

KIC 003866552

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})
003866552-01	OBS	No	3.213262	132.206533	31.4	12.190	7.9	6.6	4.67	6897	2.64	15472.85
003866552-02	OBS	No	133.834667	143.984882	526.0	6.956	11.2	10.0	4.67	6897	13.59	107.17
003866552-03	OBS	No	262.307267	242.968973	347.8	4.245	8.0	8.0	4.67	6897	9.89	43.69
003866552-04	OBS	No	317.061935	429.926346	354.1	8.703	7.7	7.1	4.67	6897	9.18	33.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003866552-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003866552-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003866552-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003866552-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—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.

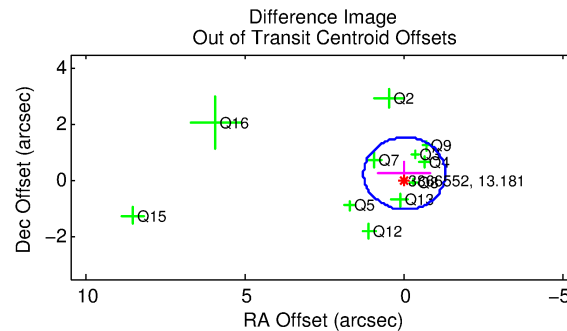
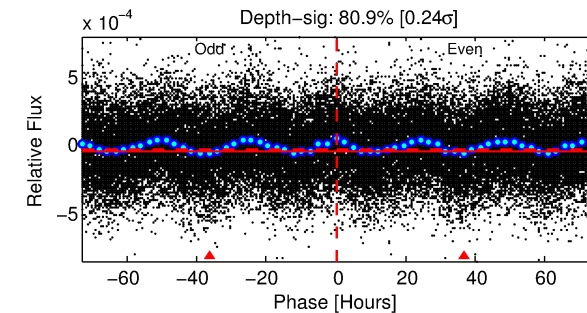
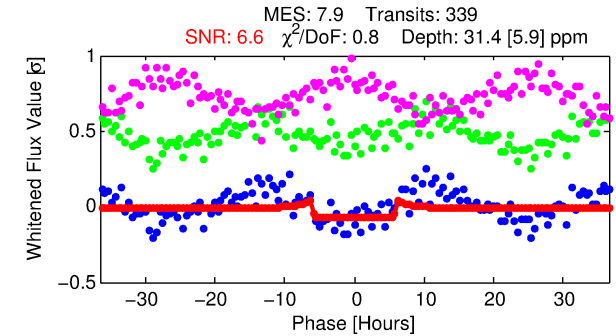
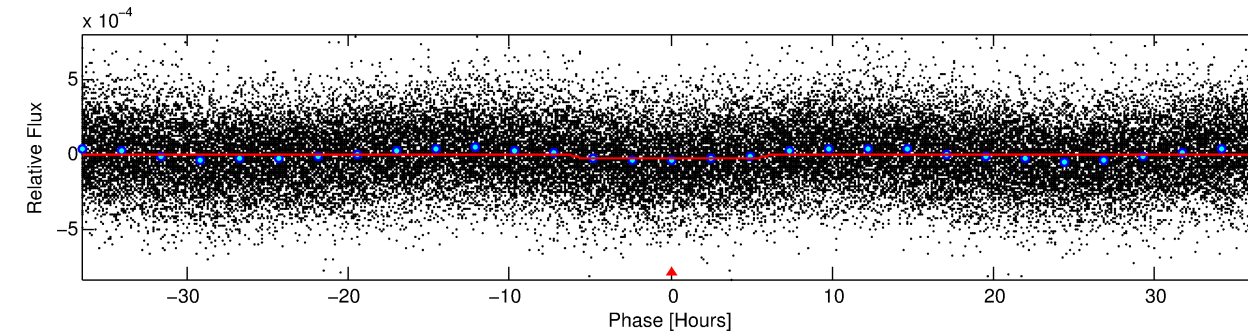
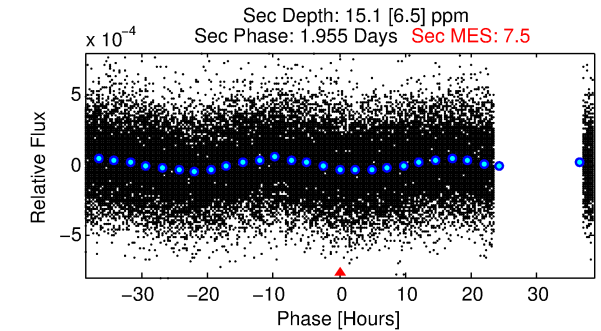
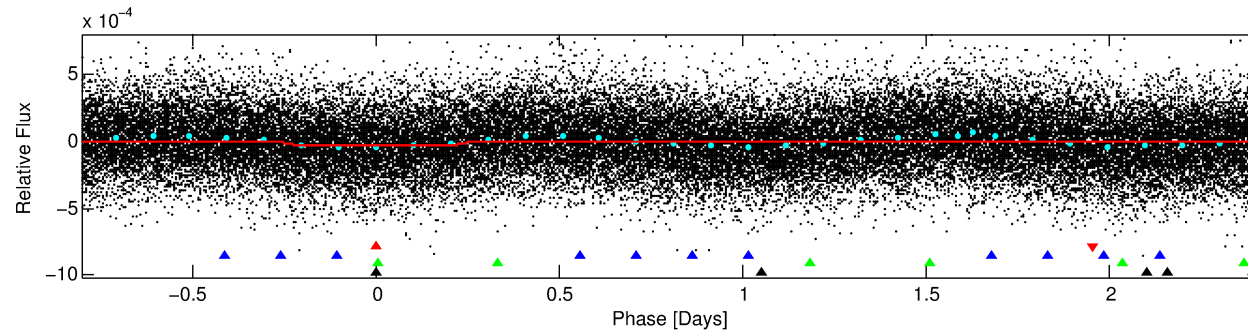
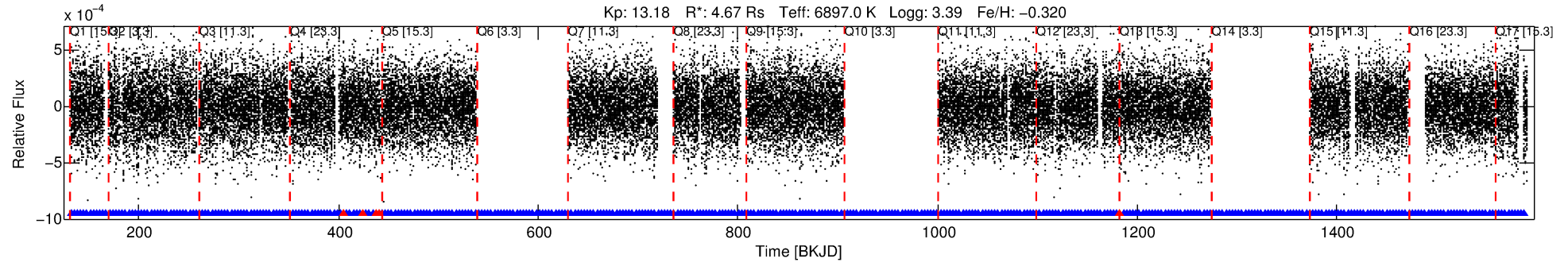
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003866552-01

No Significant Match Found

DV One-Page Summary

KIC: 3866552 Candidate: 1 of 4 Period: 3.213 d



DV Fit Results:

Period = 3.21326 [0.00005] d
Epoch = 132.2065 [0.0088] BKJD
Rp/R* = 0.0052 [0.0055]
a/R* = 2.11 [9.78]
b = 0.05 [114.33]
Seff = 15472.85 [9185.09]
Teq = 2844 [422] K
Rp = 2.64 [2.95] Re
a = 0.0534 [0.0193] AU
Ag = 3.41 [7.58] [0.32σ]
Teffp = 5974 [3214] K [0.97σ]

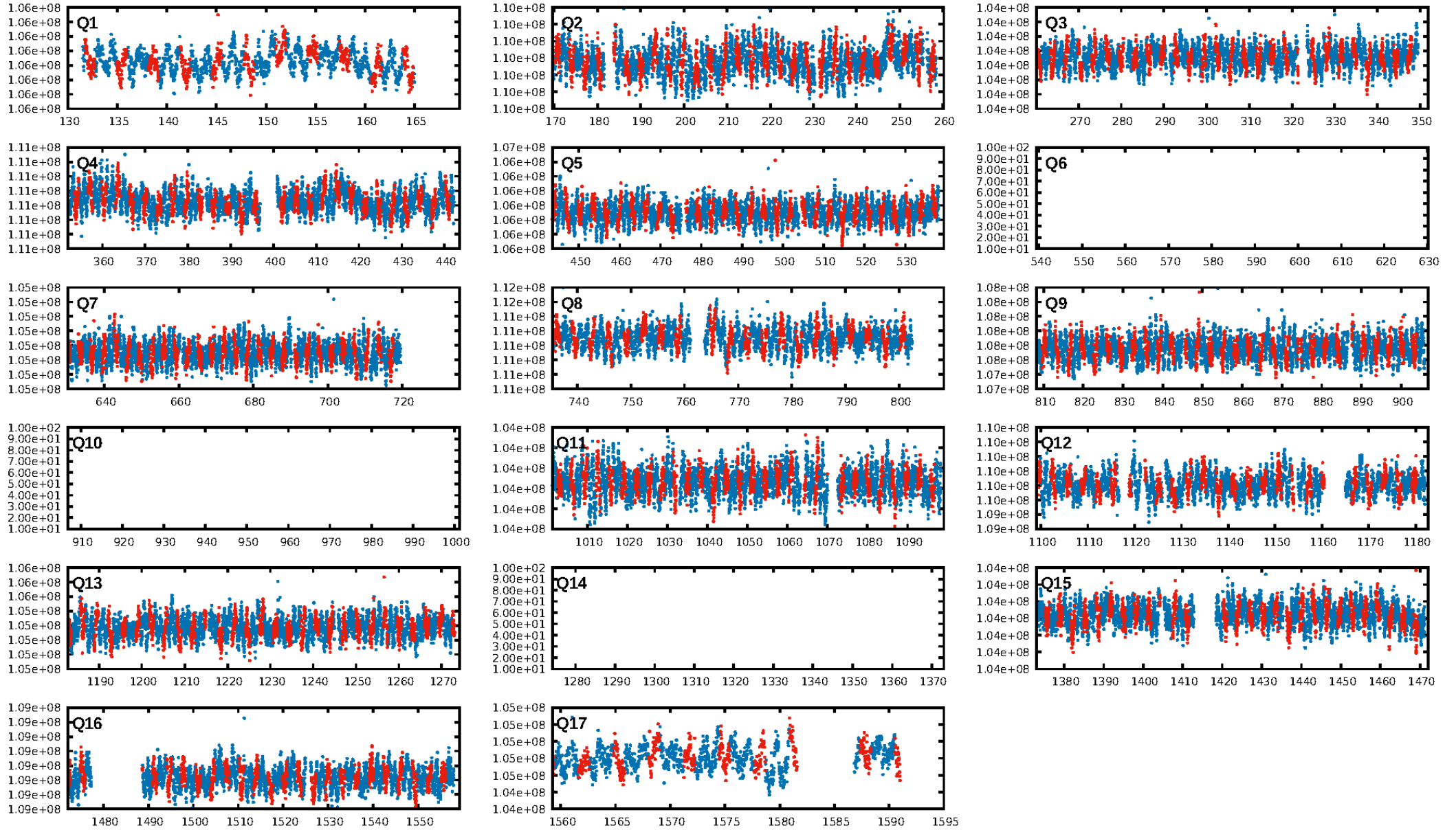
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [223.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.36e-09
RollingBand-fgt: 0.98 [314/319]
GhostDiagnostic-chr: 3.039
Centroid-sig: N/A
Centroid-so: 0.917 arcsec [0.80σ]
OotOffset-rm: 0.256 arcsec [0.60σ]
KicOffset-rm: 0.225 arcsec [0.51σ]
OotOffset-st: 1/3/4/3 [11]
KicOffset-st: 1/3/4/3 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [14/14]

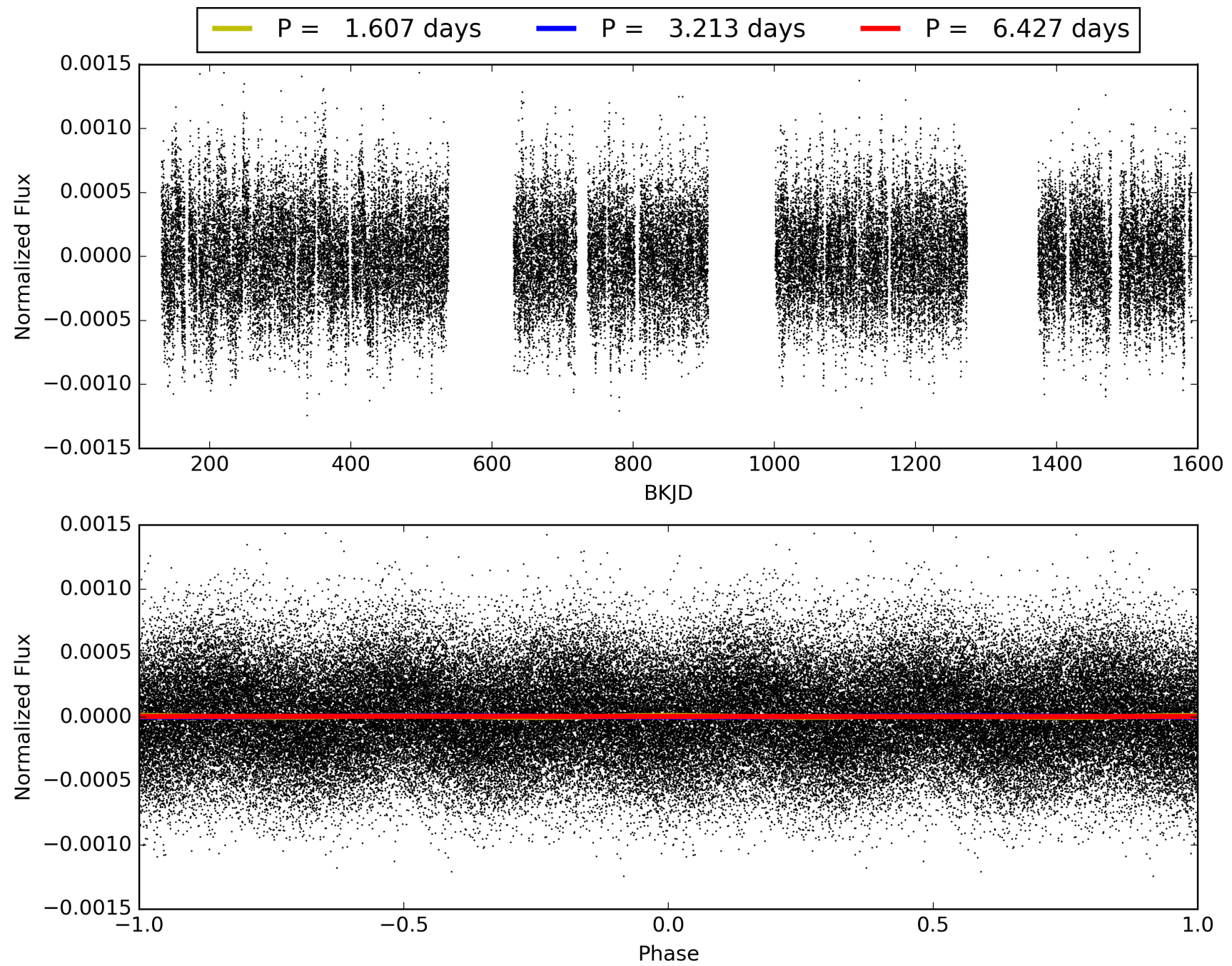
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:58:54 Z

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

TCE 003866552-01, PDC Light Curves

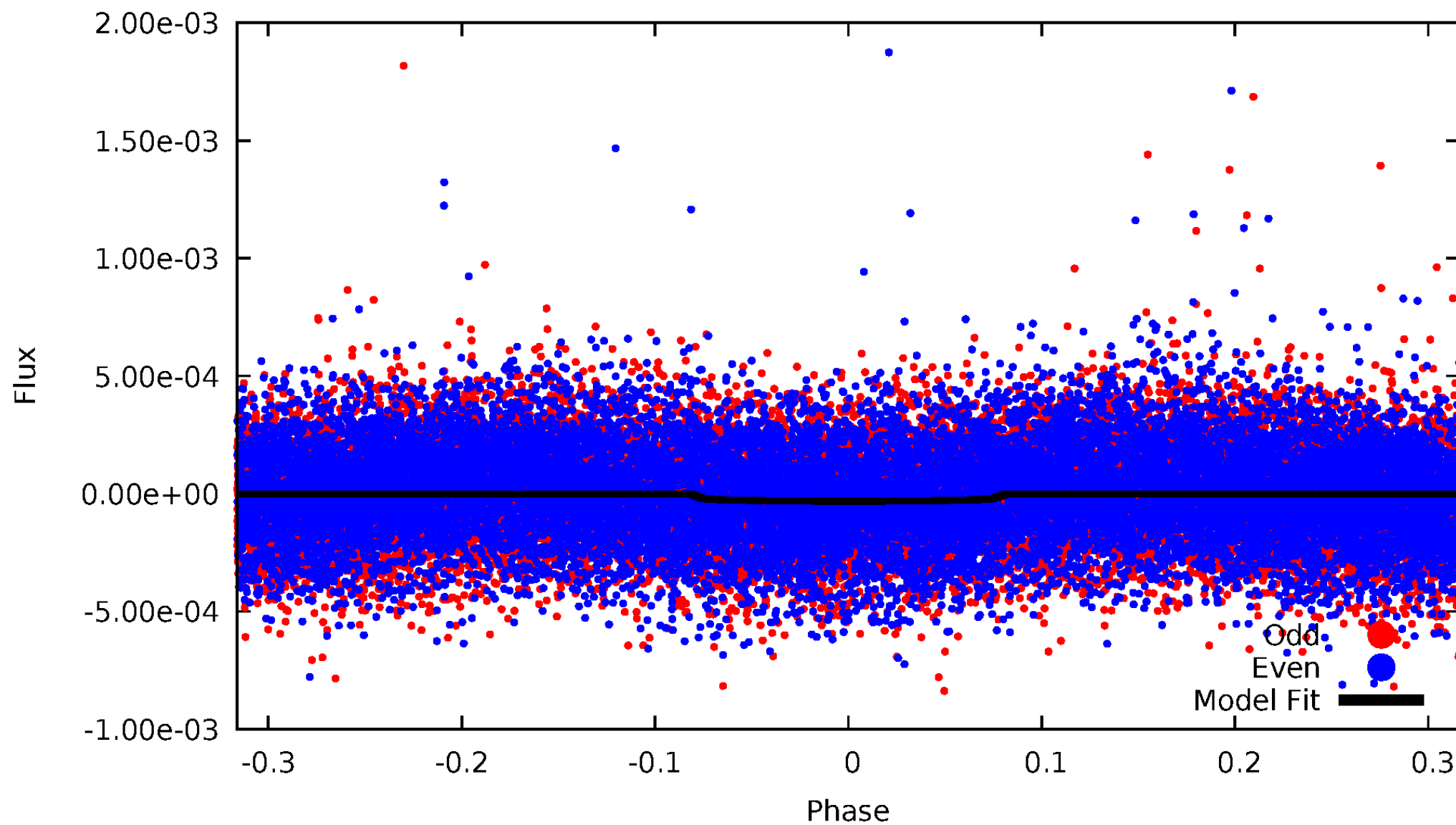


TCE 003866552-01



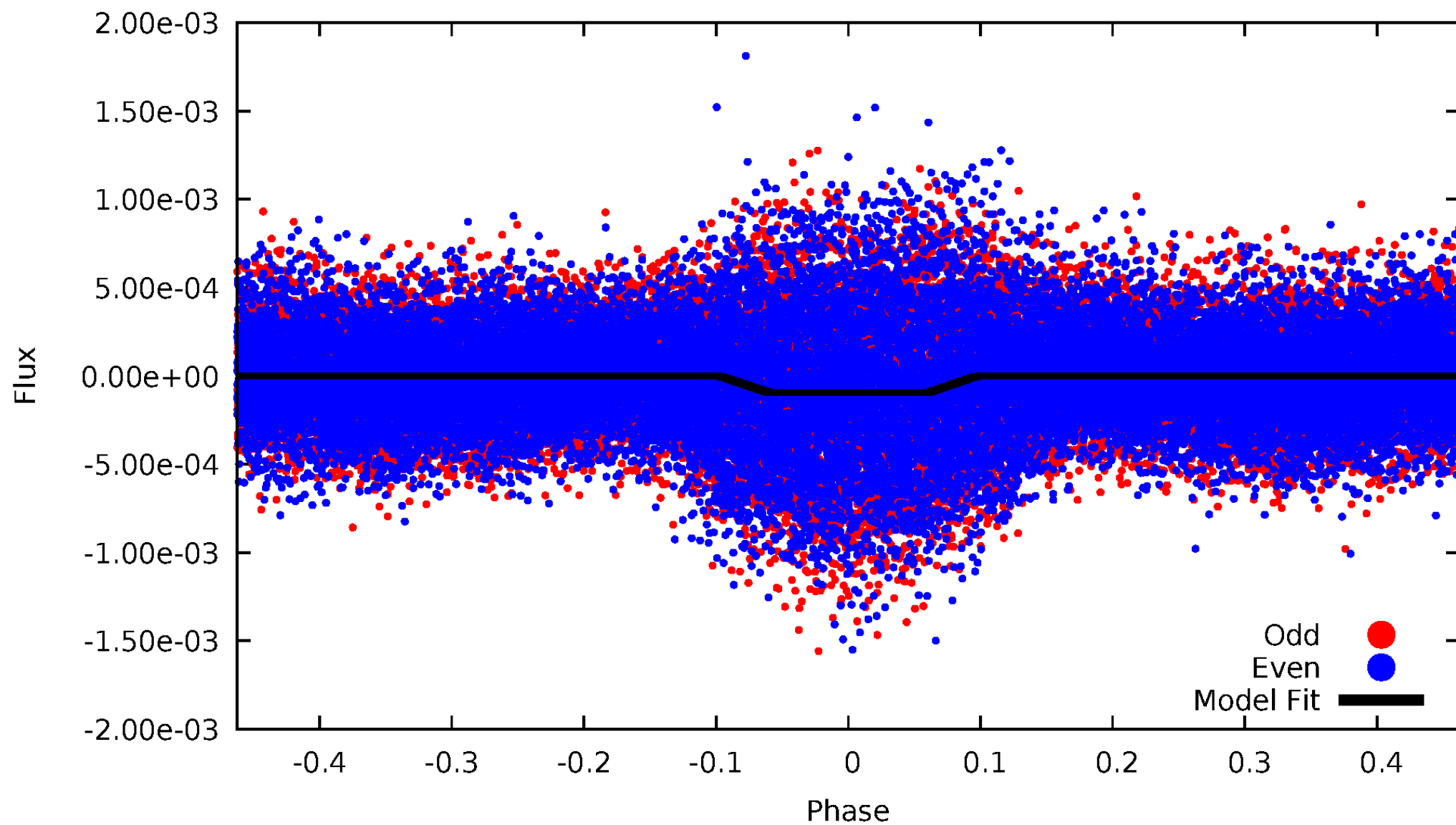
DV Odd/Even

TCE 003866552-01

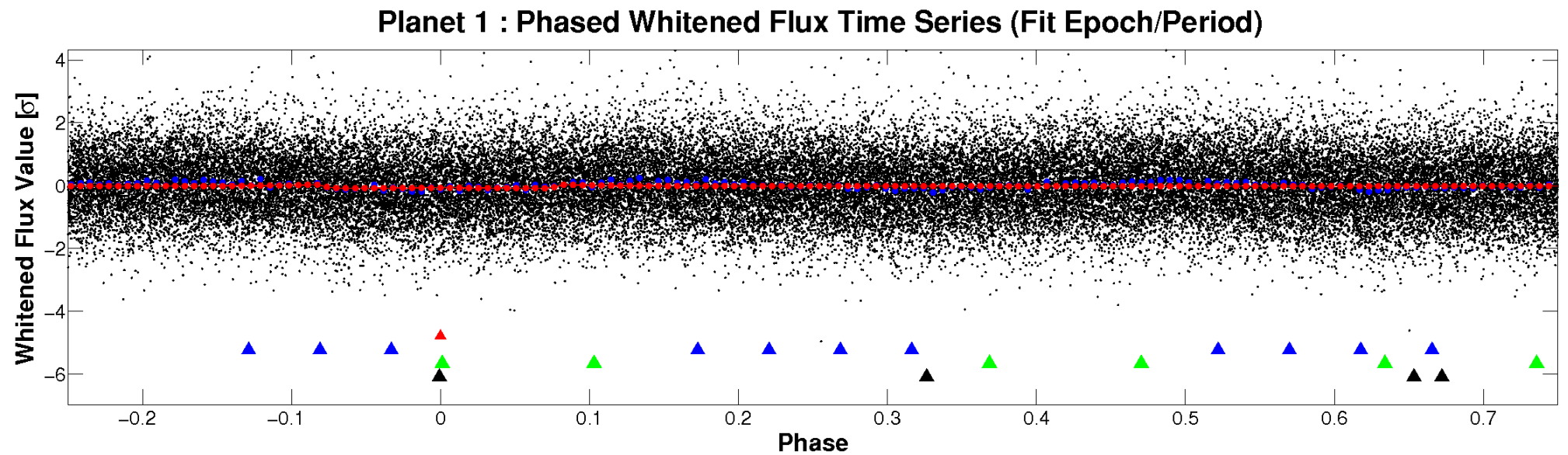
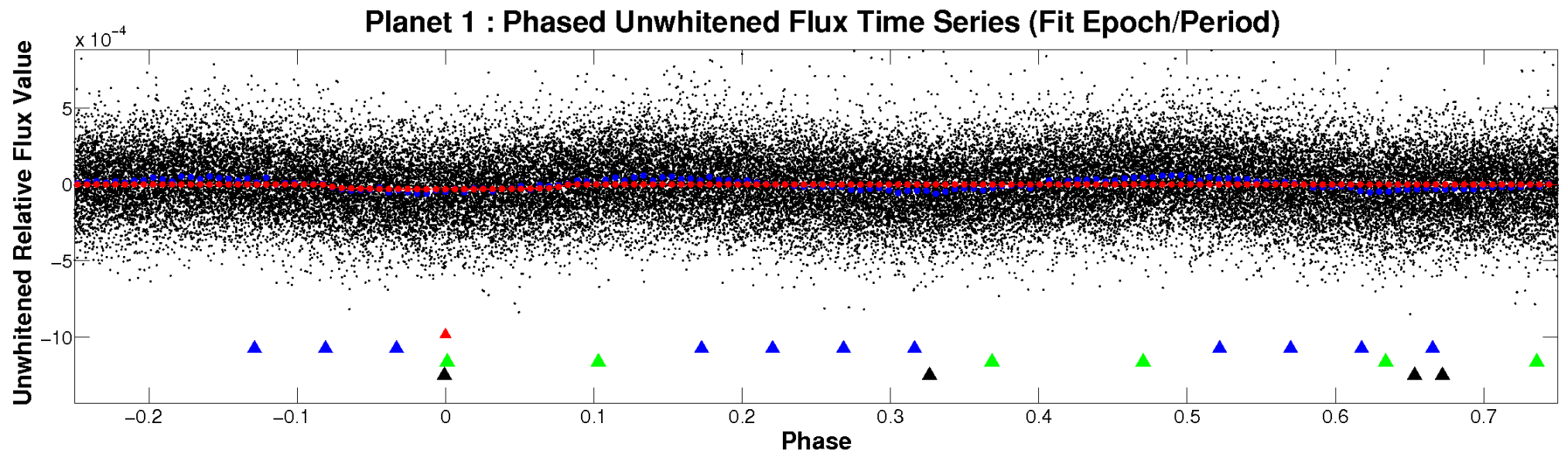


