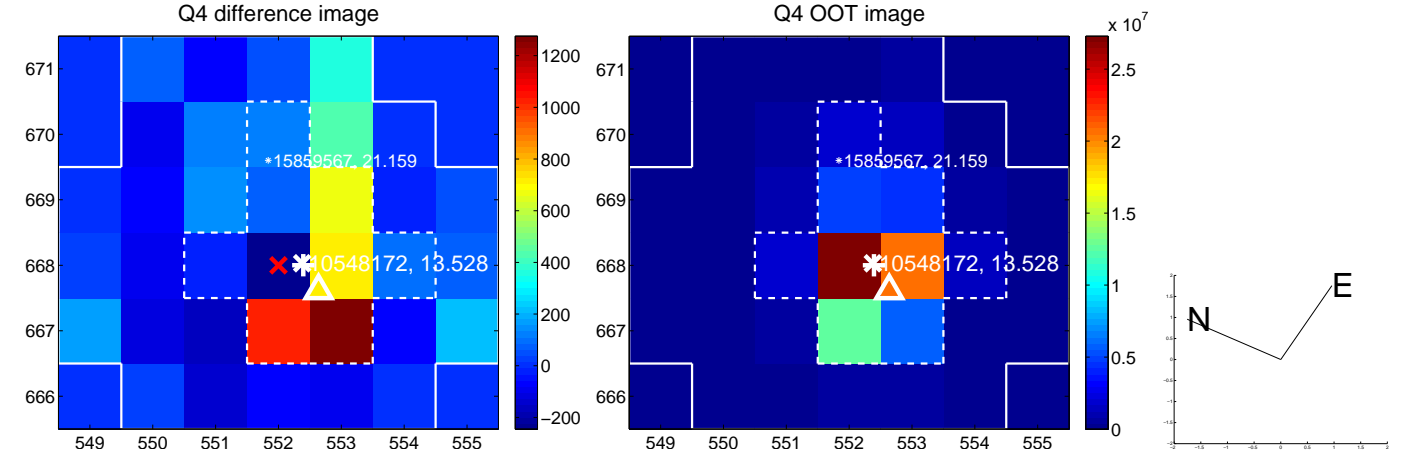
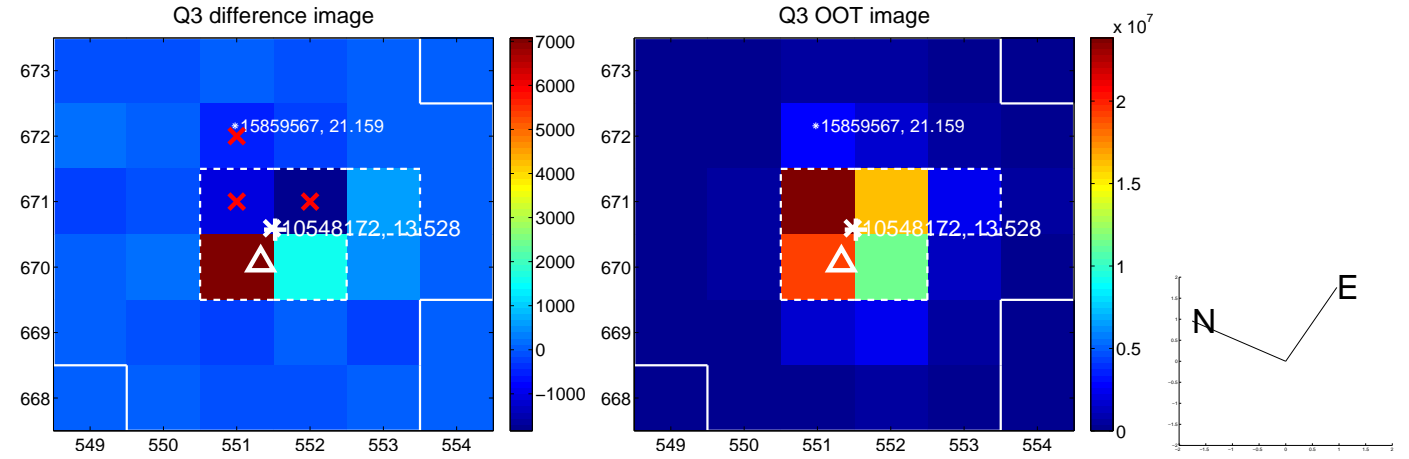
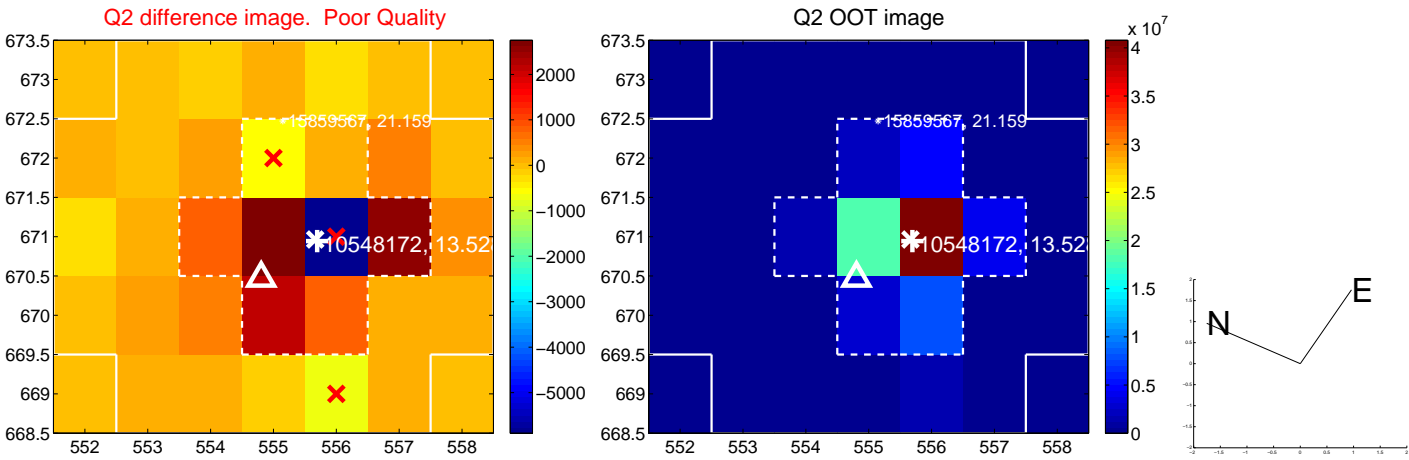
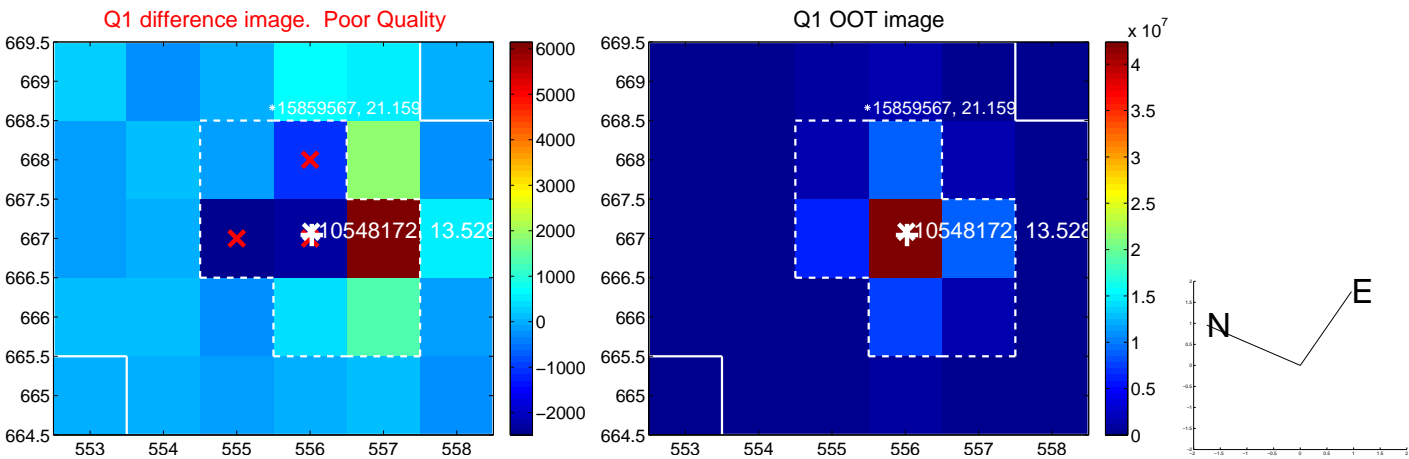
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.110 \pm 0.653	3.23	1.728 \pm 0.761	1.211 \pm 0.850
PRF-fit source offset from KIC position	1.916 \pm 0.668	2.87	1.606 \pm 0.779	1.045 \pm 0.927
photometric centroid source offset	0.67 \pm 1.37	0.49	0.67 \pm 1.37	-0.02 \pm 1.48

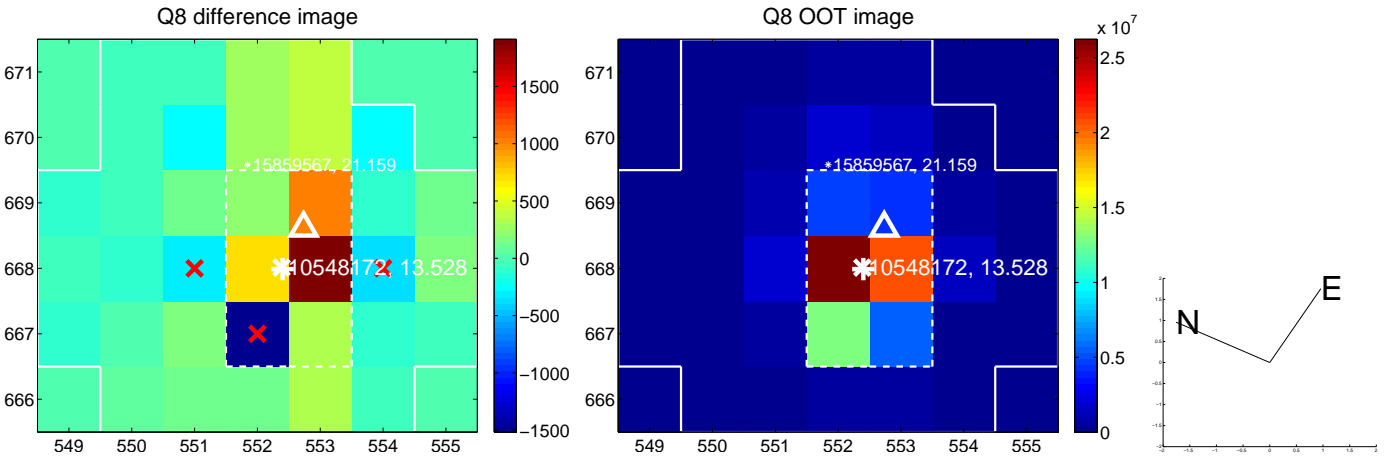
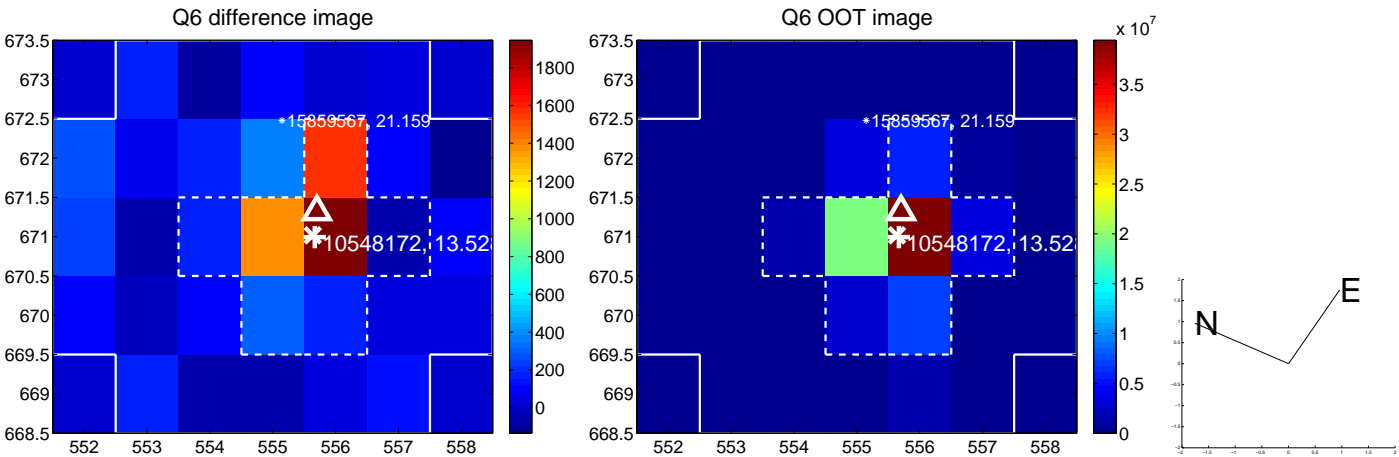
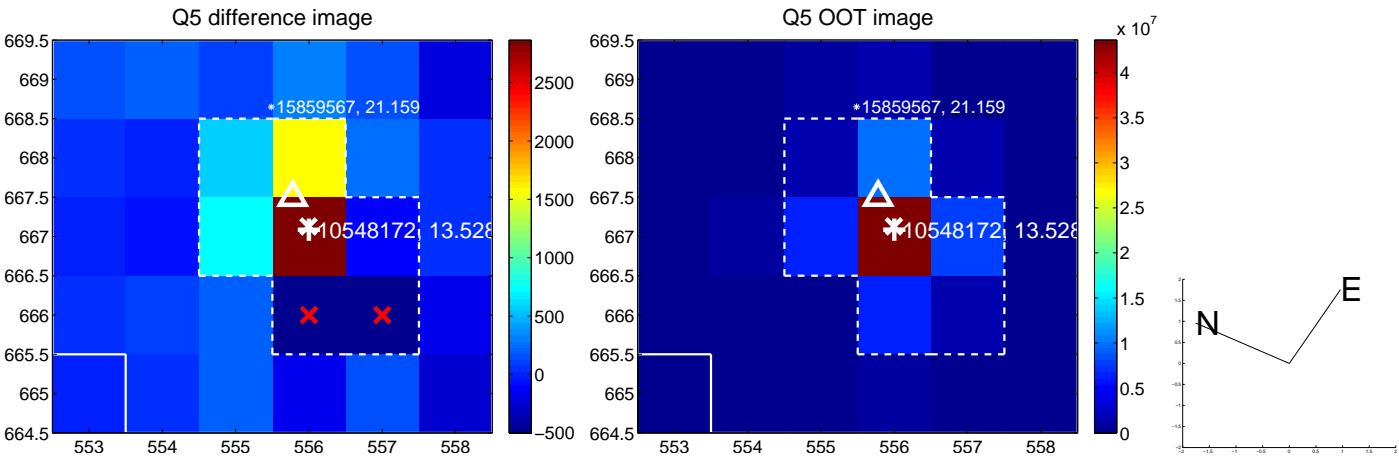


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

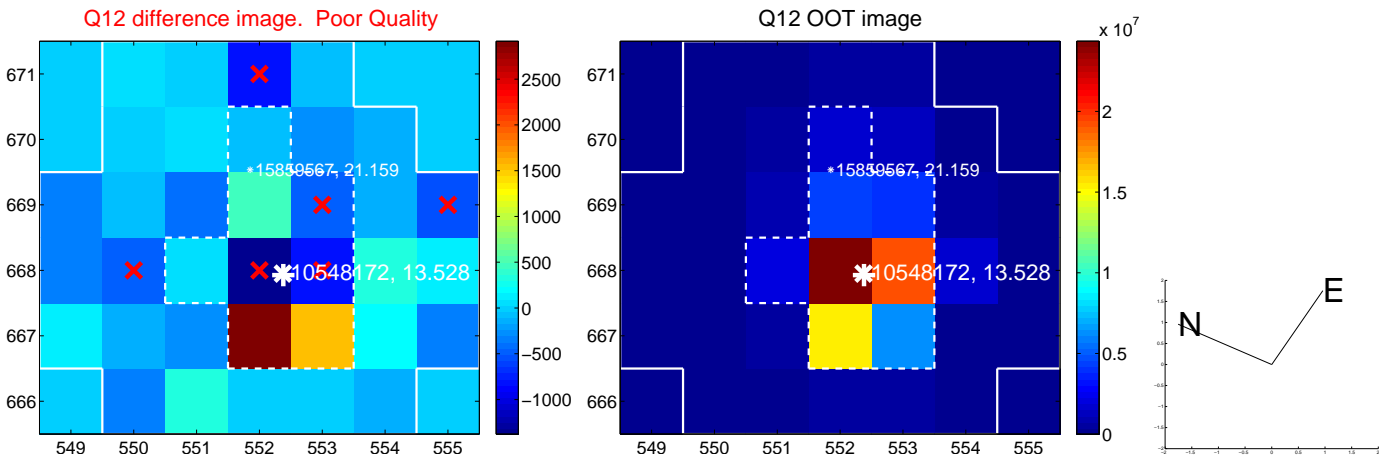
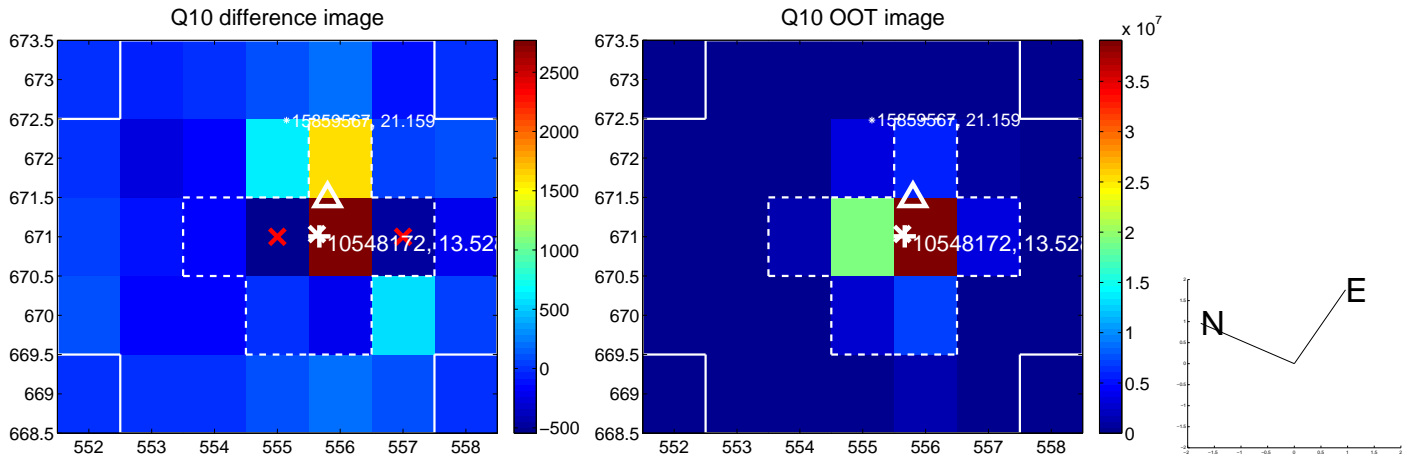
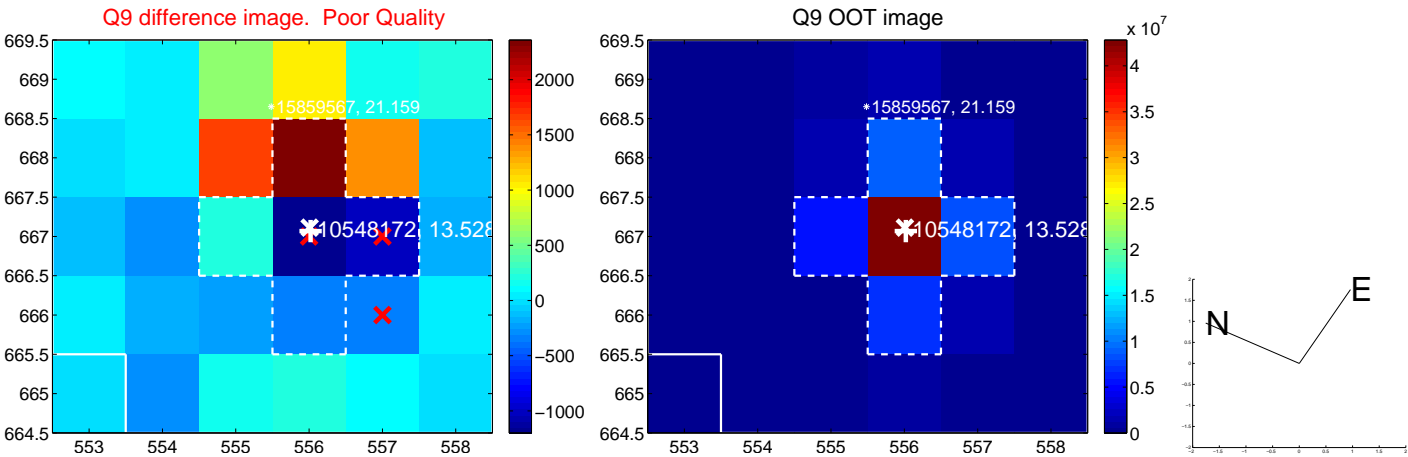
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



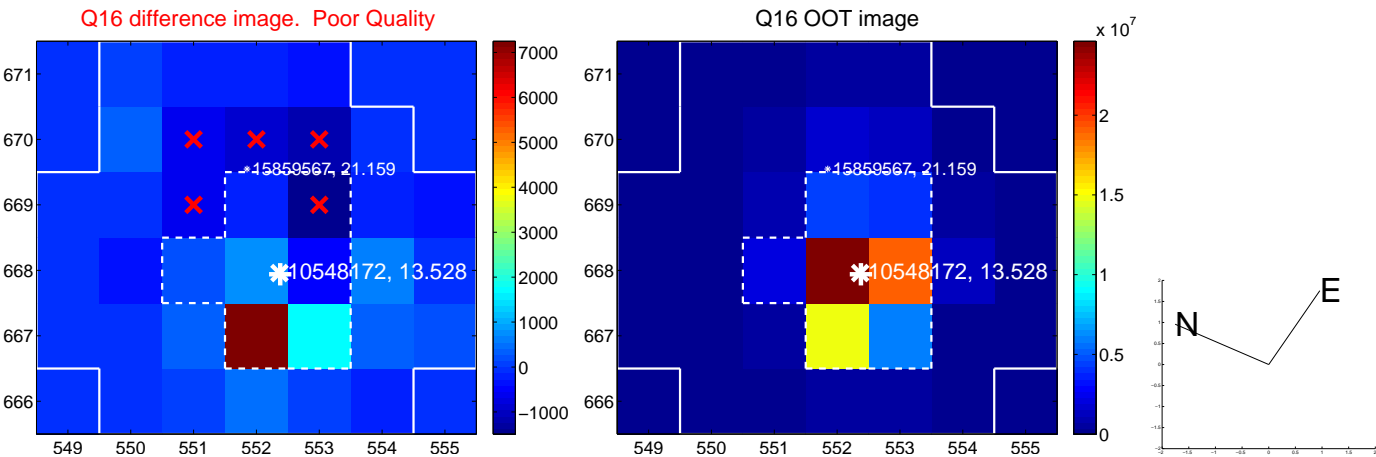
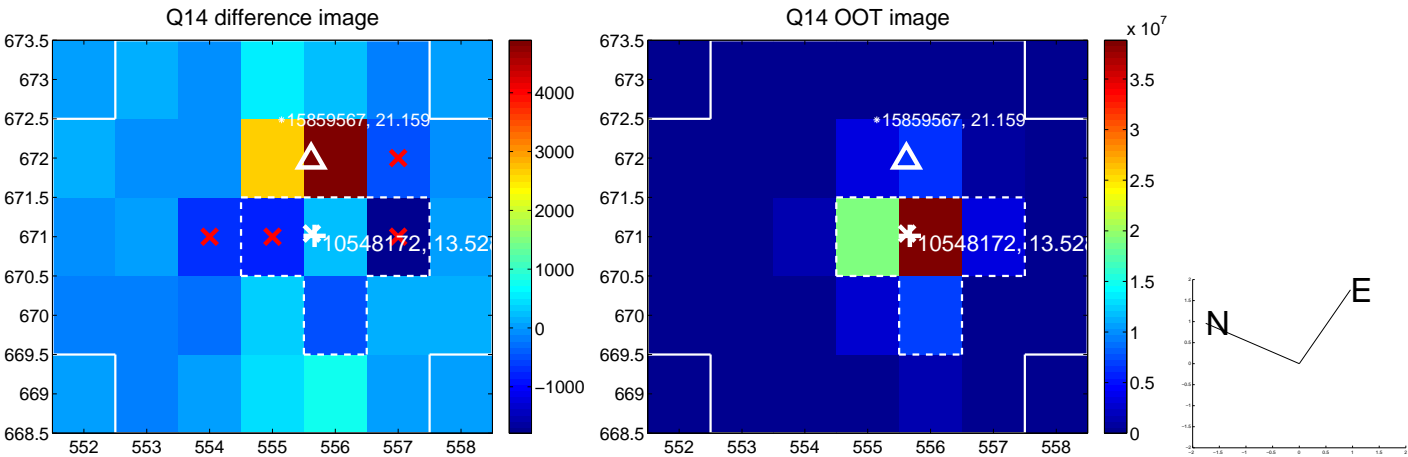
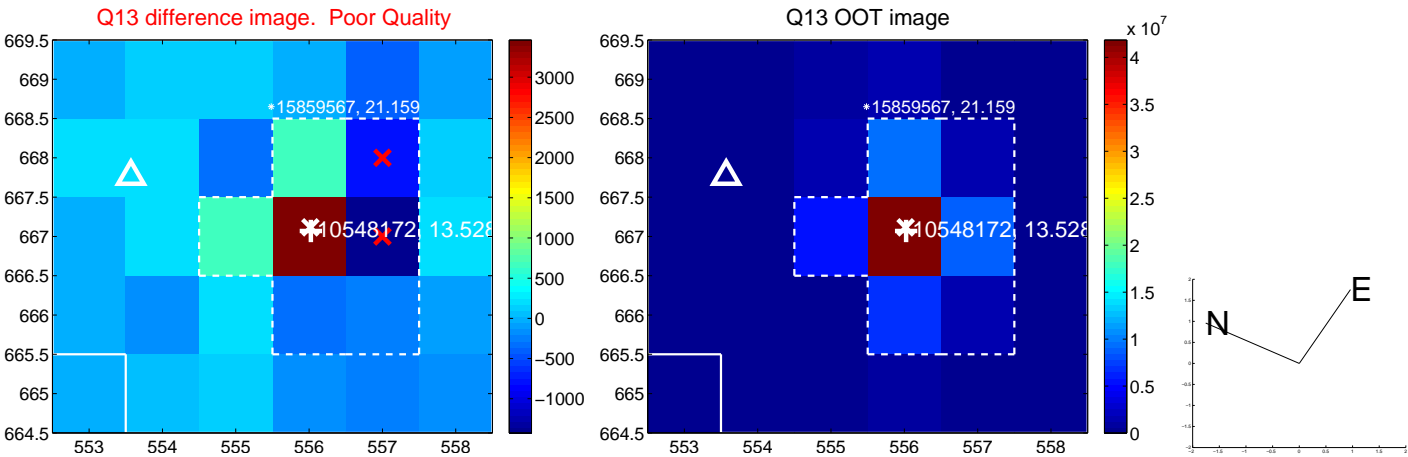
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