ALT Odd/Even

TCE 003866552-01

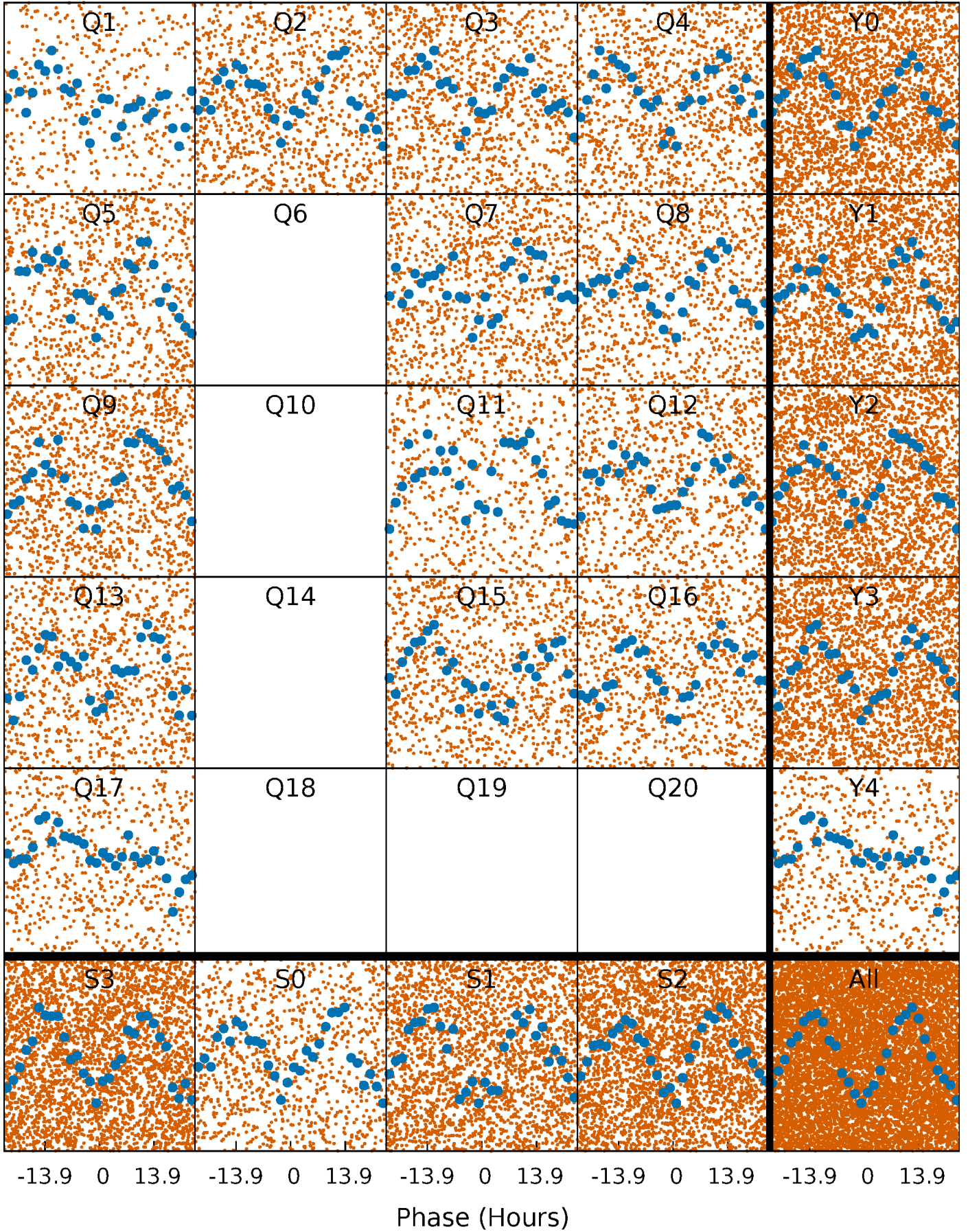


Non-Whitened Vs. Whitened Light Curve



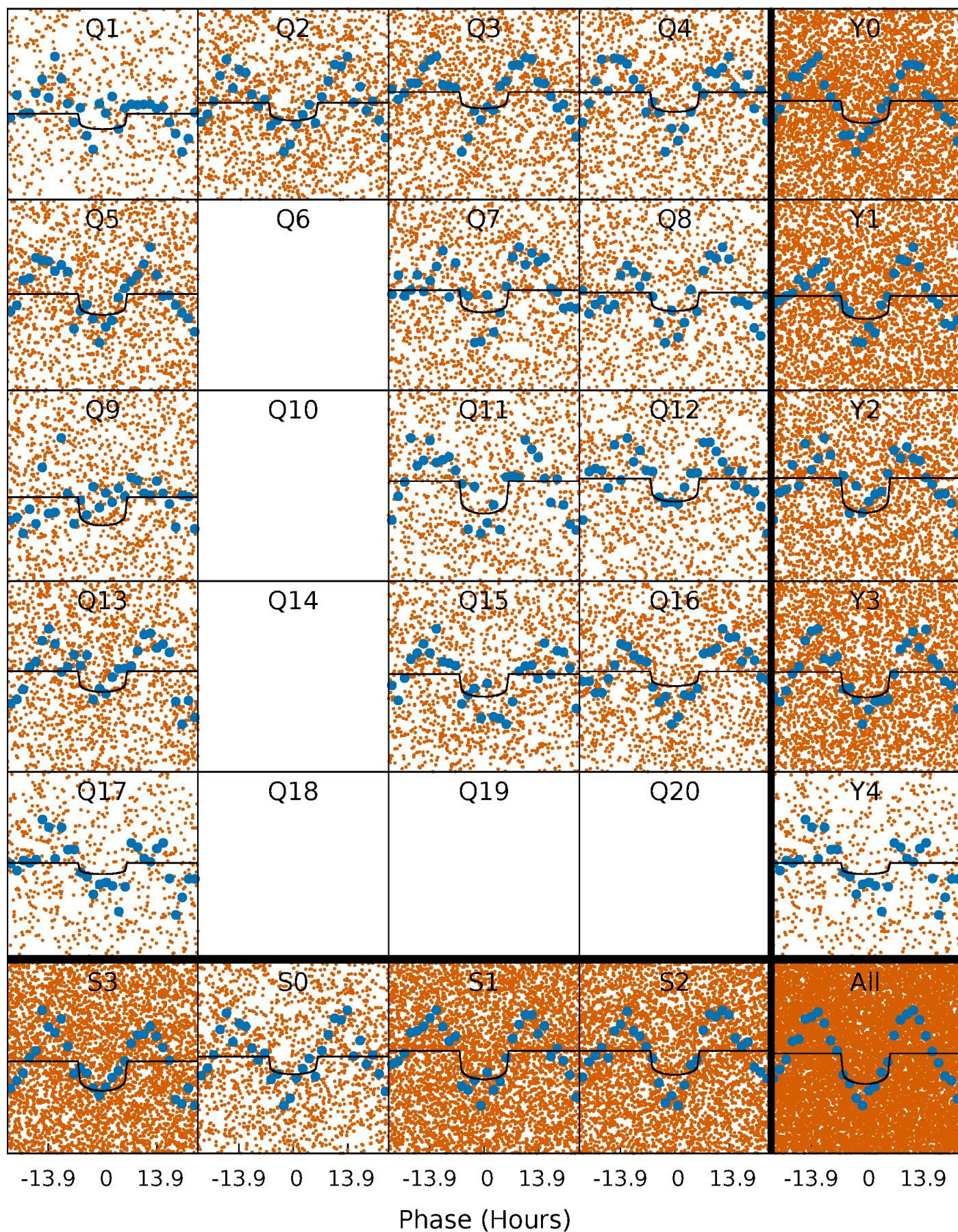
PDC Quarter-Phased Transit Curves

TCE 003866552-01 P= 3.213262 Days $T_0=132.206533$ (BKJD)



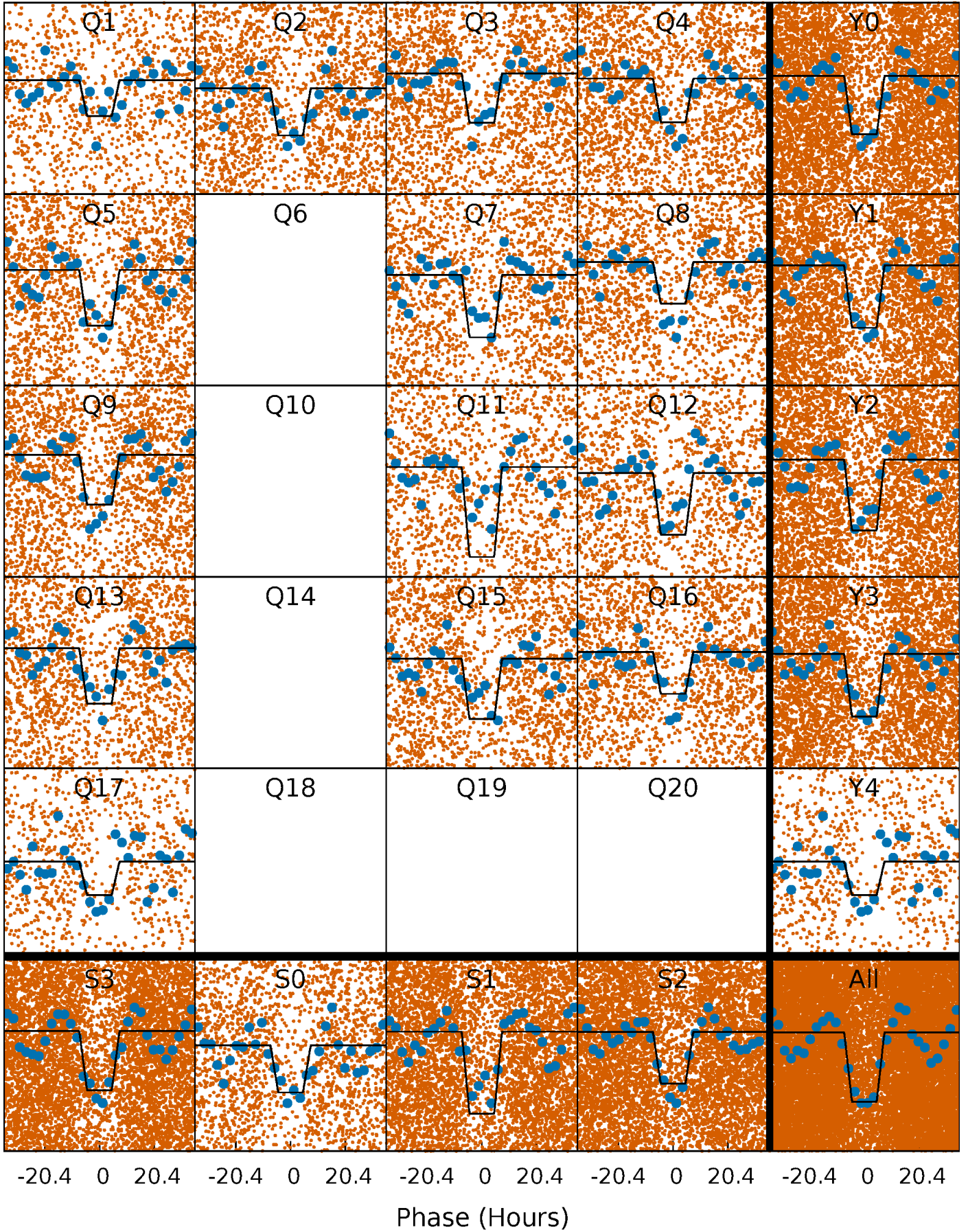
DV Quarter-Phased Transit Curves

TCE 003866552-01 P= 3.213262 Days $T_0=132.206533$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

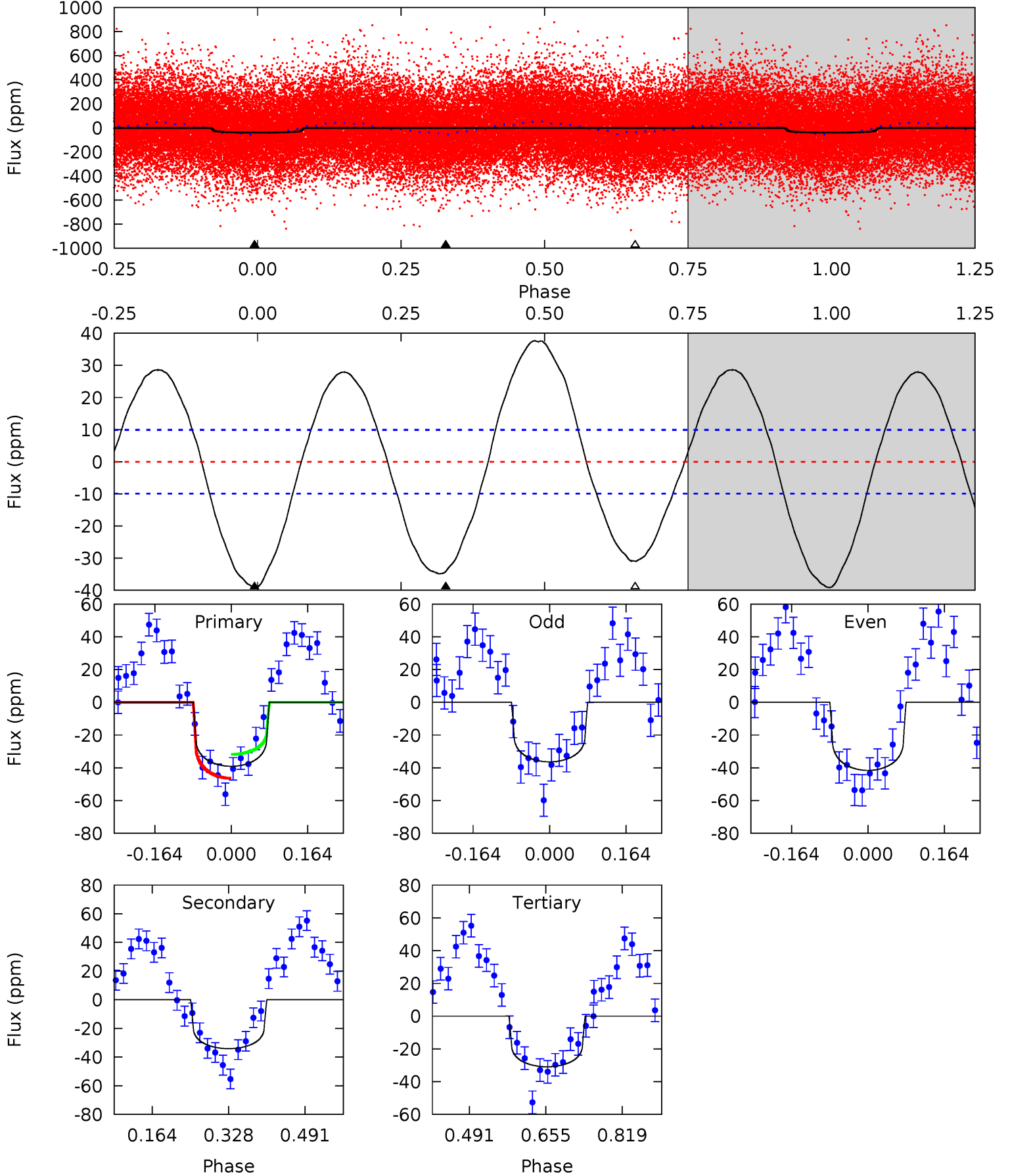
TCE 003866552-01 P= 3.213491 Days $T_0=132.113868$ (BKJD)



DV Model-Shift Uniqueness Test

003866552-01, P = 3.213262 Days, E = 128.993271 Days

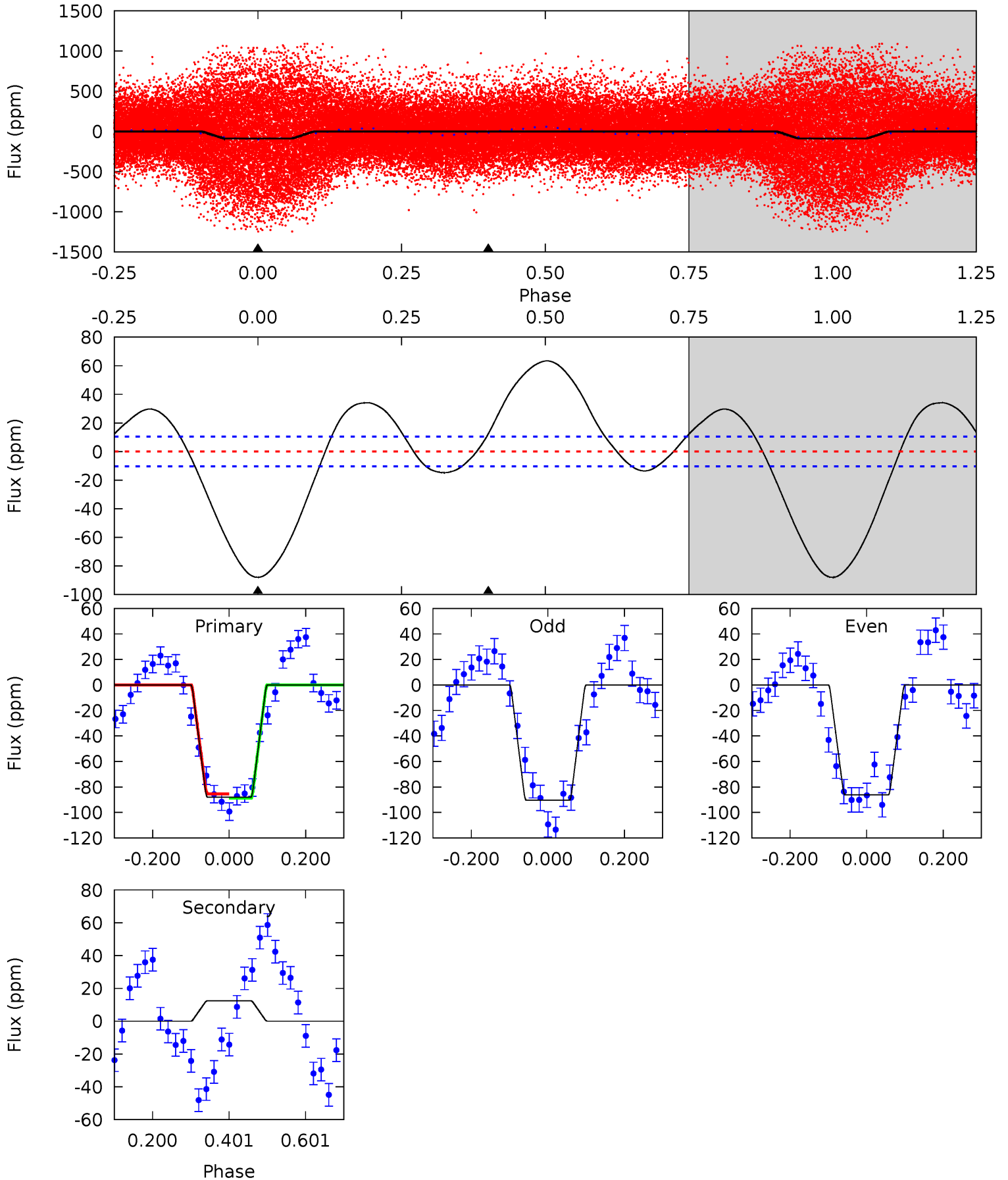
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	15.3	13.9	0	4.46	1.39	10.2	3.67	17.6	1.44	15.3	1.18	1.41	0.49	3.36



Alt Model-Shift Uniqueness Test

003866552-01, P = 3.213491 Days, E = 128.900377 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.3	-5.27	0	0	4.42	1.28	5.51	37.3	37.3	-5.27	-5.27	0.88	2.01	0.42	0.71



Stellar Parameters For KIC 003866552

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.394^{+0.340}_{-0.060}$	$-0.320^{+0.350}_{-0.300}$	$4.666^{+0.412}_{-1.752}$	$1.967^{+0.134}_{-0.336}$	$0.027^{+0.069}_{-0.005}$
	+3%/-3%	+10%/-2%	+109%/-94%	+9%/-38%	+7%/-17%	+251%/-20%
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 003866552-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-34 ± 2	$3.04^{+2.21}_{-1.84}$	3866^{+215}_{-324}	6411^{+5367}_{-1566}	$5.853^{+29.958}_{-3.895}$
Alt.	12 ± 2	$4.49^{+2.70}_{-2.23}$	3875^{+209}_{-340}	-4594^{+495}_{-1394}	$-0.928^{+0.569}_{-2.878}$

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

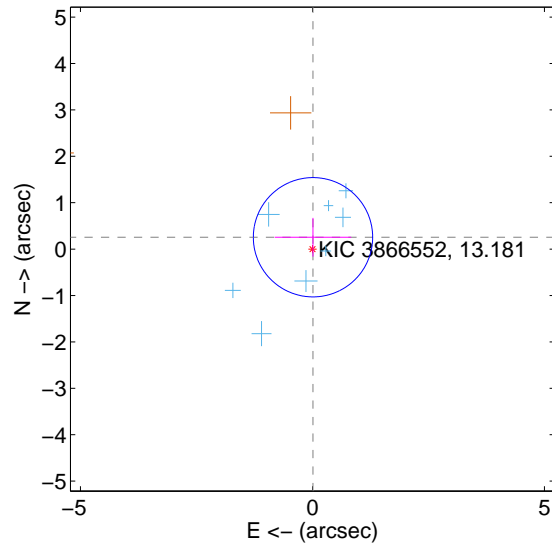
Supplemental centroid analysis for 003866552-01. Kepler magnitude: 13.18. Transit SNR 6.58

There are 8 quarters with good PRF difference image offsets

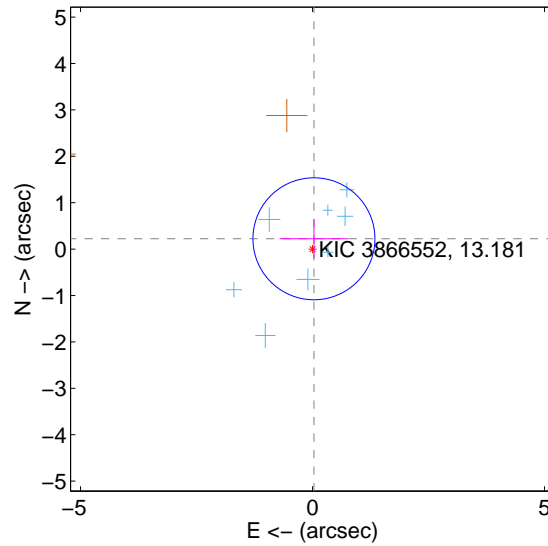
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.256 ± 0.429	0.60	-0.012 ± 0.825	0.255 ± 0.418
PRF-fit source offset from KIC position	0.225 ± 0.438	0.51	-0.030 ± 0.737	0.222 ± 0.427
photometric centroid source offset	0.92 ± 1.14	0.80	0.67 ± 1.13	0.62 ± 1.16

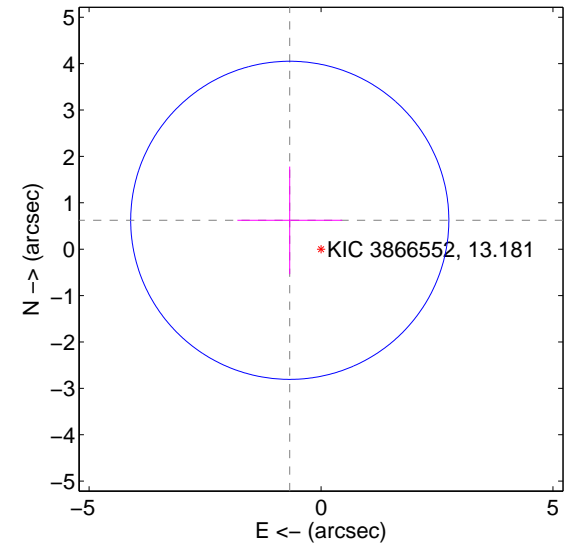
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

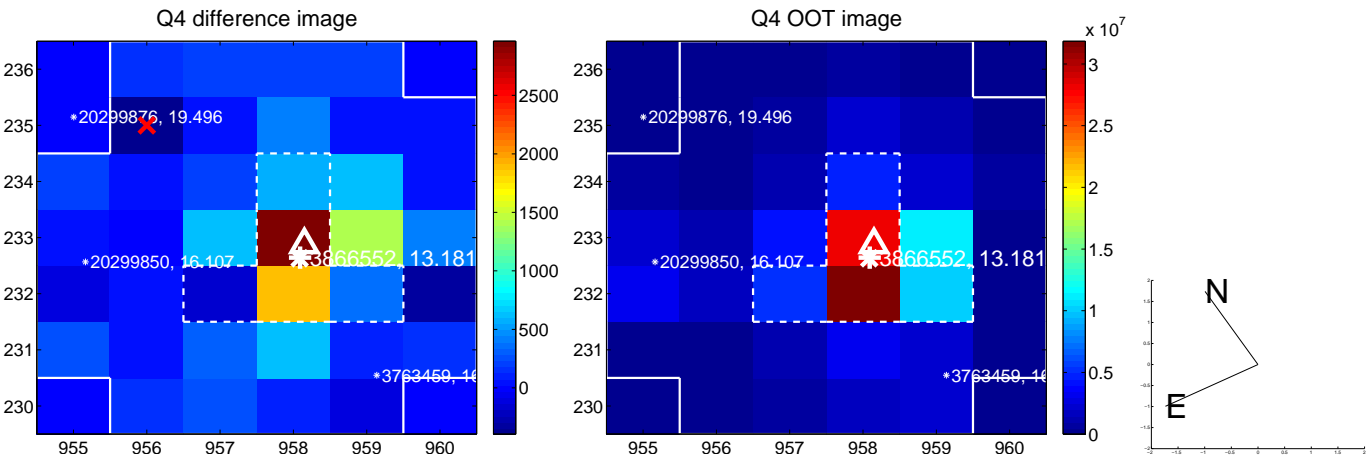
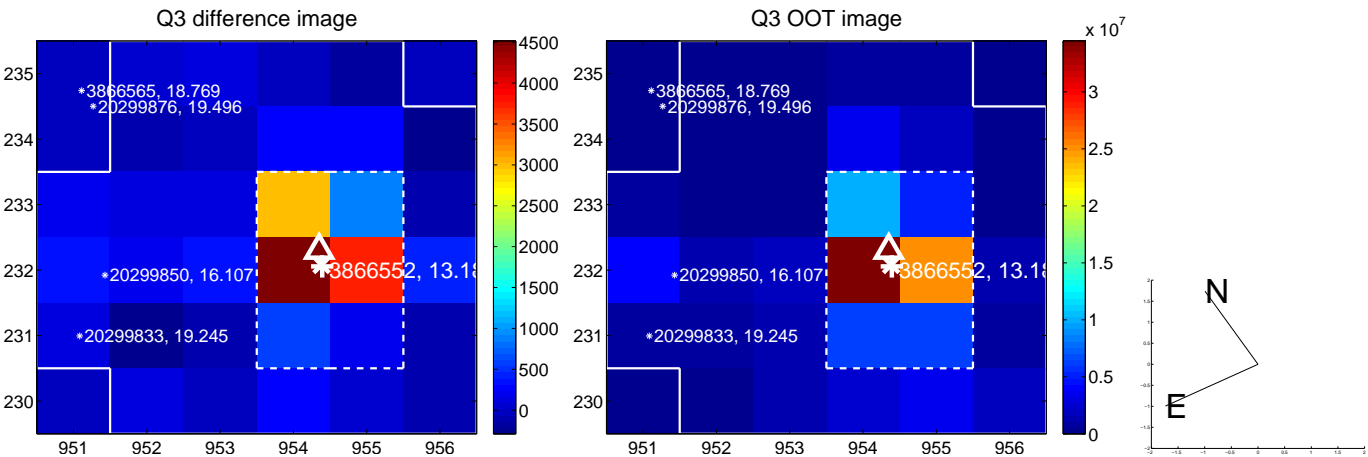
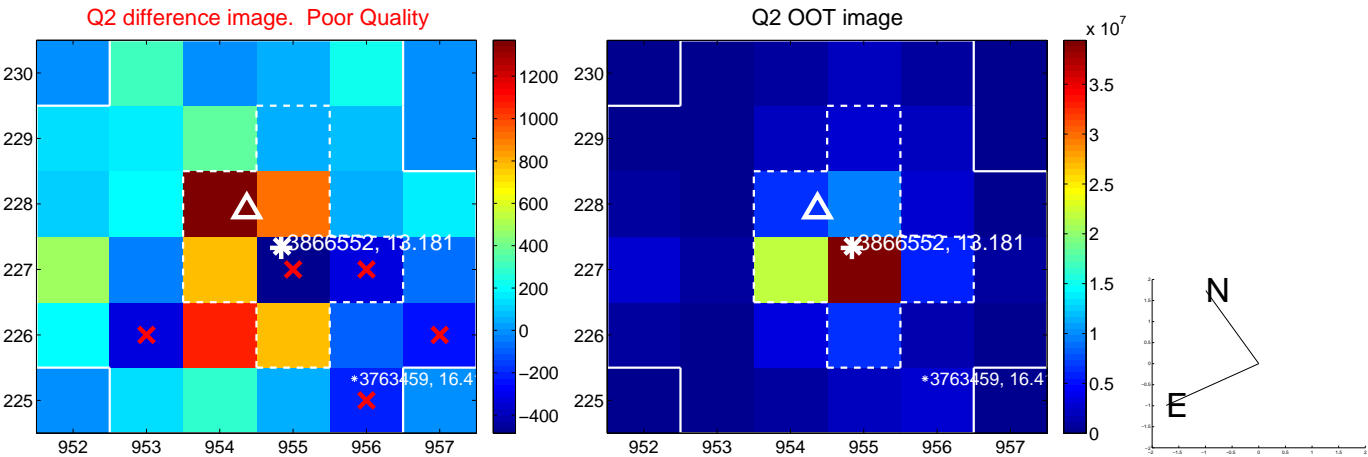
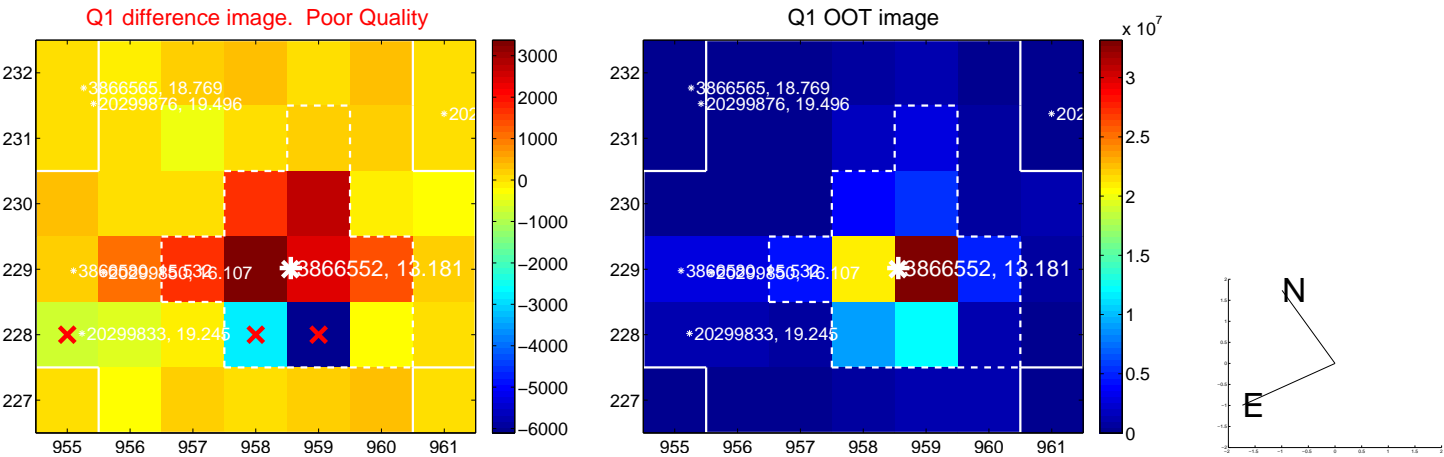