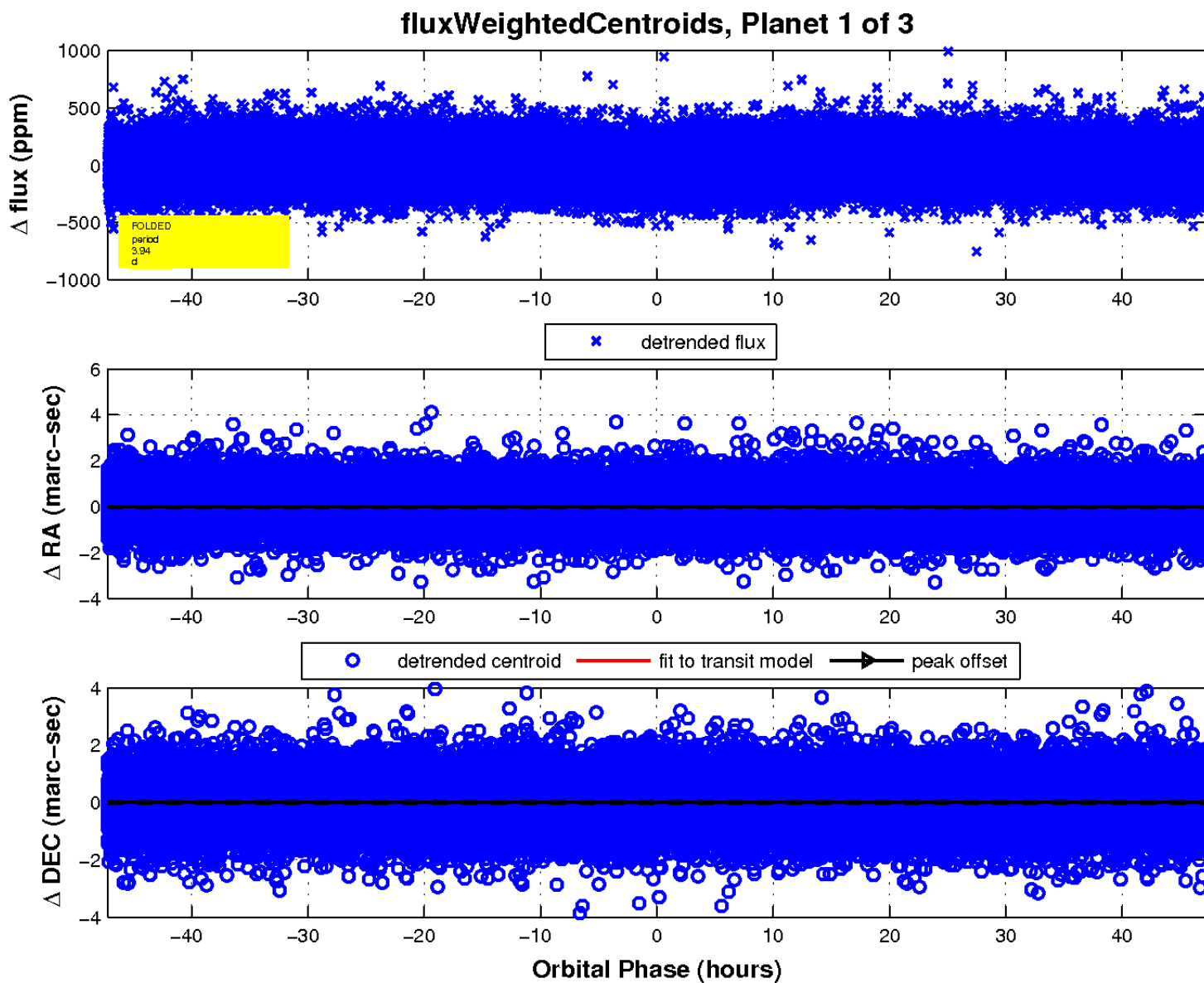
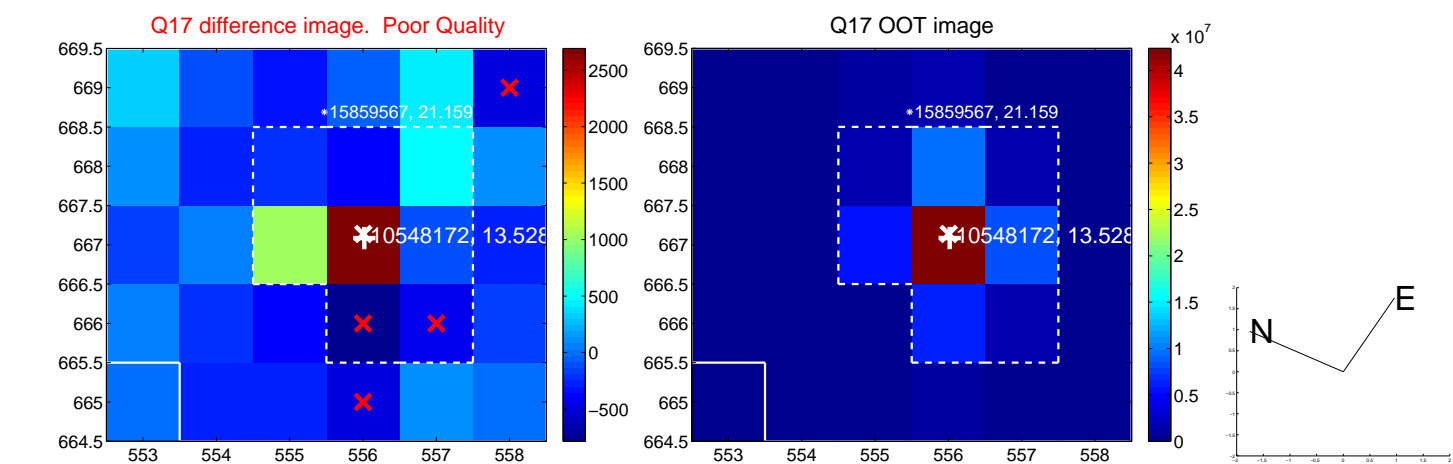
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

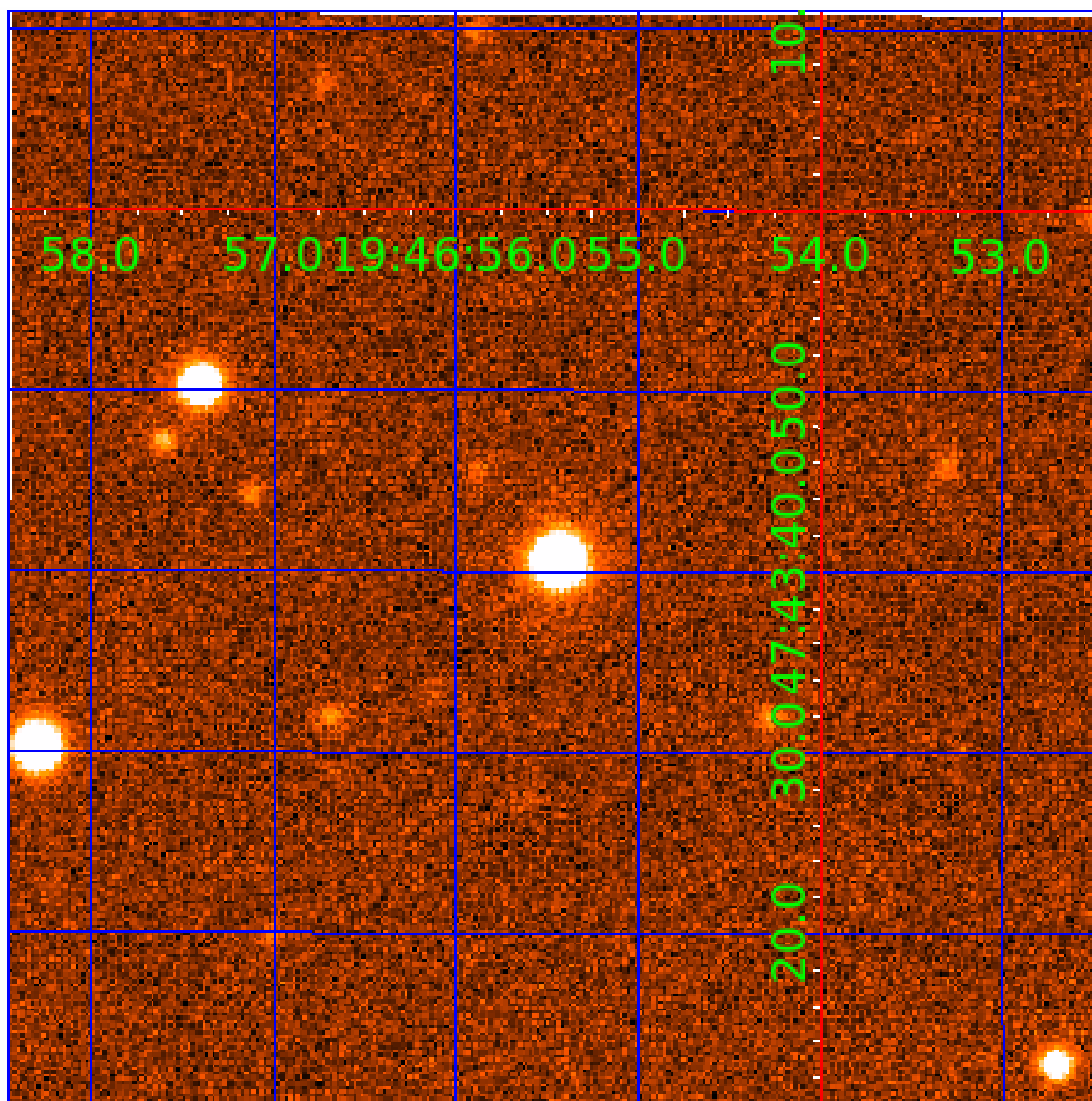


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010548172

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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010548172-02	OBS	No	113.919752	204.341391	111.2	11.826	9.3	6.6	2.01	8141	2.38	49.60
010548172-03	OBS	No	6.558052	135.783060	34.9	20.382	8.2	8.2	2.01	8141	1.40	2231.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010548172-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010548172-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
010548172-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

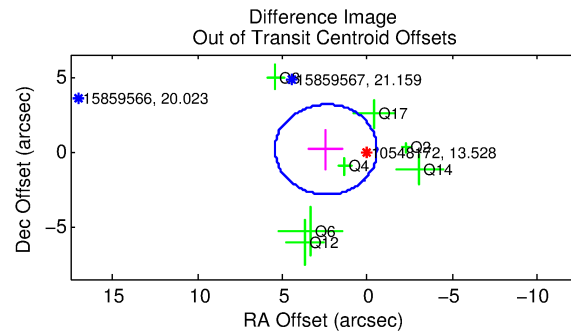
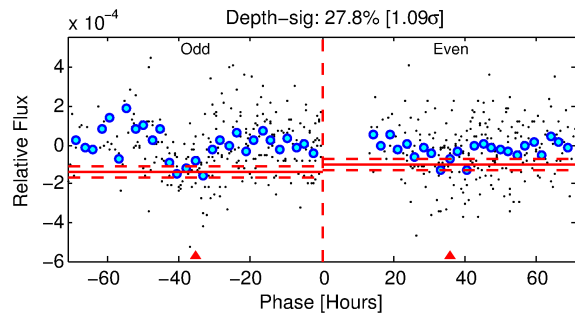
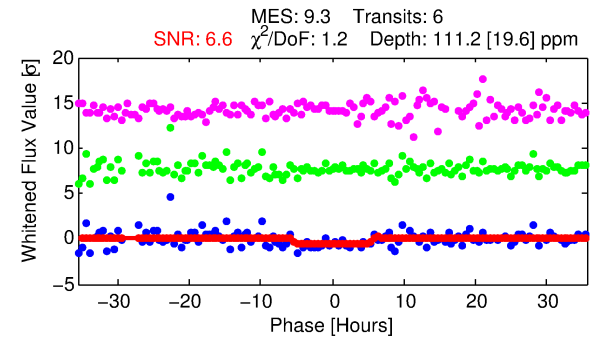
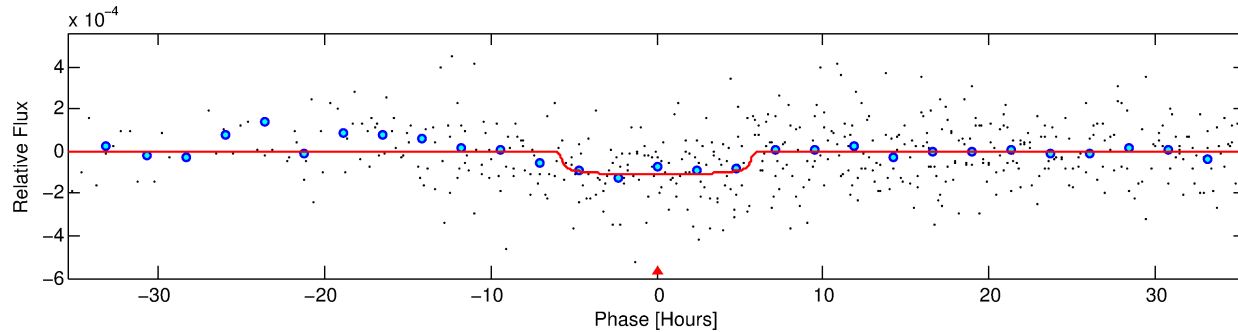
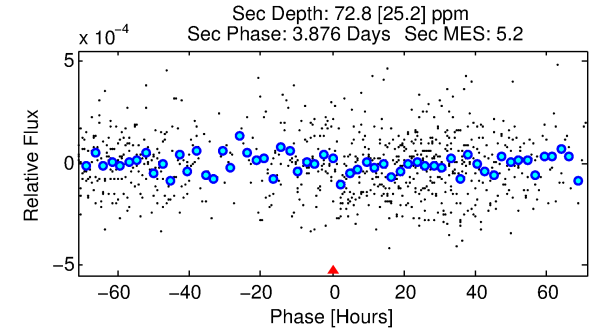
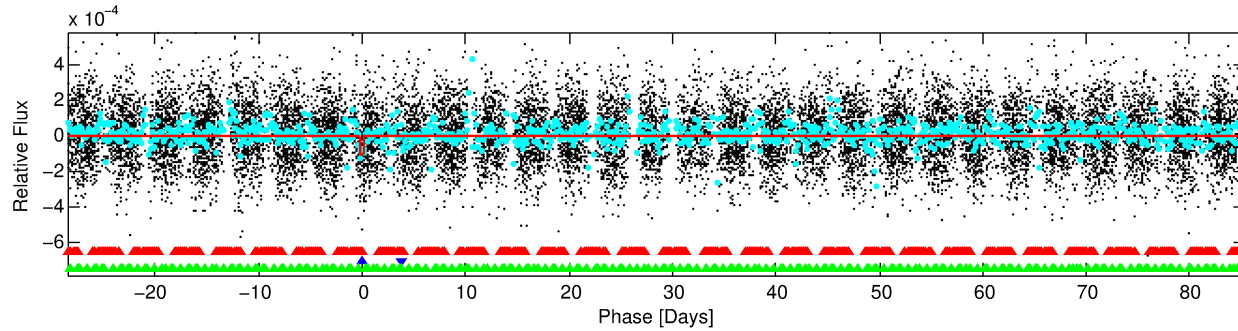
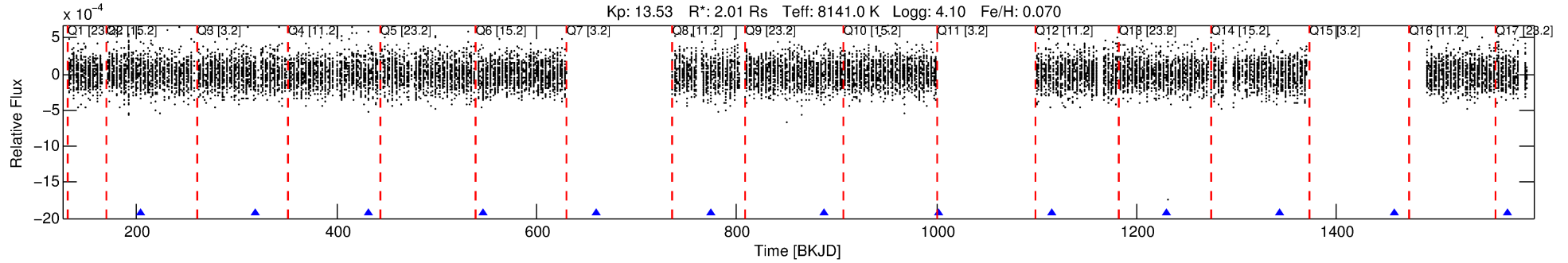
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010548172-02

No Significant Match Found

DV One-Page Summary

KIC: 10548172 Candidate: 2 of 3 Period: 113.920 d



DV Fit Results:

Period = 113.91975 [0.00772] d
Epoch = 204.3414 [0.0212] BKJD
Rp/R* = 0.0108 [0.0042]
a/R* = 41.77 [97.49]
b = 0.84 [0.84]
Seff = 49.60 [16.99]
Teq = 677 [58] K
Rp = 2.38 [1.11] Re
a = 0.5673 [0.1180] AU
Ag = 2281.41 [2055.01] [1.11σ]
Teffp = 7231 [1574] K [4.16σ]

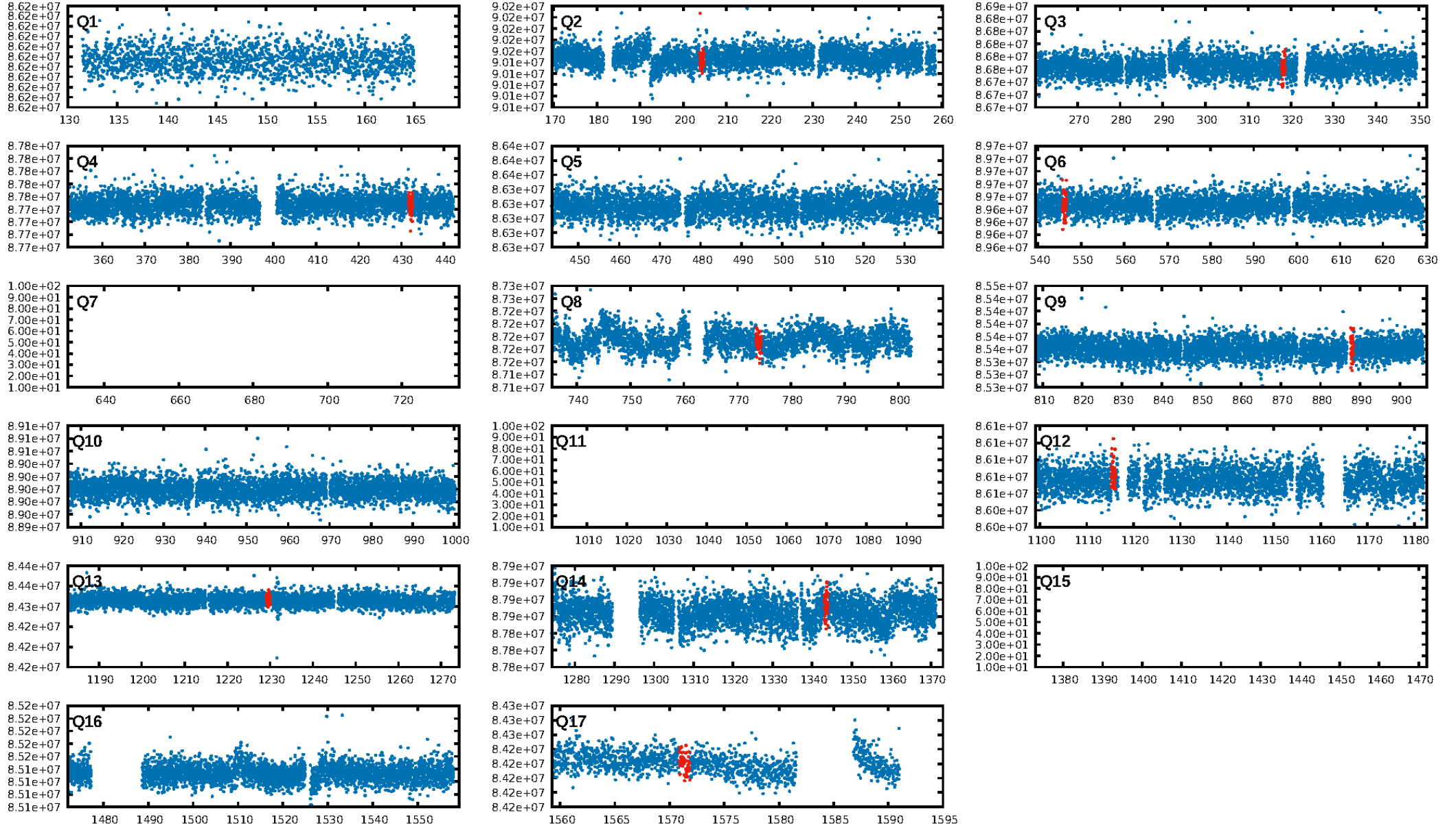
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [109.35σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.61e-12
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.8959
Centroid-sig: 22.4%
Centroid-so: 1.155 arcsec [0.79σ]
OotOffset-rm: 2.420 arcsec [2.41σ]
KicOffset-rm: 2.361 arcsec [2.17σ]
OotOffset-st: 3/0/3/1 [7]
KicOffset-st: 3/0/3/1 [7]
DiffImageQuality-fgm: 0.29 [2/7]
DiffImageOverlap-fno: 0.38 [3/8]

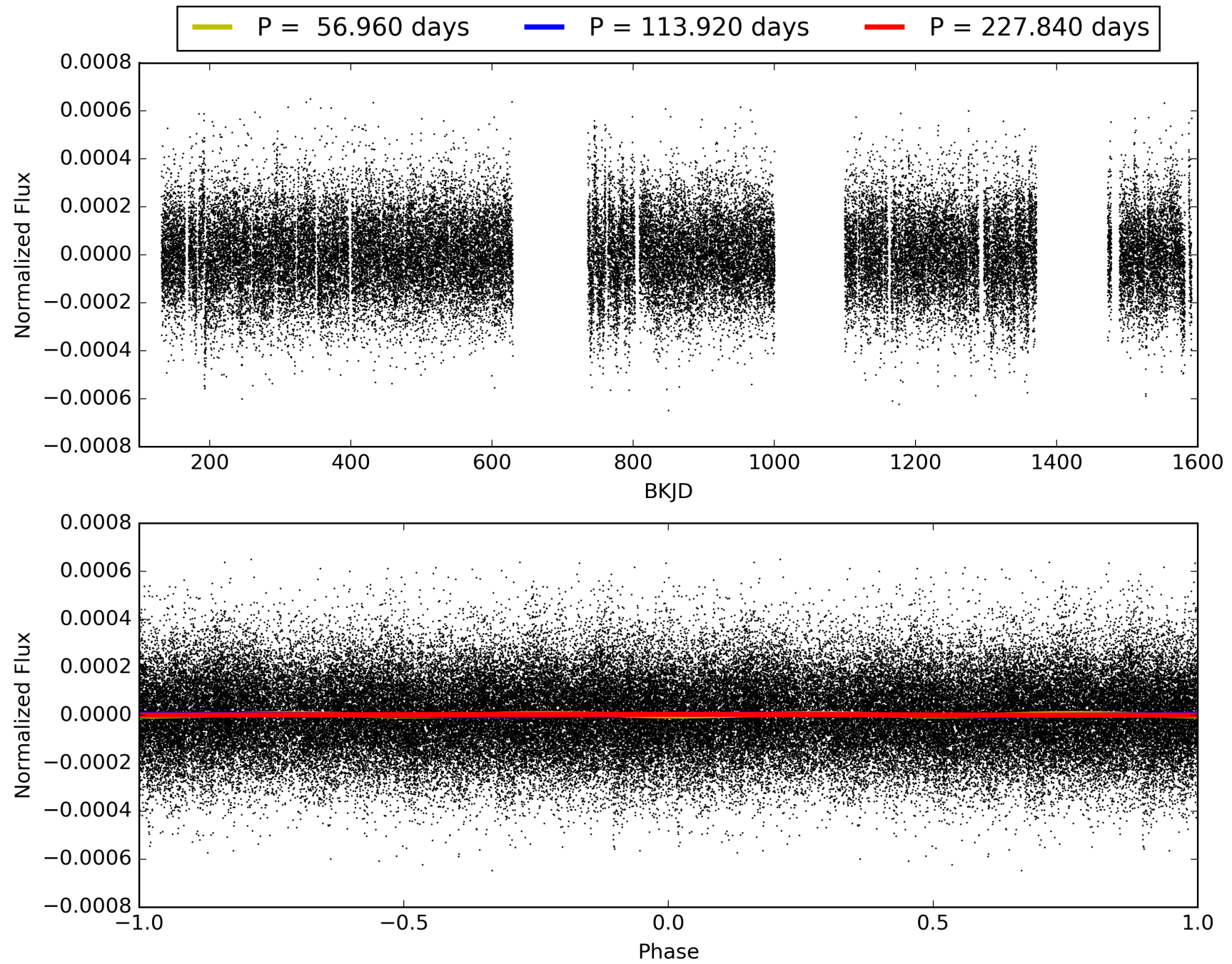
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:06:38 Z

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

TCE 010548172-02, PDC Light Curves

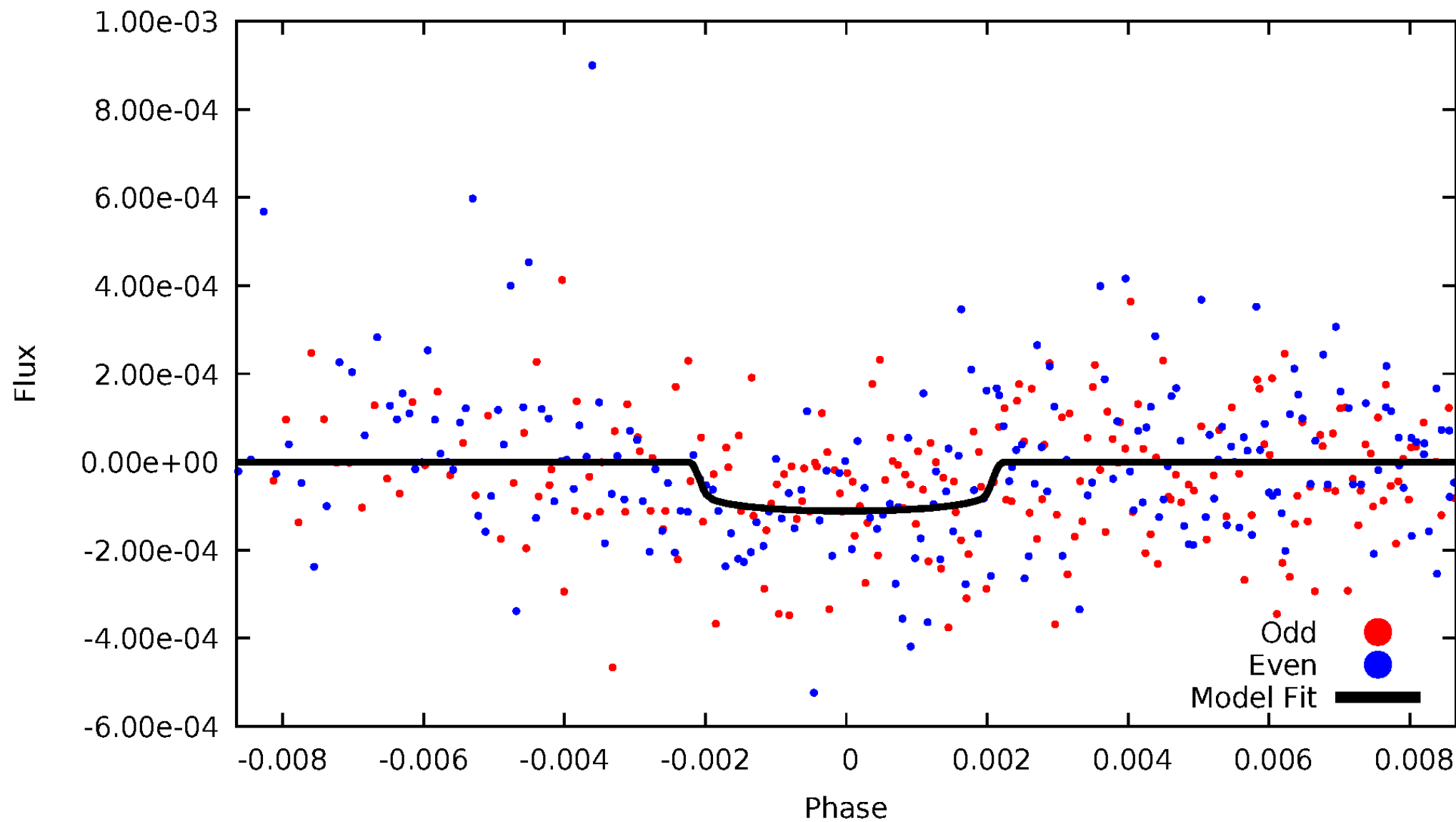


TCE 010548172-02



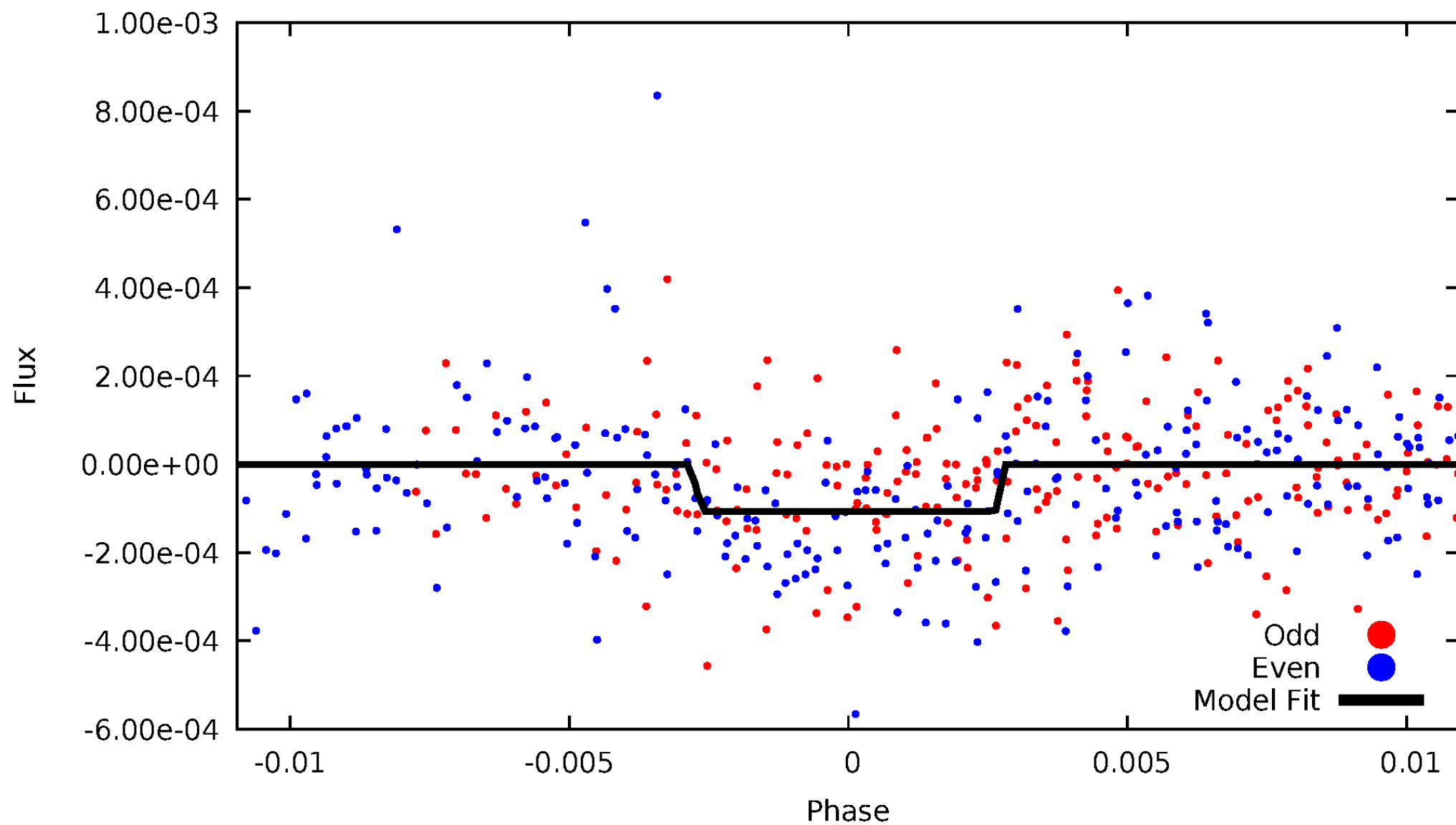
DV Odd/Even

TCE 010548172-02



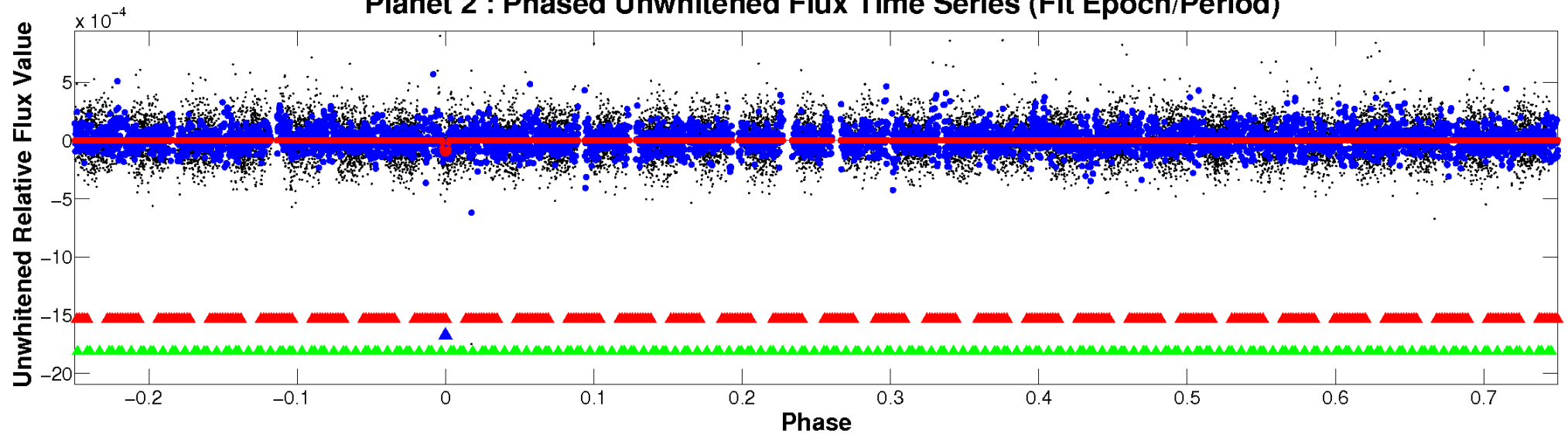
ALT Odd/Even

TCE 010548172-02

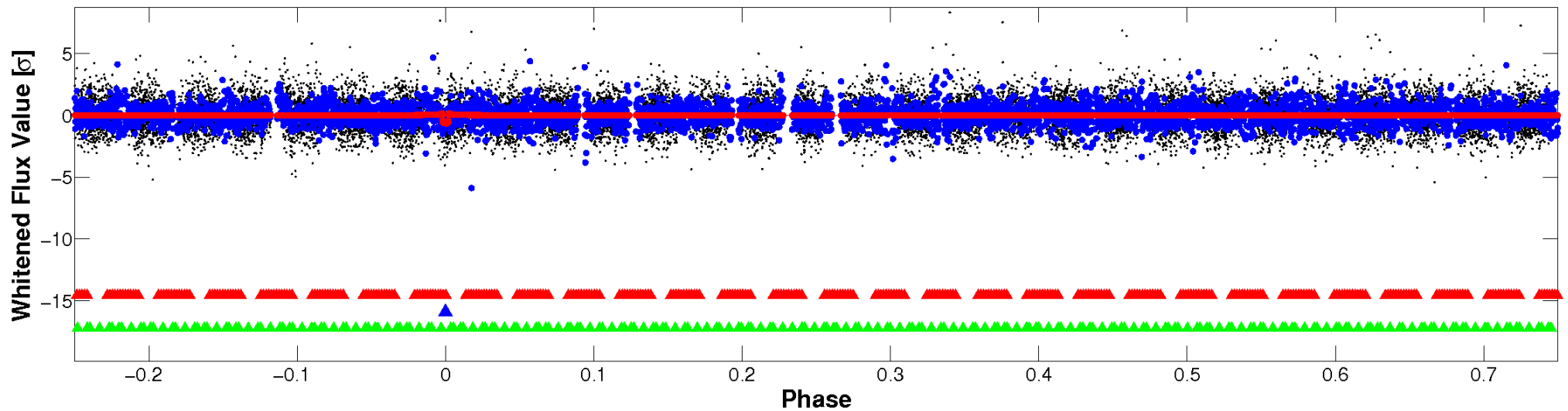


Non-Whitened Vs. Whitened Light Curve

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

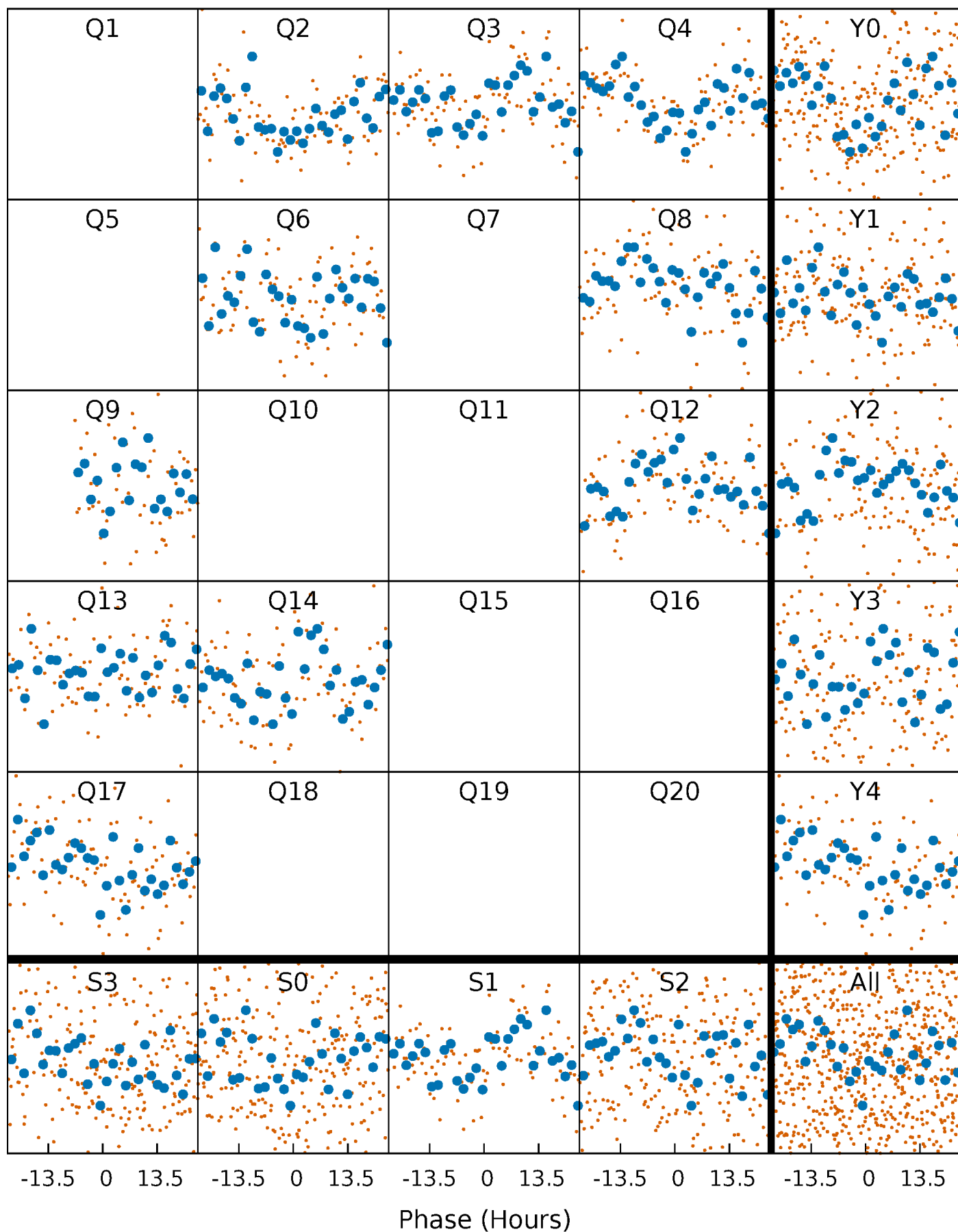


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



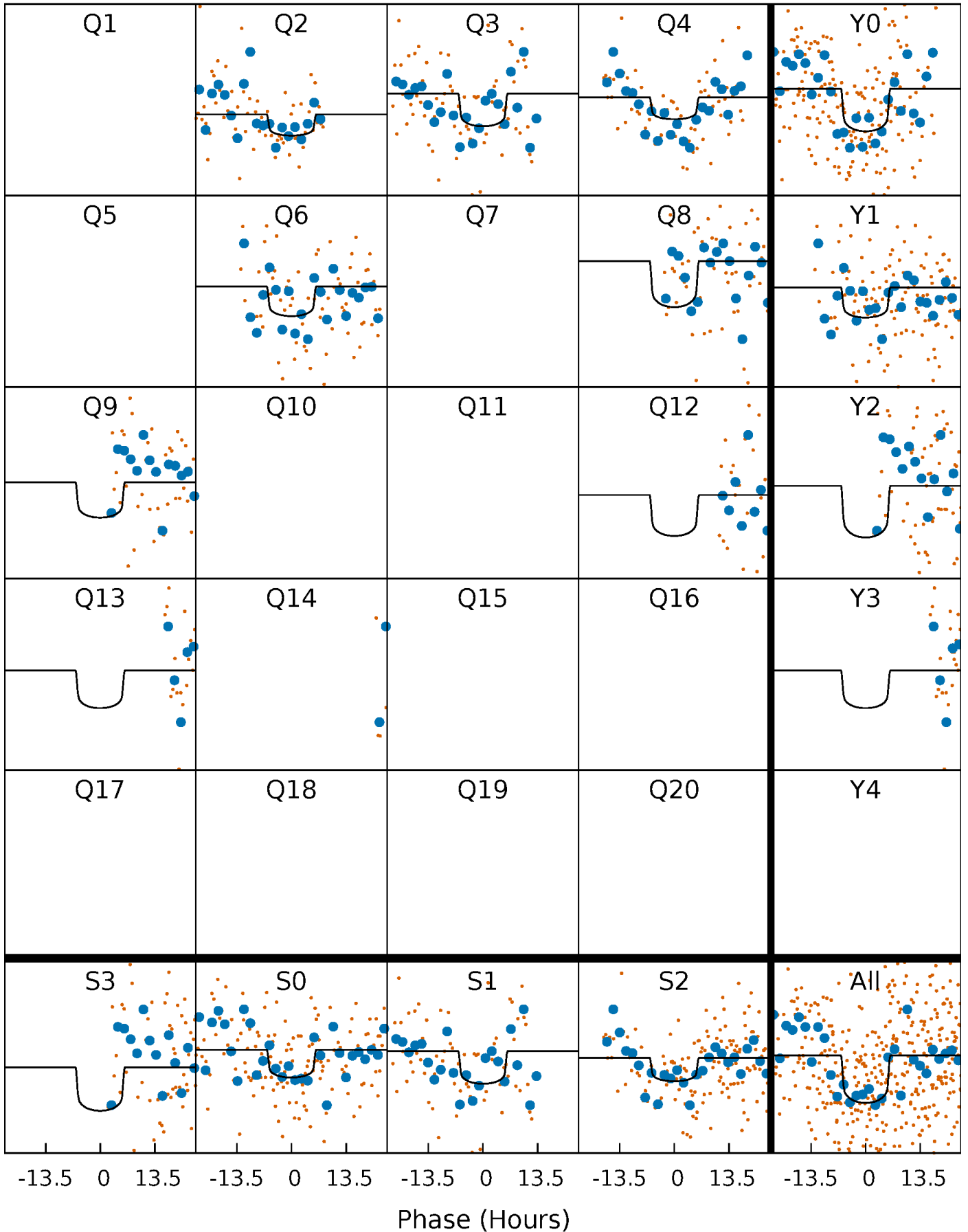
PDC Quarter-Phased Transit Curves

TCE 010548172-02 P=113.919752 Days $T_0=204.341391$ (BKJD)



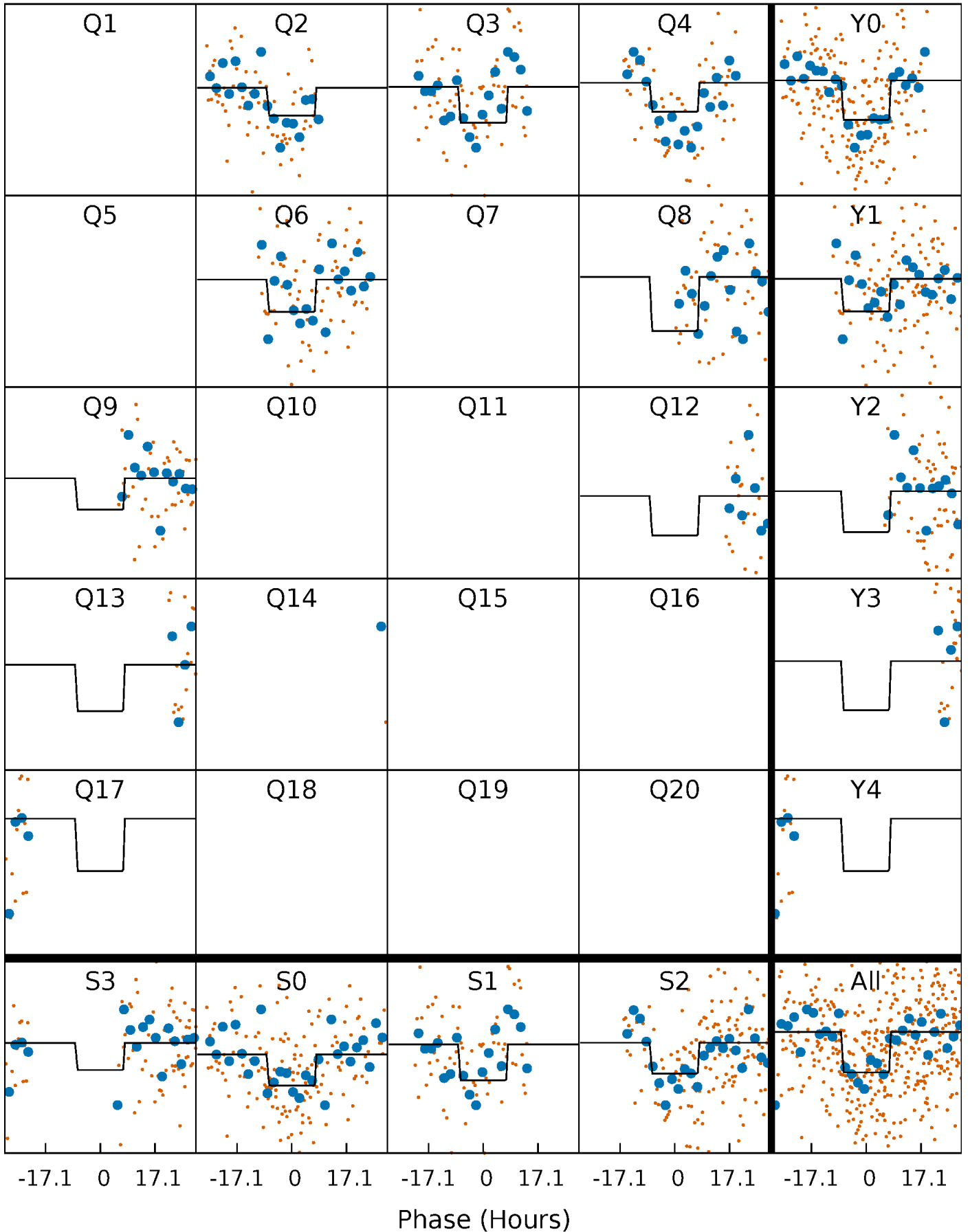
DV Quarter-Phased Transit Curves

TCE 010548172-02 P=113.919752 Days $T_0=204.341391$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

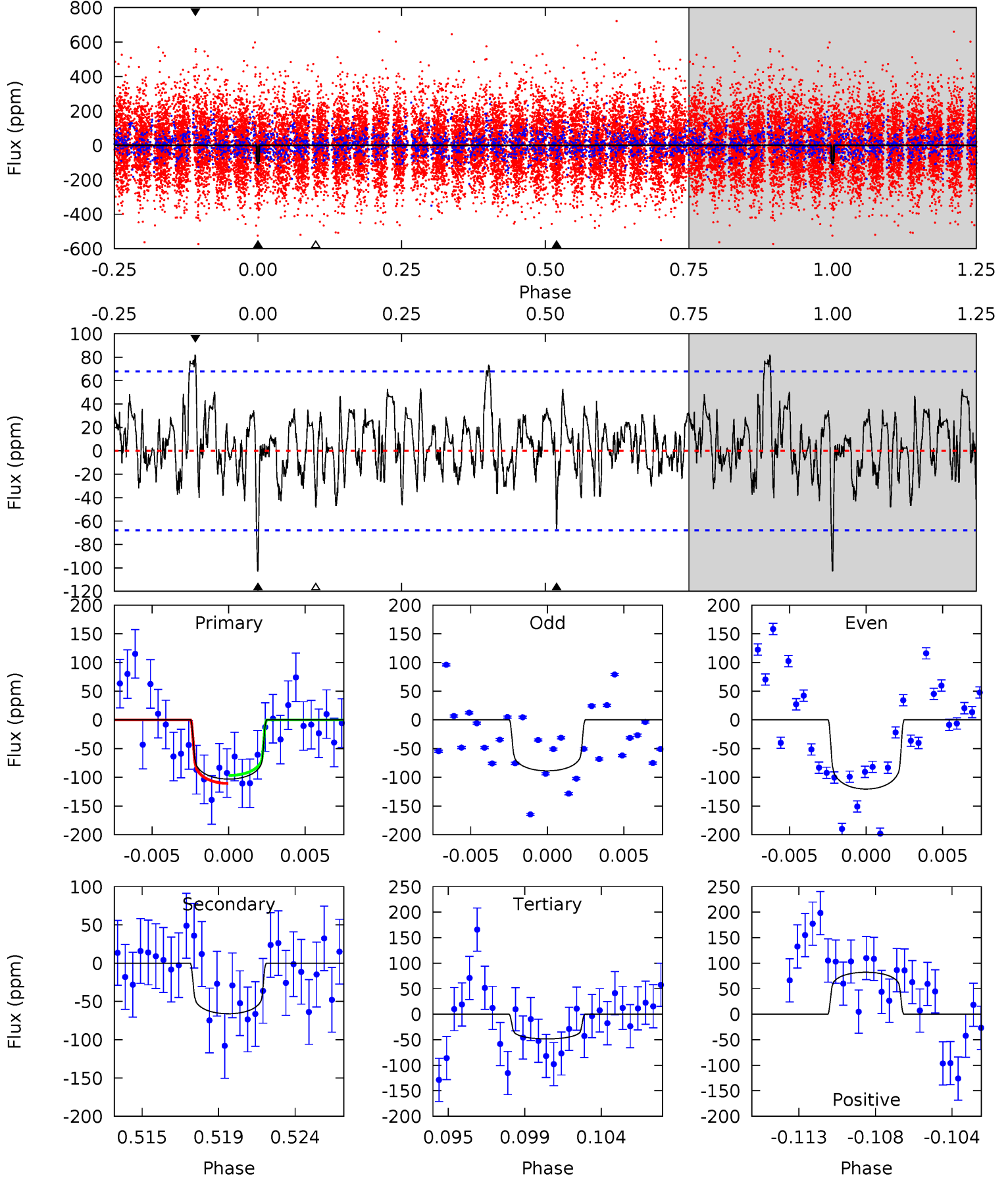
TCE 010548172-02 P=113.896663 Days $T_0=204.320661$ (BKJD)