offset from photometric centroids

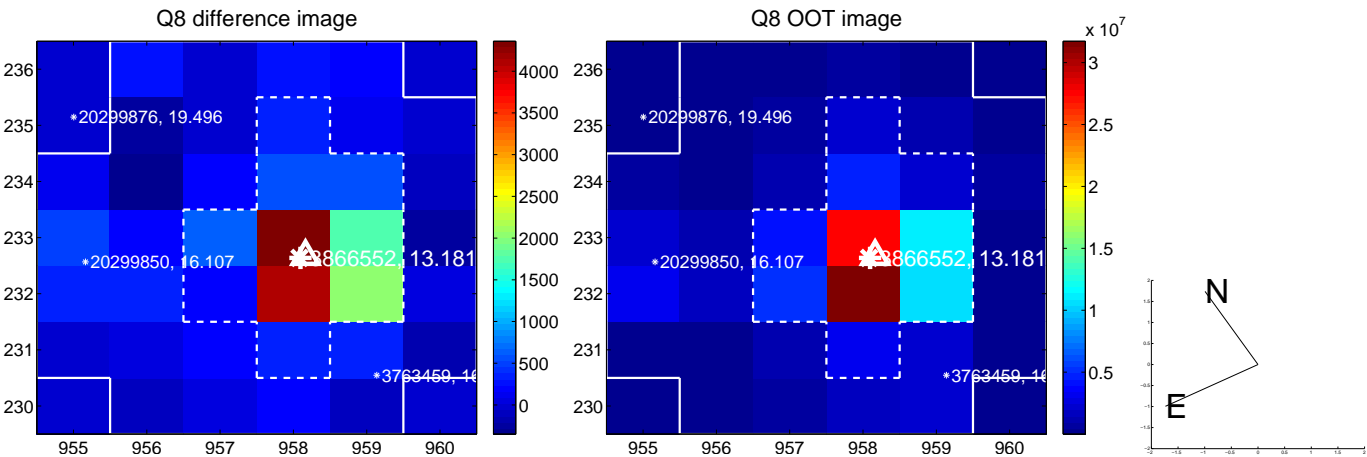
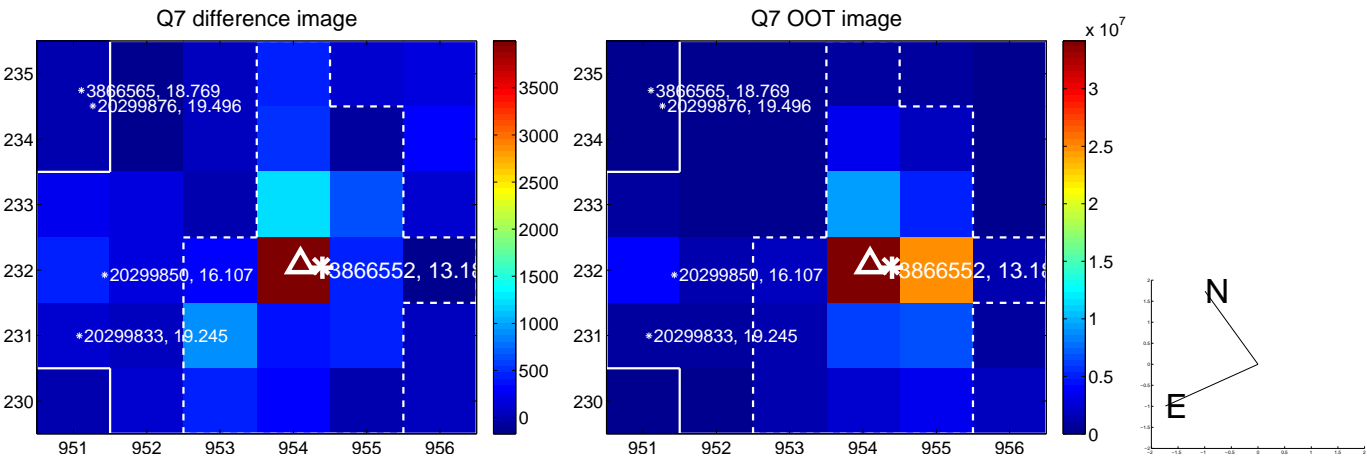
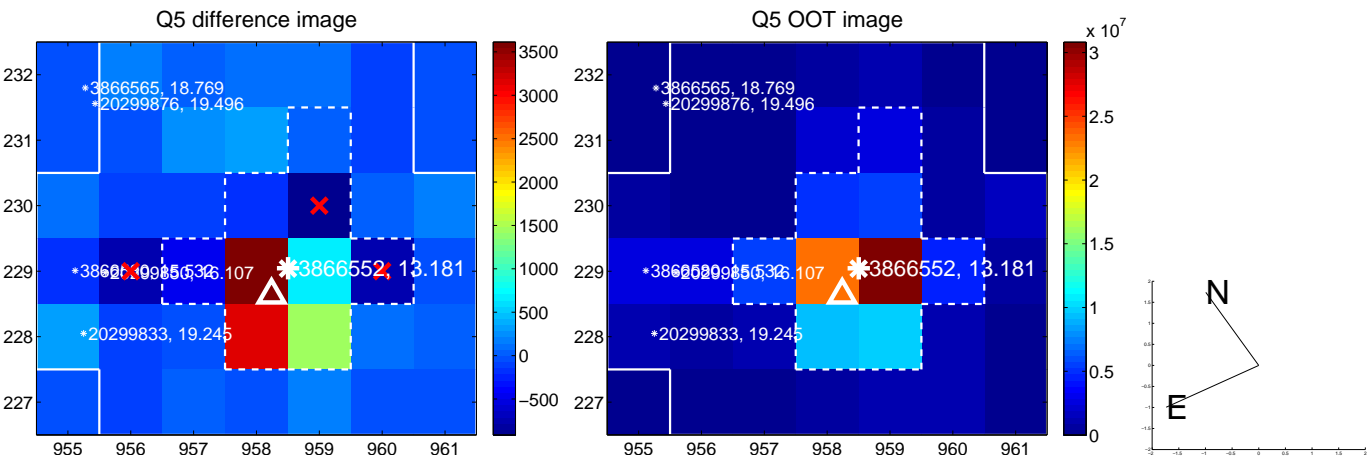


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

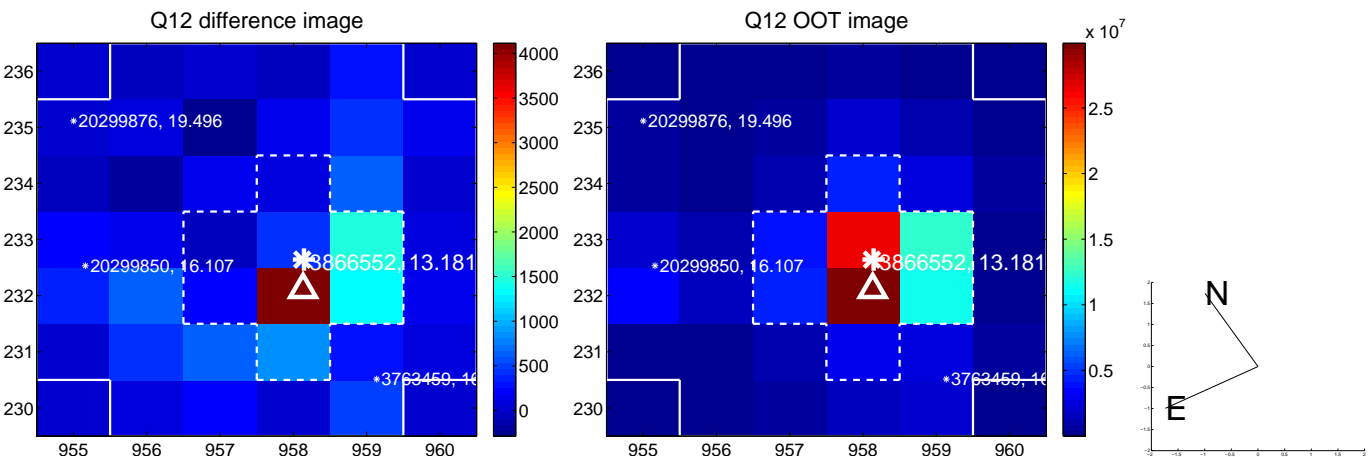
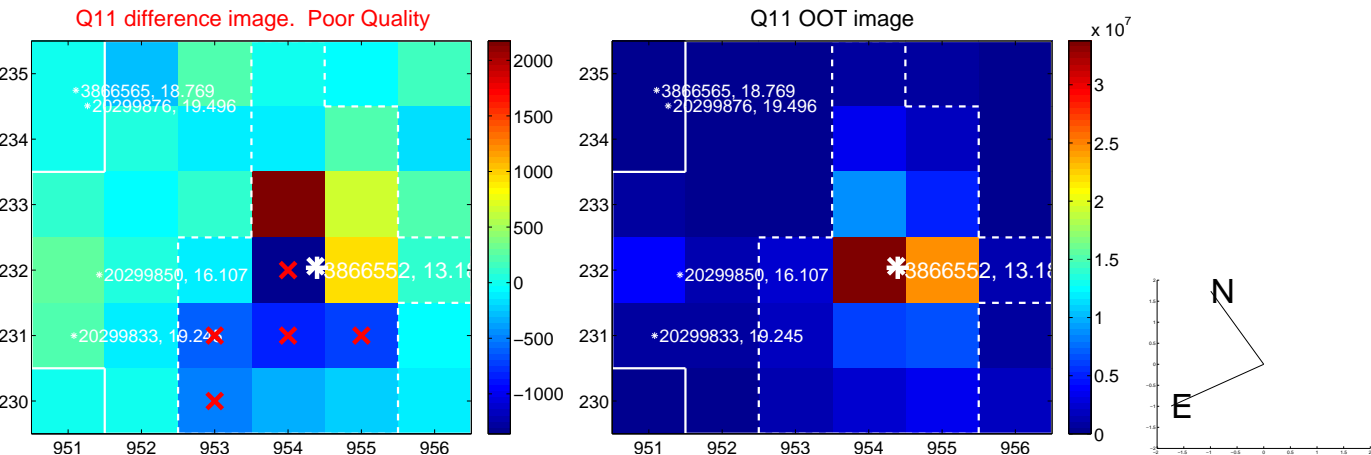
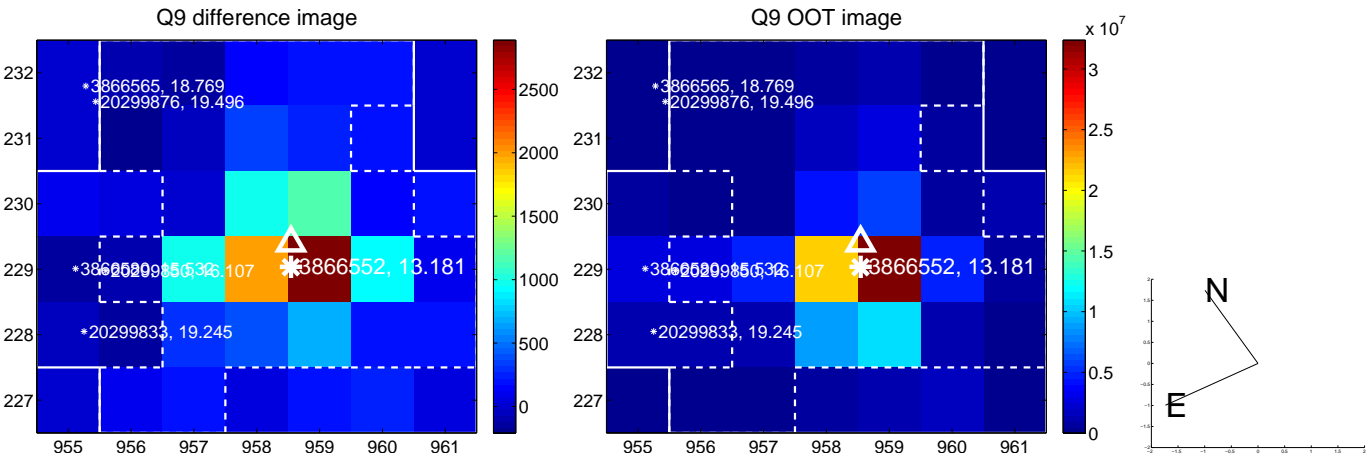
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



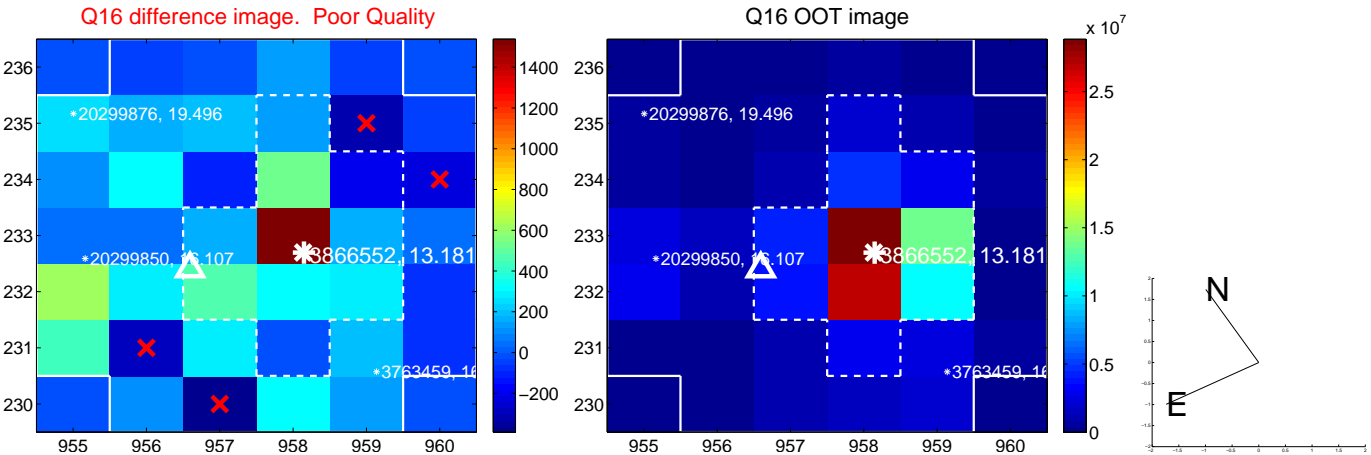
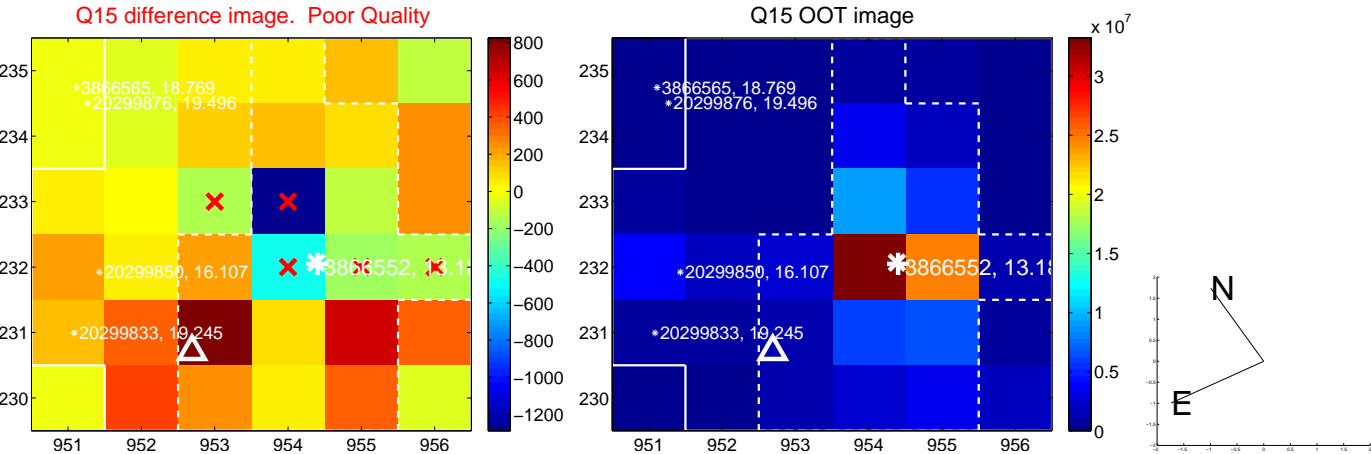
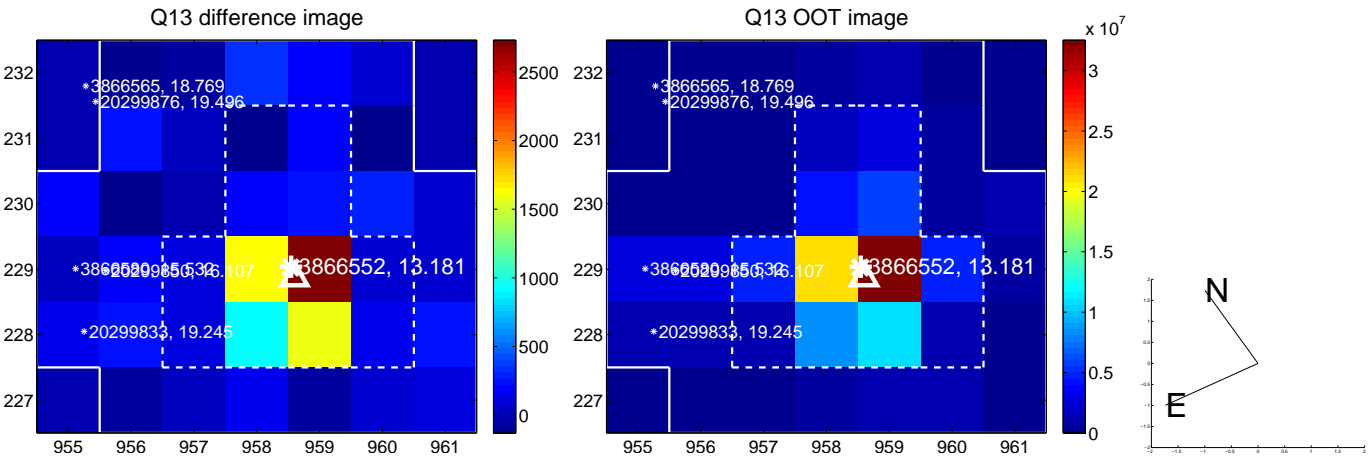
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



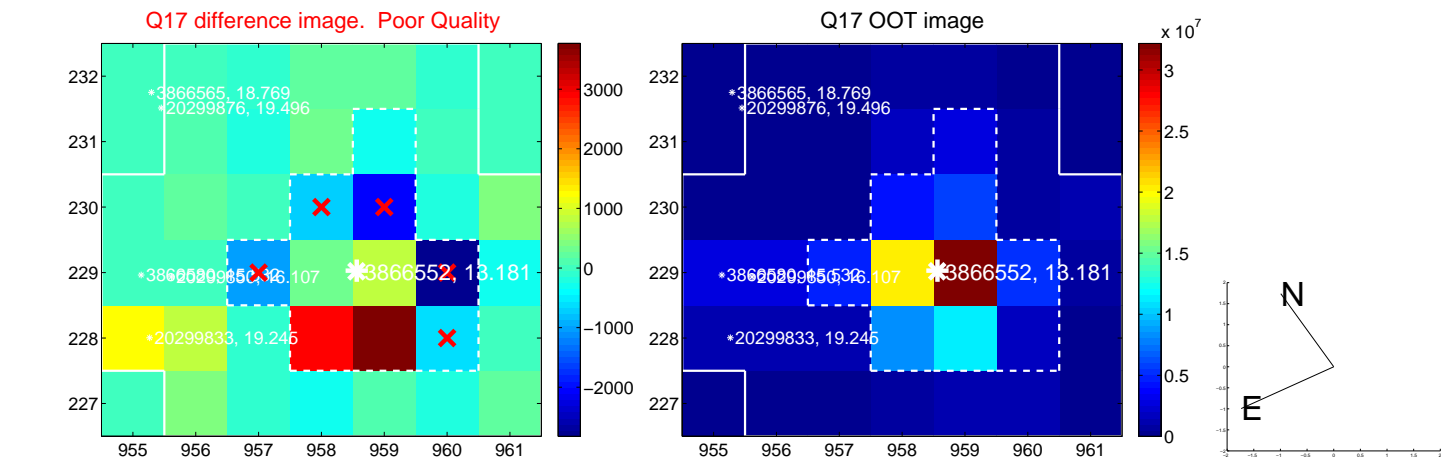
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



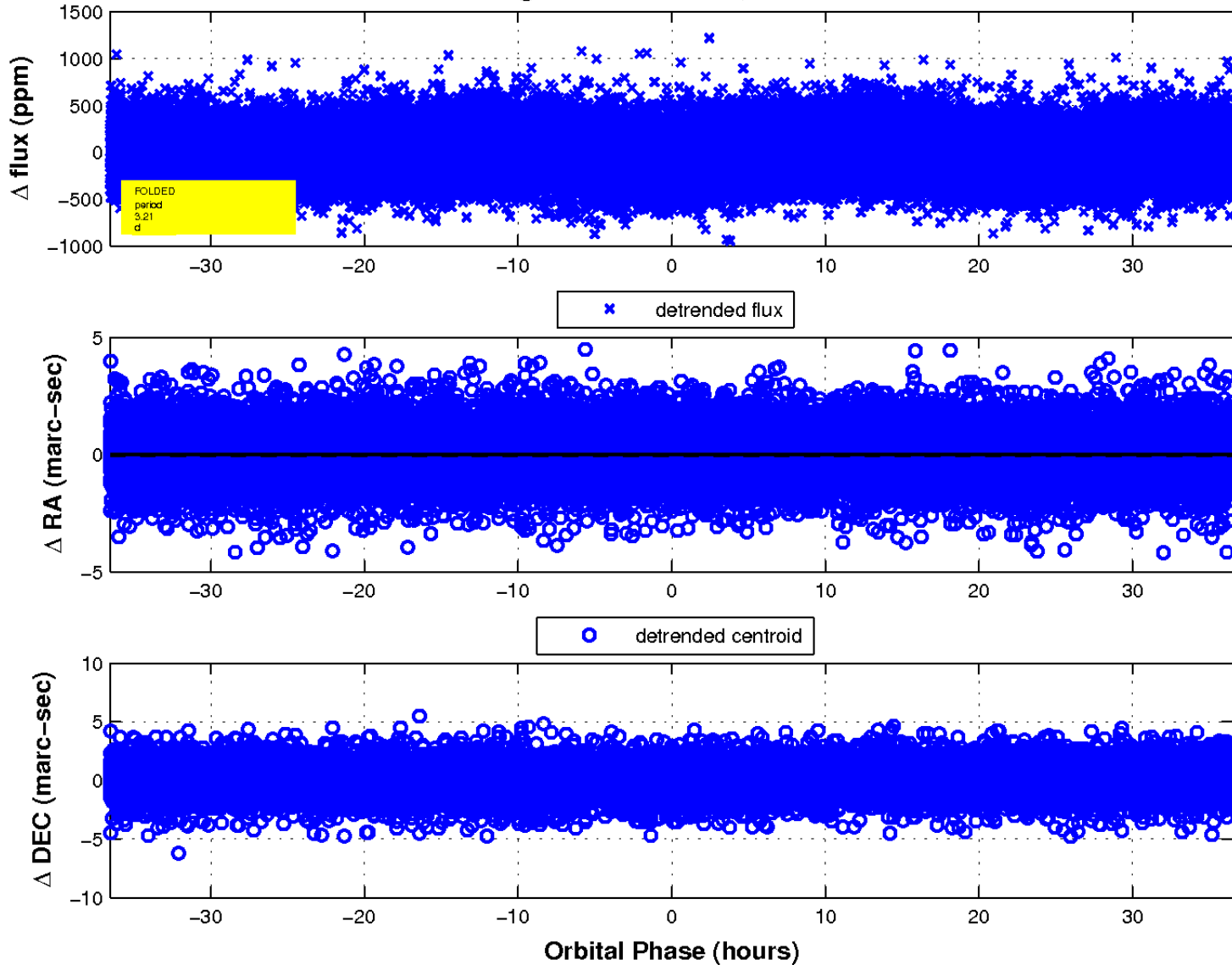
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

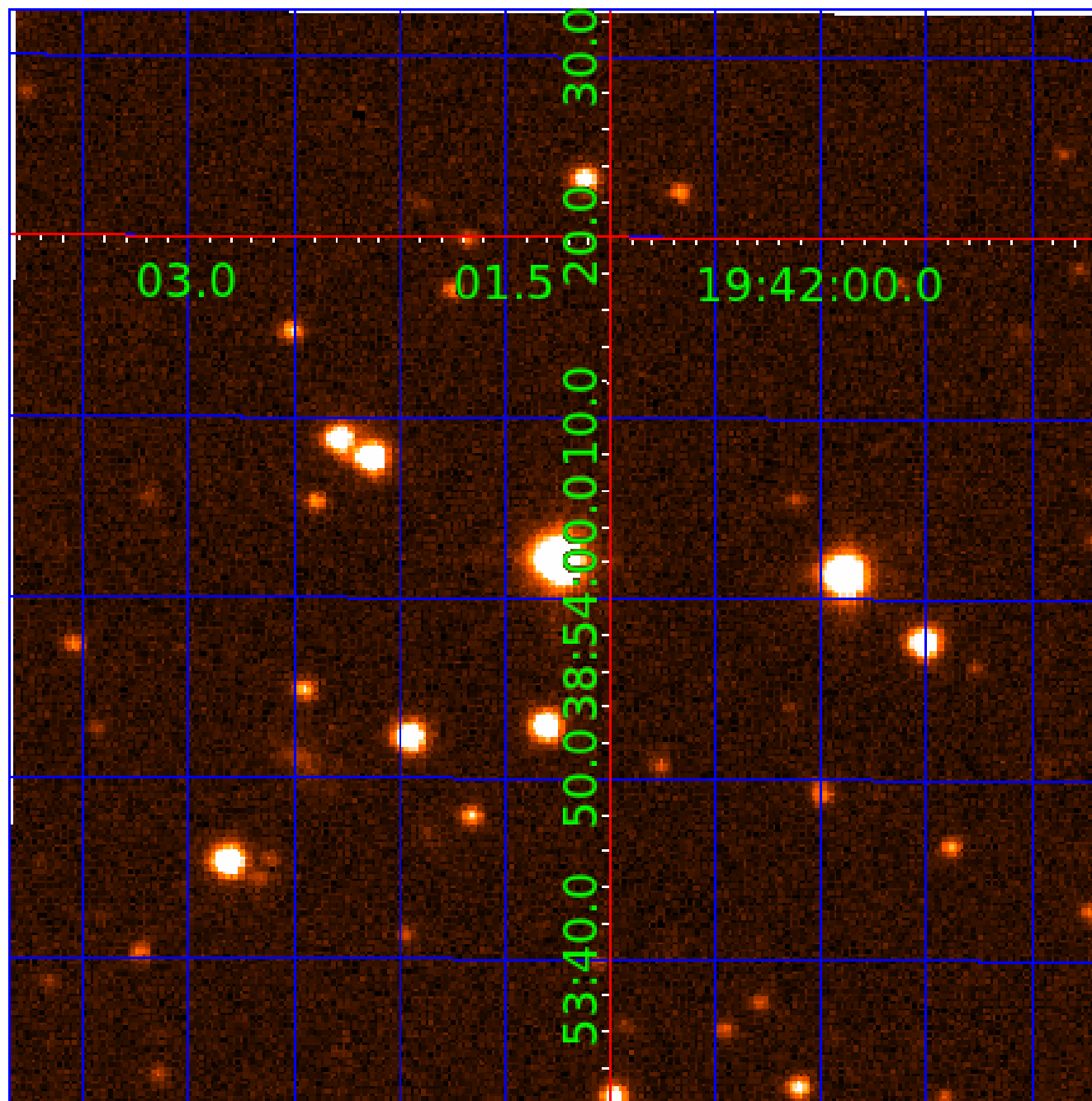


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 003866552

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})
003866552-01	OBS	No	3.213262	132.206533	31.4	12.190	7.9	6.6	4.67	6897	2.64	15472.85
003866552-02	OBS	No	133.834667	143.984882	526.0	6.956	11.2	10.0	4.67	6897	13.59	107.17
003866552-03	OBS	No	262.307267	242.968973	347.8	4.245	8.0	8.0	4.67	6897	9.89	43.69
003866552-04	OBS	No	317.061935	429.926346	354.1	8.703	7.7	7.1	4.67	6897	9.18	33.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003866552-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003866552-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003866552-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003866552-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—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.