DV Model-Shift Uniqueness Test

010548172-02, P = 113.919752 Days, E = 90.421639 Days

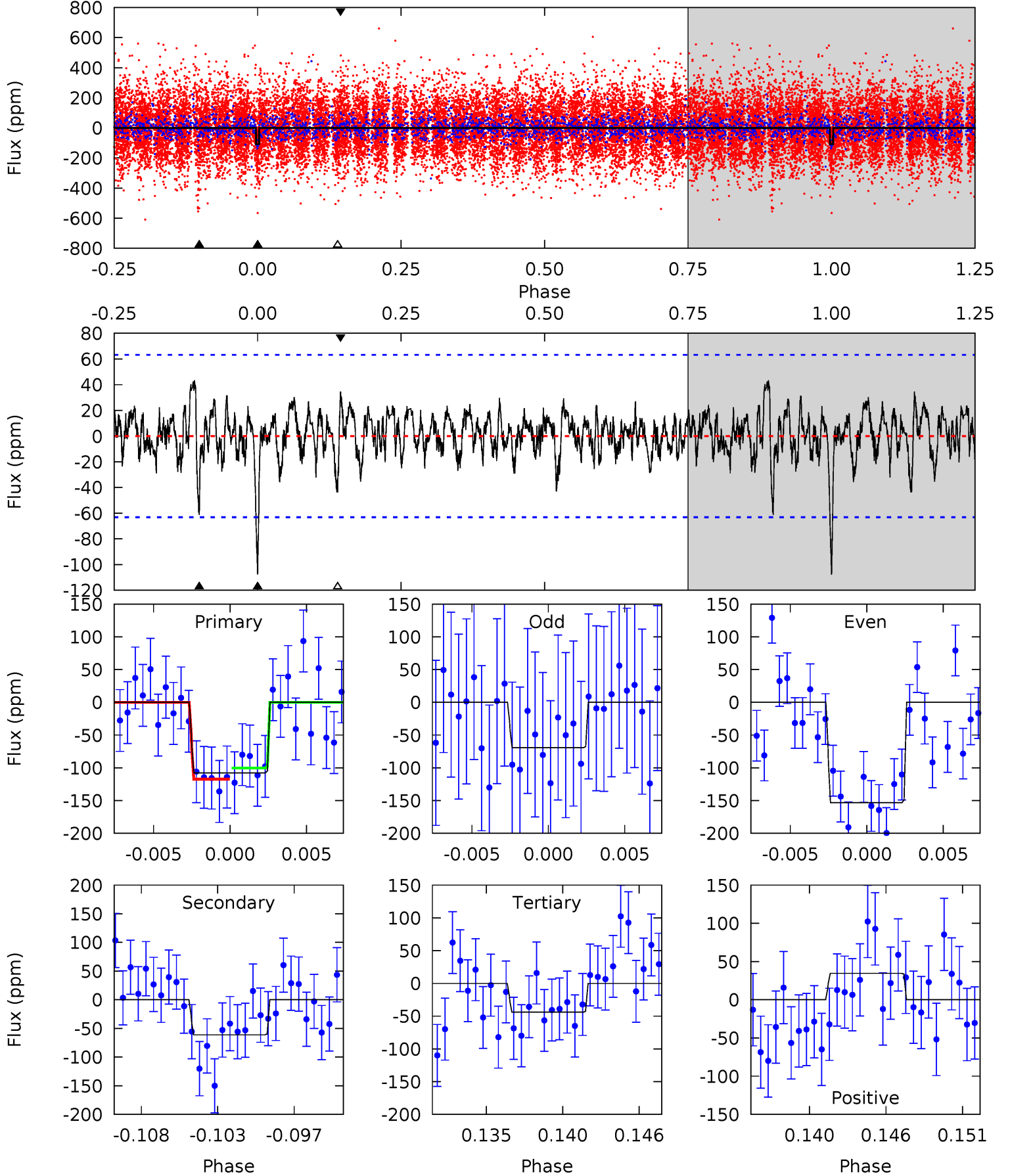
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.86	5.04	3.69	6.27	5.18	2.84	1.54	4.18	1.59	1.35	-1.23	1.21	0.95	0.44	0.53



Alt Model-Shift Uniqueness Test

010548172-02, $P = 113.896663$ Days, $E = 90.423998$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.78	4.98	3.57	2.81	5.14	2.78	1.06	5.21	5.96	1.41	2.16	3.41	1.17	0.29	0.68



Stellar Parameters For KIC 010548172

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8141^{+224}_{-365}	$4.103^{+0.112}_{-0.154}$	$0.070^{+0.250}_{-0.400}$	$2.014^{+0.517}_{-0.387}$	$1.872^{+0.271}_{-0.332}$	$0.323^{+0.193}_{-0.139}$
	+3%/-4%	+3%/-4%	+357%/-571%	+26%/-19%	+14%/-18%	+60%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010548172-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-66 ± 13	$2.42^{+0.99}_{-0.91}$	947^{+65}_{-57}	6795^{+2126}_{-1081}	1988^{+3079}_{-1008}
Alt.	-61 ± 12	$2.25^{+0.99}_{-0.88}$	946^{+68}_{-56}	6907^{+2666}_{-1176}	2070^{+3639}_{-1098}

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

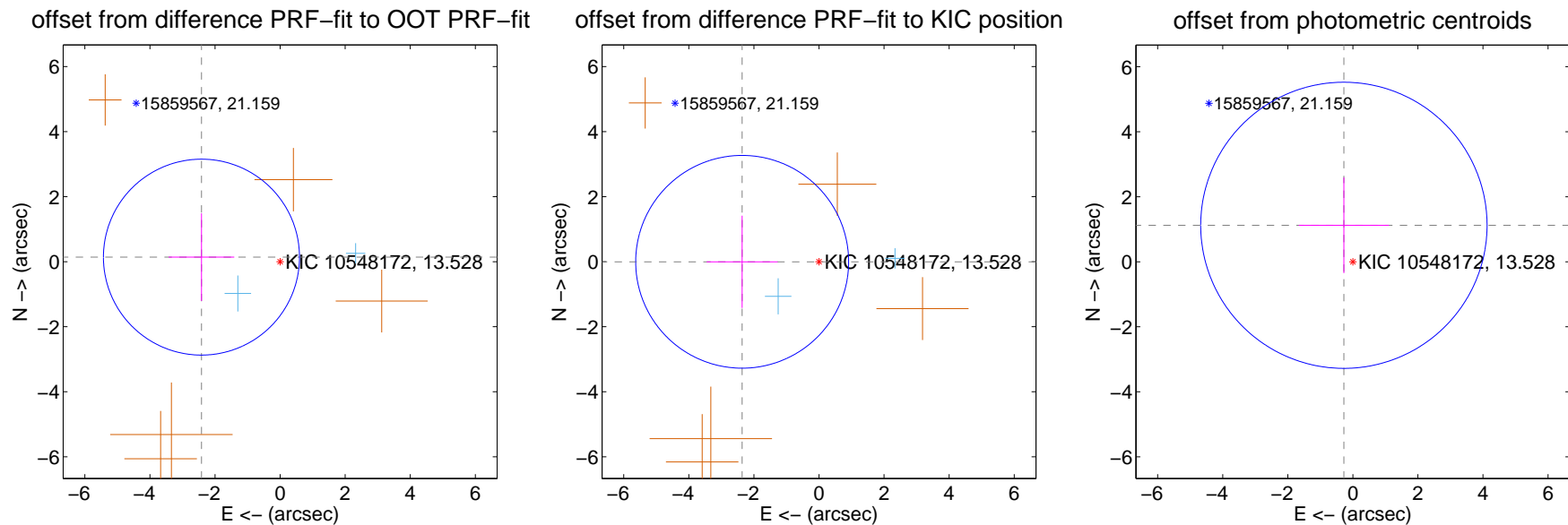
DV Centroid Data

Supplemental centroid analysis for 010548172-02. Kepler magnitude: 13.53. Transit SNR 6.61

There are 2 quarters with good PRF difference image offsets

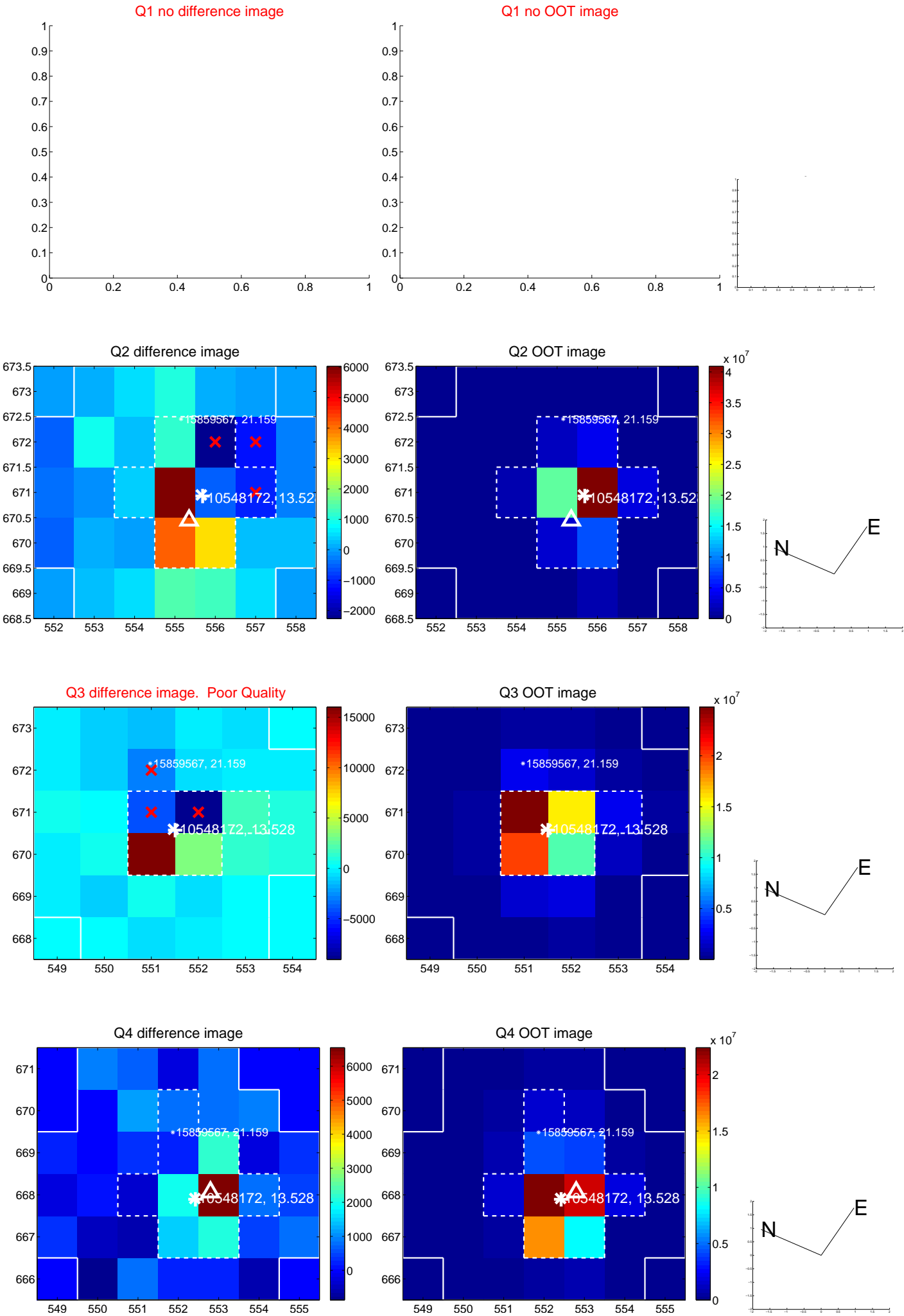
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.420 ± 1.004	2.41	2.416 ± 1.008	0.140 ± 1.348
PRF-fit source offset from KIC position	2.361 ± 1.090	2.17	2.361 ± 1.090	-0.003 ± 1.417
photometric centroid source offset	1.16 ± 1.47	0.79	0.28 ± 1.38	1.12 ± 1.47

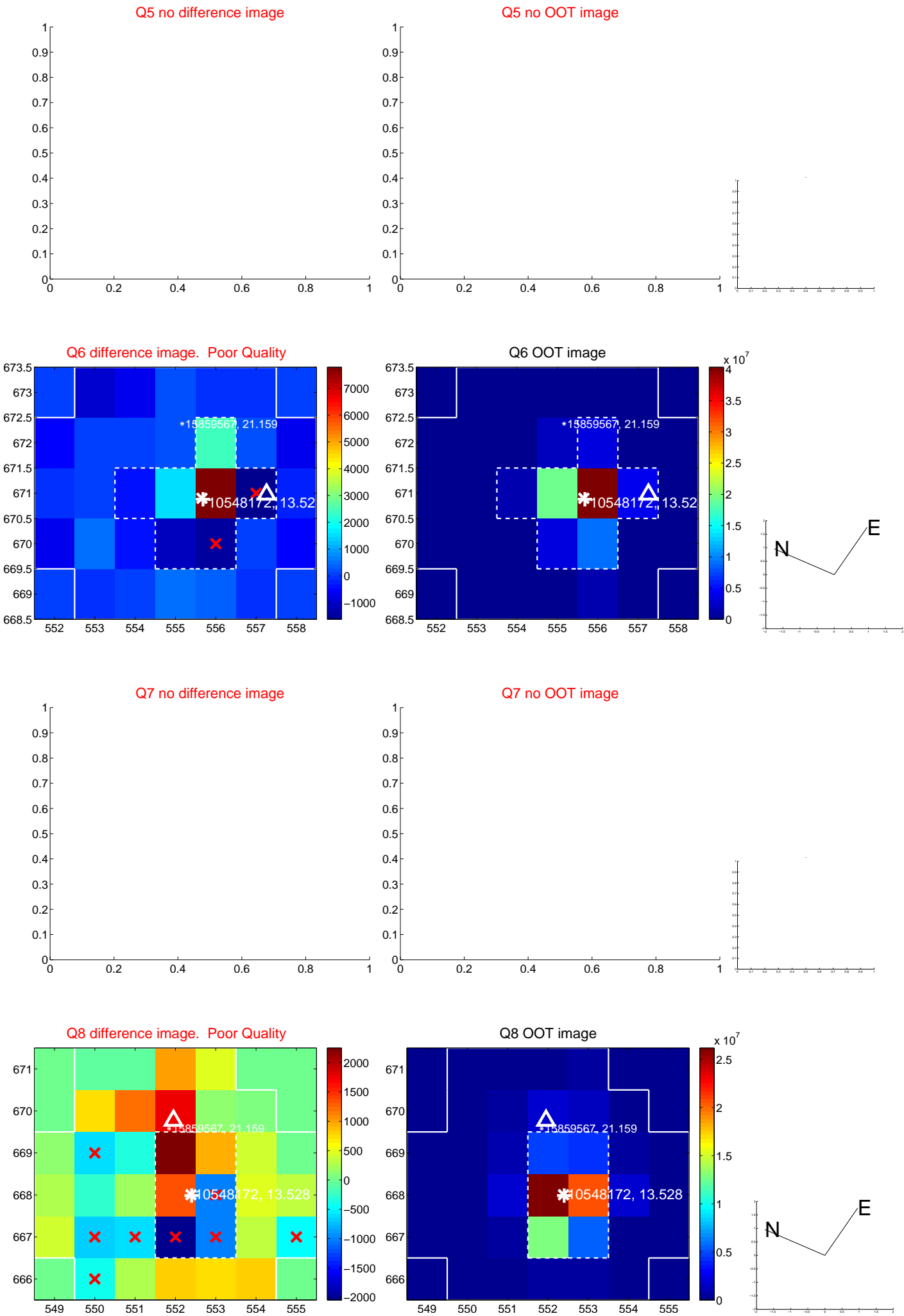


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

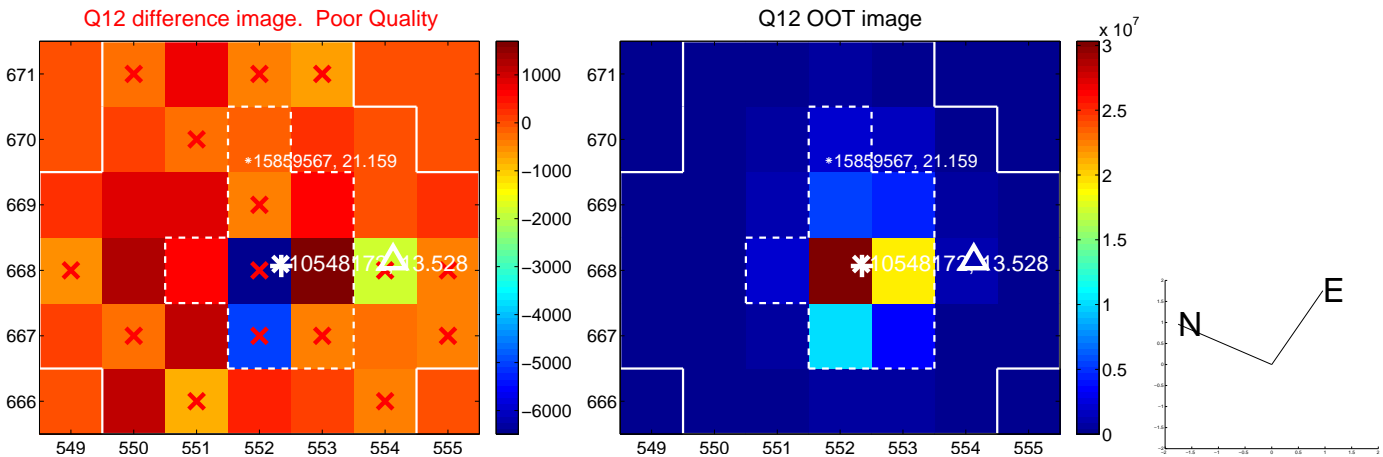
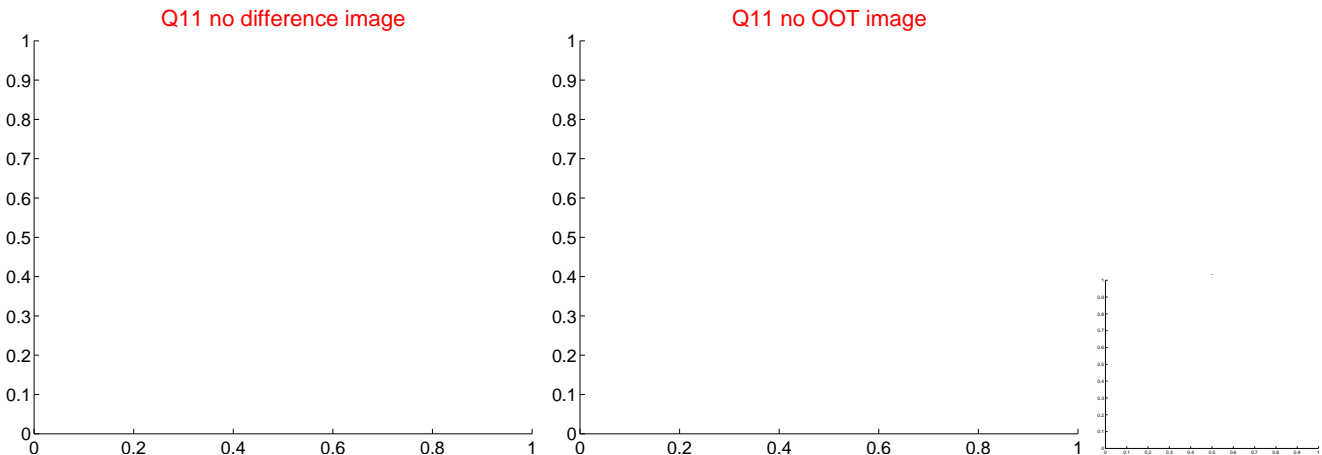
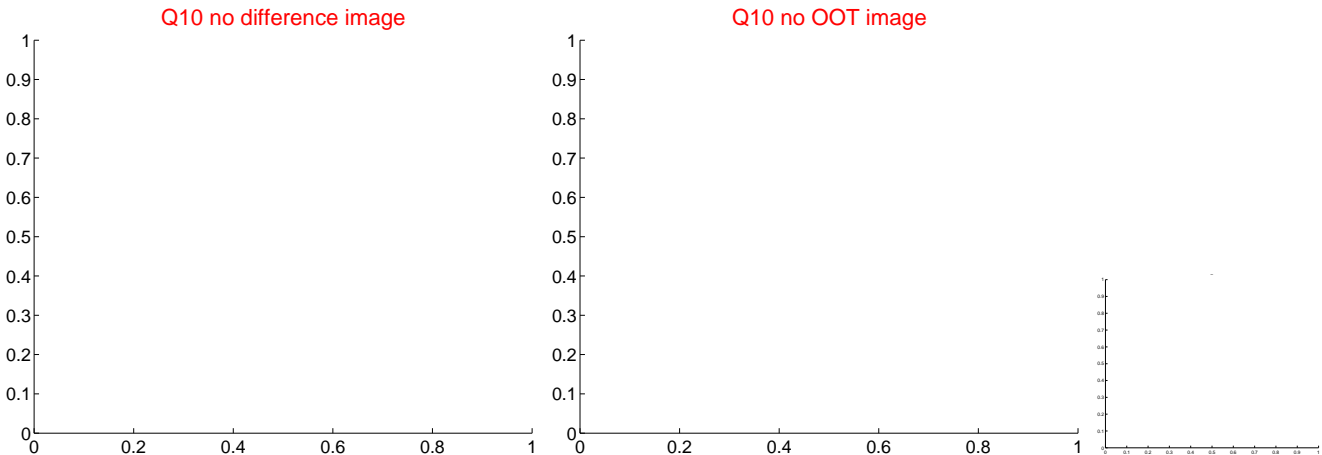
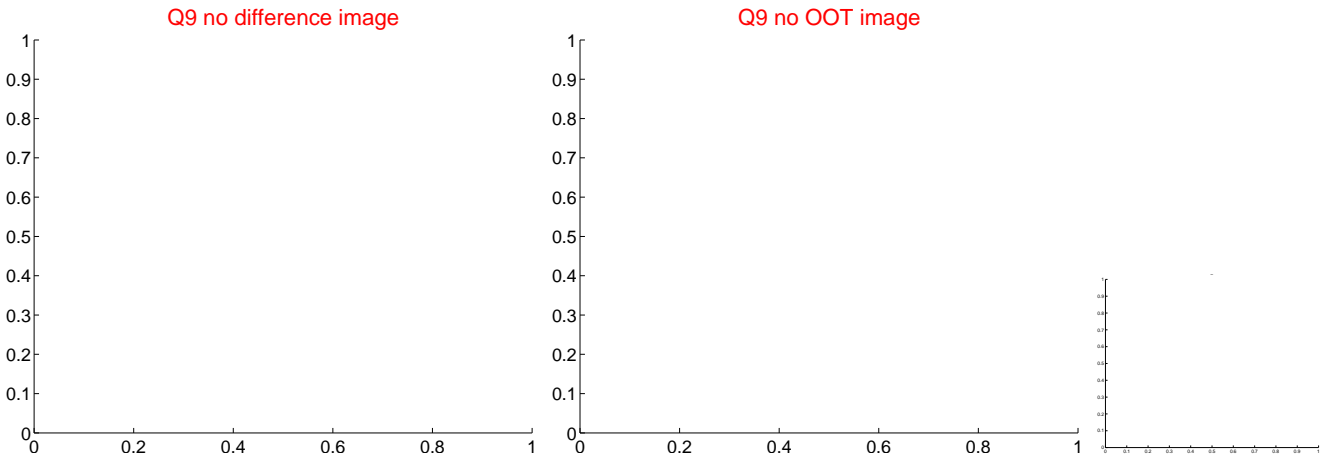
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



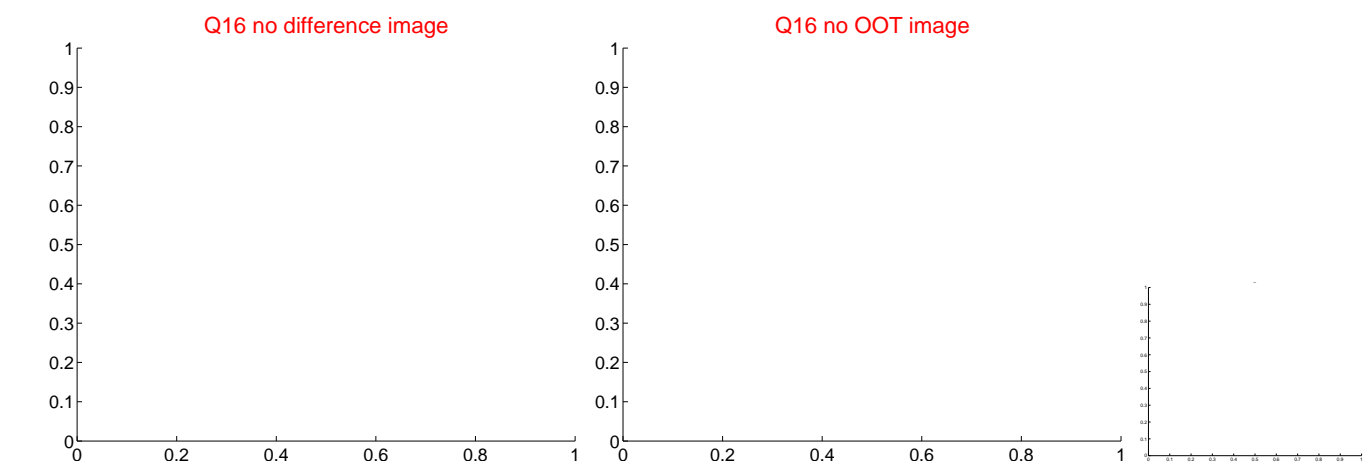
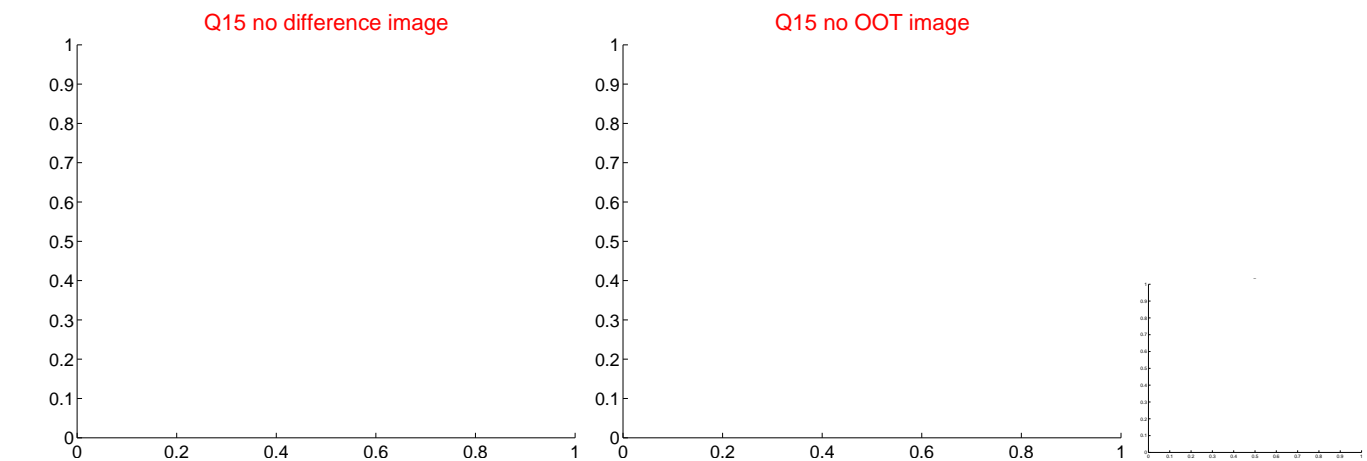
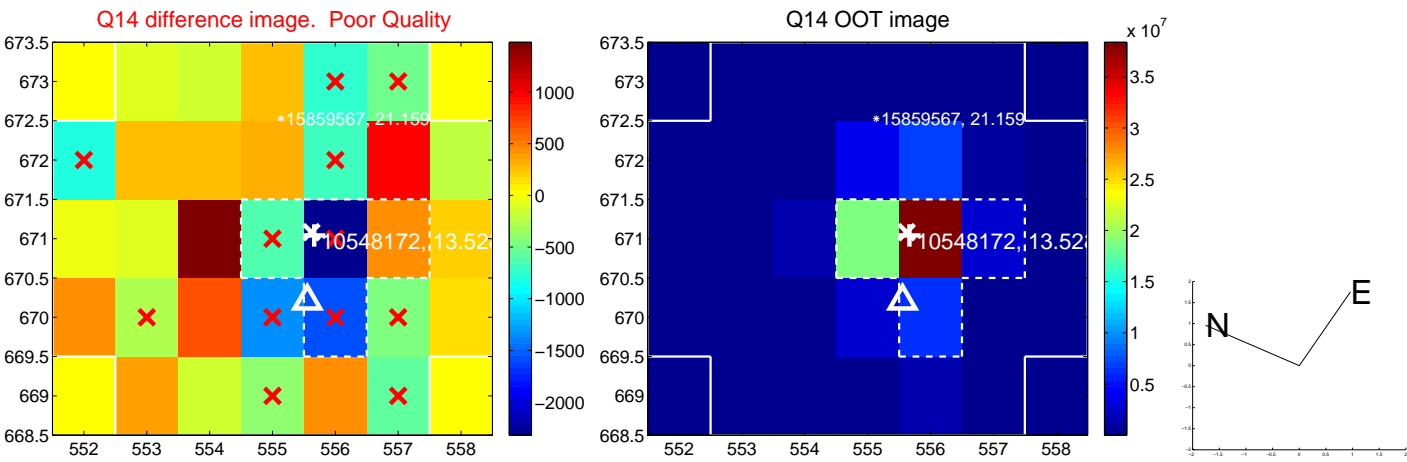
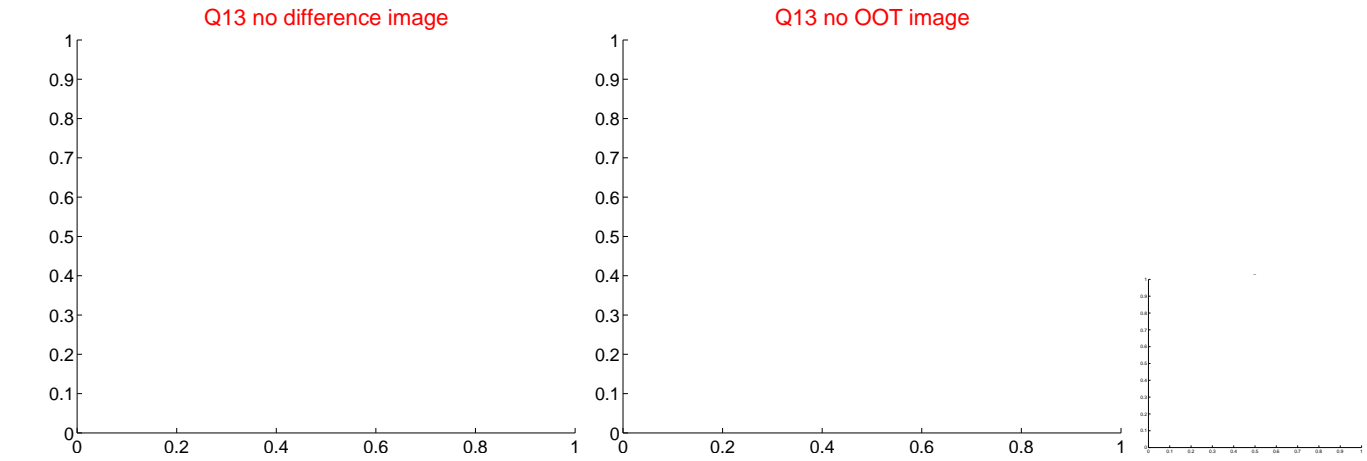
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



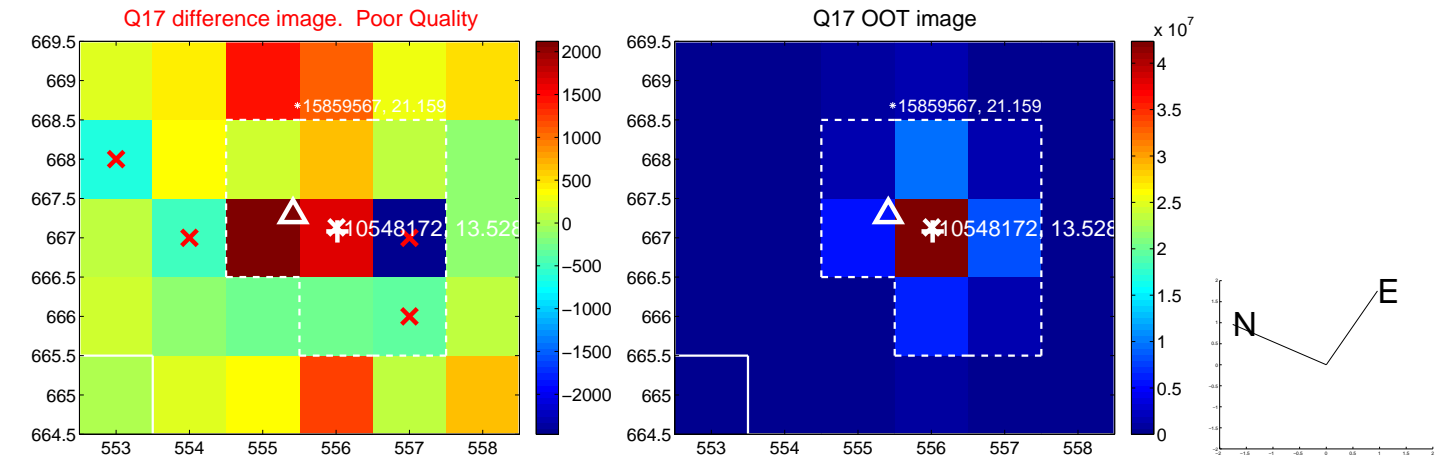
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



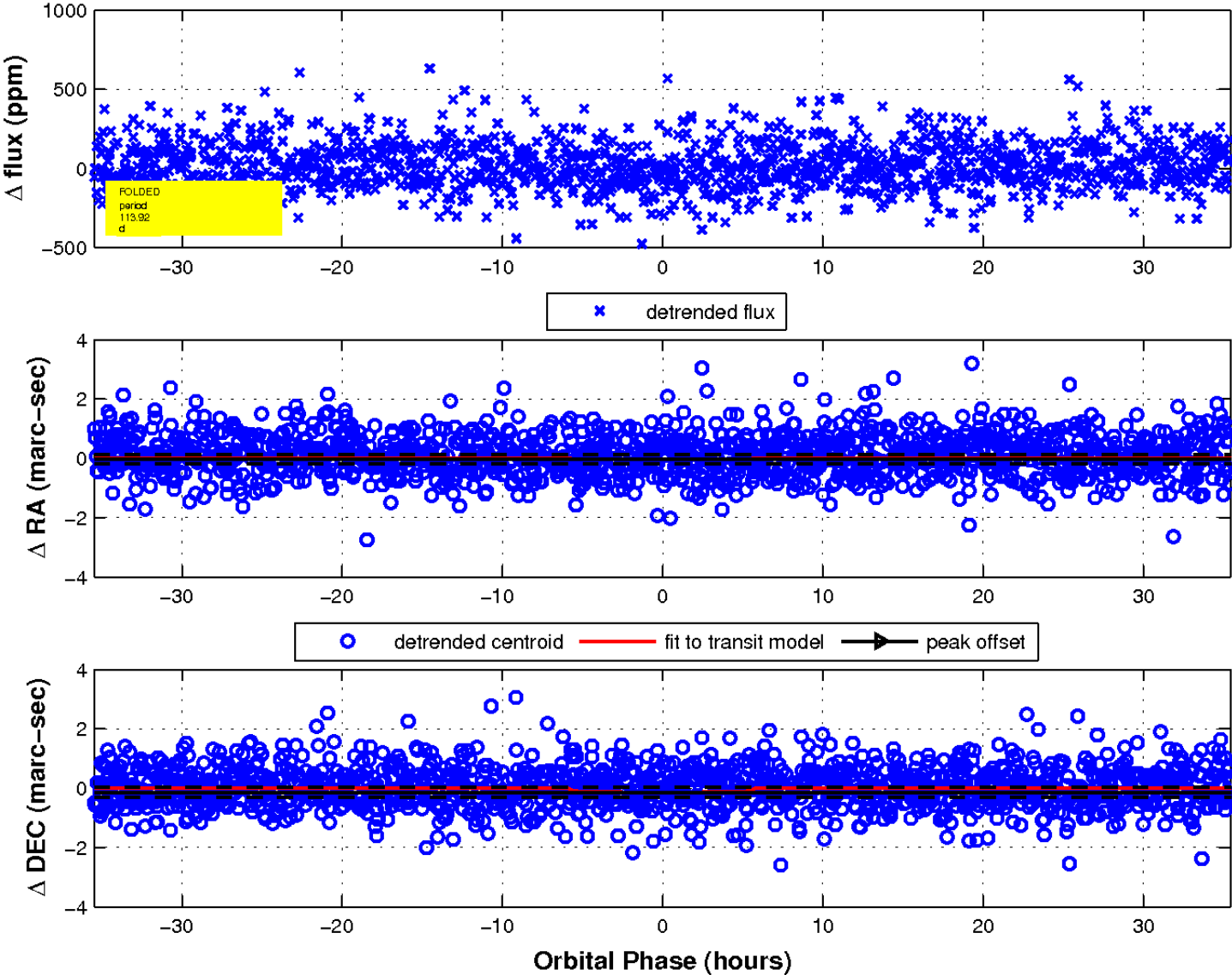
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

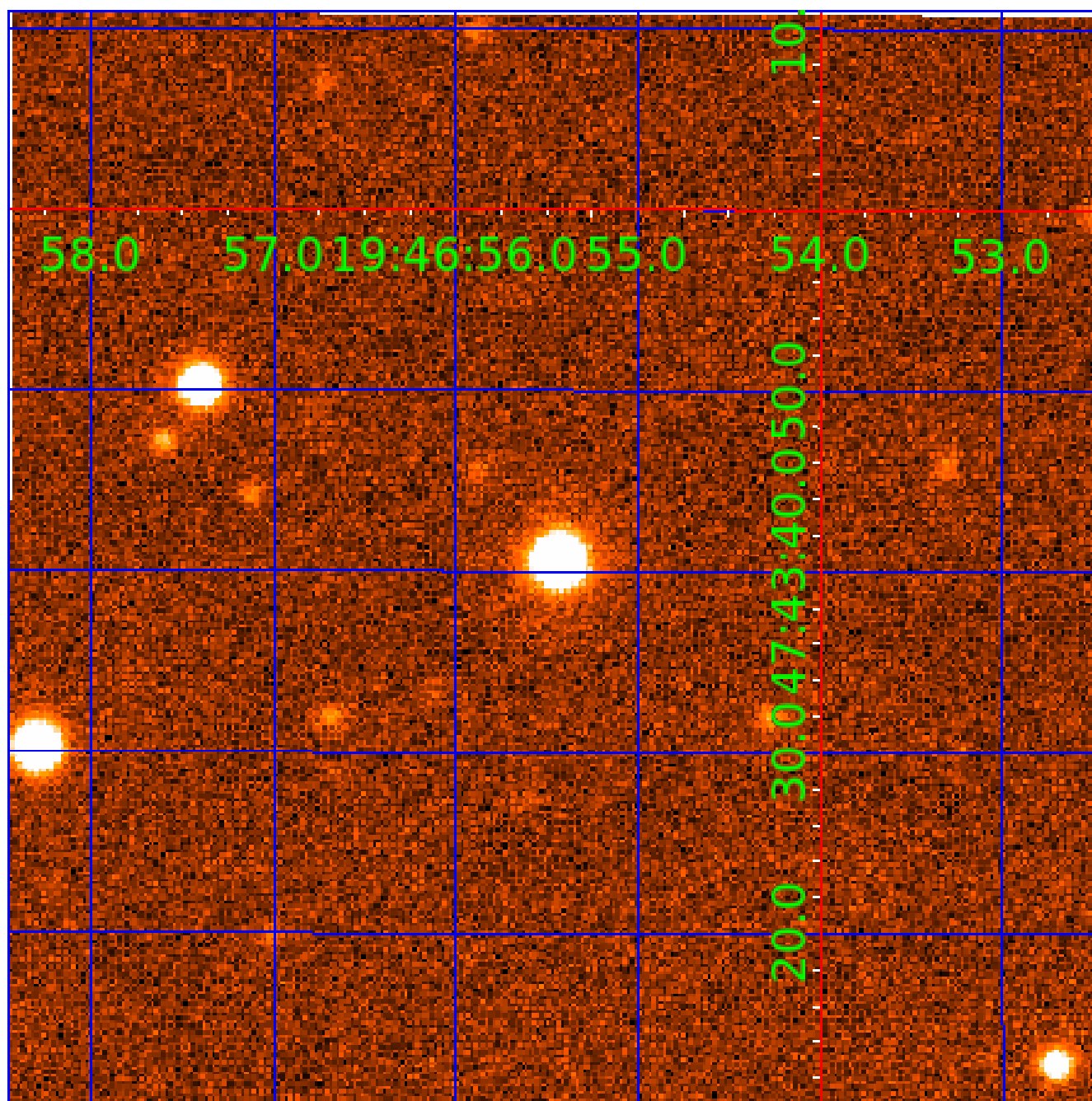


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 010548172

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})
010548172-01	OBS	No	3.935143	135.076185	16.8	19.610	8.2	7.5	2.01	8141	0.84	4409.25
010548172-02	OBS	No	113.919752	204.341391	111.2	11.826	9.3	6.6	2.01	8141	2.38	49.60
010548172-03	OBS	No	6.558052	135.783060	34.9	20.382	8.2	8.2	2.01	8141	1.40	2231.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010548172-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010548172-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
010548172-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

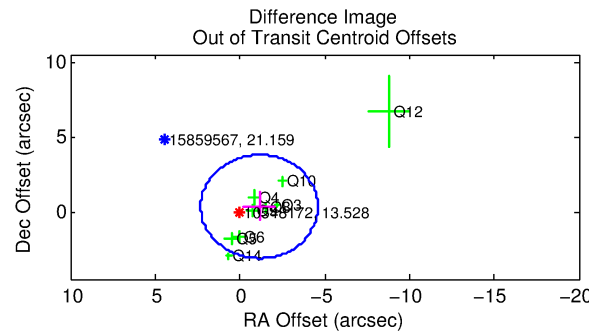
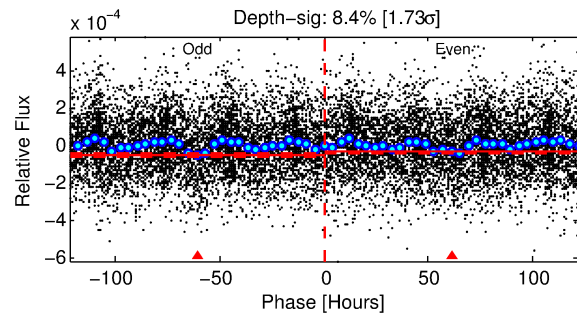
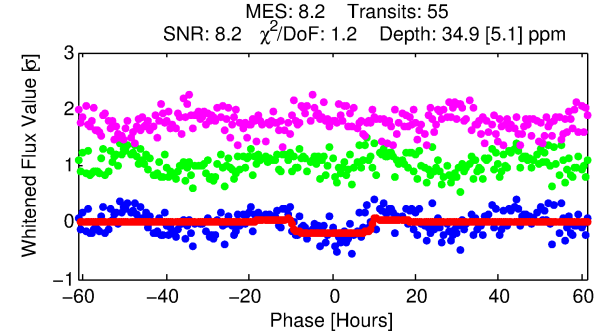
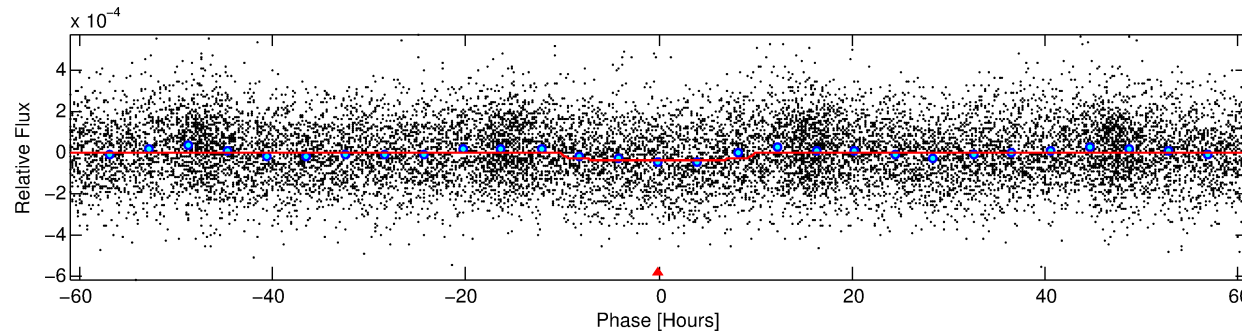
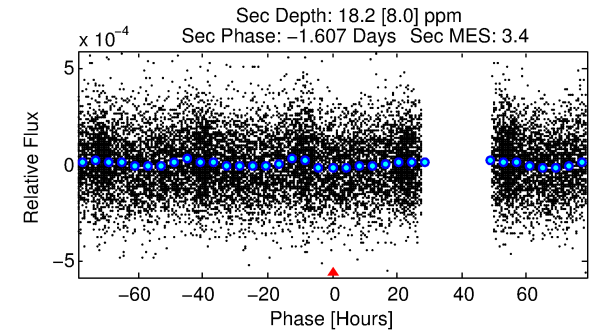
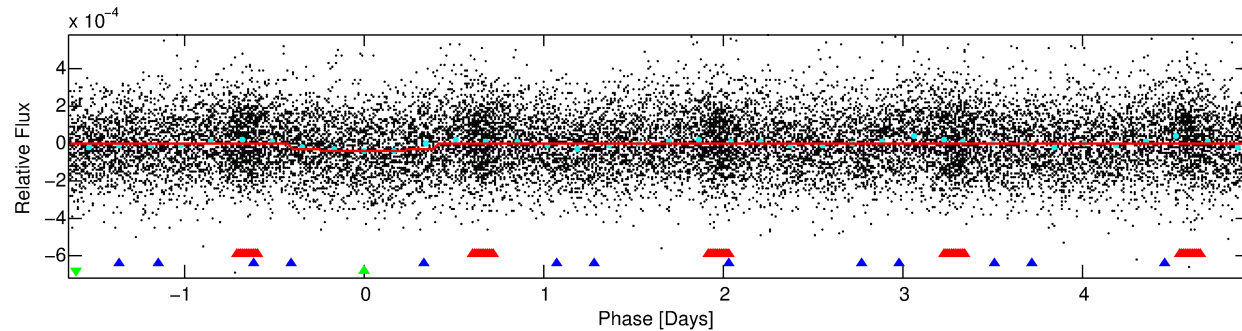
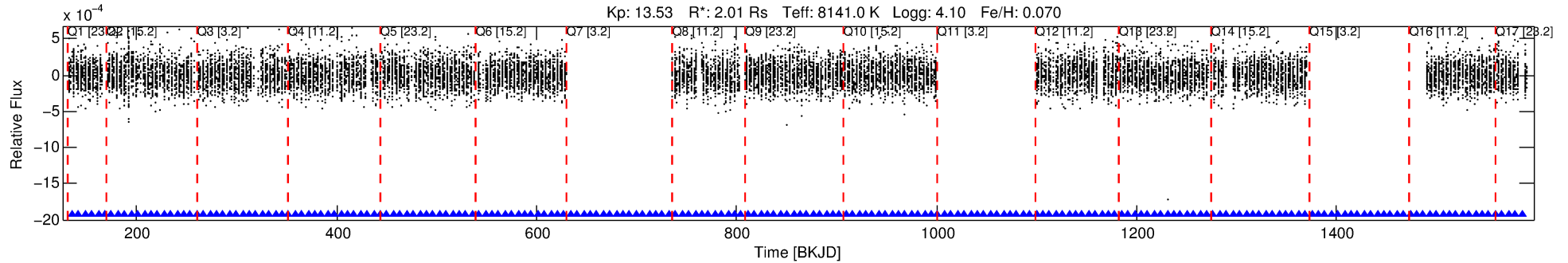
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010548172-03

No Significant Match Found

DV One-Page Summary

KIC: 10548172 Candidate: 3 of 3 Period: 6.558 d



DV Fit Results:

Period = 6.55805 [0.00026] d
Epoch = 135.7831 [0.0280] BKJD
Rp/R* = 0.0064 [0.0009]
a/R* = 1.40 [0.57]
b = 0.91 [0.15]
Seff = 2231.58 [764.41]
Teq = 1753 [150] K
Rp = 1.40 [0.41] Re
a = 0.0846 [0.0176] AU
Ag = 36.73 [22.24] [1.61σ]
Teffp = 6671 [934] K [5.20σ]

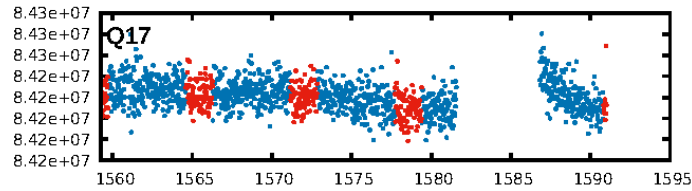
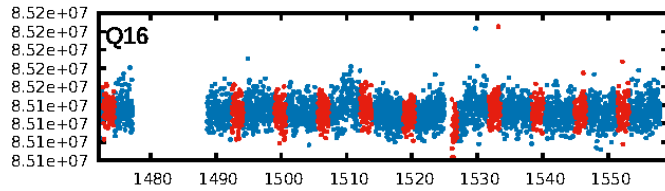
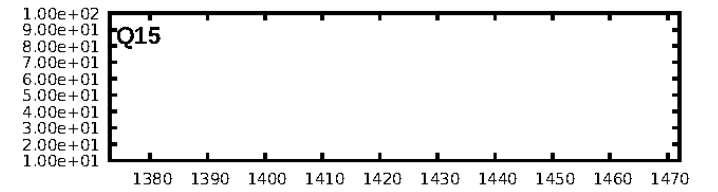
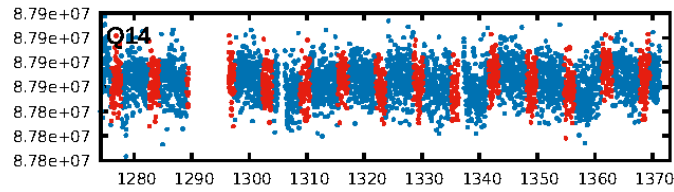
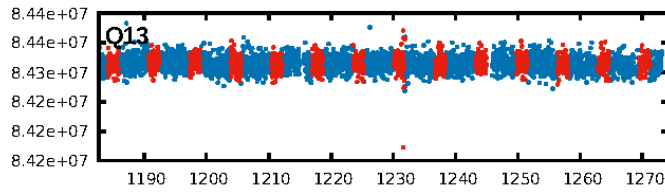
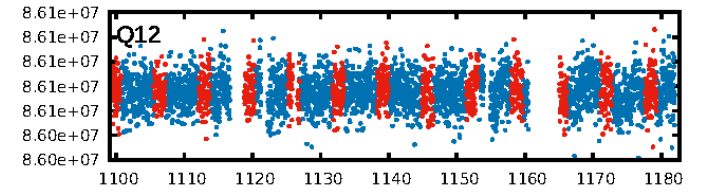
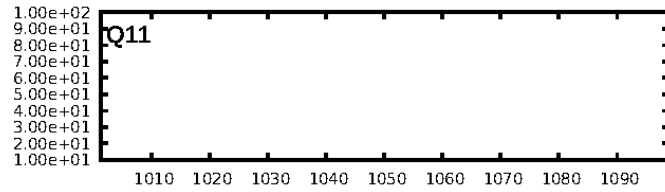
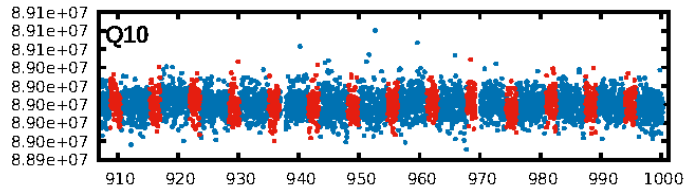
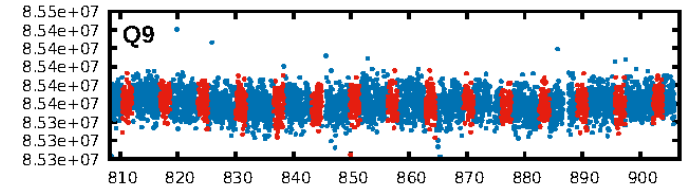
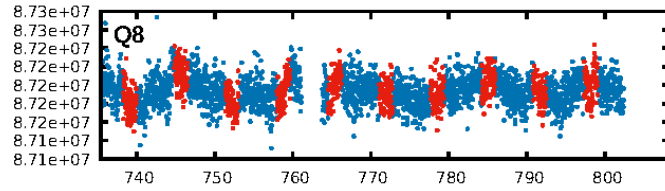
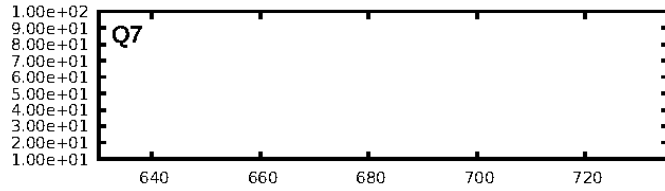
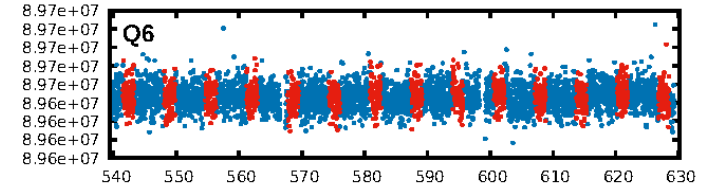
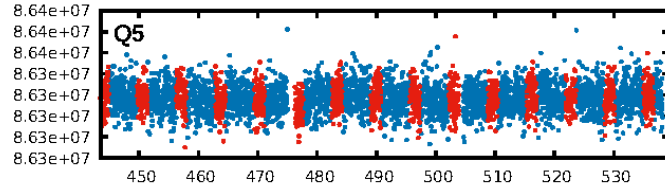
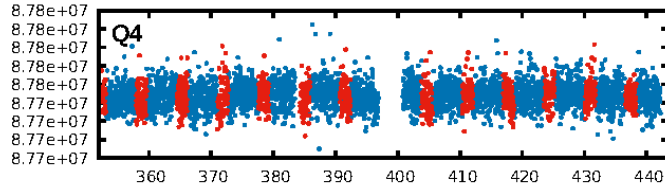
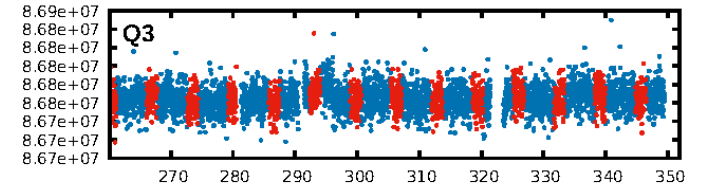
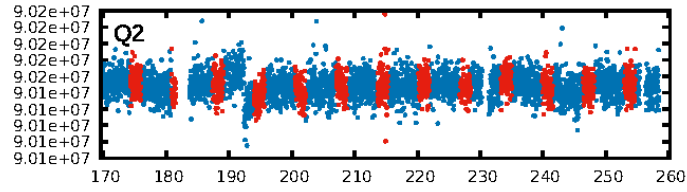
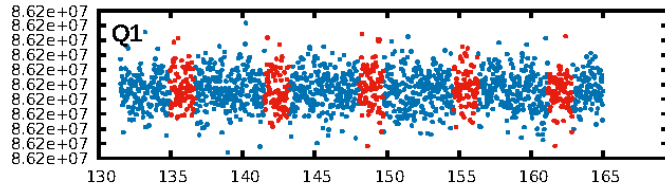
DV Diagnostic Results:

ShortPeriod-sig: 97.4% [2.23σ]
LongPeriod-sig: 100.0% [109.35σ]
ModelChiSquare2-sig: 55.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.78e-11
RollingBand-fgt: 1.00 [53/53]
GhostDiagnostic-chr: 0.4347
Centroid-sig: 2.0%
Centroid-so: 1.411 arcsec [1.58σ]
OotOffset-rm: 1.192 arcsec [1.04σ]
OotOffset-st: 3/1/3/2 [9]
KicOffset-rm: 1.207 arcsec [1.12σ]
KicOffset-st: 3/1/3/2 [9]
DiffImageQuality-fgm: 0.78 [7/9]
DiffImageOverlap-fno: 0.93 [13/14]

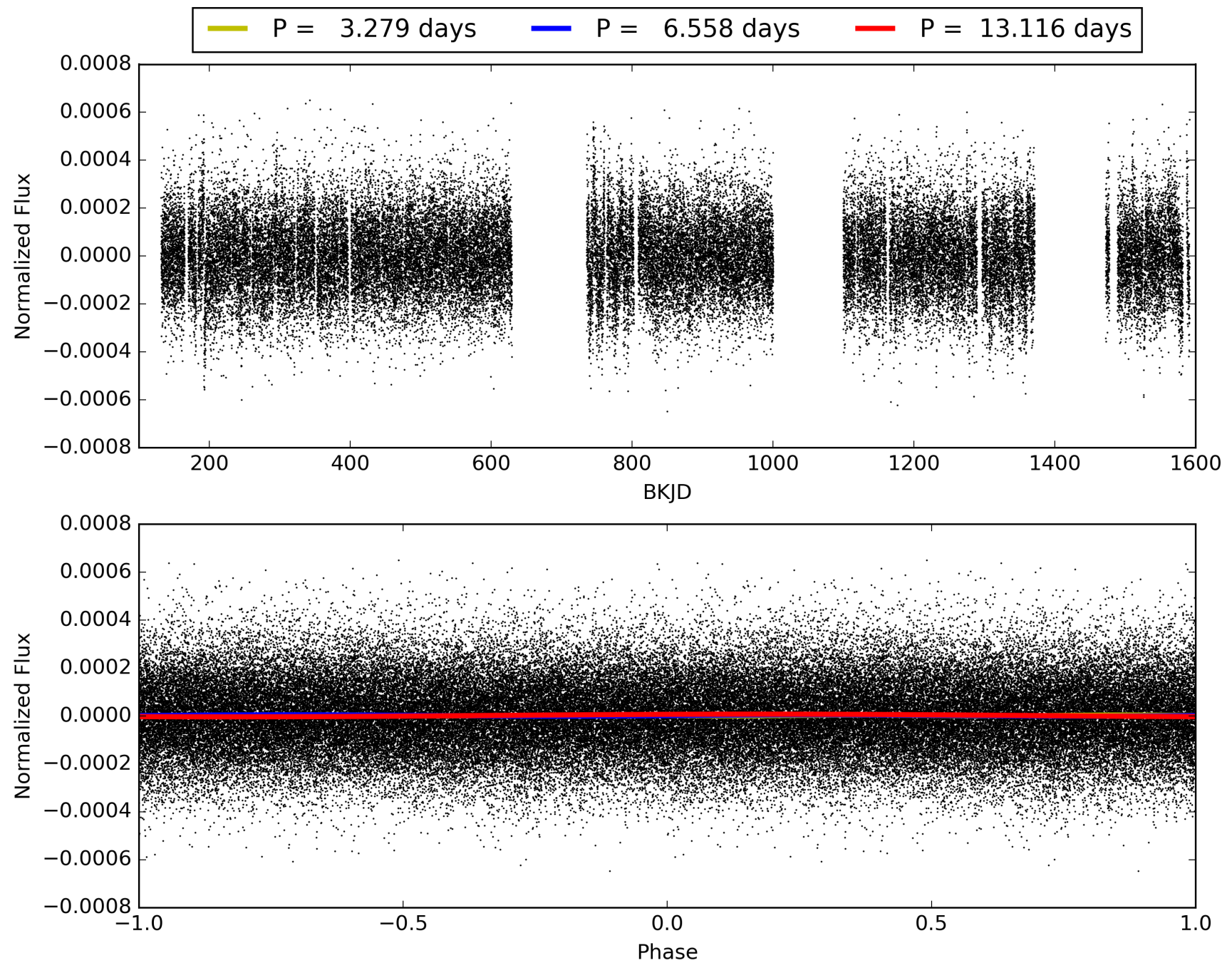
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:06:44 Z

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

TCE 010548172-03, PDC Light Curves

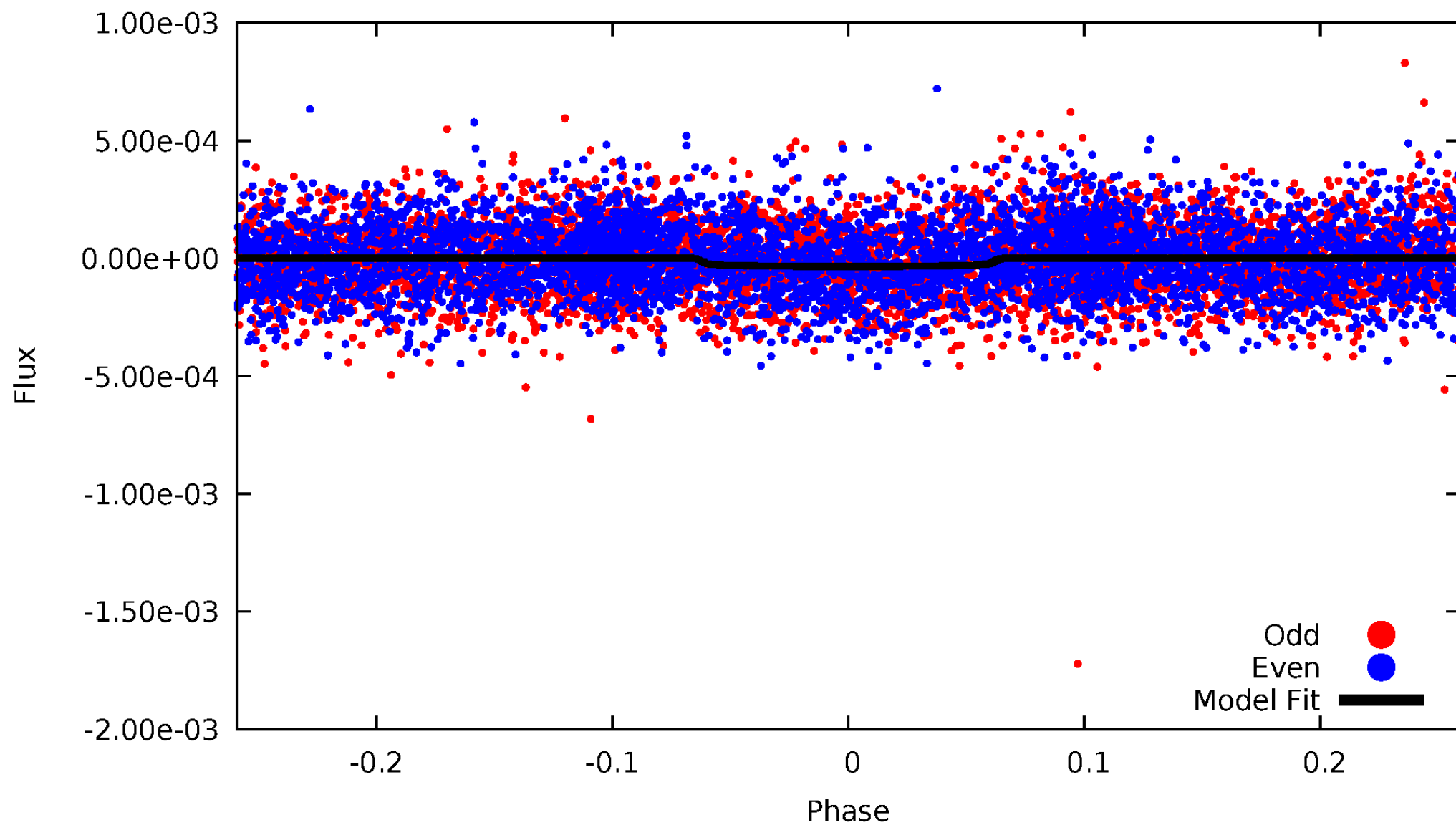


TCE 010548172-03



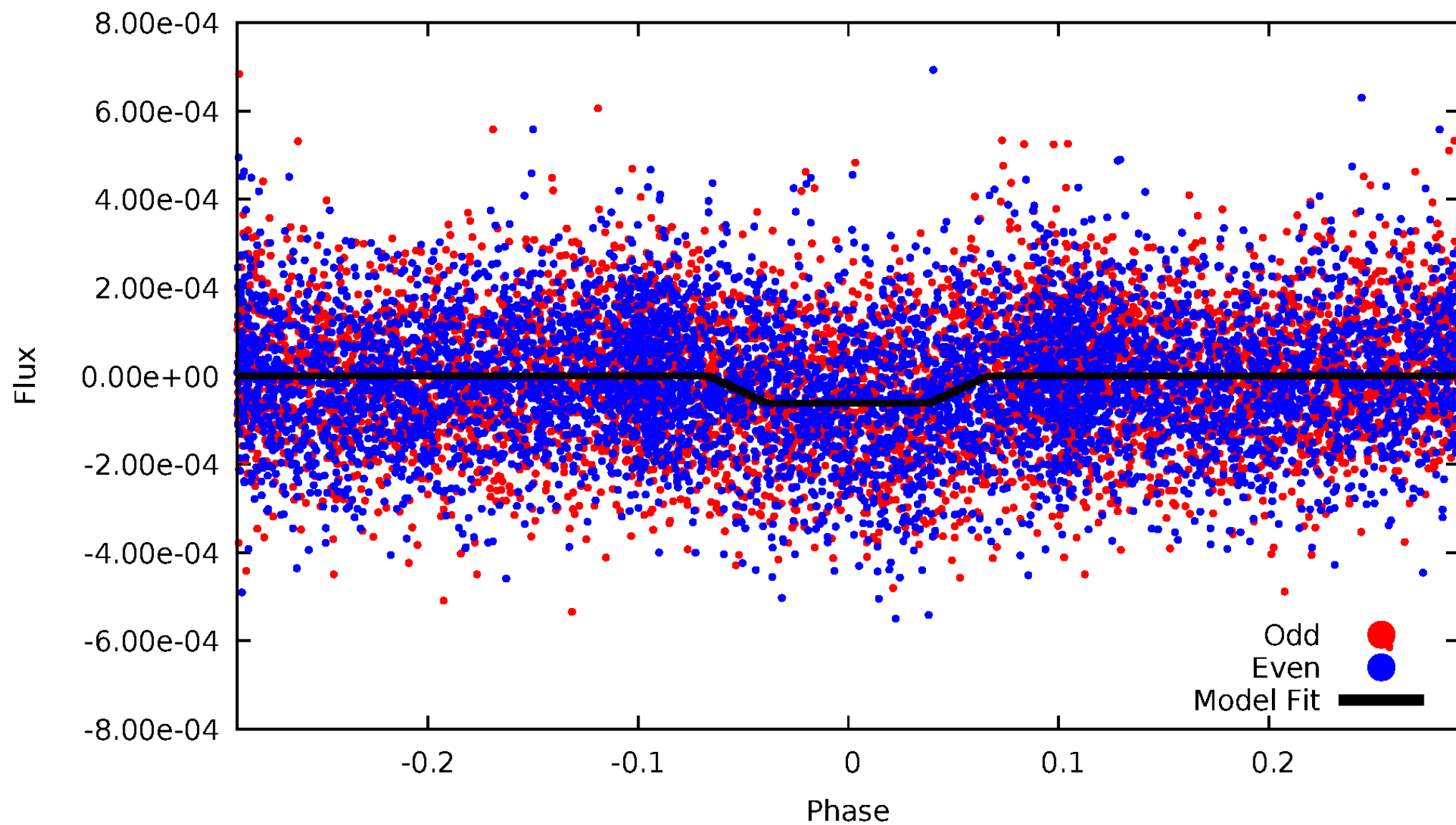
DV Odd/Even

TCE 010548172-03



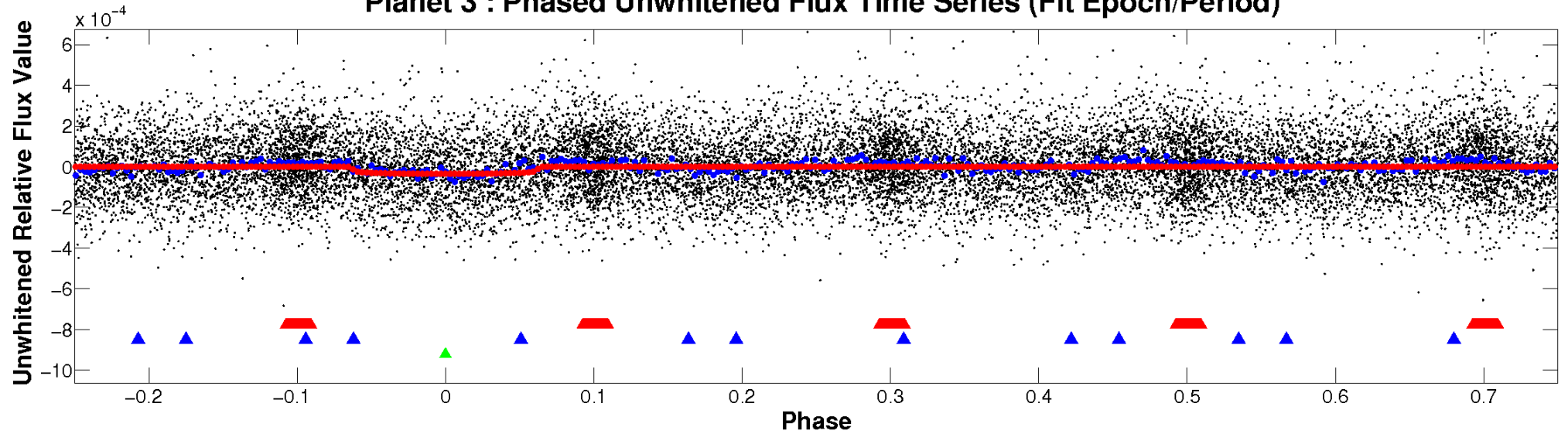
ALT Odd/Even

TCE 010548172-03

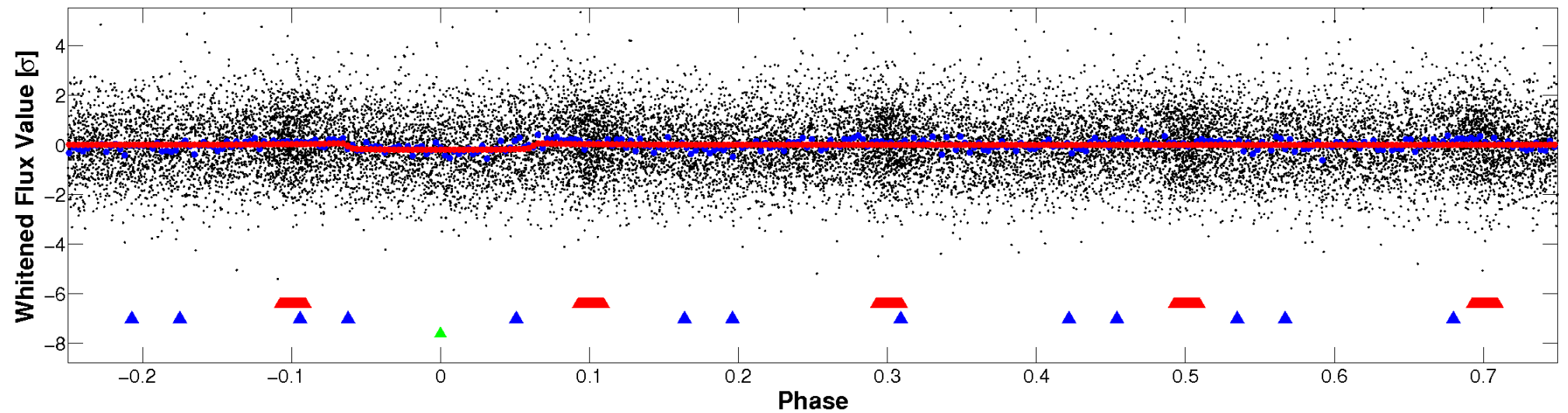


Non-Whitened Vs. Whitened Light Curve

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

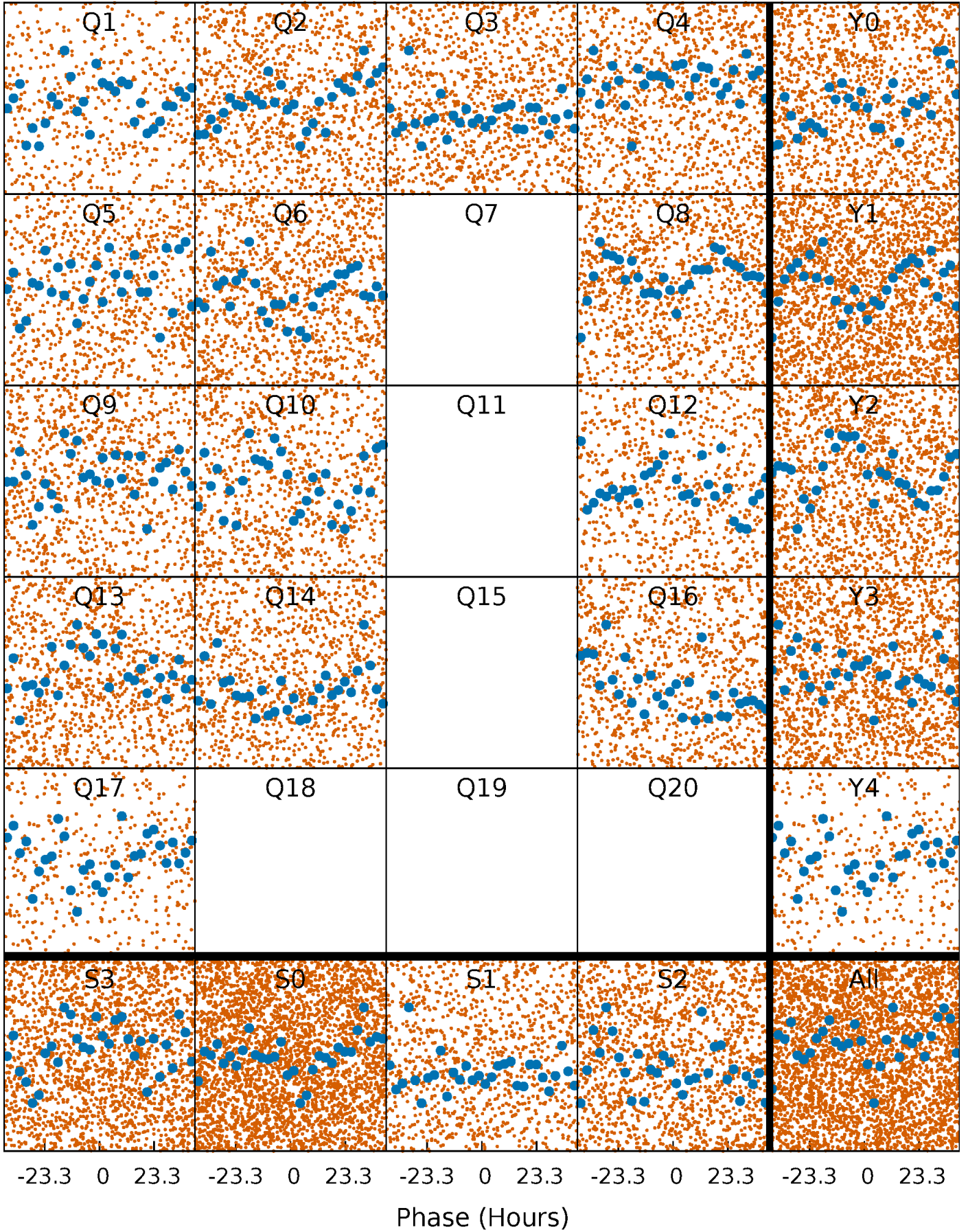


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



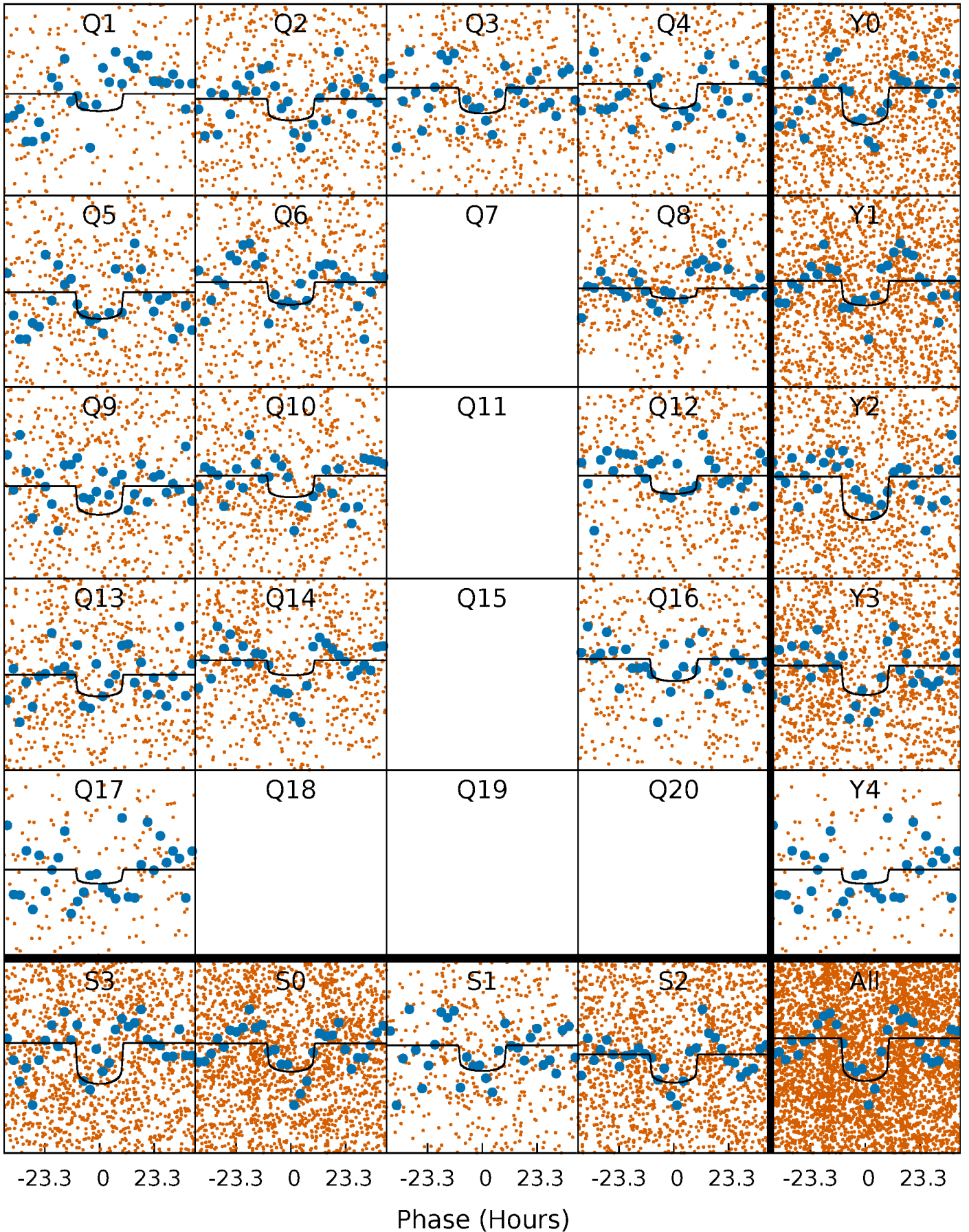
PDC Quarter-Phased Transit Curves

TCE 010548172-03 P= 6.558052 Days $T_0=135.783060$ (BKJD)