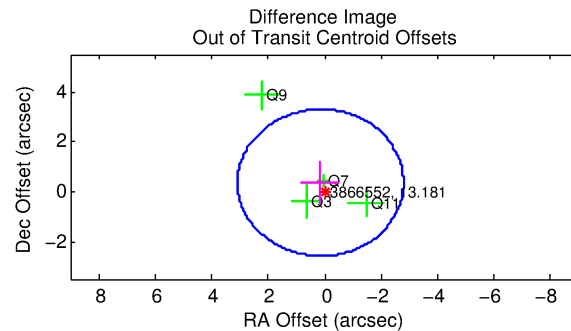
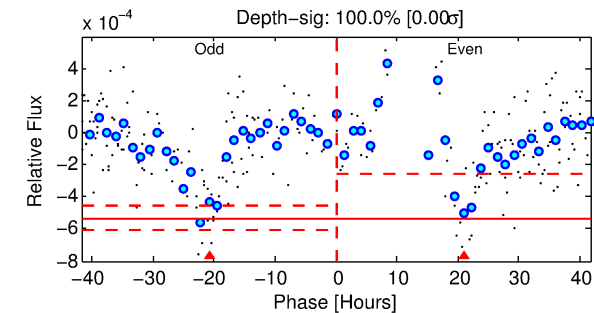
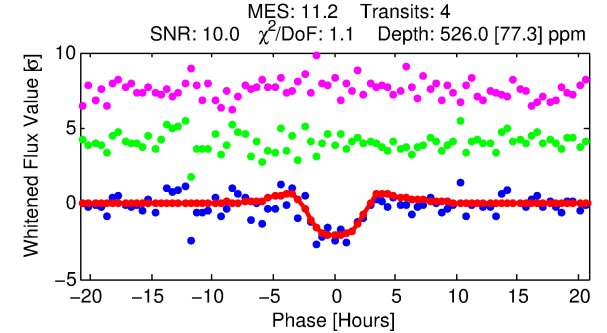
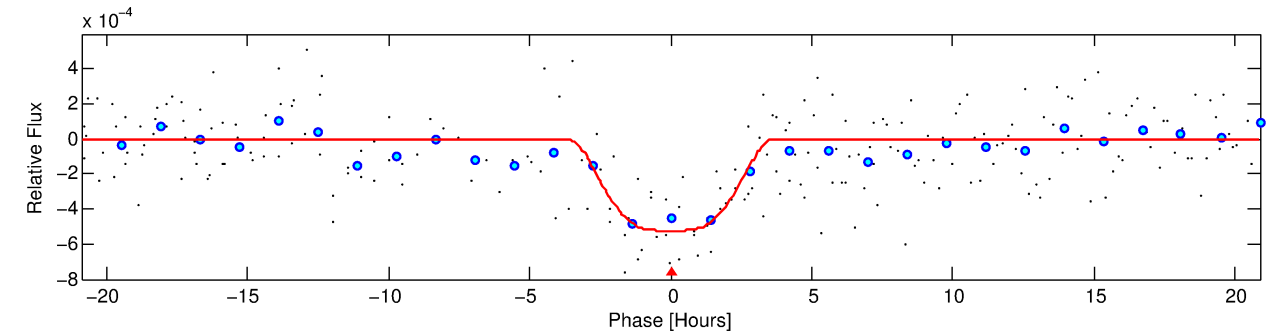
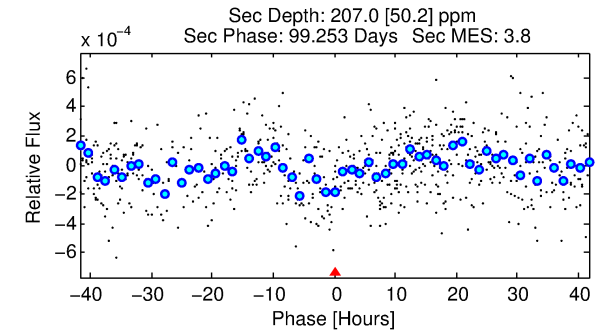
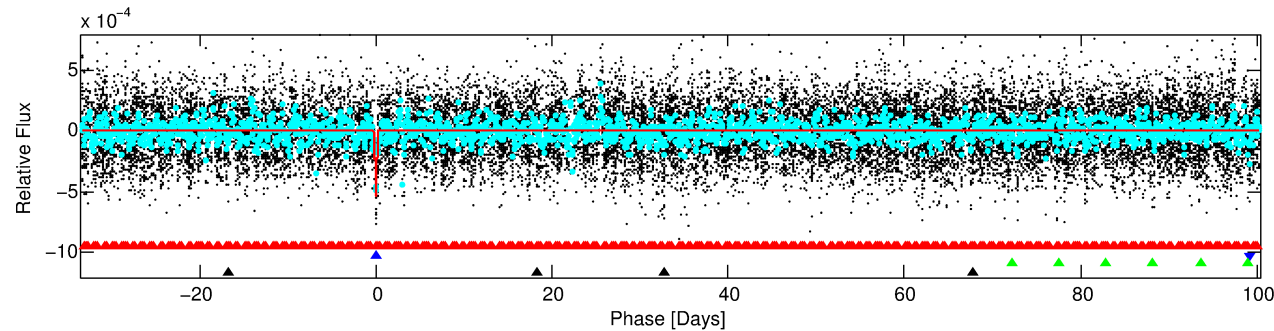
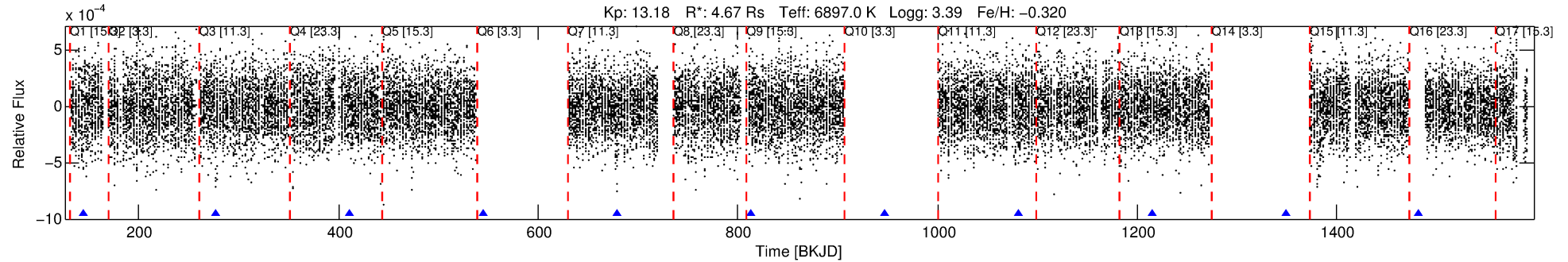
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003866552-02

No Significant Match Found

DV One-Page Summary

KIC: 3866552 Candidate: 2 of 4 Period: 133.835 d



DV Fit Results:

Period = 133.83467 [0.00342] d
Epoch = 143.9849 [0.0110] BKJD
Rp/R* = 0.0267 [0.0026]
a/R* = 50.50 [11.20]
b = 0.97 [0.02]
Seff = 107.17 [63.62]
Teq = 820 [122] K
Rp = 13.59 [5.28] Re
a = 0.6418 [0.2321] AU
Ag = 253.85 [166.99] [1.51σ]
Teffp = 5063 [429] K [9.51σ]

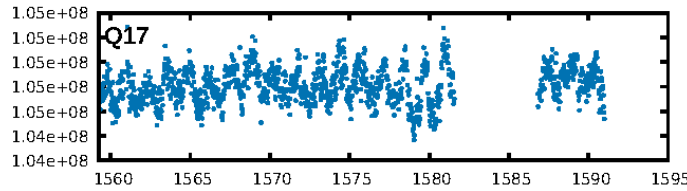
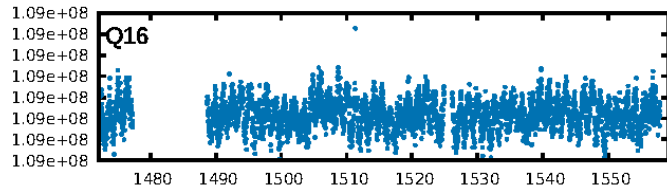
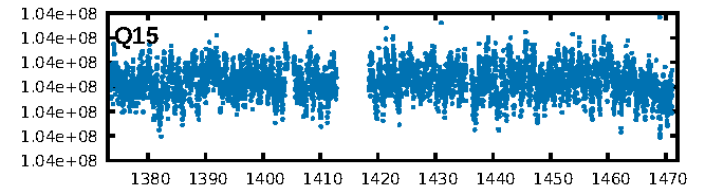
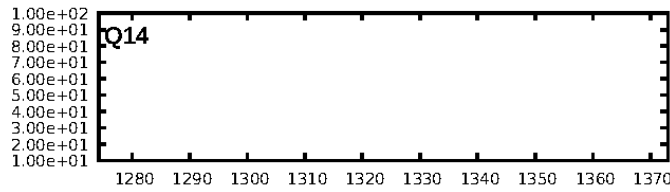
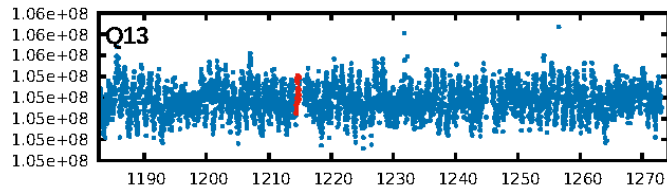
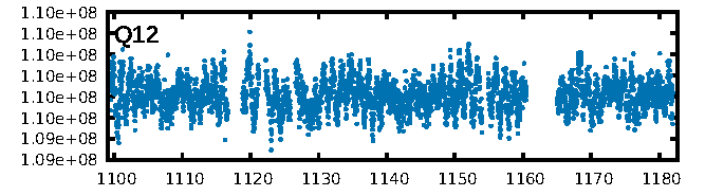
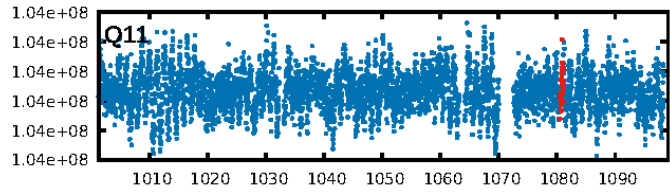
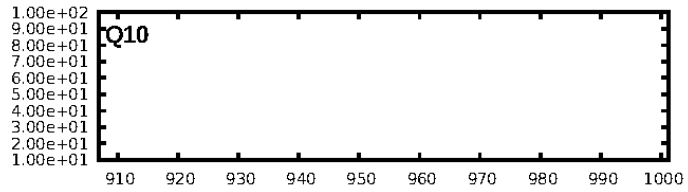
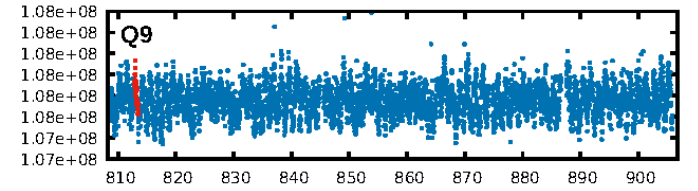
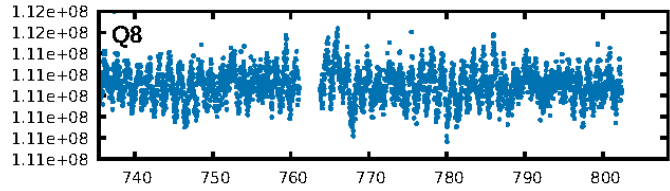
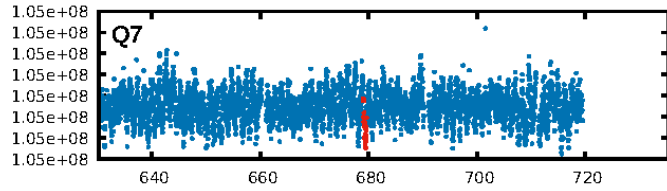
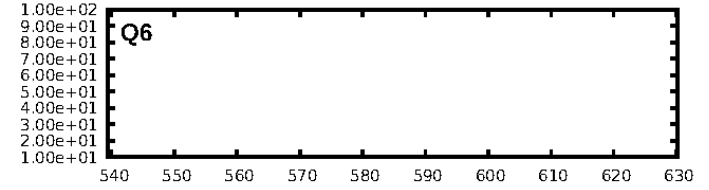
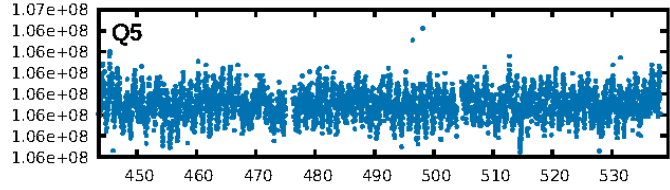
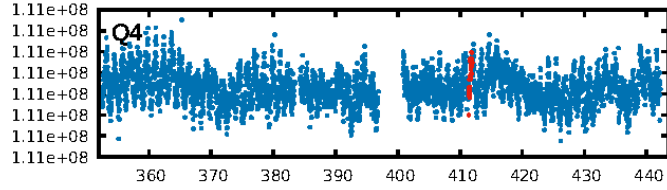
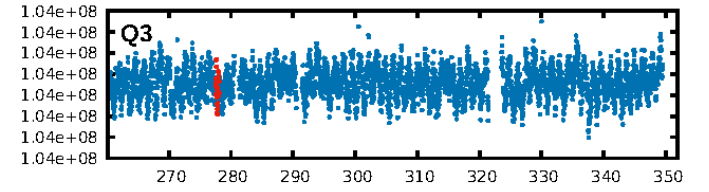
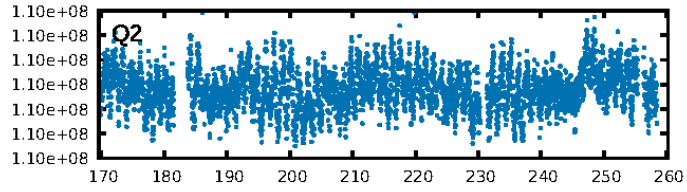
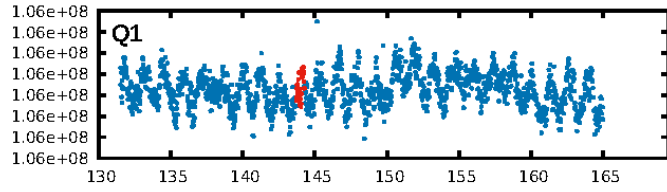
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [223.36σ]
LongPeriod-sig: 100.0% [378.37σ]
ModelChiSquare2-sig: 49.9%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 5.72e-20
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.402
Centroid-sig: N/A
Centroid-so: 0.536 arcsec [0.82σ]
OotOffset-rm: 0.386 arcsec [0.39σ]
KicOffset-rm: 0.303 arcsec [0.35σ]
OotOffset-st: 0/3/0/1 [4]
KicOffset-st: 0/3/0/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.50 [3/6]

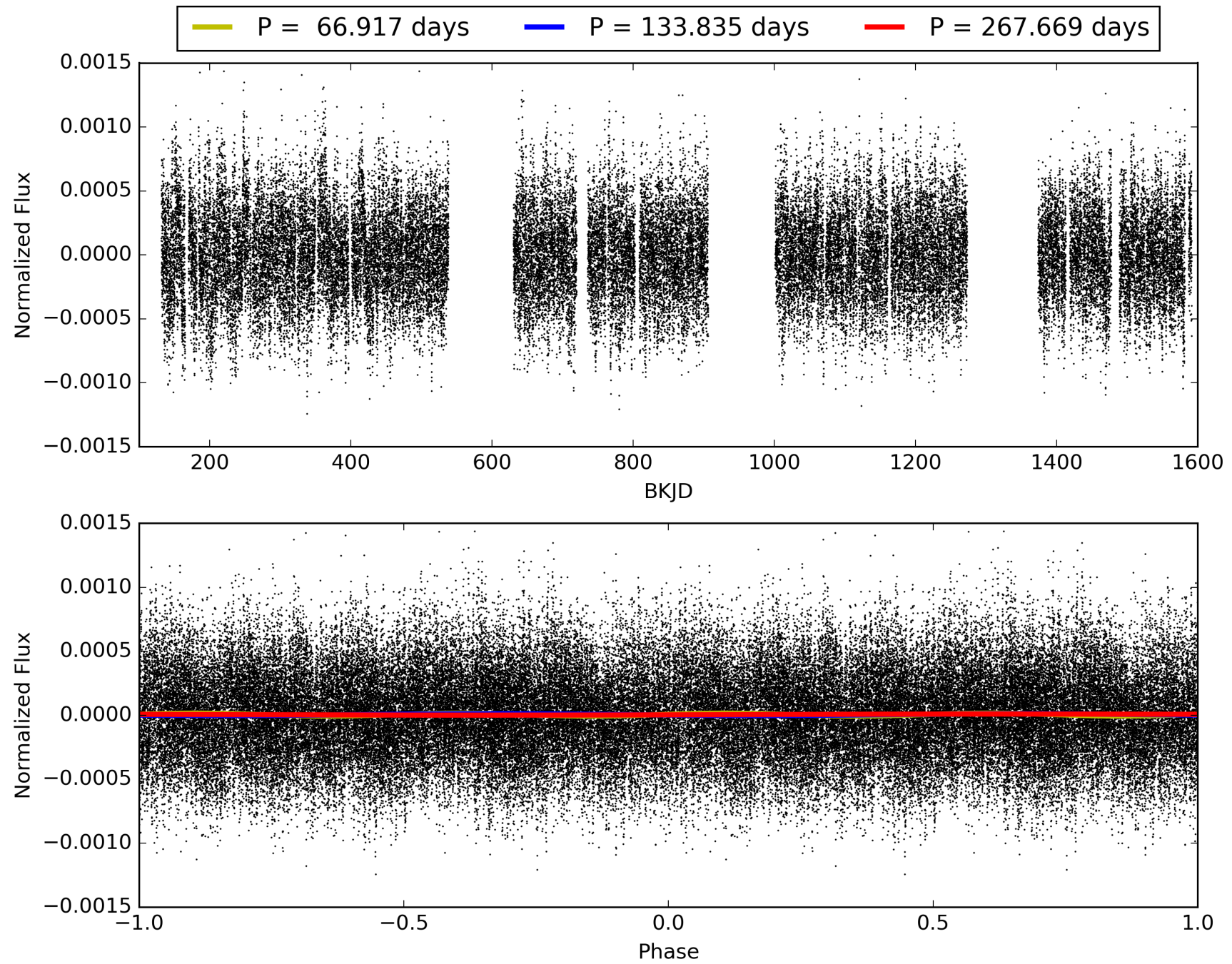
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:59:04 Z

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

TCE 003866552-02, PDC Light Curves

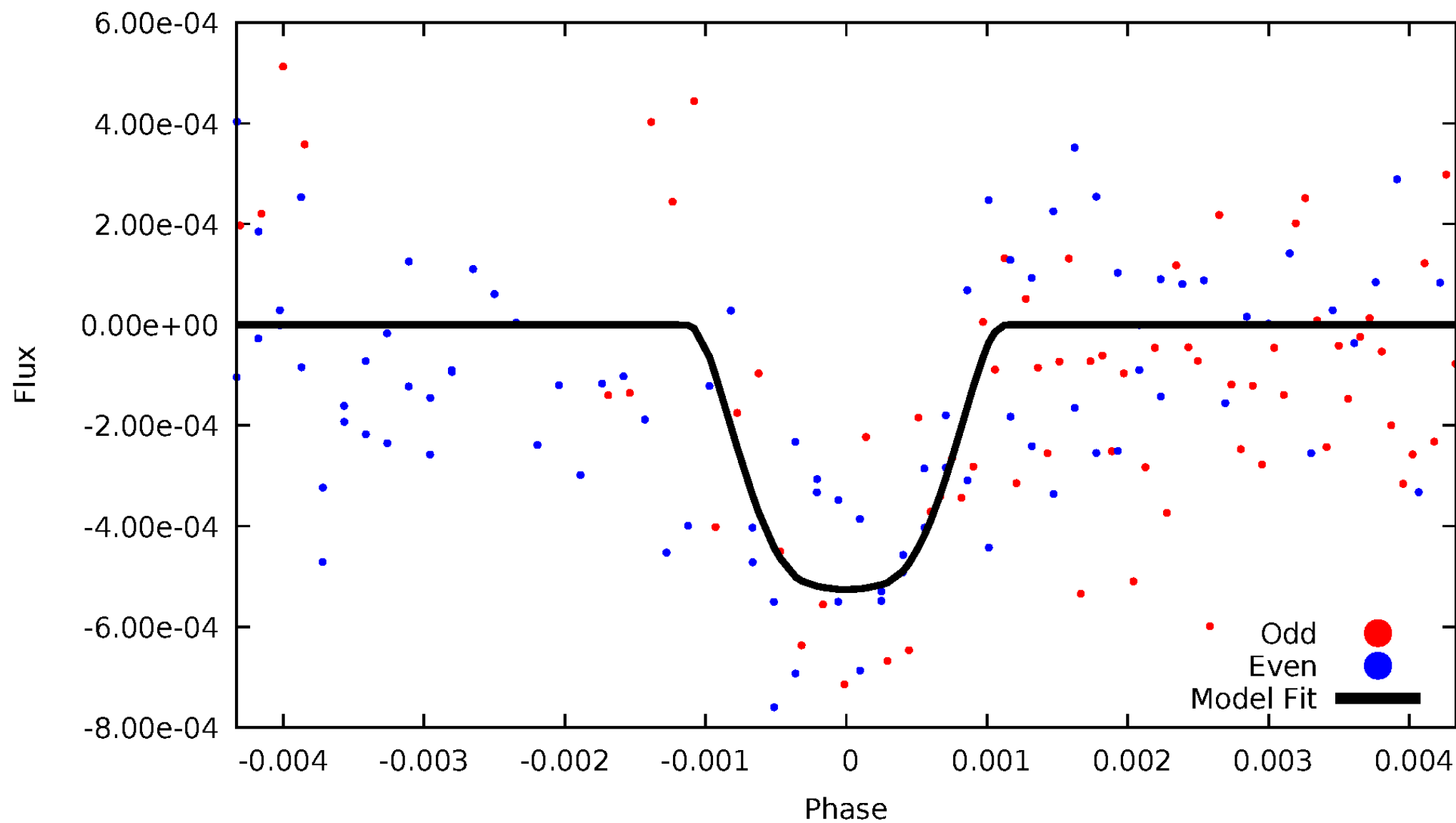


TCE 003866552-02



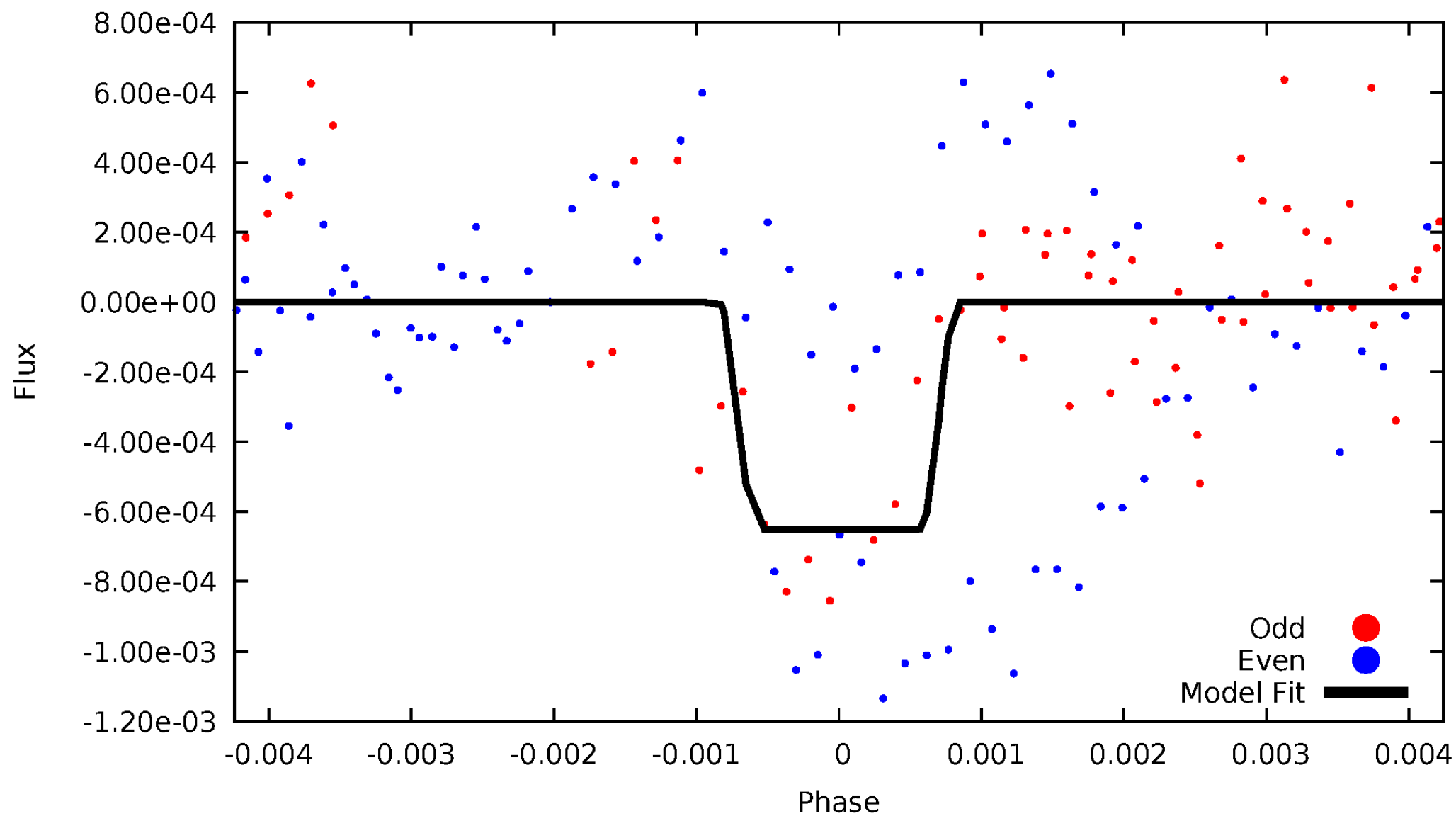
DV Odd/Even

TCE 003866552-02



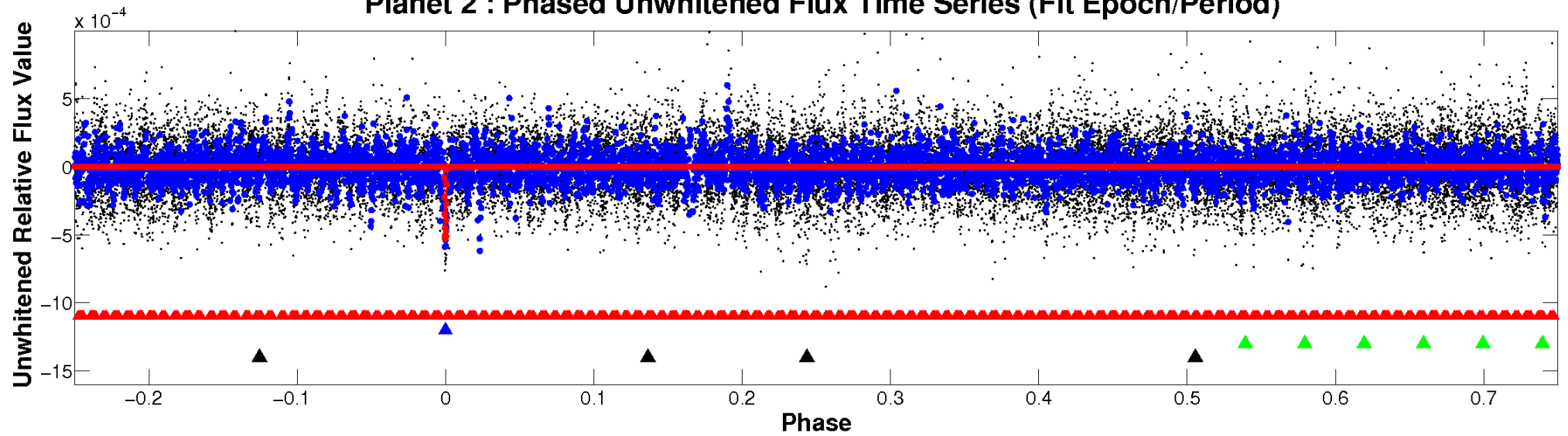
ALT Odd/Even

TCE 003866552-02

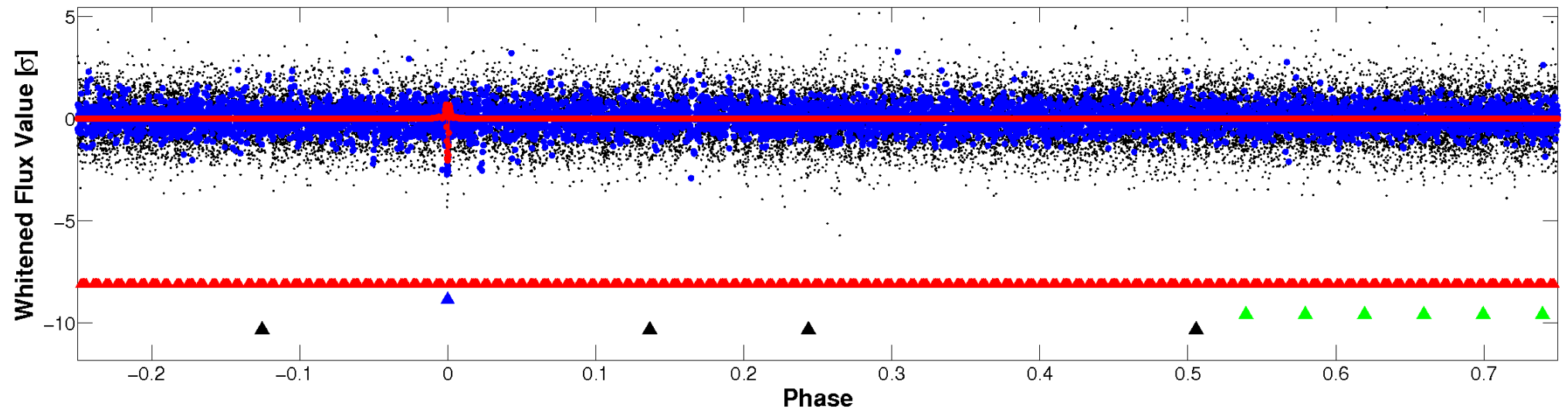


Non-Whitened Vs. Whitened Light Curve

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

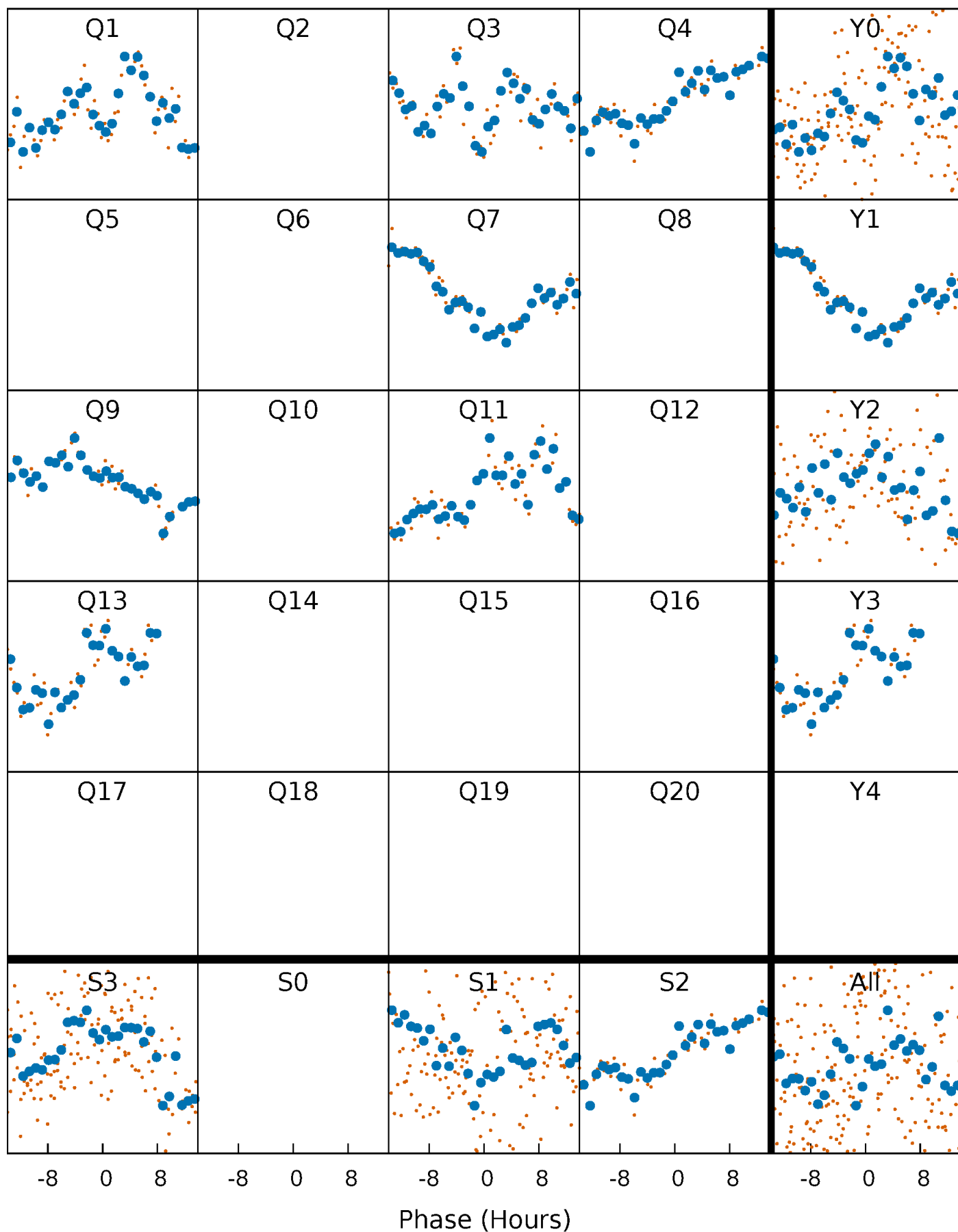


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



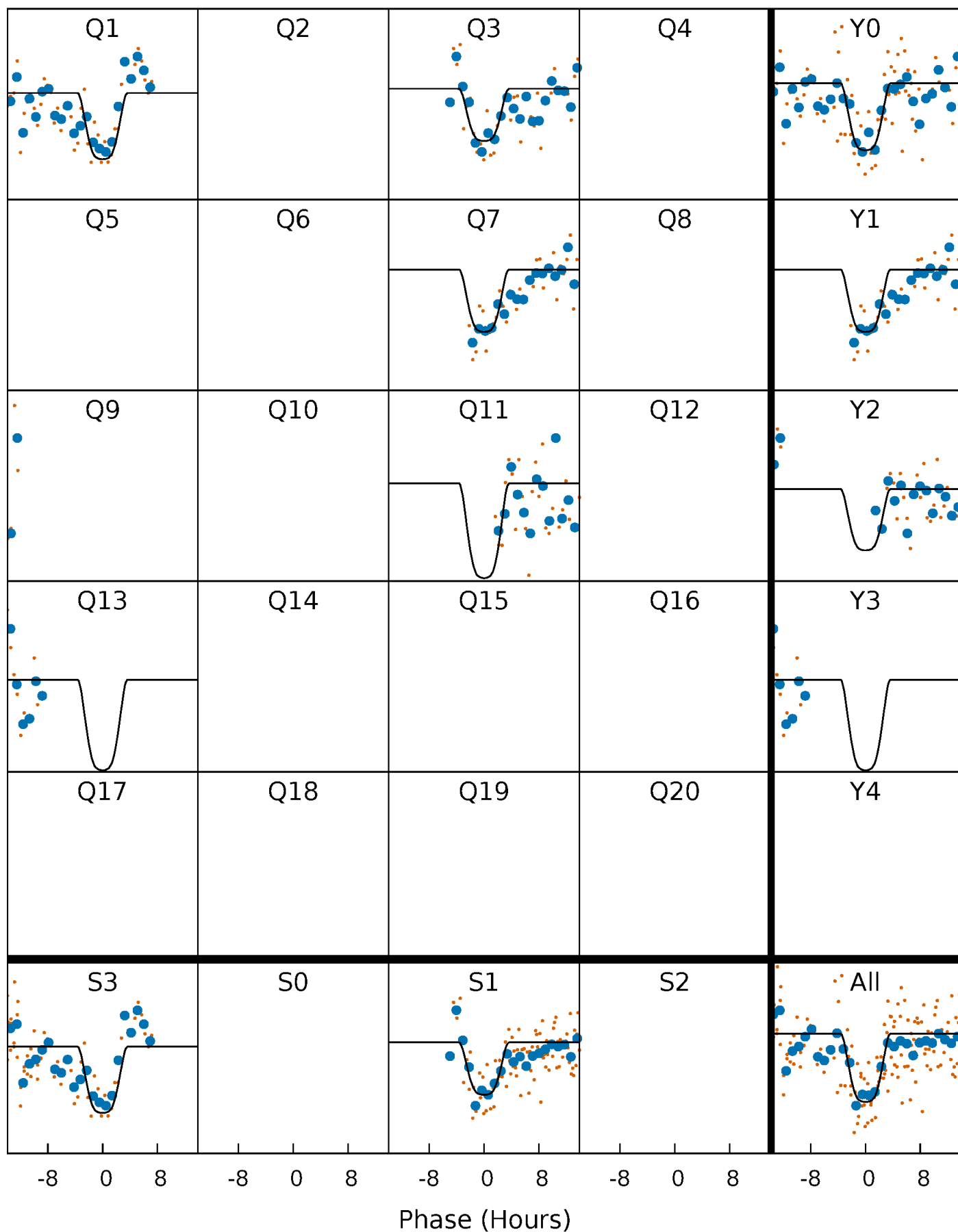
PDC Quarter-Phased Transit Curves

TCE 003866552-02 P=133.834667 Days $T_0=143.984882$ (BKJD)



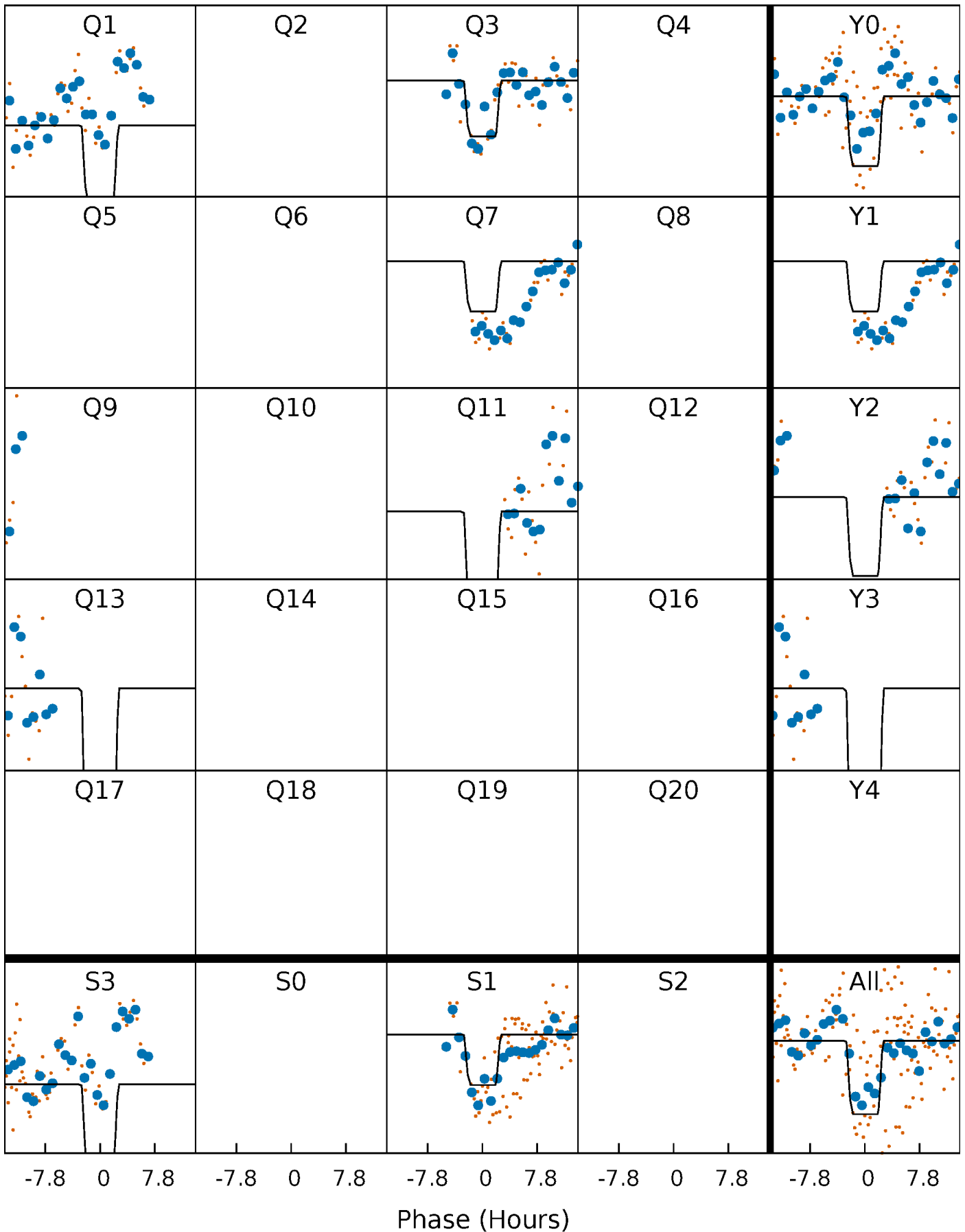
DV Quarter-Phased Transit Curves

TCE 003866552-02 P=133.834667 Days $T_0=143.984882$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

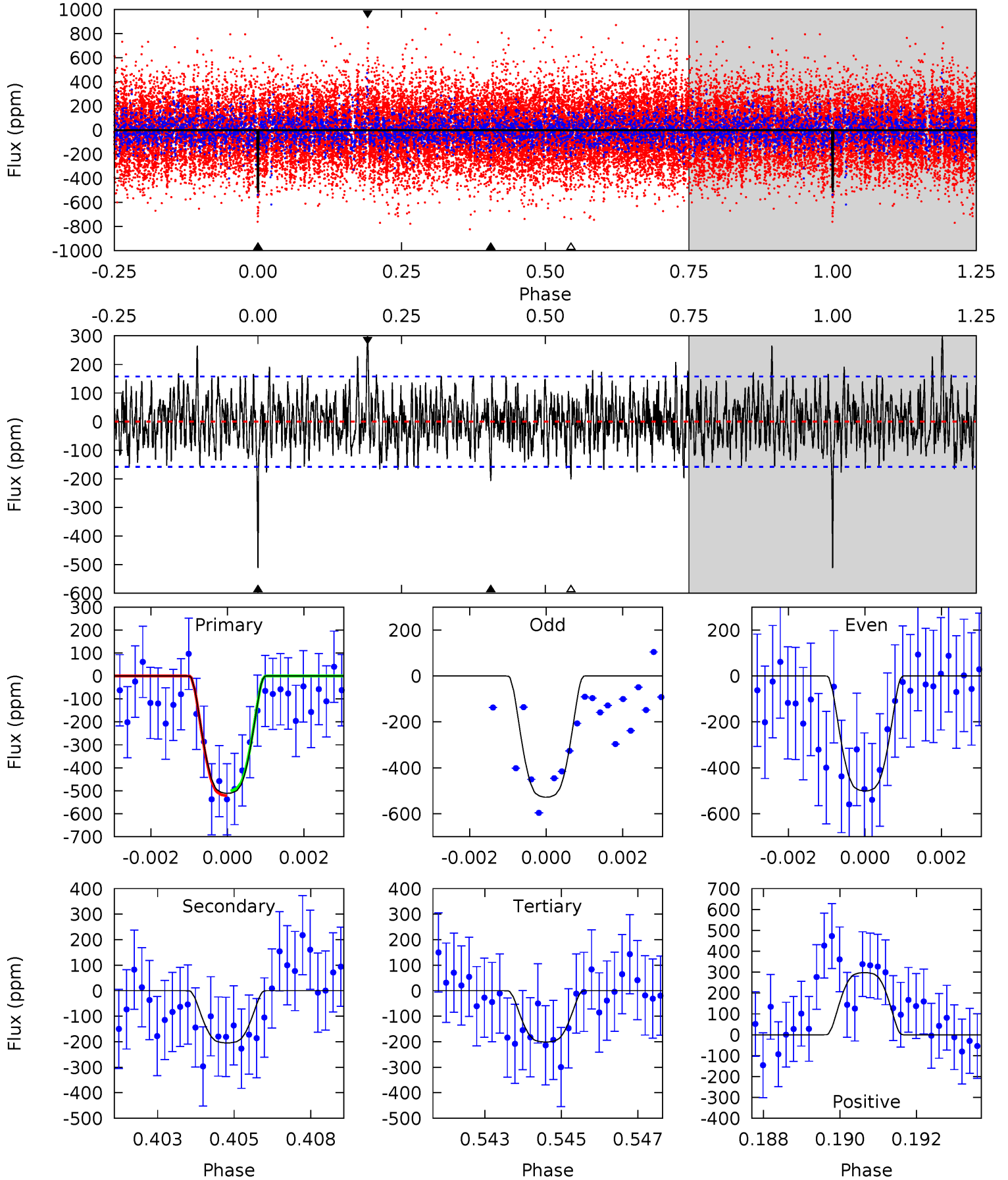
TCE 003866552-02 P=133.822951 Days $T_0=144.003303$ (BKJD)



DV Model-Shift Uniqueness Test

003866552-02, $P = 133.834667$ Days, $E = 10.150215$ Days

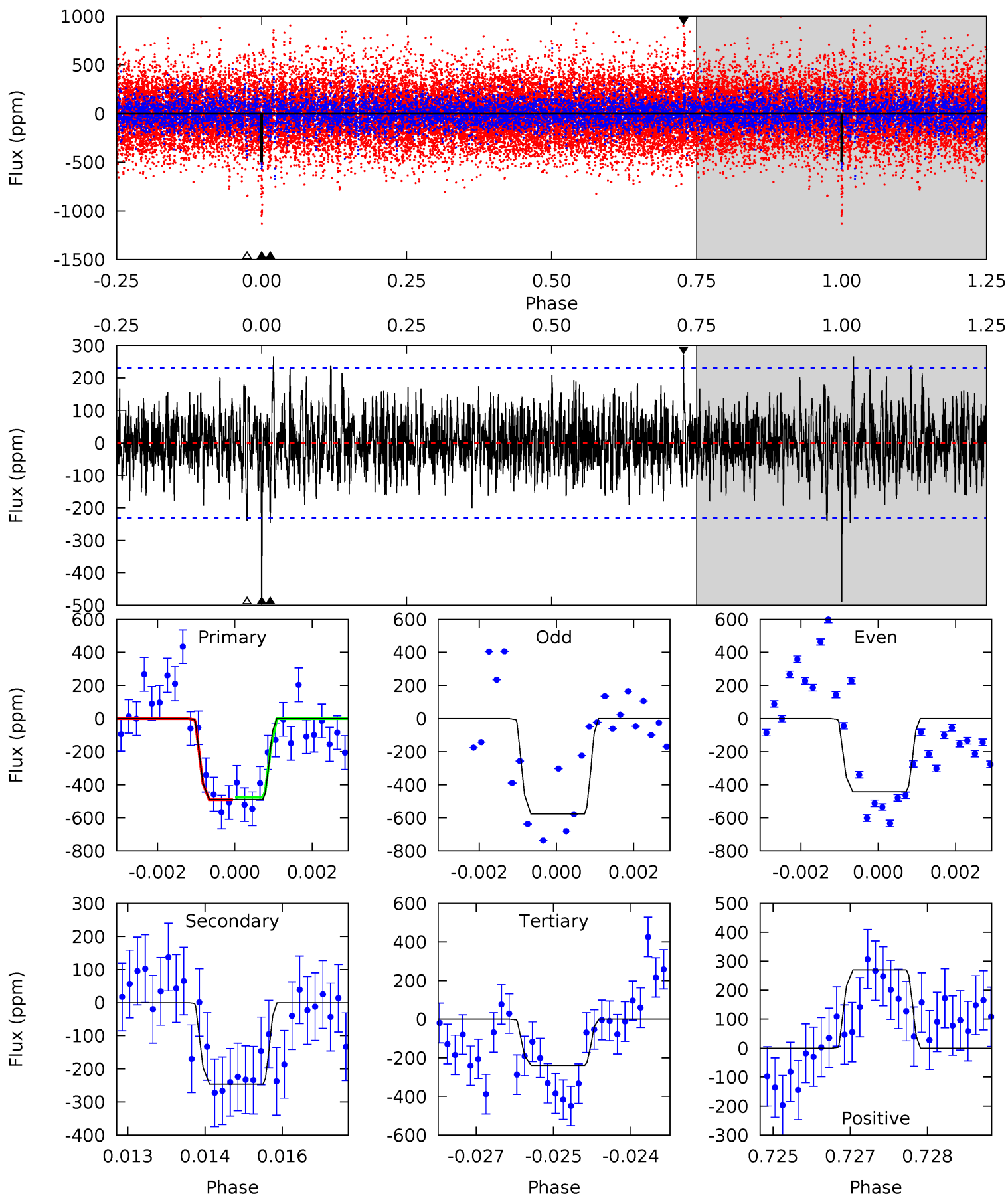
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	6.87	6.75	10.00	5.30	3.05	2.27	10.4	7.17	0.12	-3.13	0.45	0.98	0.37	0.36



Alt Model-Shift Uniqueness Test

003866552-02, P = 133.822951 Days, E = 10.180352 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	5.74	5.57	6.28	5.37	3.16	1.57	5.79	5.08	0.17	-0.55	1.51	0.87	0.36	0.17



Stellar Parameters For KIC 003866552

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.394^{+0.340}_{-0.060}$	$-0.320^{+0.350}_{-0.300}$	$4.666^{+0.412}_{-1.752}$	$1.967^{+0.134}_{-0.336}$	$0.027^{+0.069}_{-0.005}$
	+3%/-3%	+10%/-2%	+109%/-94%	+9%/-38%	+7%/-17%	+251%/-20%
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 003866552-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-205 ± 30	$12.81^{+1.96}_{-2.67}$	1114^{+66}_{-104}	5081^{+297}_{-279}	282^{+159}_{-75}
Alt.	-247 ± 43	$12.26^{+2.08}_{-2.36}$	1124^{+57}_{-113}	5419^{+350}_{-355}	371^{+204}_{-111}

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 $A_{\text{obs}} \gg 1.0$

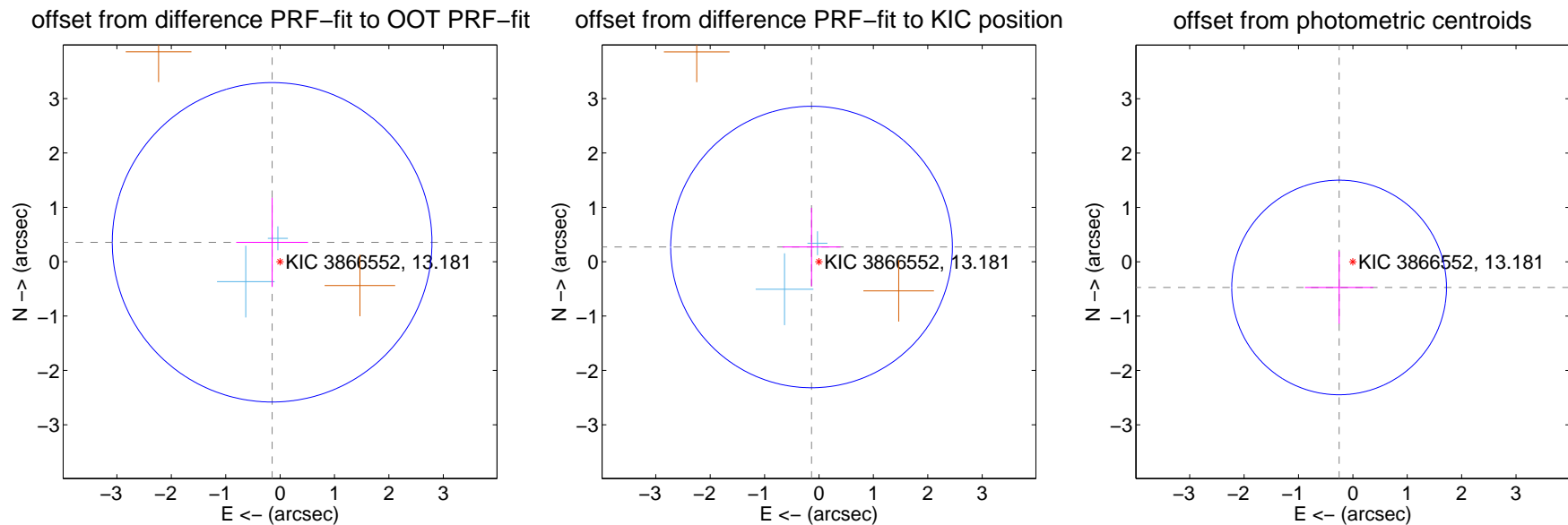
DV Centroid Data

Supplemental centroid analysis for 003866552-02. Kepler magnitude: 13.18. Transit SNR 10.01