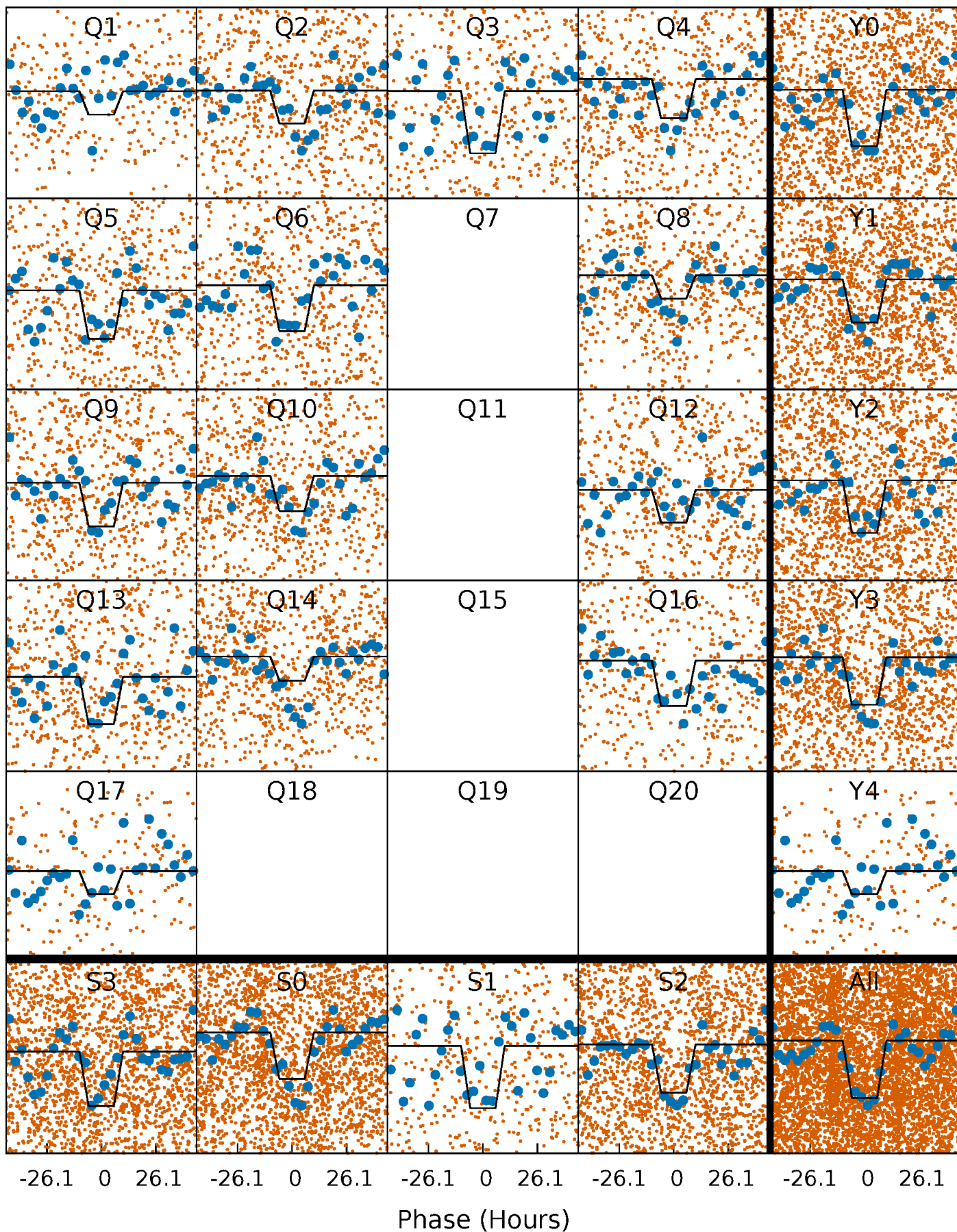
DV Quarter-Phased Transit Curves

TCE 010548172-03 P= 6.558052 Days $T_0=135.783060$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

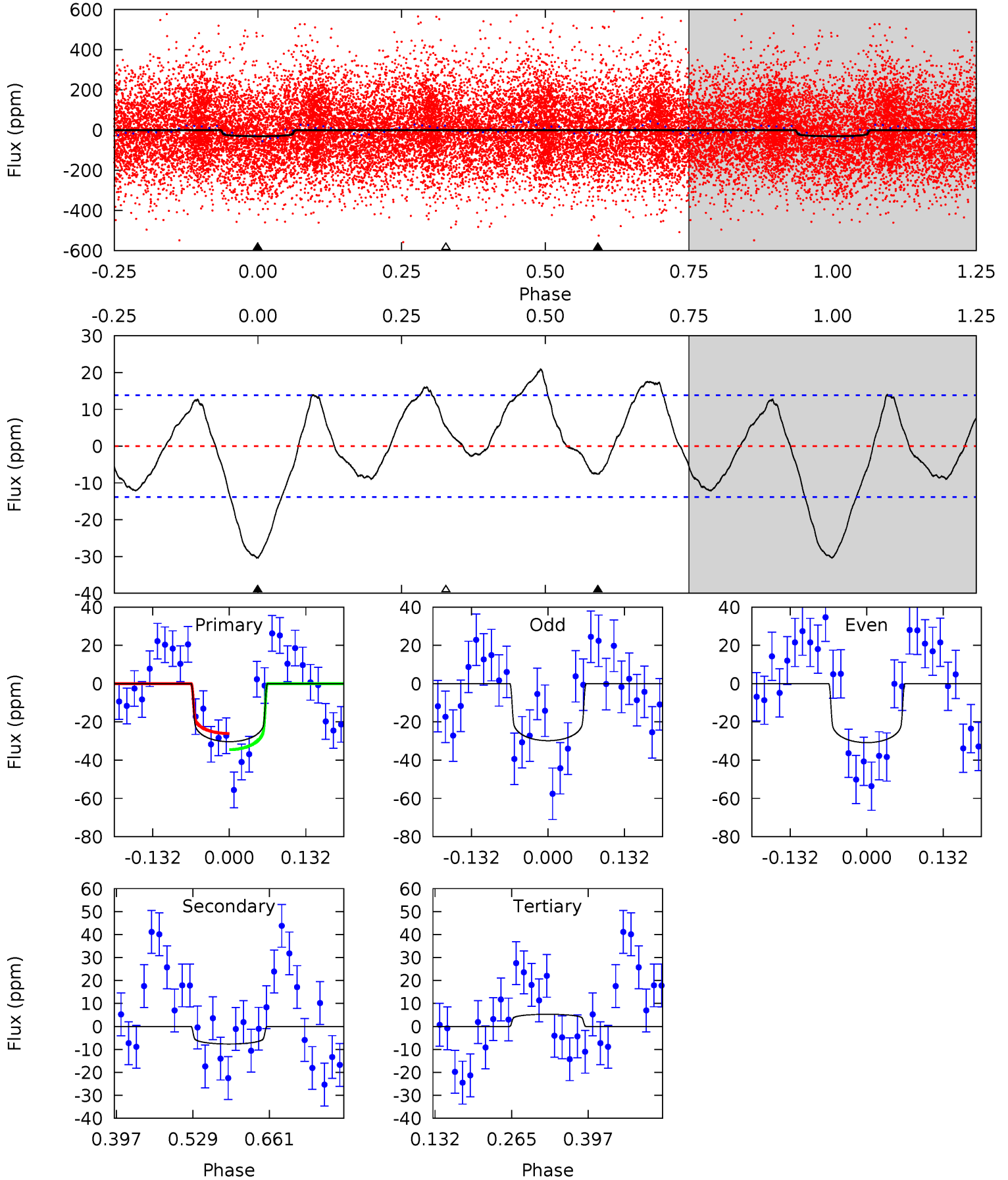
TCE 010548172-03 P= 6.557822 Days $T_0=135.777859$ (BKJD)



DV Model-Shift Uniqueness Test

010548172-03, P = 6.558052 Days, E = 129.225008 Days

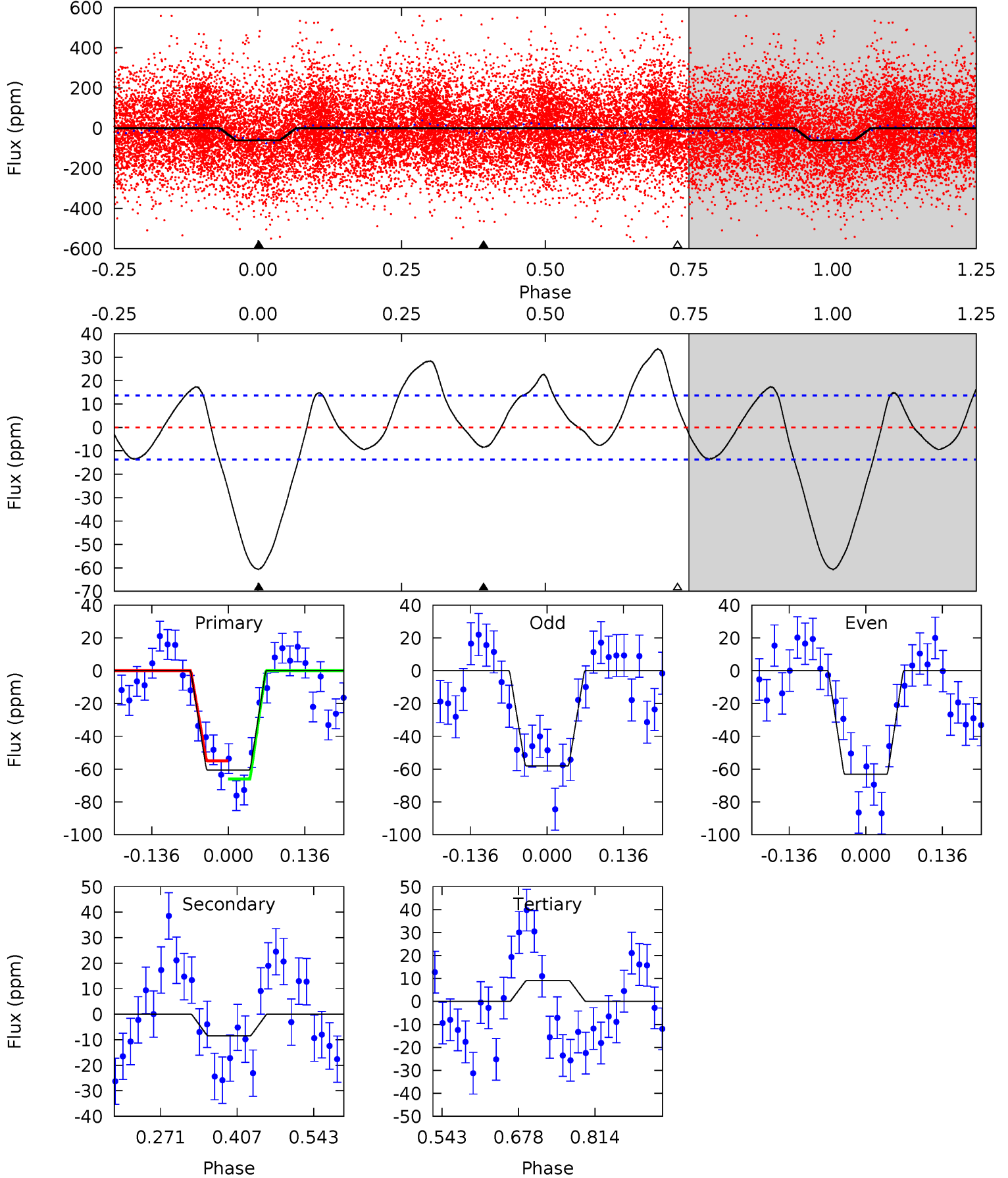
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.88	2.49	-1.72	0	4.51	1.51	2.66	11.6	9.88	4.21	2.49	0.17	0.96	0.41	1.36



Alt Model-Shift Uniqueness Test

010548172-03, P = 6.557822 Days, E = 129.220037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	2.77	-3.00	0	4.50	1.49	4.42	22.9	19.9	5.77	2.77	0.85	1.16	0.36	1.83



Stellar Parameters For KIC 010548172

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8141^{+224}_{-365}	$4.103^{+0.112}_{-0.154}$	$0.070^{+0.250}_{-0.400}$	$2.014^{+0.517}_{-0.387}$	$1.872^{+0.271}_{-0.332}$	$0.323^{+0.193}_{-0.139}$
	+3%/-4%	+3%/-4%	+357%/-571%	+26%/-19%	+14%/-18%	+60%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010548172-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 3	$1.42^{+0.29}_{-0.26}$	2457^{+166}_{-154}	5188^{+643}_{-606}	14^{+10}_{-7}
Alt.	-8 ± 3	$1.74^{+0.32}_{-0.26}$	2454^{+158}_{-150}	4850^{+452}_{-454}	10^{+6}_{-4}

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 $A_{obs} \gg 1.0$

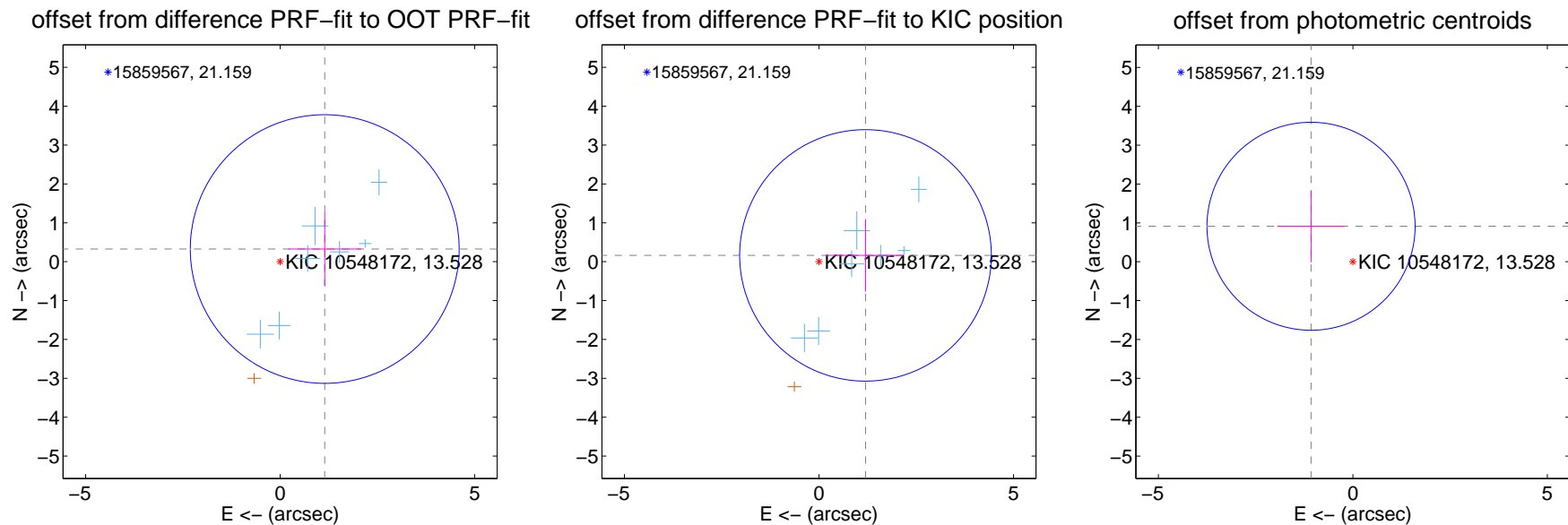
DV Centroid Data

Supplemental centroid analysis for 010548172-03. Kepler magnitude: 13.53. Transit SNR 8.20

There are 7 quarters with good PRF difference image offsets

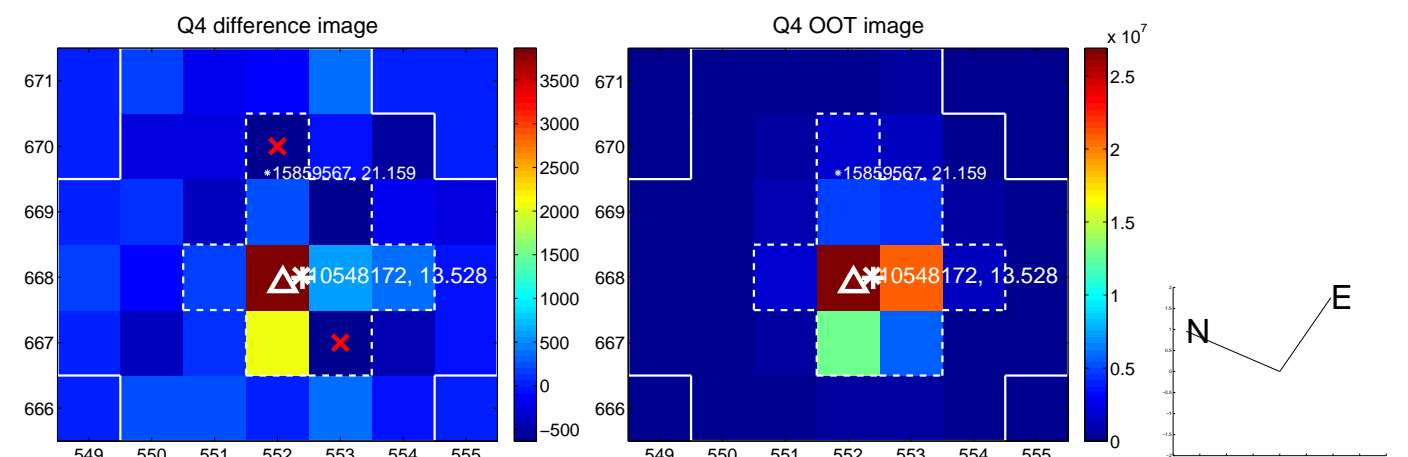
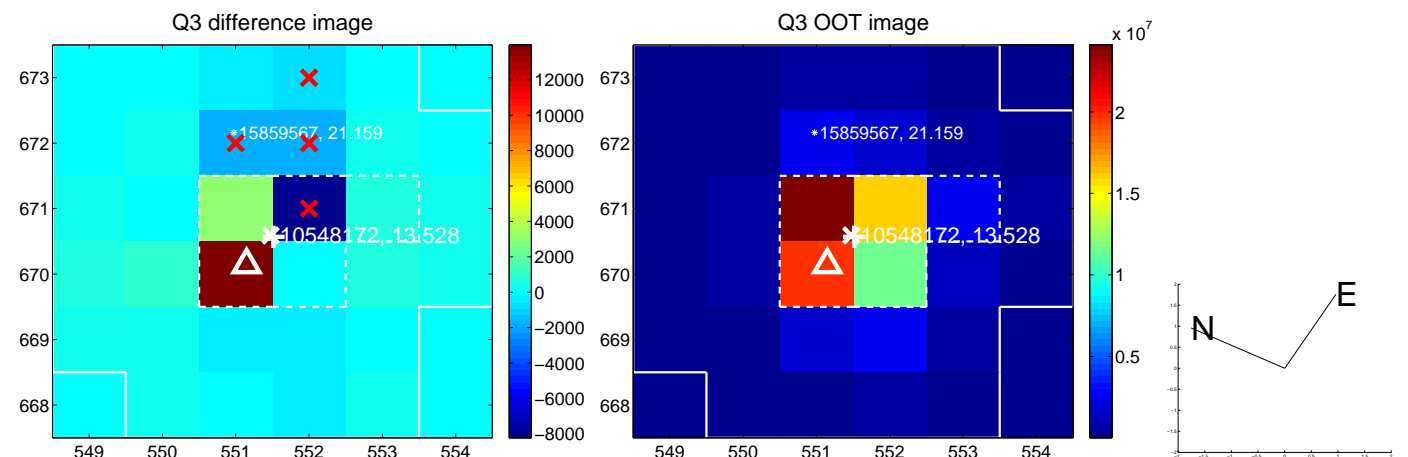
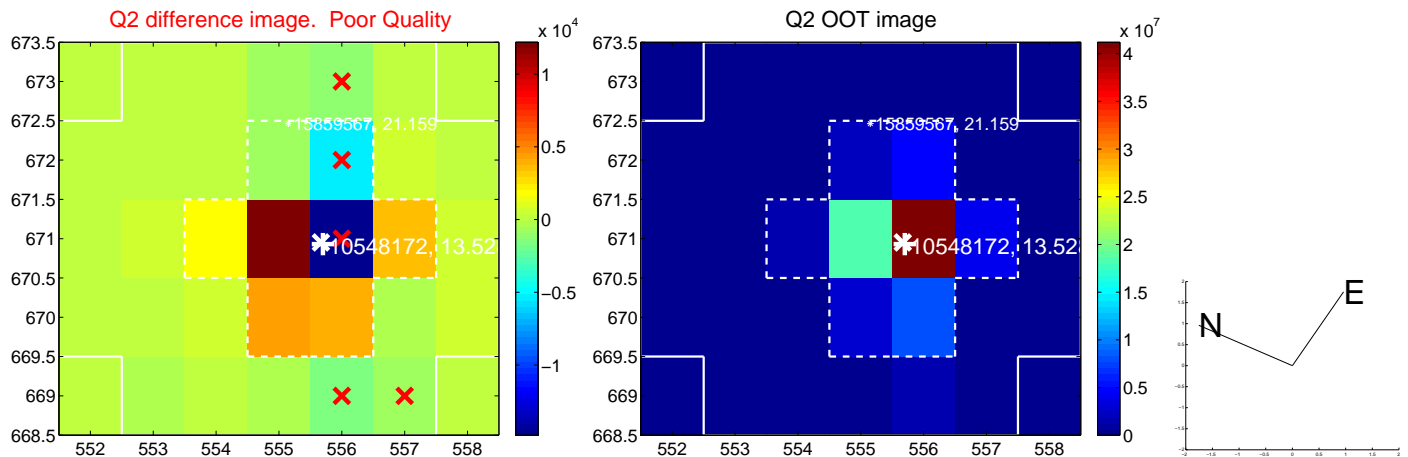
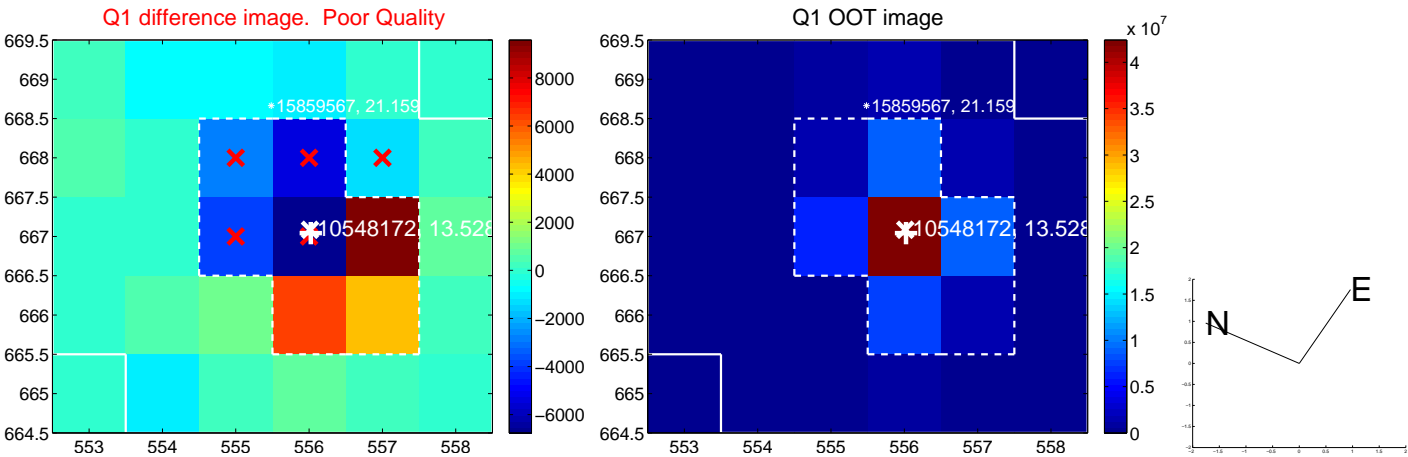
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.192 ± 1.152	1.04	-1.147 ± 0.935	0.326 ± 0.941
PRF-fit source offset from KIC position	1.207 ± 1.078	1.12	-1.196 ± 0.967	0.162 ± 0.928
photometric centroid source offset	1.41 ± 0.89	1.58	1.08 ± 0.87	0.91 ± 0.93