There are 2 quarters with good PRF difference image offsets

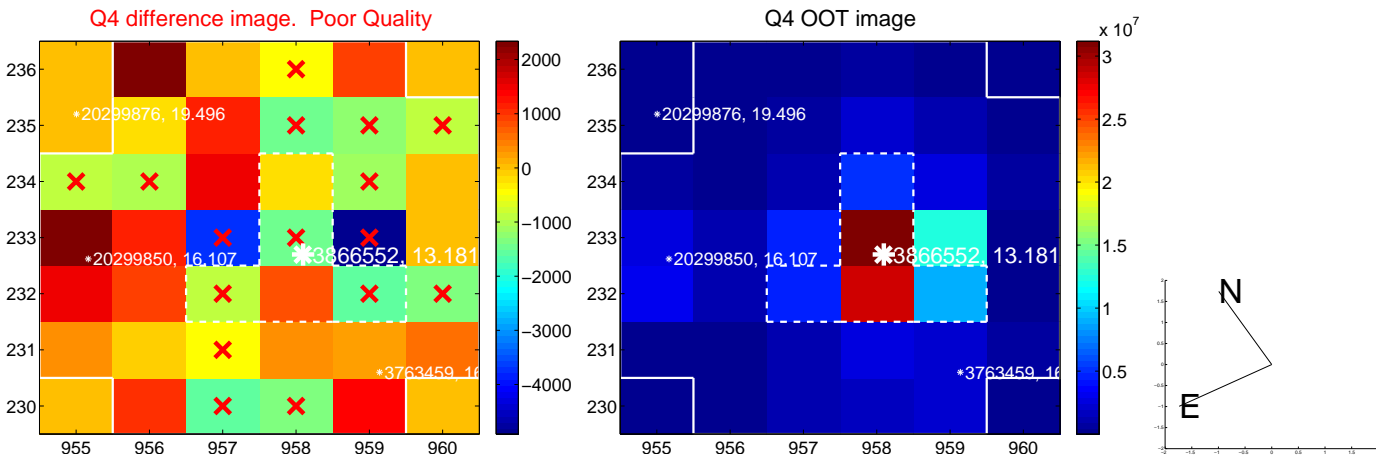
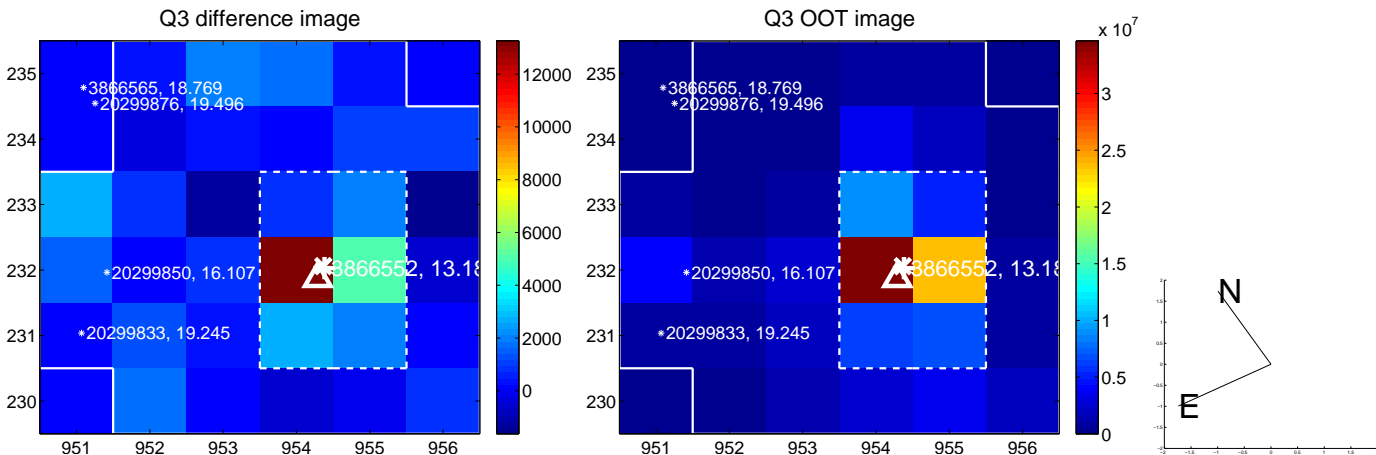
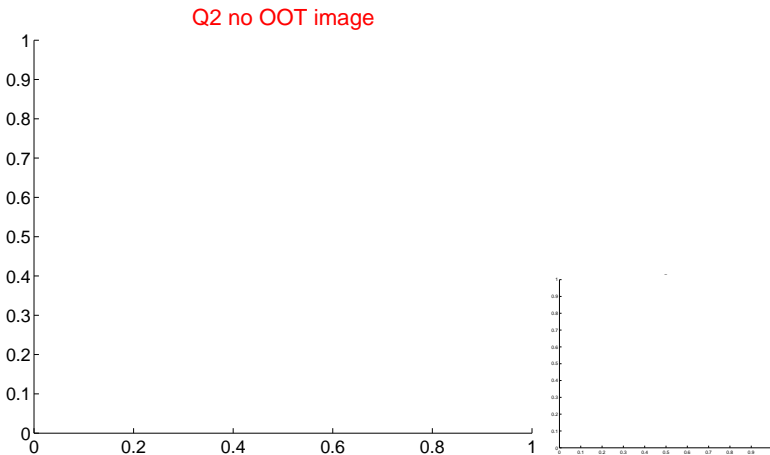
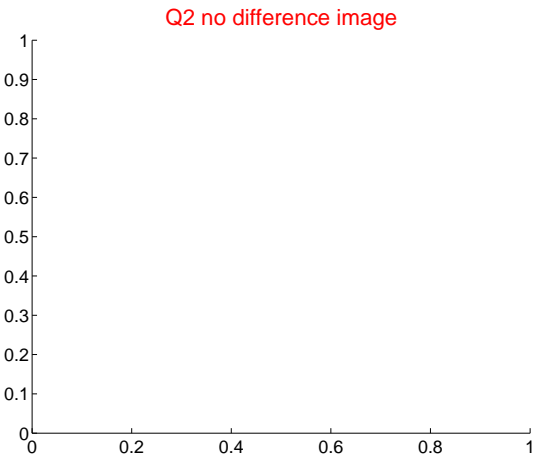
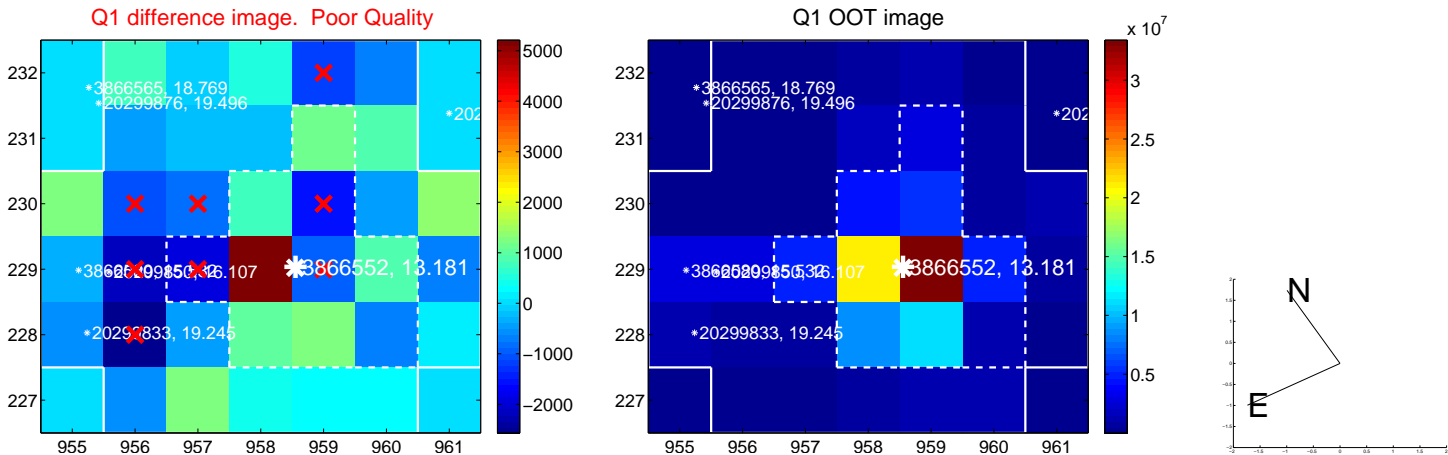
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.386 ± 0.980	0.39	0.147 ± 0.660	0.357 ± 0.821
PRF-fit source offset from KIC position	0.303 ± 0.863	0.35	0.137 ± 0.532	0.270 ± 0.720
photometric centroid source offset	0.54 ± 0.66	0.82	0.25 ± 0.63	-0.47 ± 0.67

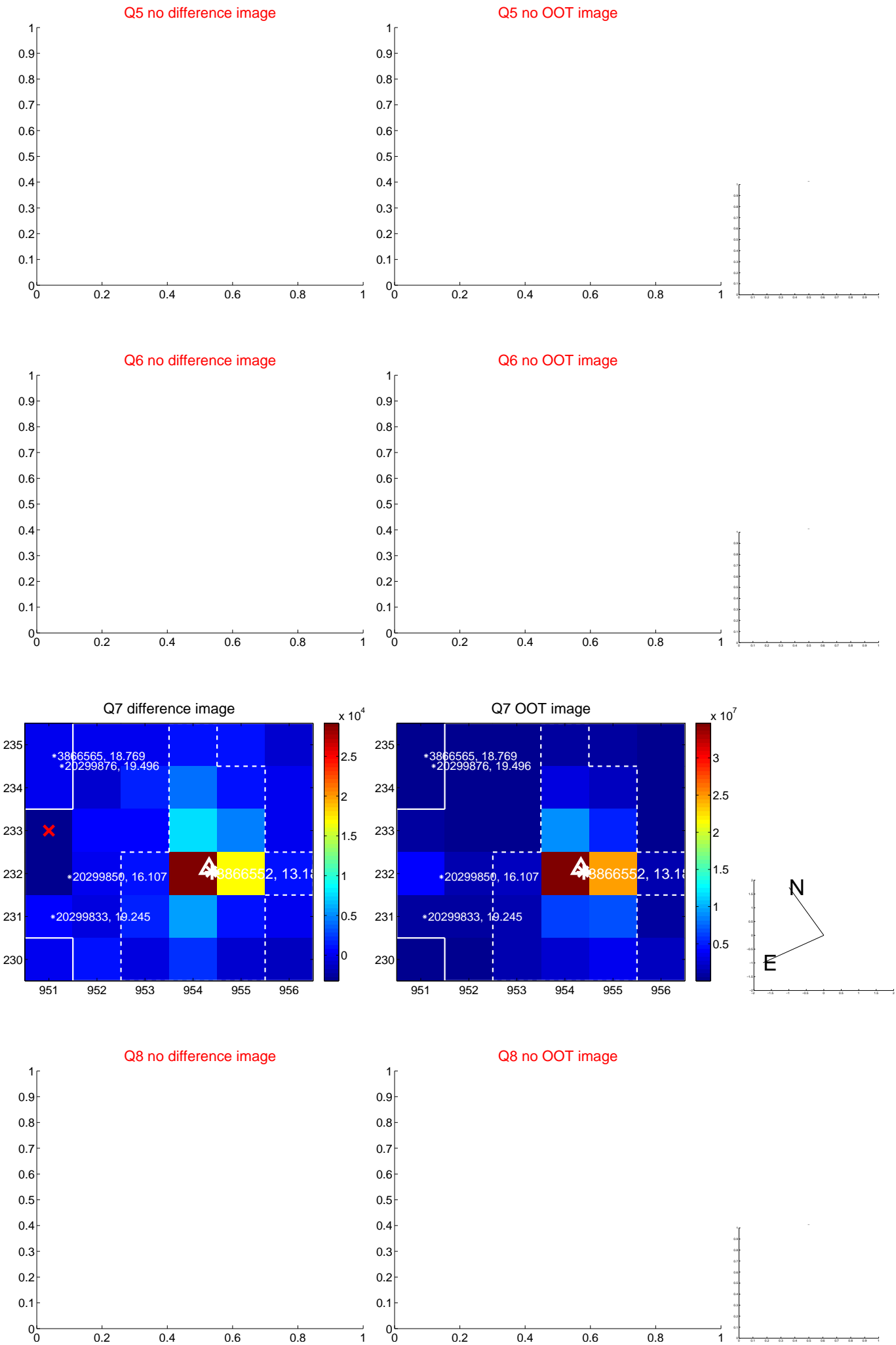


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

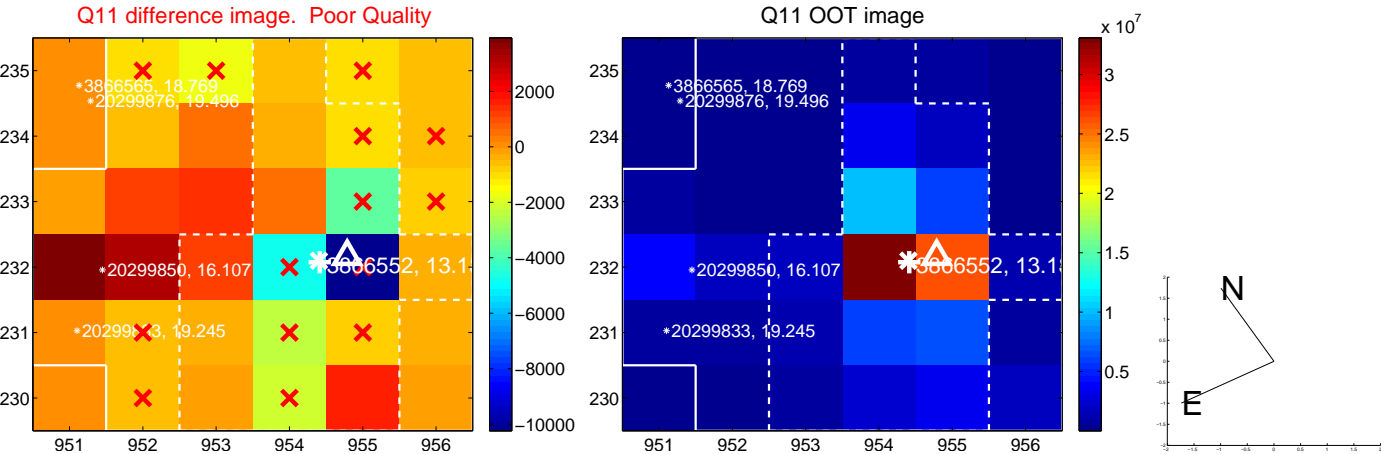
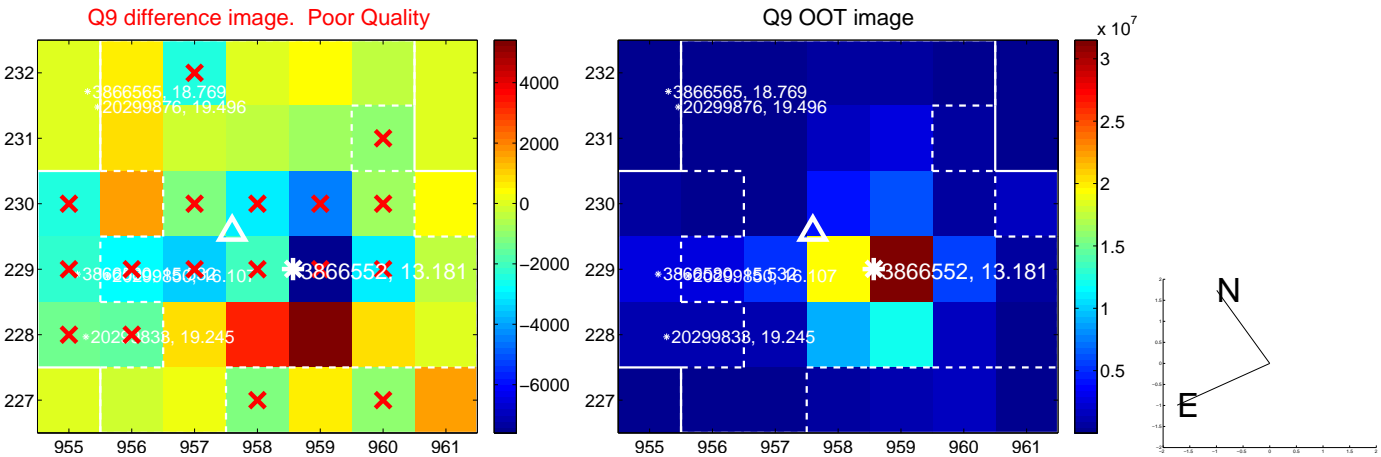
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



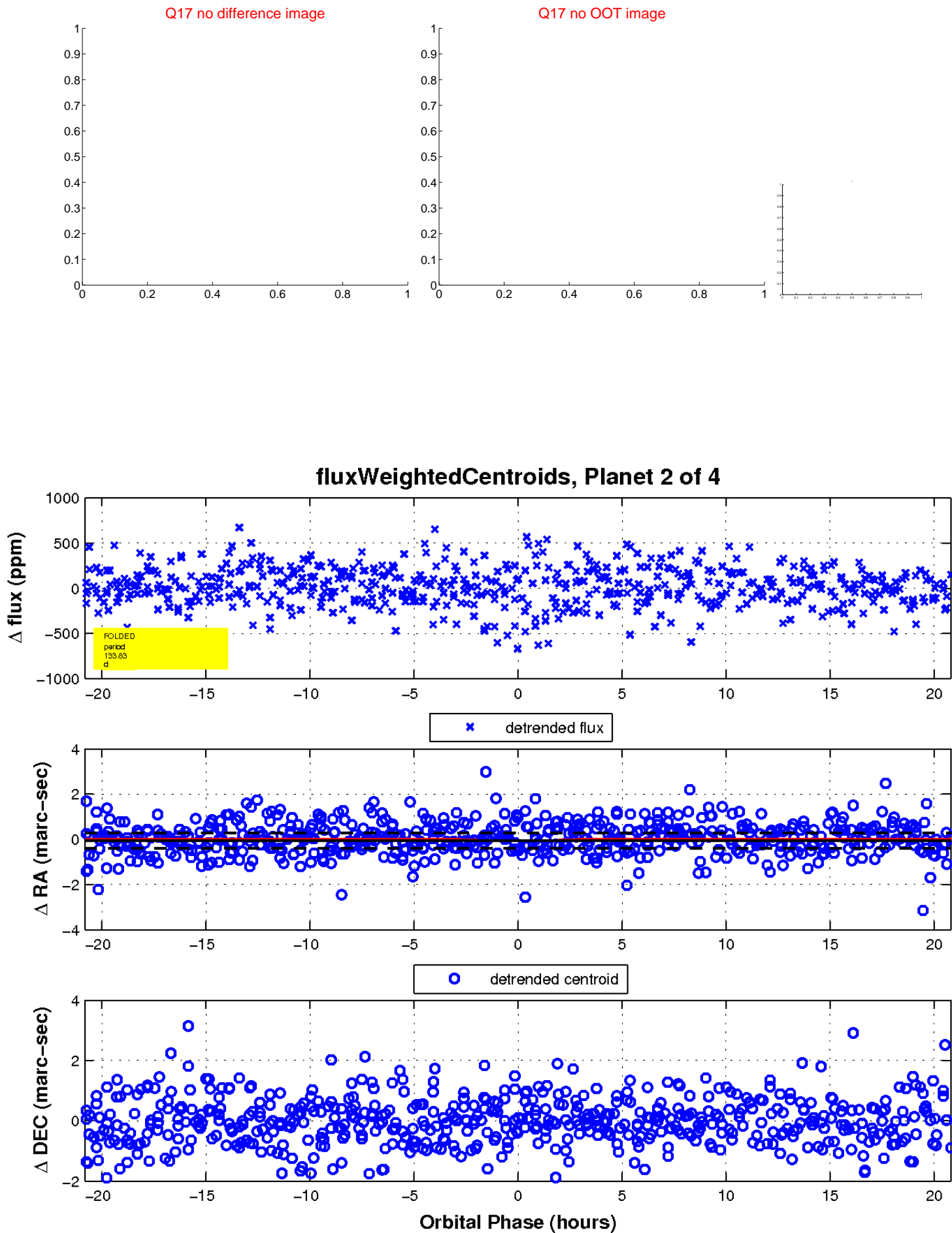
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

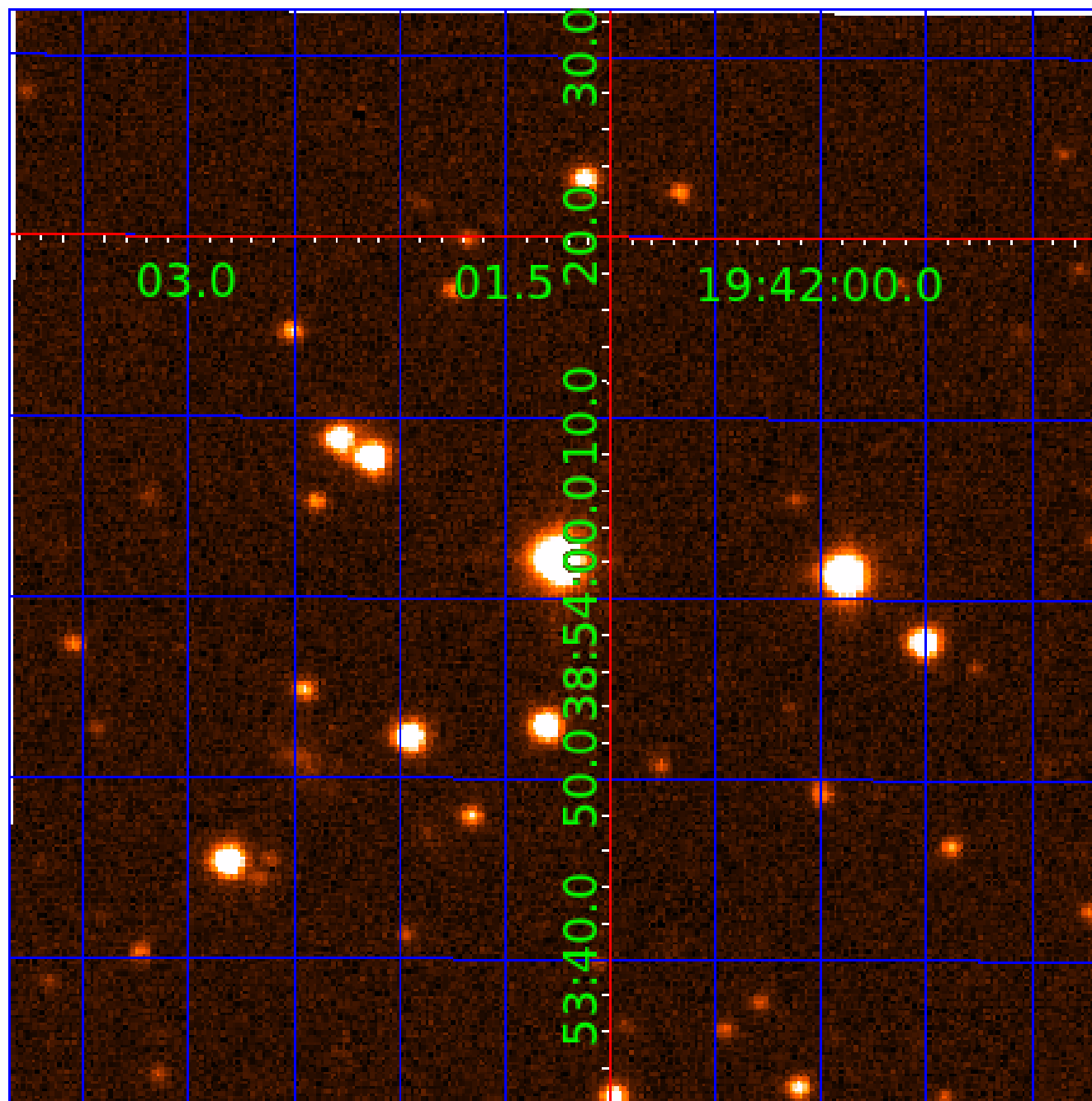


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003866552

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})
003866552-01	OBS	No	3.213262	132.206533	31.4	12.190	7.9	6.6	4.67	6897	2.64	15472.85
003866552-02	OBS	No	133.834667	143.984882	526.0	6.956	11.2	10.0	4.67	6897	13.59	107.17
003866552-03	OBS	No	262.307267	242.968973	347.8	4.245	8.0	8.0	4.67	6897	9.89	43.69
003866552-04	OBS	No	317.061935	429.926346	354.1	8.703	7.7	7.1	4.67	6897	9.18	33.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003866552-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003866552-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003866552-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003866552-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—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.

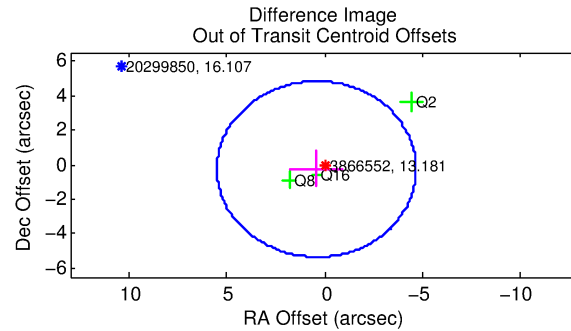
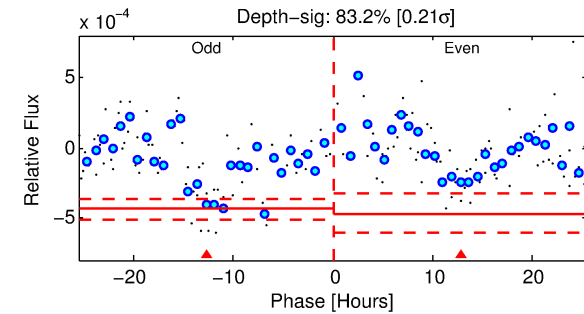
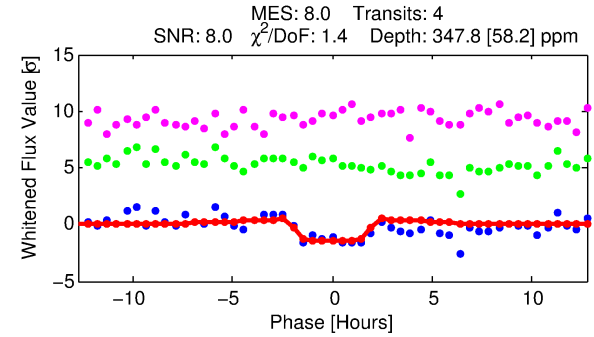
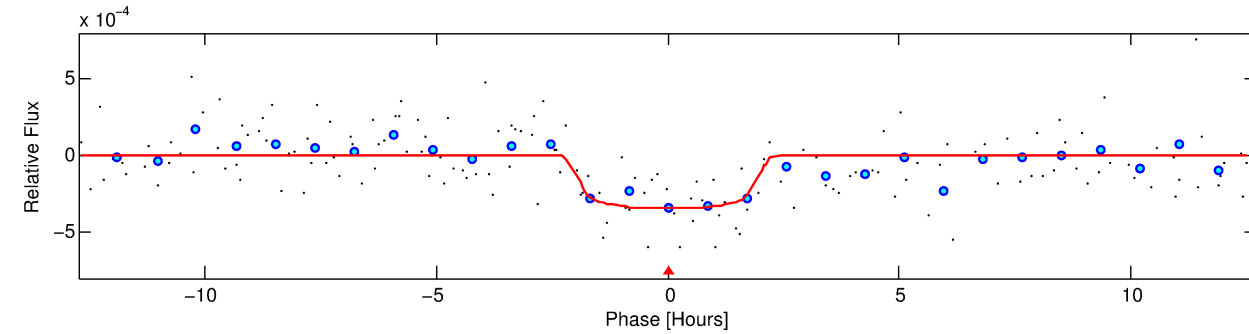
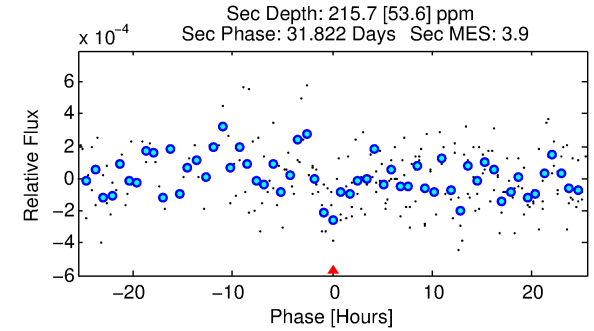
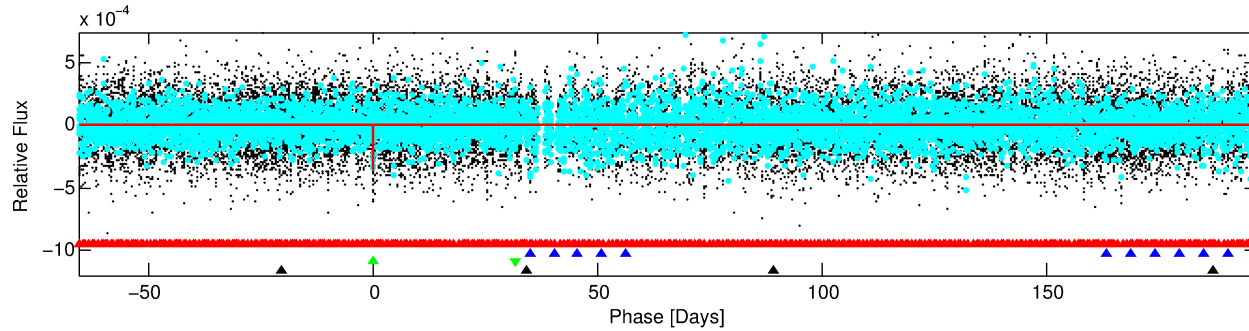
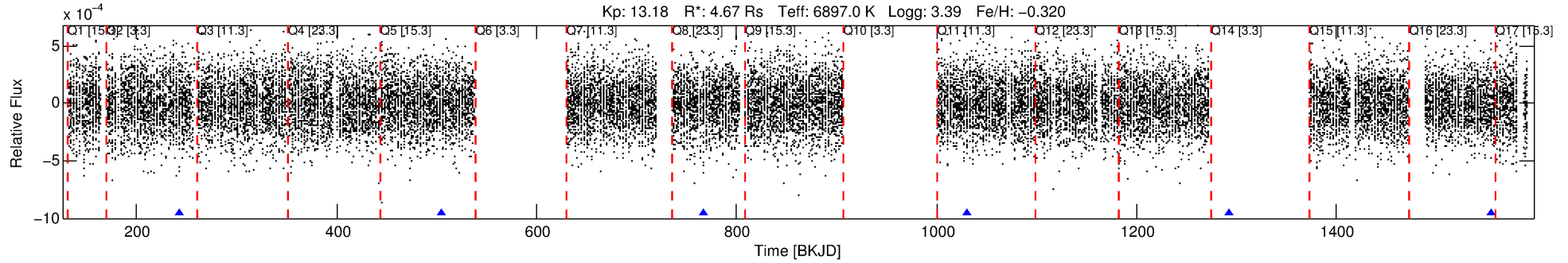
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003866552-03

No Significant Match Found

DV One-Page Summary

KIC: 3866552 Candidate: 3 of 4 Period: 262.307 d



DV Fit Results:

Period = 262.30727 [0.00343] d
Epoch = 242.9690 [0.0120] BKJD
Rp/R* = 0.0194 [0.0091]
a/R* = 253.97 [687.06]
b = 0.87 [0.79]
Seff = 43.69 [25.94]
Teq = 656 [97] K
Rp = 9.89 [5.92] Re
a = 1.0051 [0.3634] AU
Ag = 1225.35 [1379.69] [0.89σ]
Teffp = 5997 [1461] K [3.65σ]

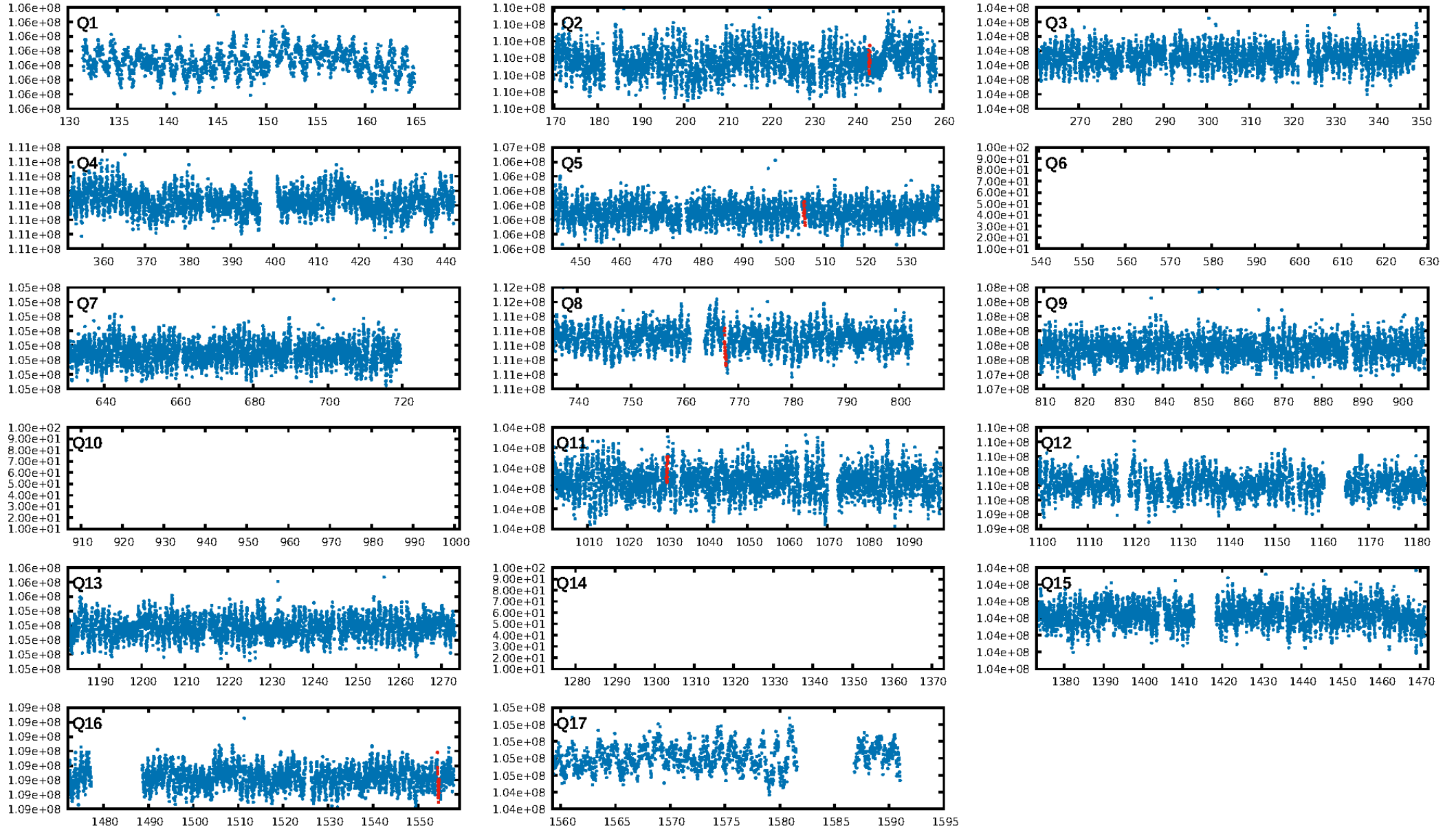
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [378.37σ]
LongPeriod-sig: 100.0% [135.72σ]
ModelChiSquare2-sig: 18.6%
ModelChiSquareGof-sig: 94.2%
Bootstrap-pfa: 2.37e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.081
Centroid-sig: N/A
Centroid-so: 0.278 arcsec [0.21σ]
OotOffset-rm: 0.487 arcsec [0.29σ]
KicOffset-rm: 0.470 arcsec [0.20σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

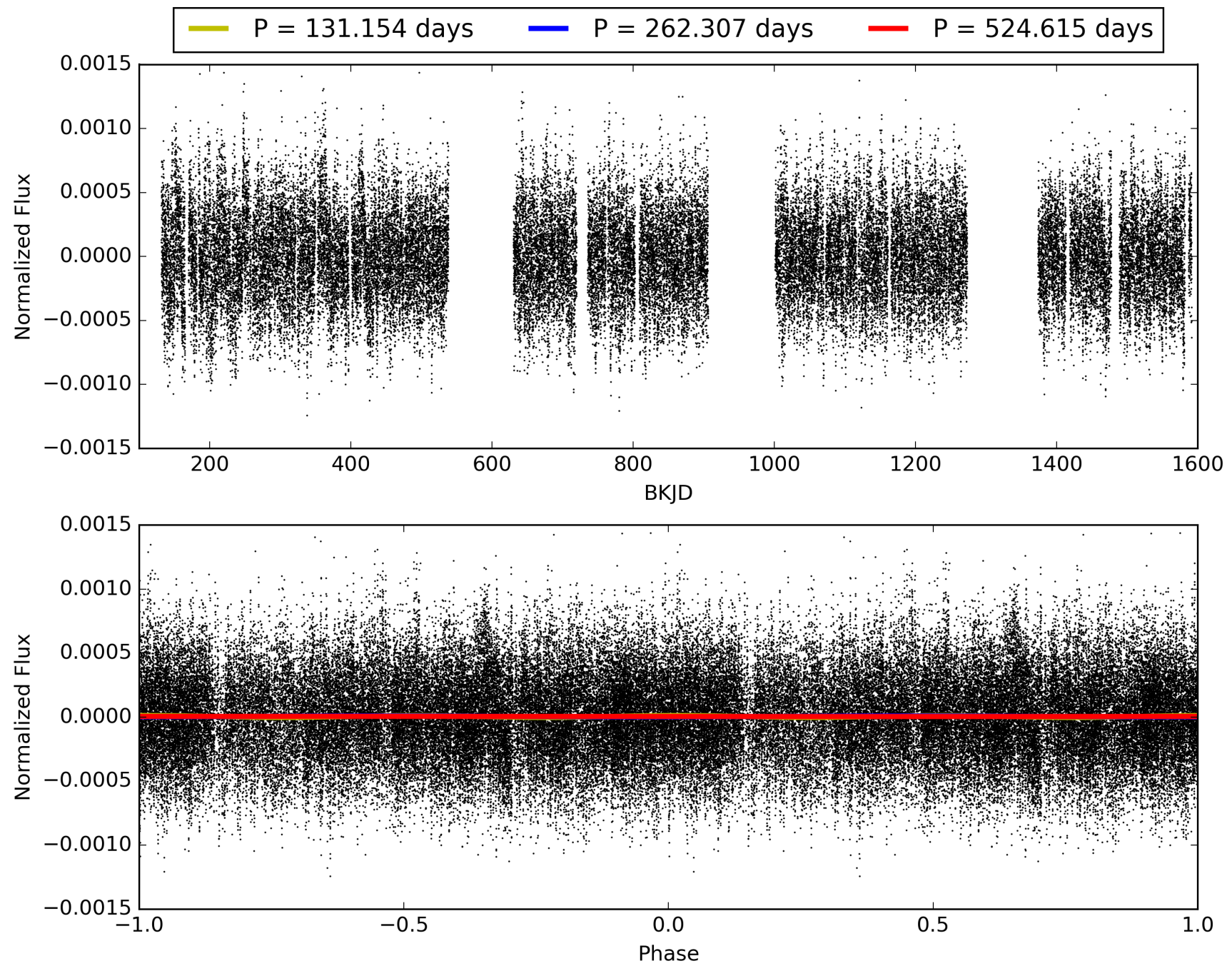
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:59:11 Z

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

TCE 003866552-03, PDC Light Curves

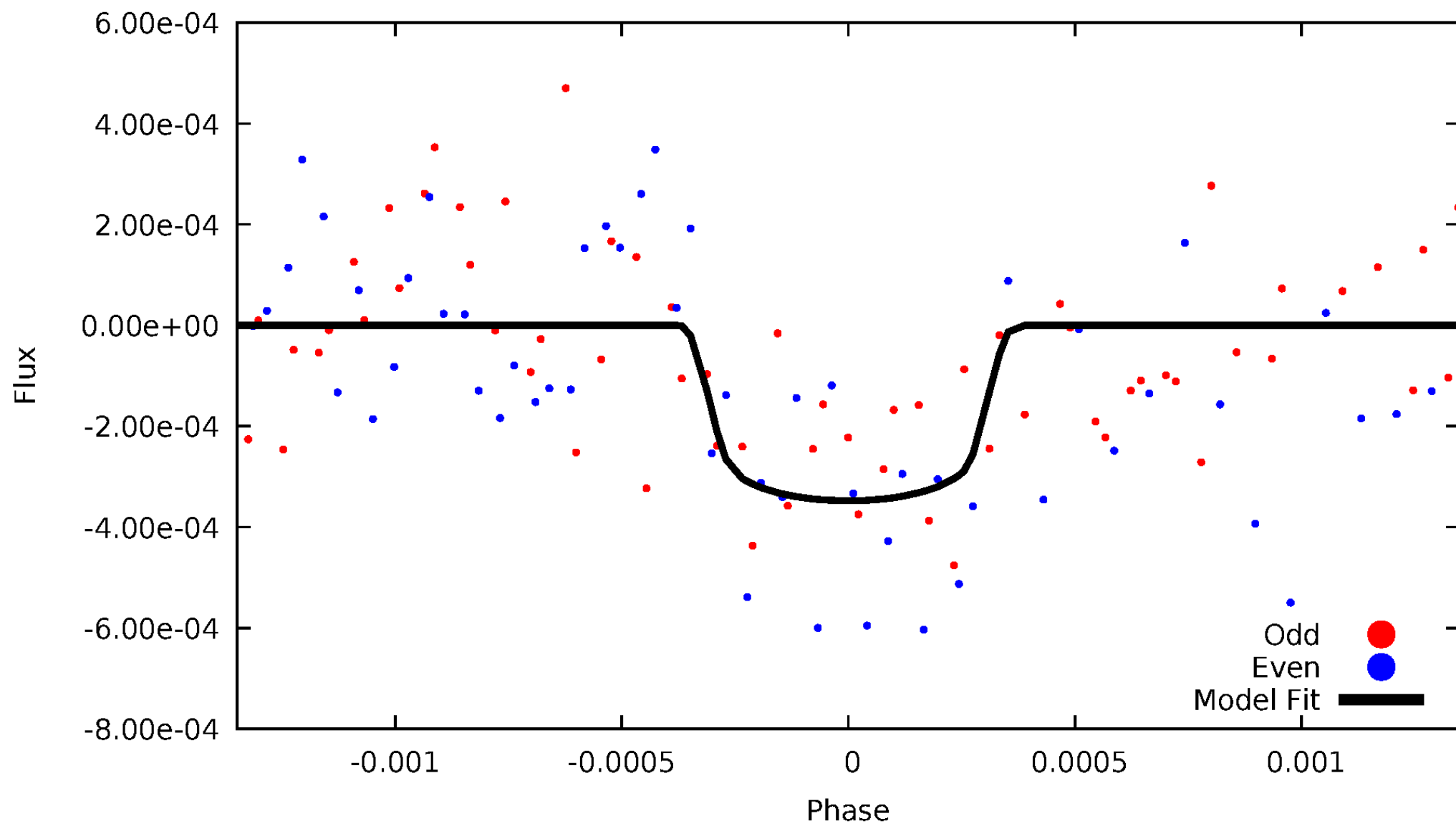


TCE 003866552-03



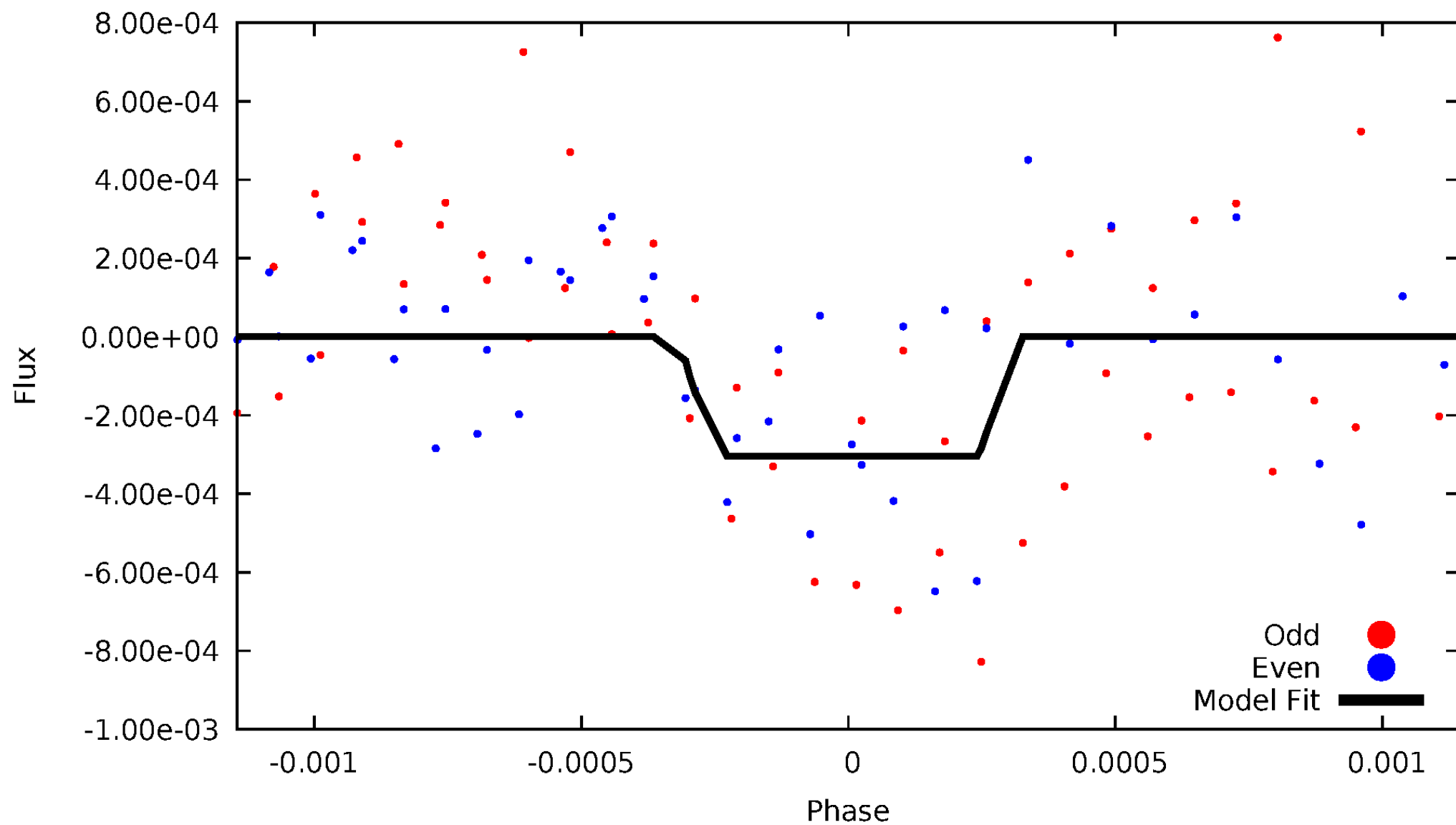
DV Odd/Even

TCE 003866552-03



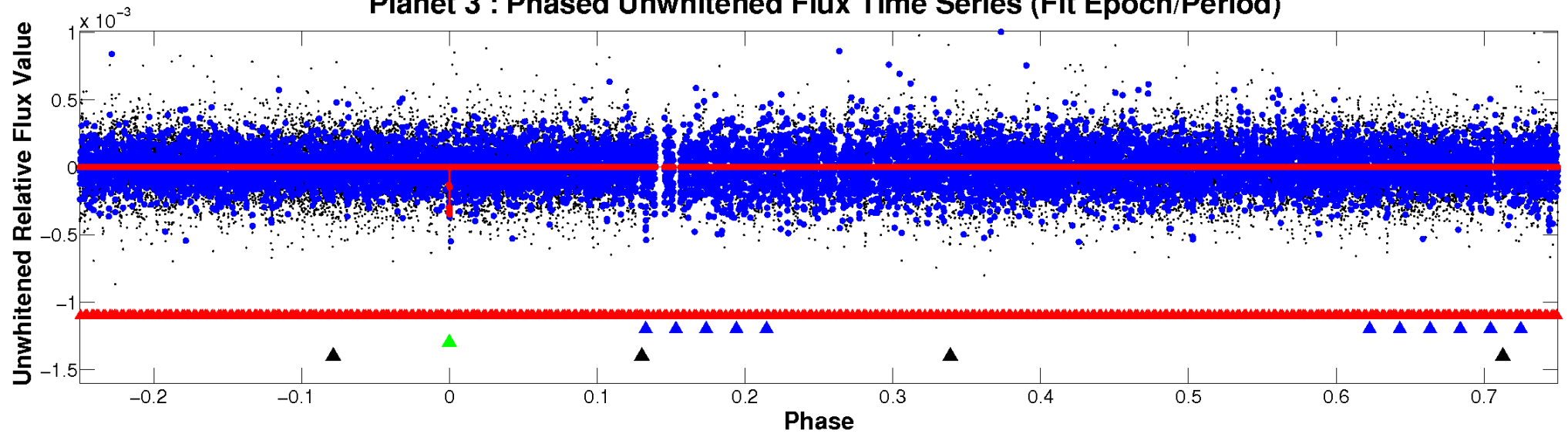
ALT Odd/Even

TCE 003866552-03

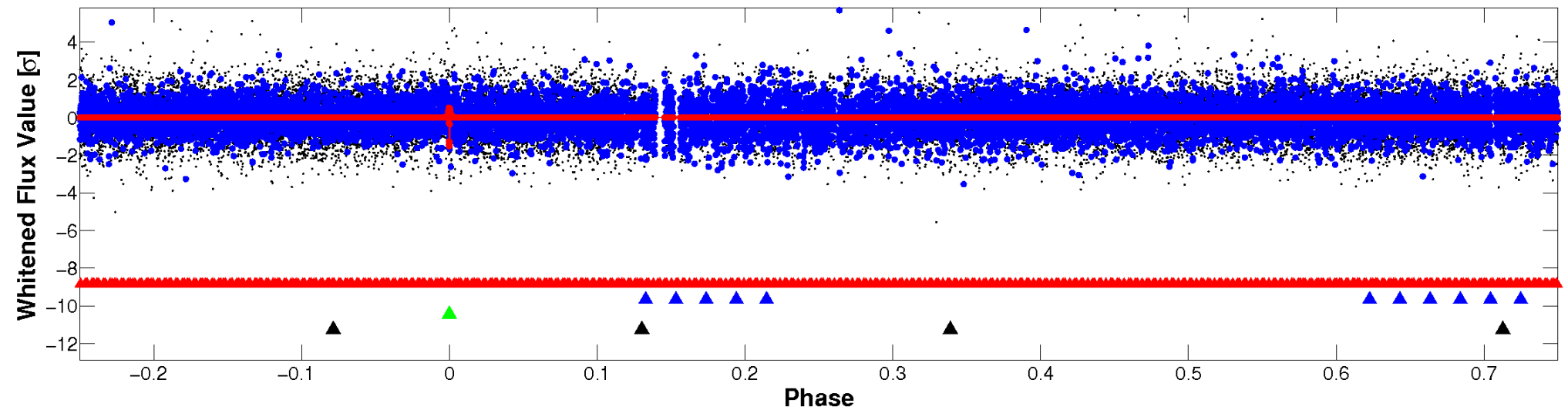


Non-Whitened Vs. Whitened Light Curve

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

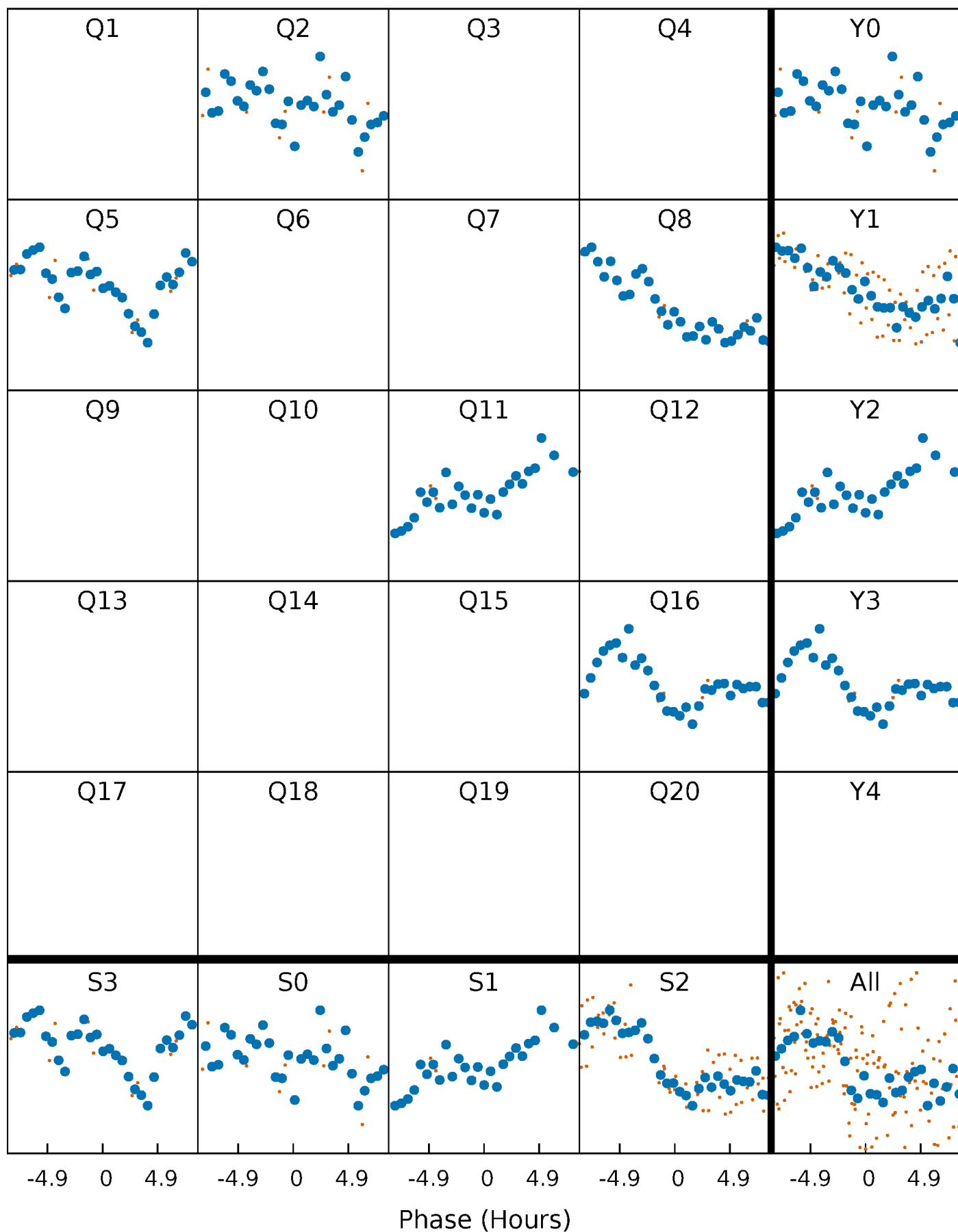


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



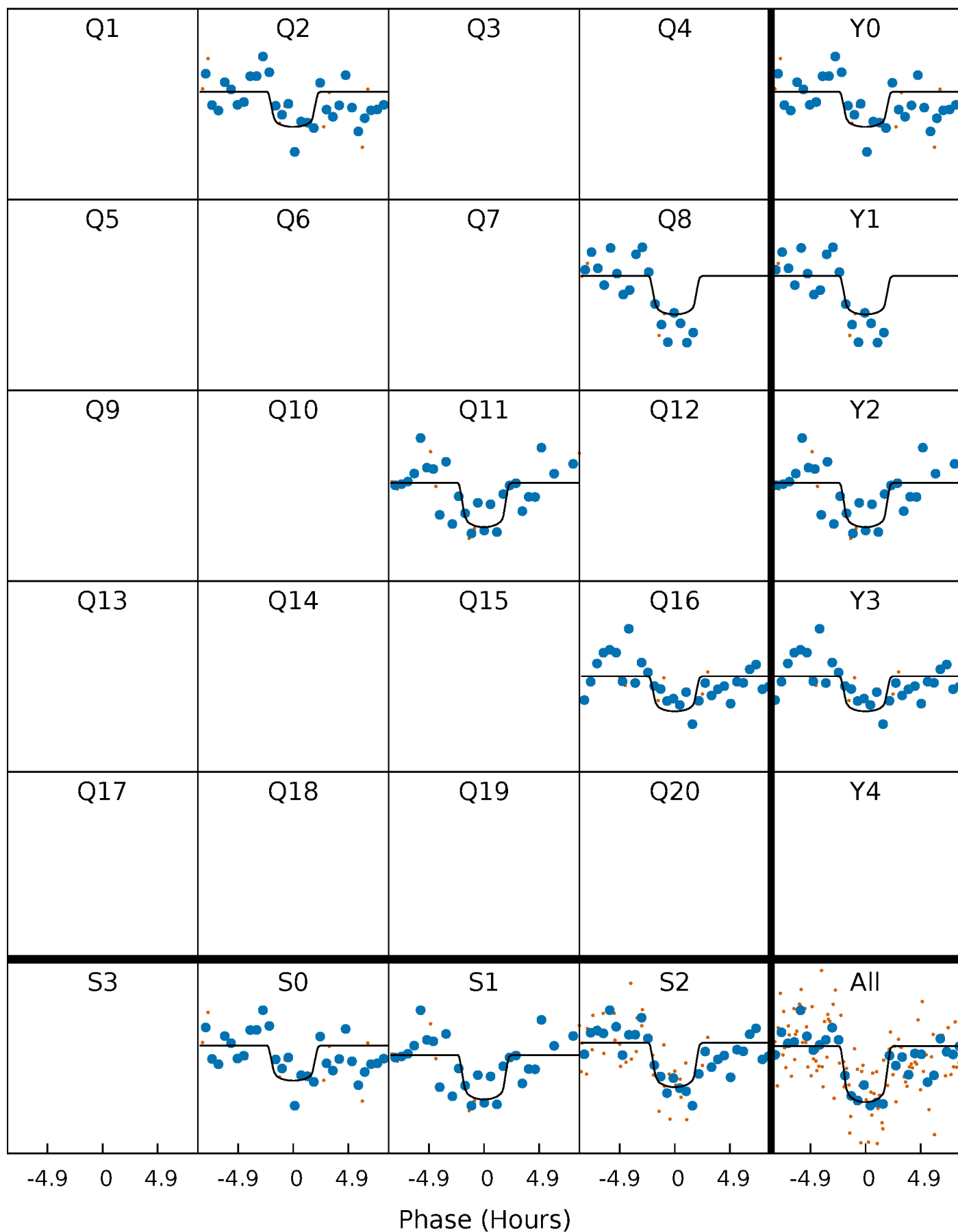
PDC Quarter-Phased Transit Curves

TCE 003866552-03 $P=262.307267$ Days $T_0=242.968973$ (BKJD)