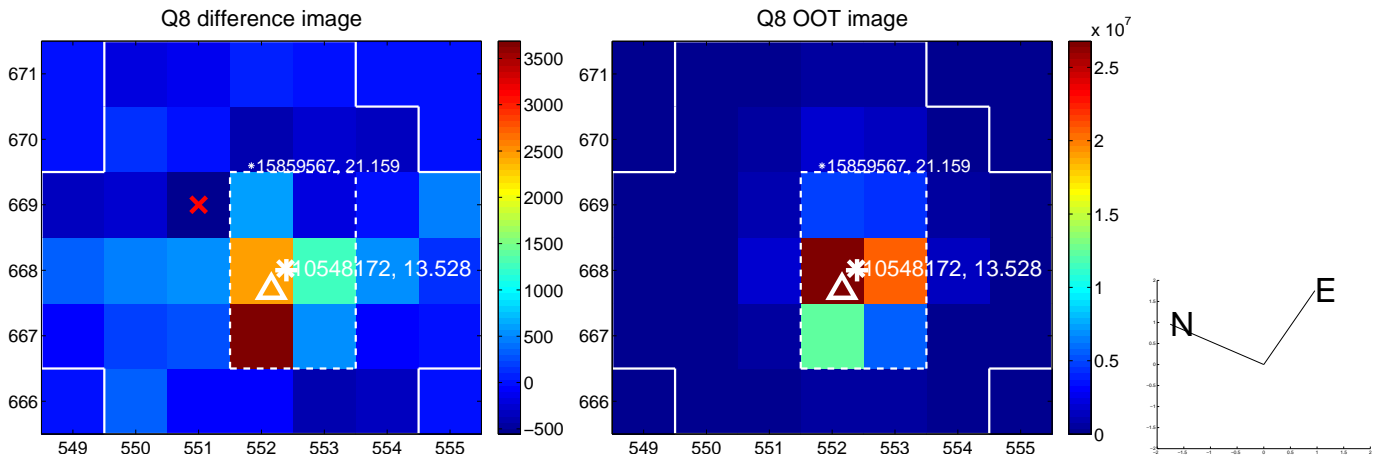
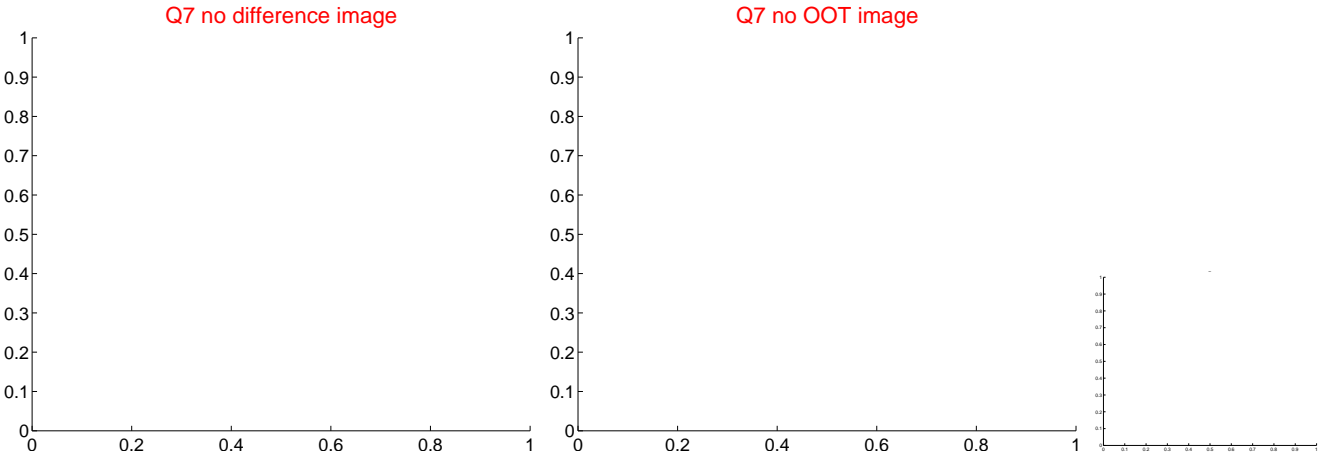
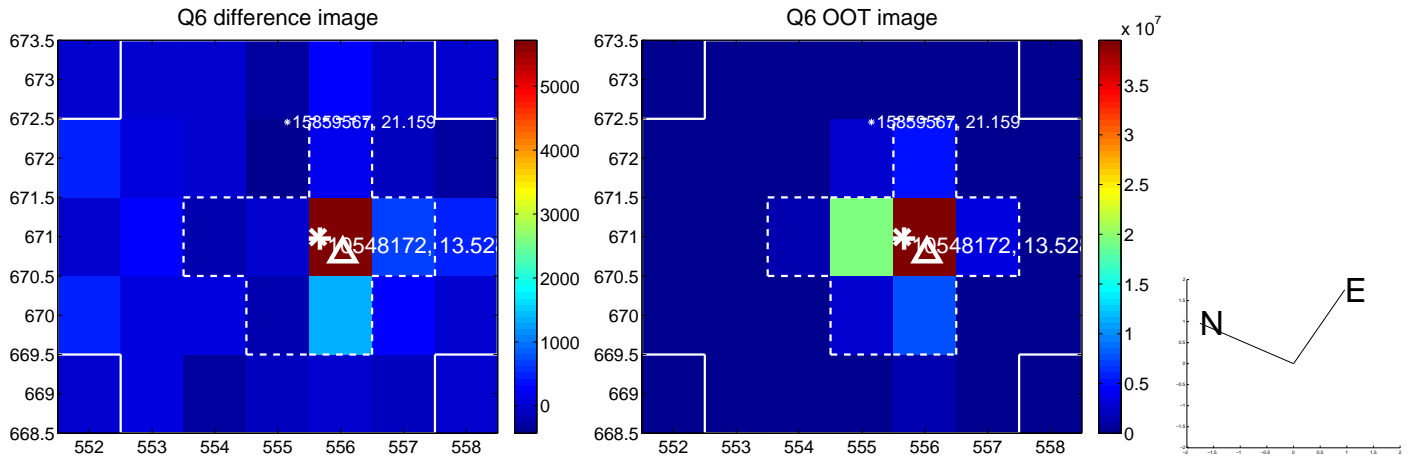
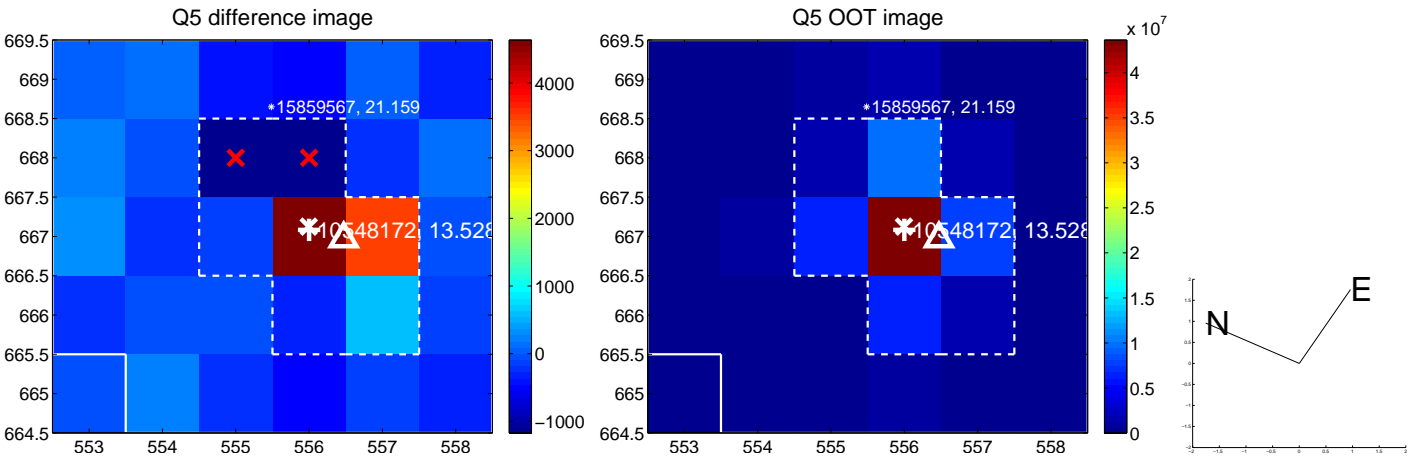


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

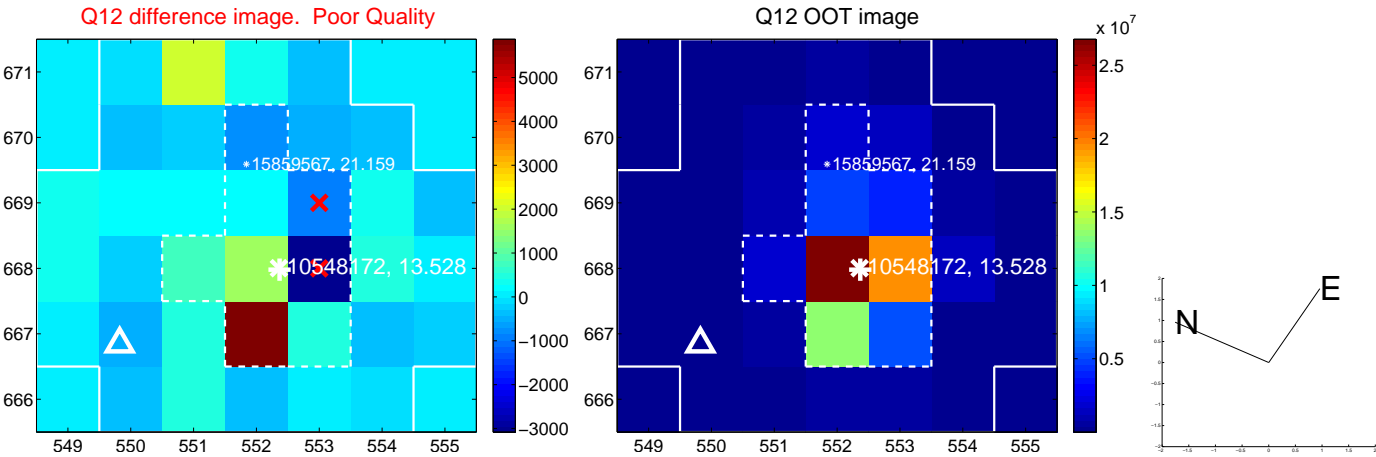
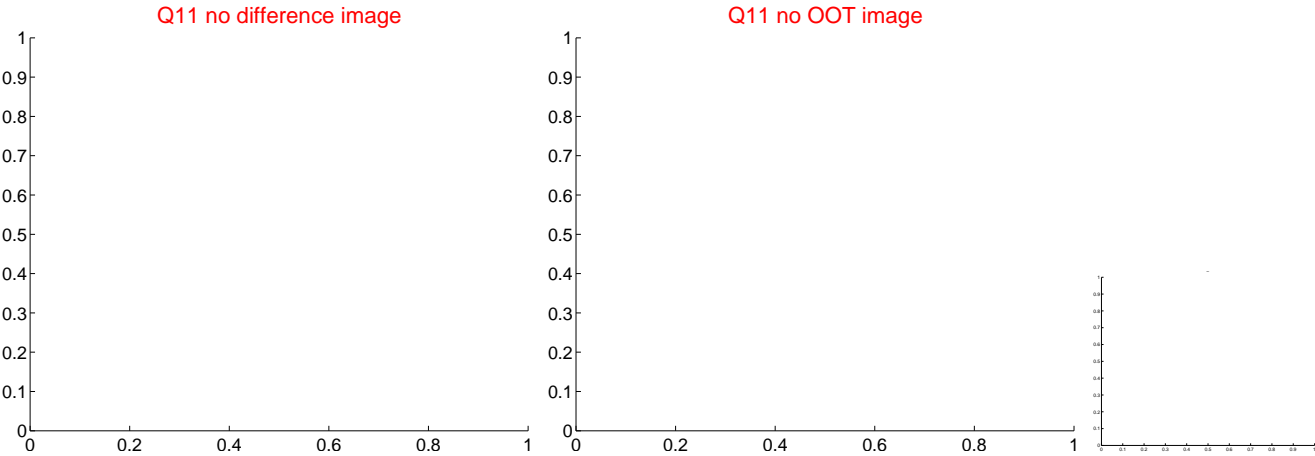
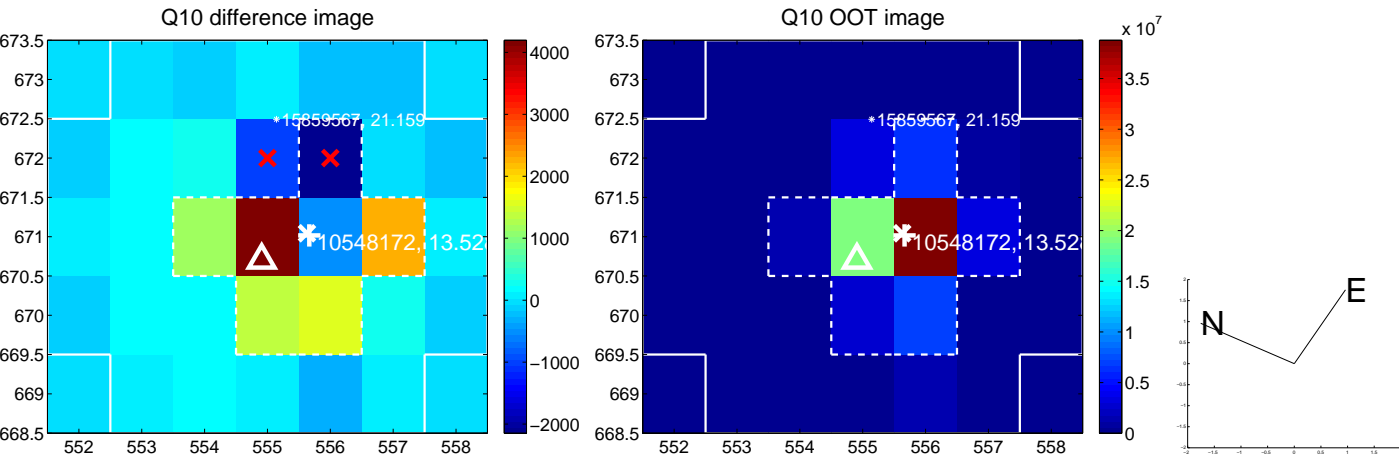
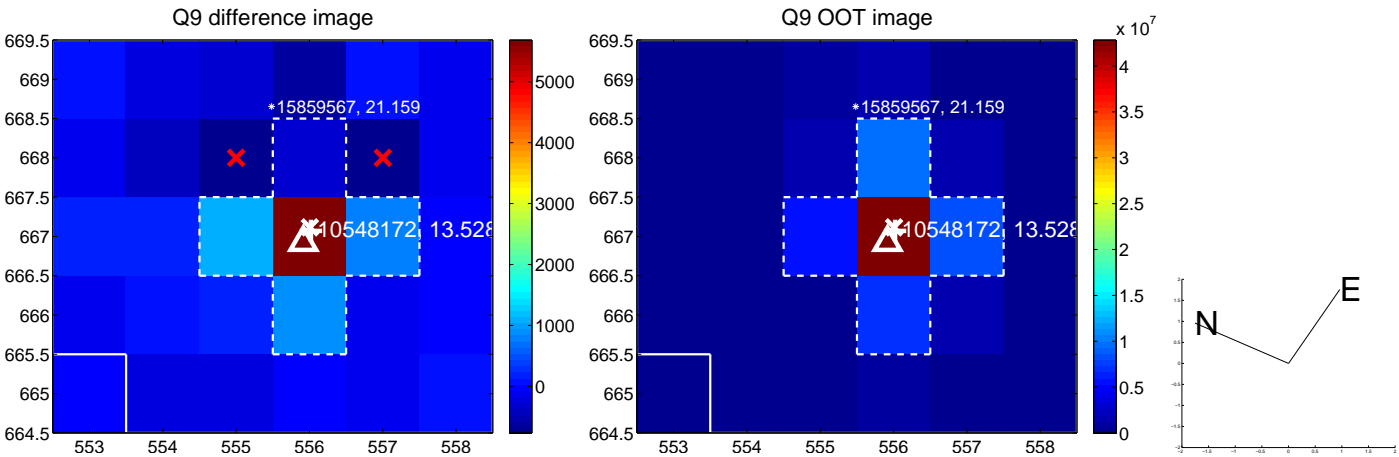
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



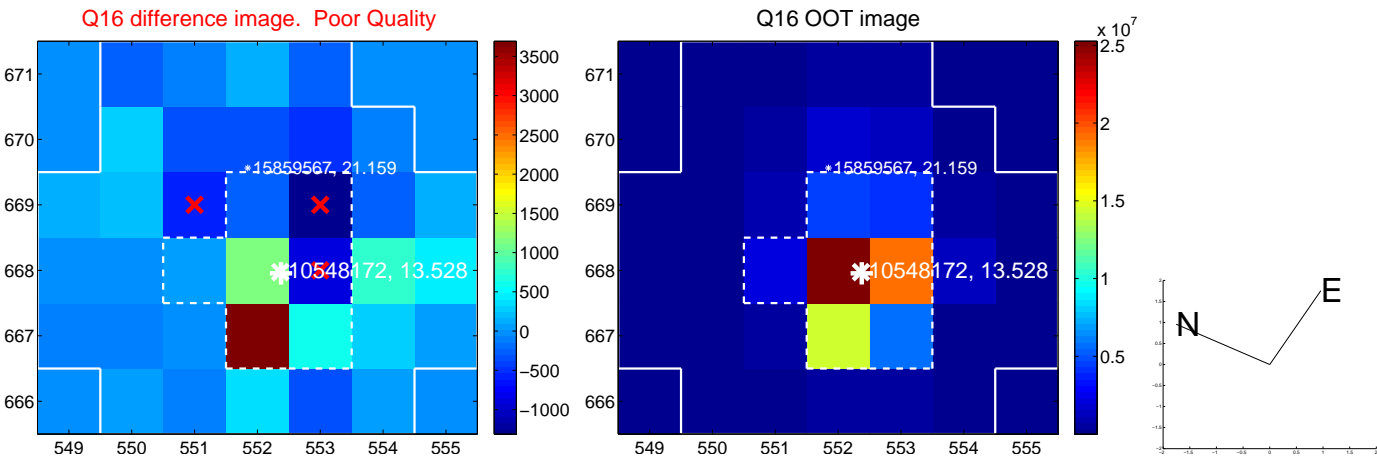
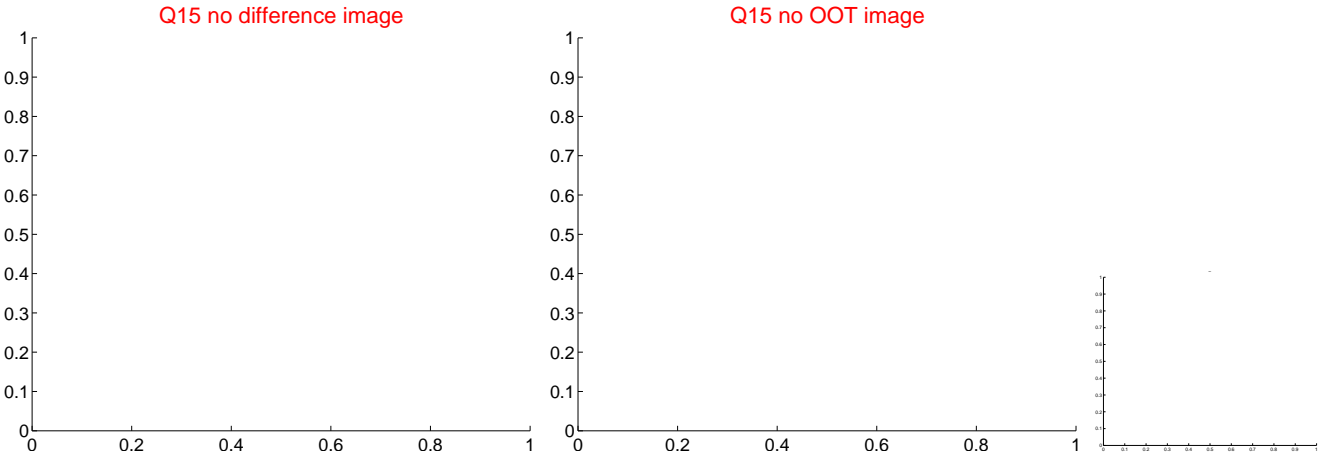
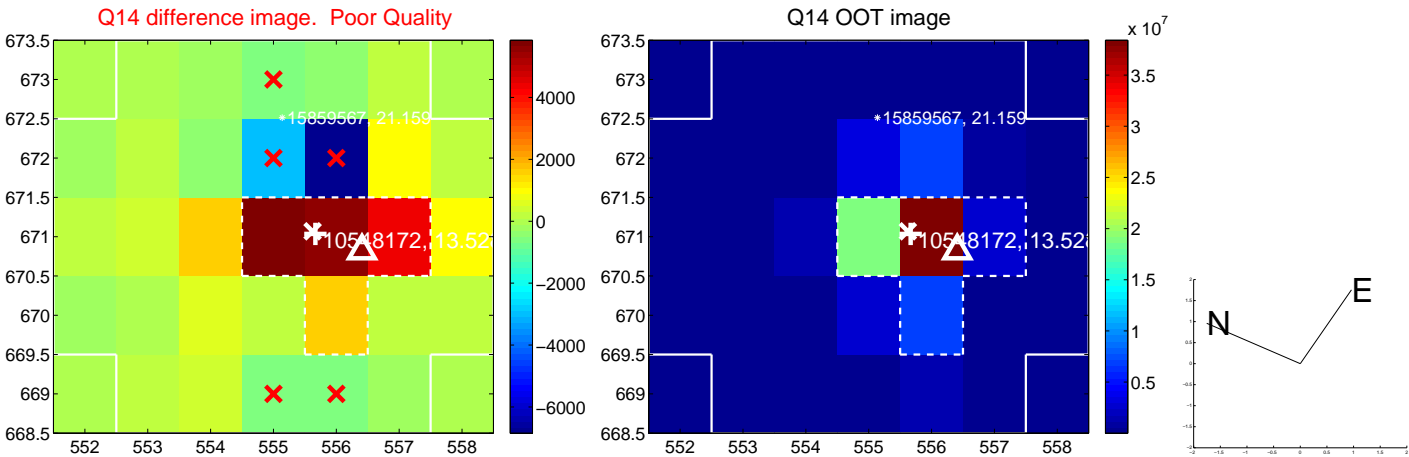
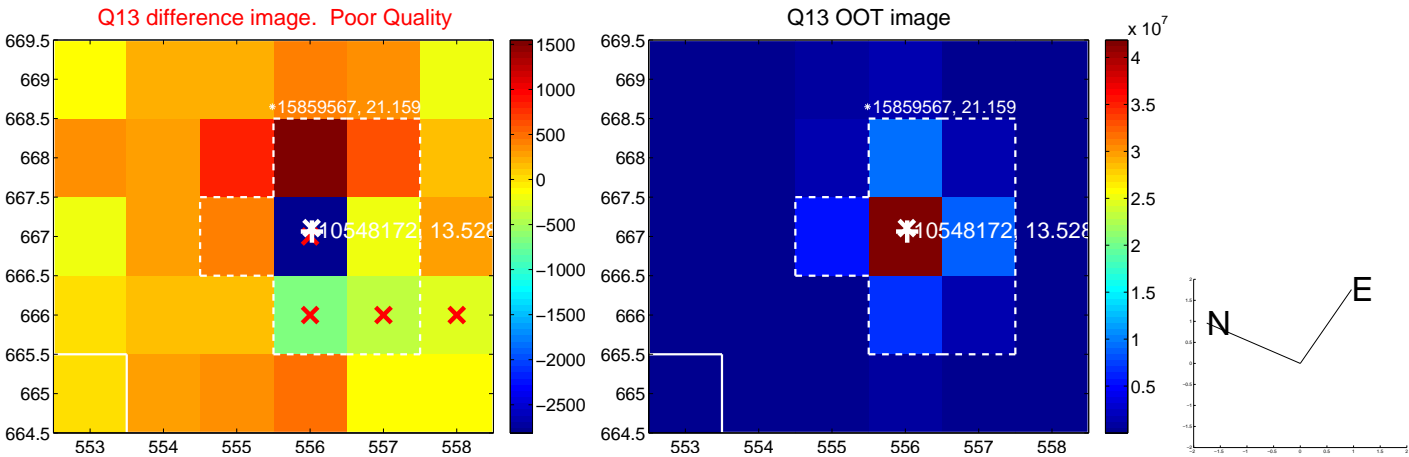
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



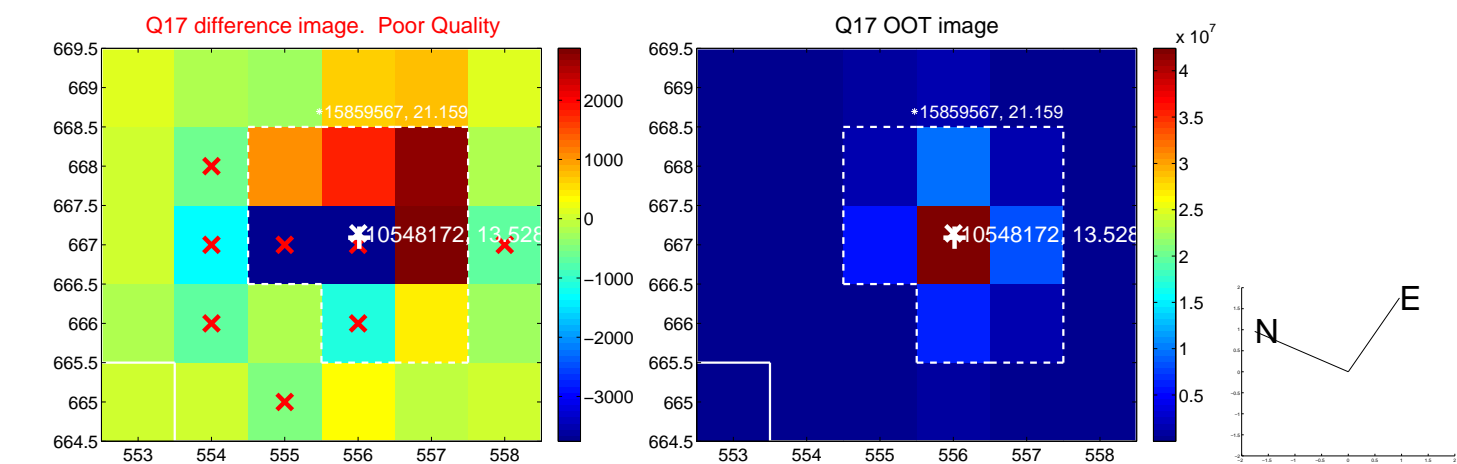
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



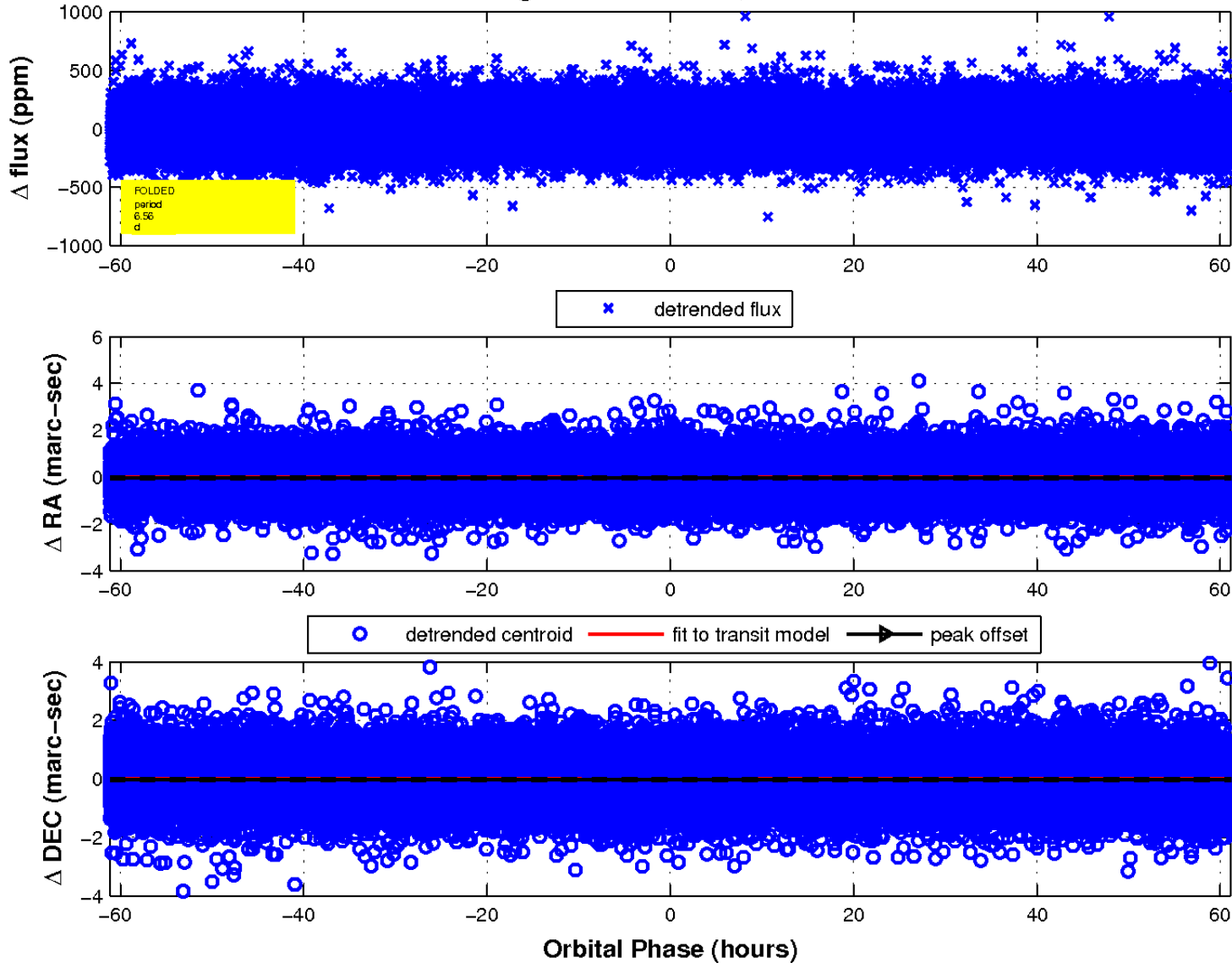
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