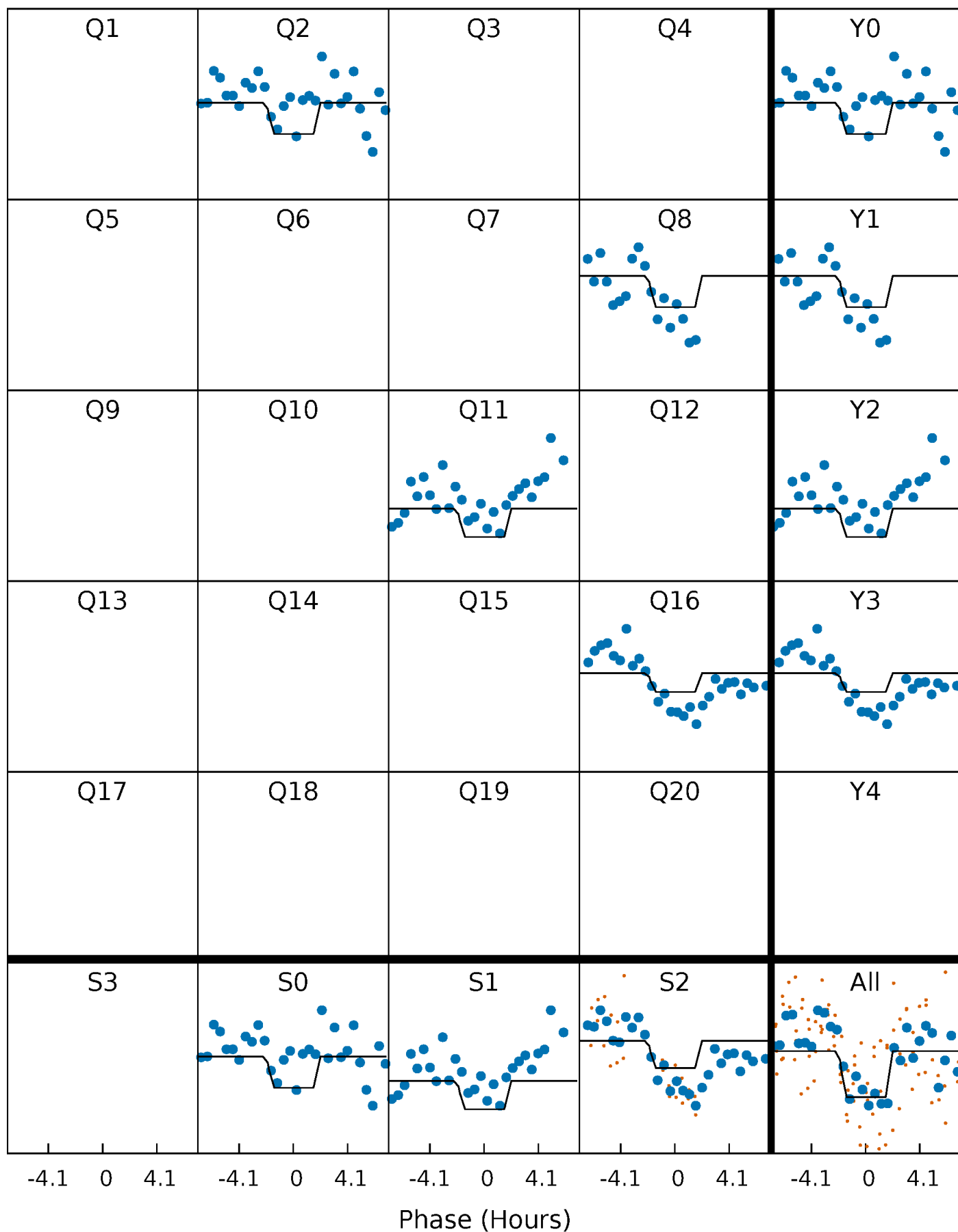
DV Quarter-Phased Transit Curves

TCE 003866552-03 P=262.307267 Days $T_0=242.968973$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

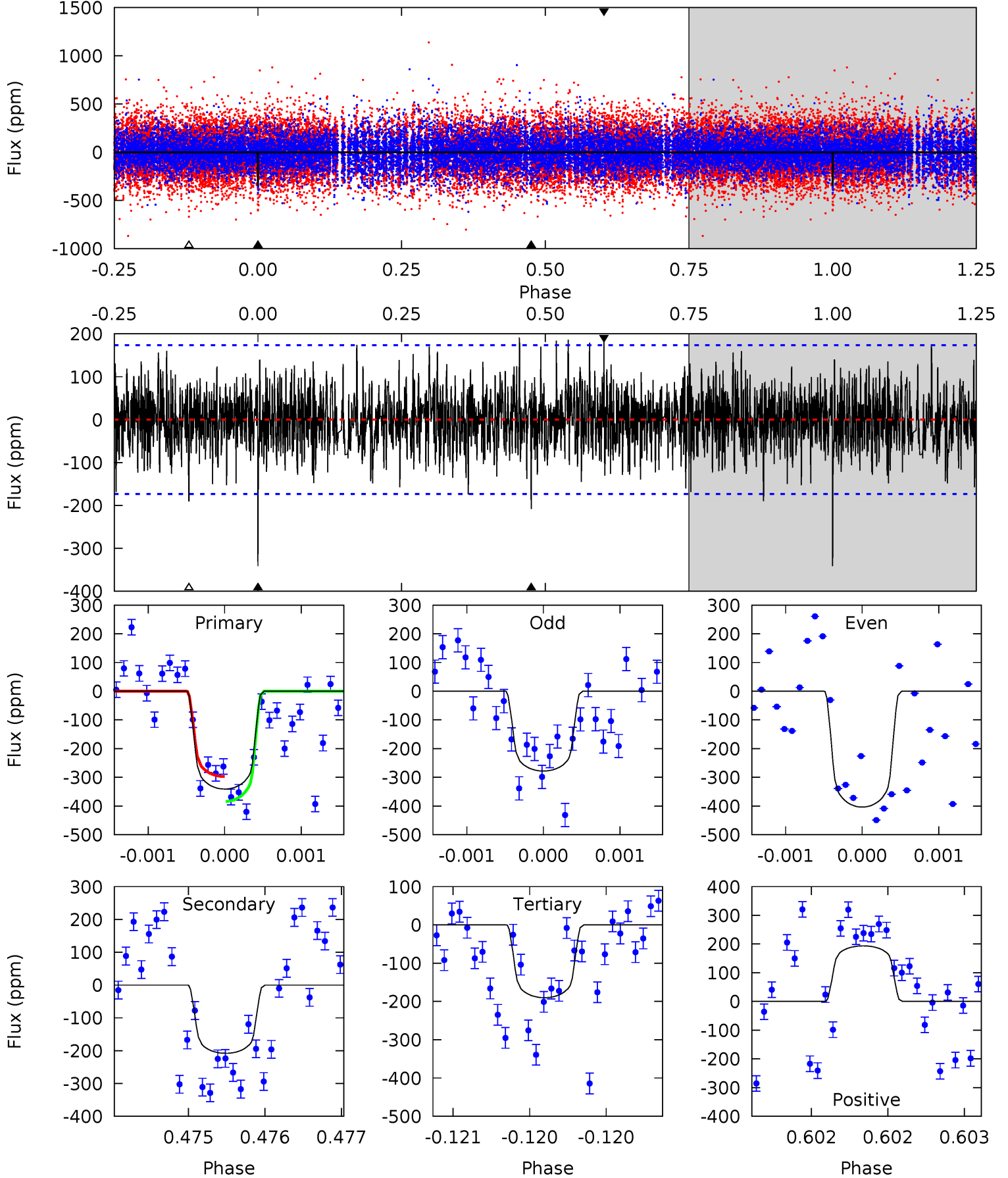
TCE 003866552-03 P=262.305610 Days $T_0=242.973256$ (BKJD)



DV Model-Shift Uniqueness Test

003866552-03, P = 262.307267 Days, E = 242.968973 Days

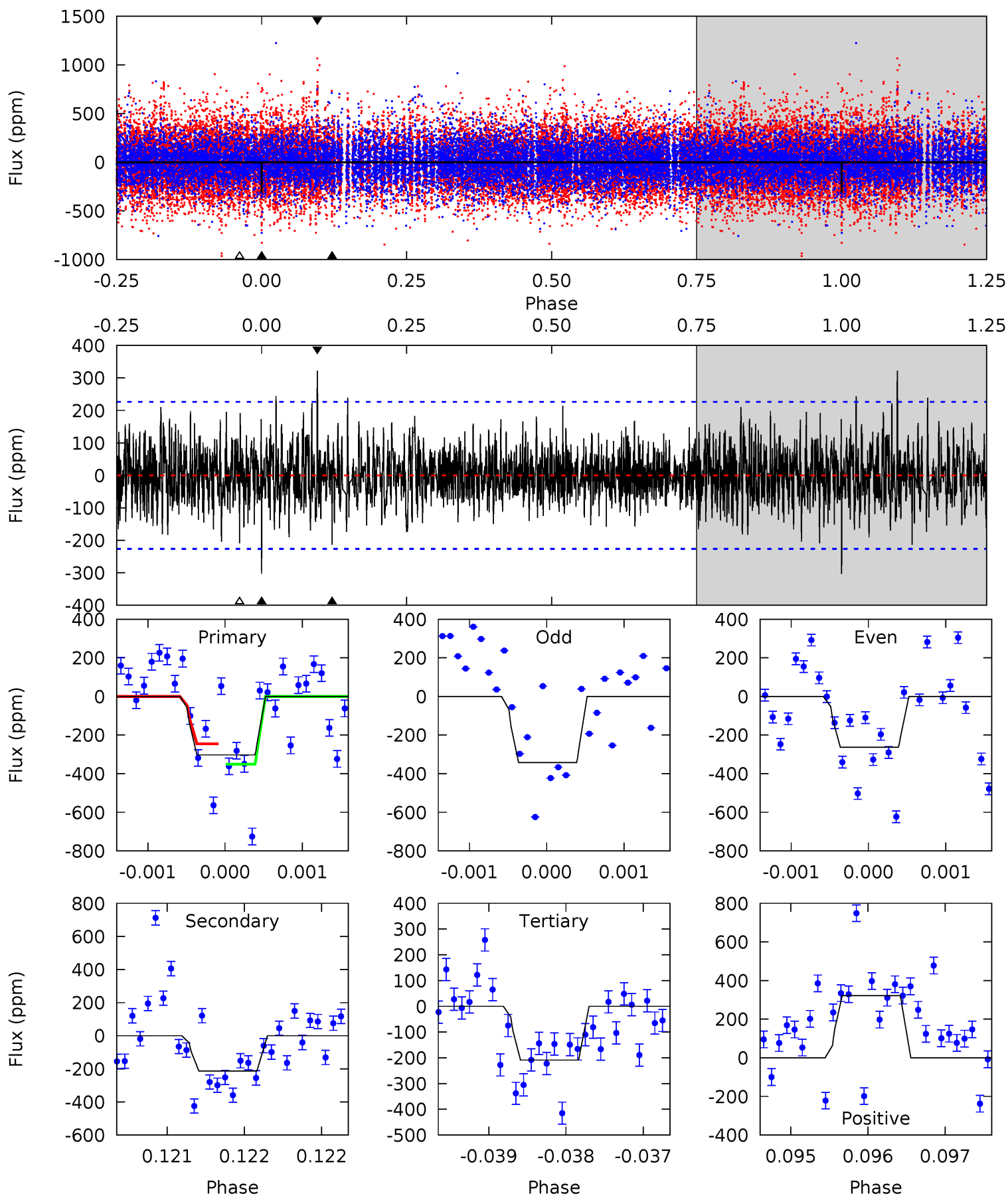
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	6.60	6.03	6.14	5.50	3.37	1.71	4.78	4.67	0.57	0.46	2.00	1.12	0.36	1.38



Alt Model-Shift Uniqueness Test

003866552-03, P = 262.305610 Days, E = 242.973256 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.40	5.21	5.10	7.88	5.53	3.42	1.53	2.30	-0.48	0.10	-2.68	0.98	1.13	0.52	1.29



Stellar Parameters For KIC 003866552

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.394^{+0.340}_{-0.060}$	$-0.320^{+0.350}_{-0.300}$	$4.666^{+0.412}_{-1.752}$	$1.967^{+0.134}_{-0.336}$	$0.027^{+0.069}_{-0.005}$
	+3%/-3%	+10%/-2%	+109%/-94%	+9%/-38%	+7%/-17%	+251%/-20%
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 003866552-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-208 ± 32	$9.07^{+5.11}_{-4.09}$	893^{+47}_{-84}	5856^{+1975}_{-965}	1387^{+3293}_{-804}
Alt.	-213 ± 41	$8.32^{+4.62}_{-4.08}$	898^{+47}_{-79}	6134^{+3256}_{-1072}	1650^{+5072}_{-975}

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 $A_{obs} \gg 1.0$

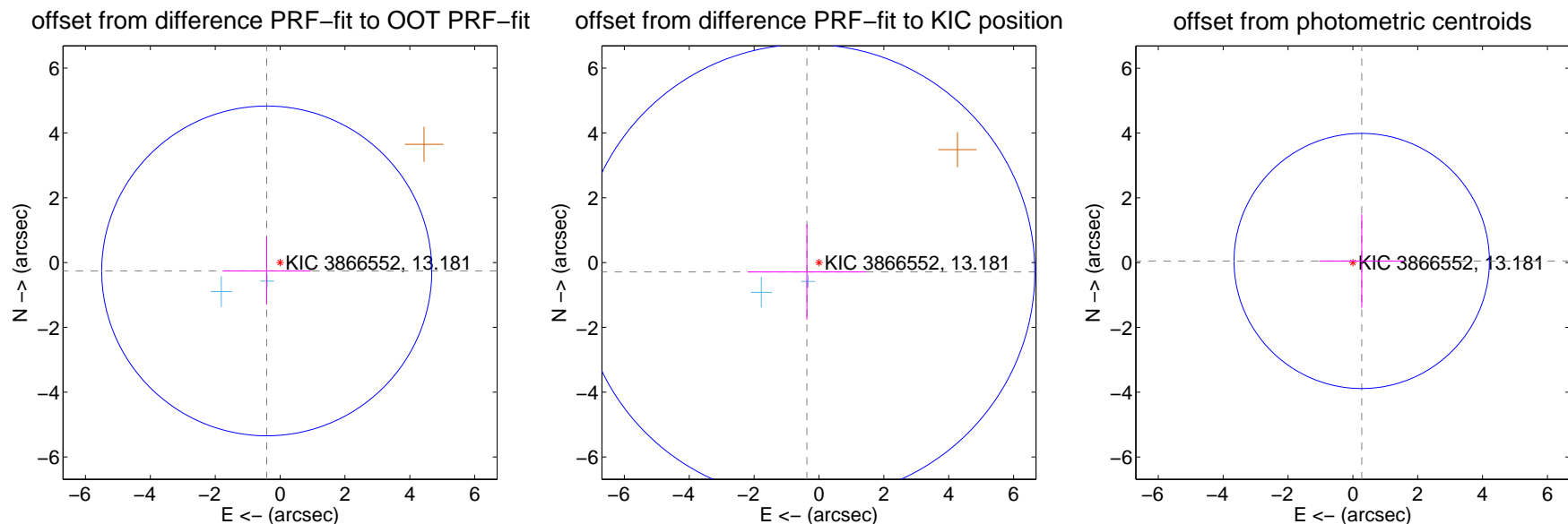
DV Centroid Data

Supplemental centroid analysis for 003866552-03. Kepler magnitude: 13.18. Transit SNR 7.98

There are 2 quarters with good PRF difference image offsets

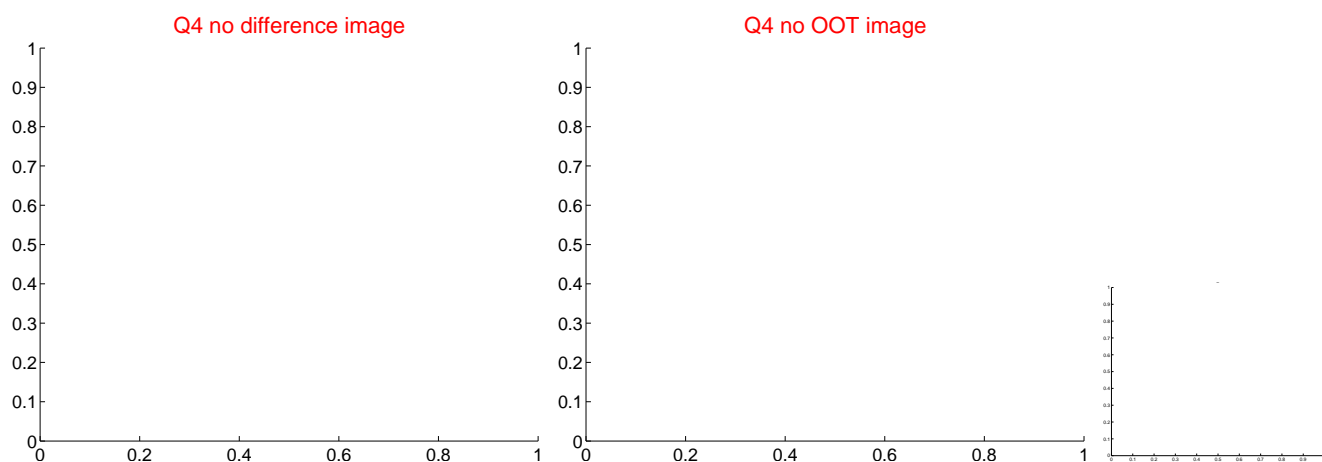
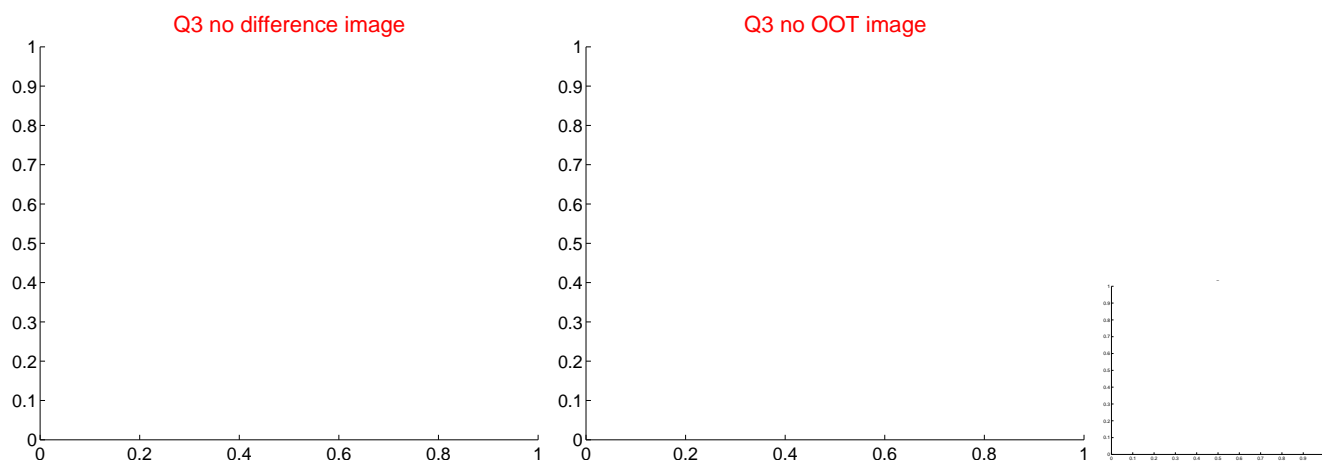
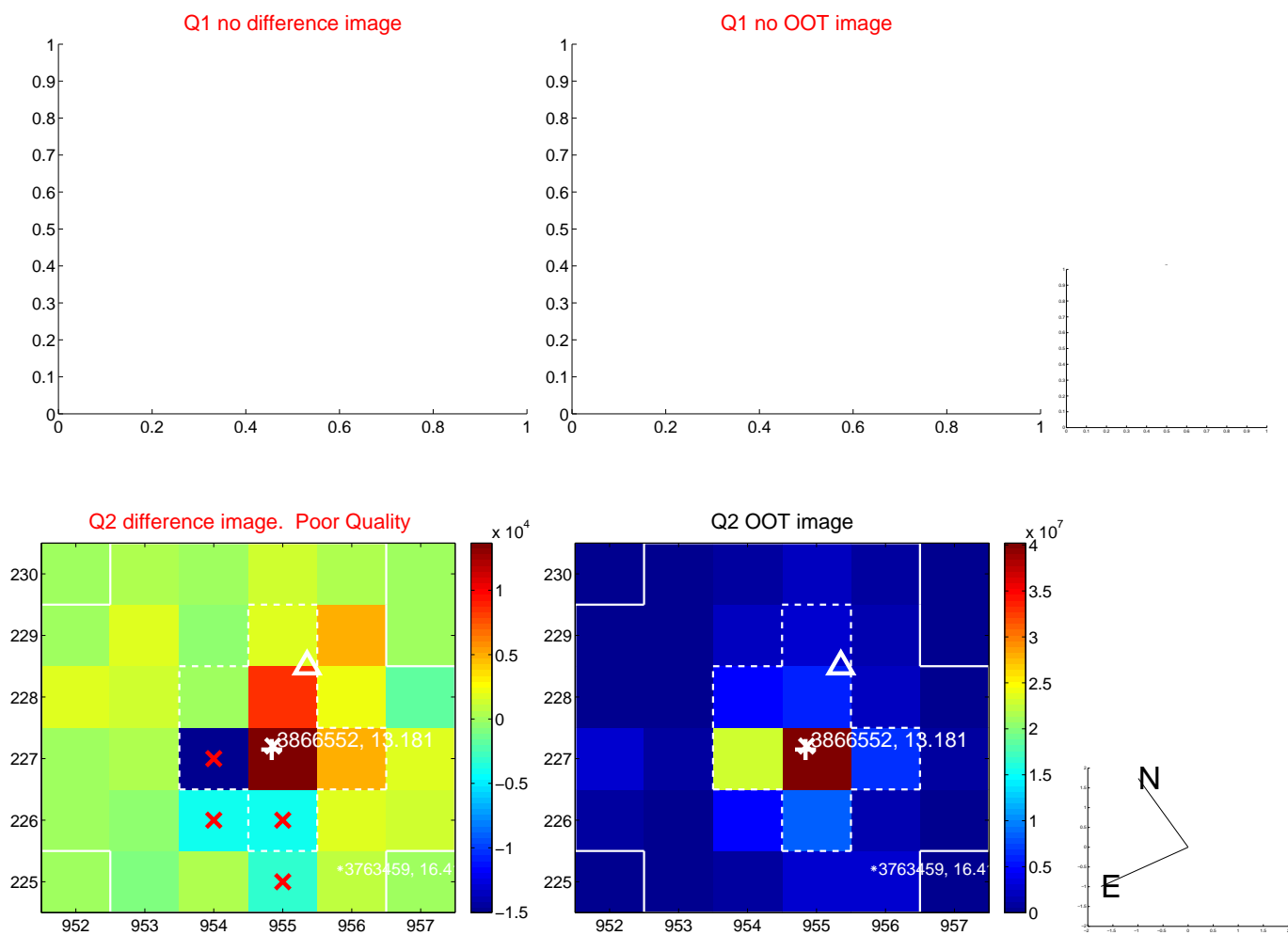
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.487 ± 1.696	0.29	0.412 ± 1.360	-0.259 ± 1.039
PRF-fit source offset from KIC position	0.470 ± 2.341	0.20	0.370 ± 1.831	-0.290 ± 1.472
photometric centroid source offset	0.28 ± 1.31	0.21	-0.27 ± 1.31	0.05 ± 1.44

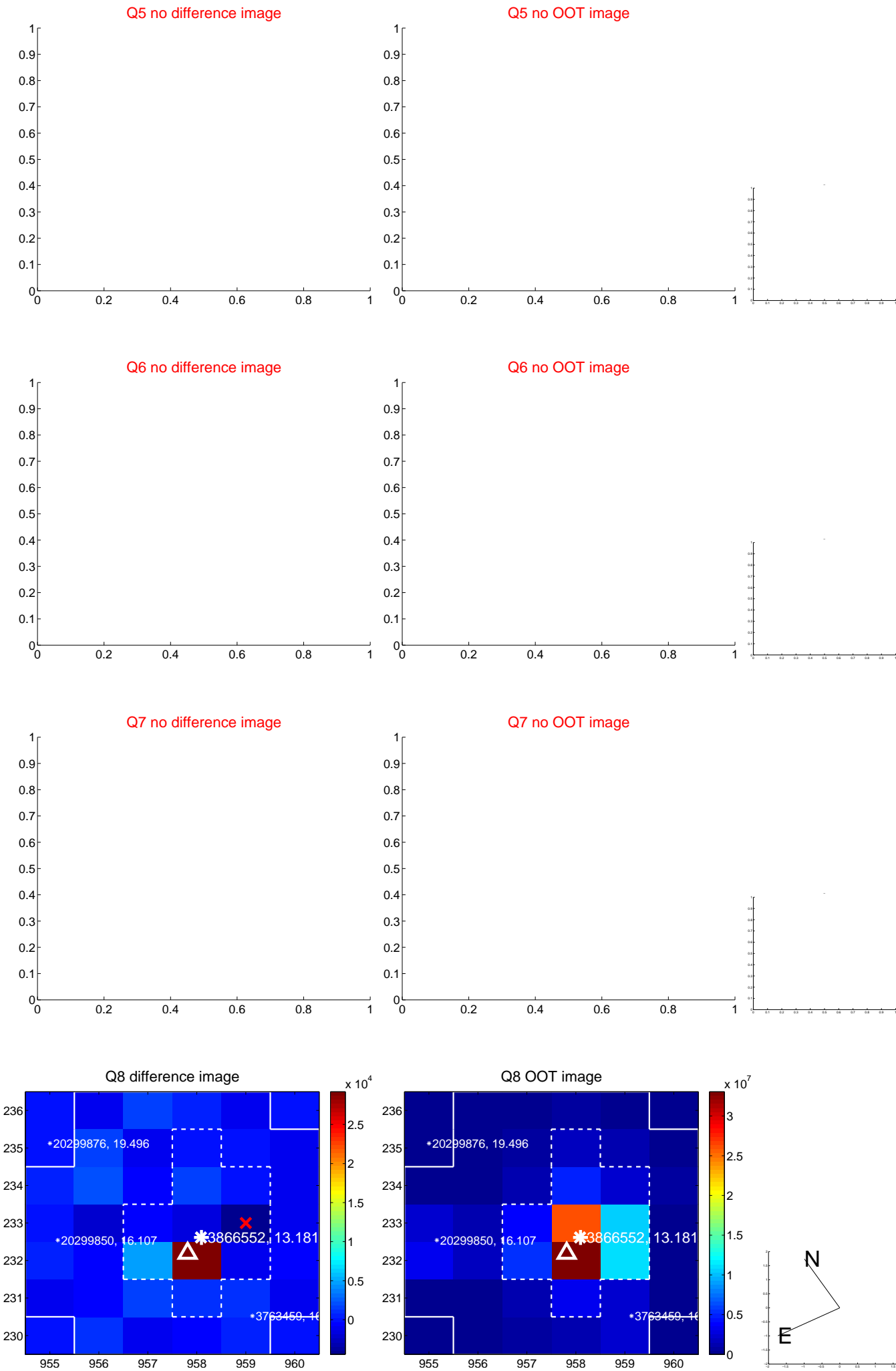


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



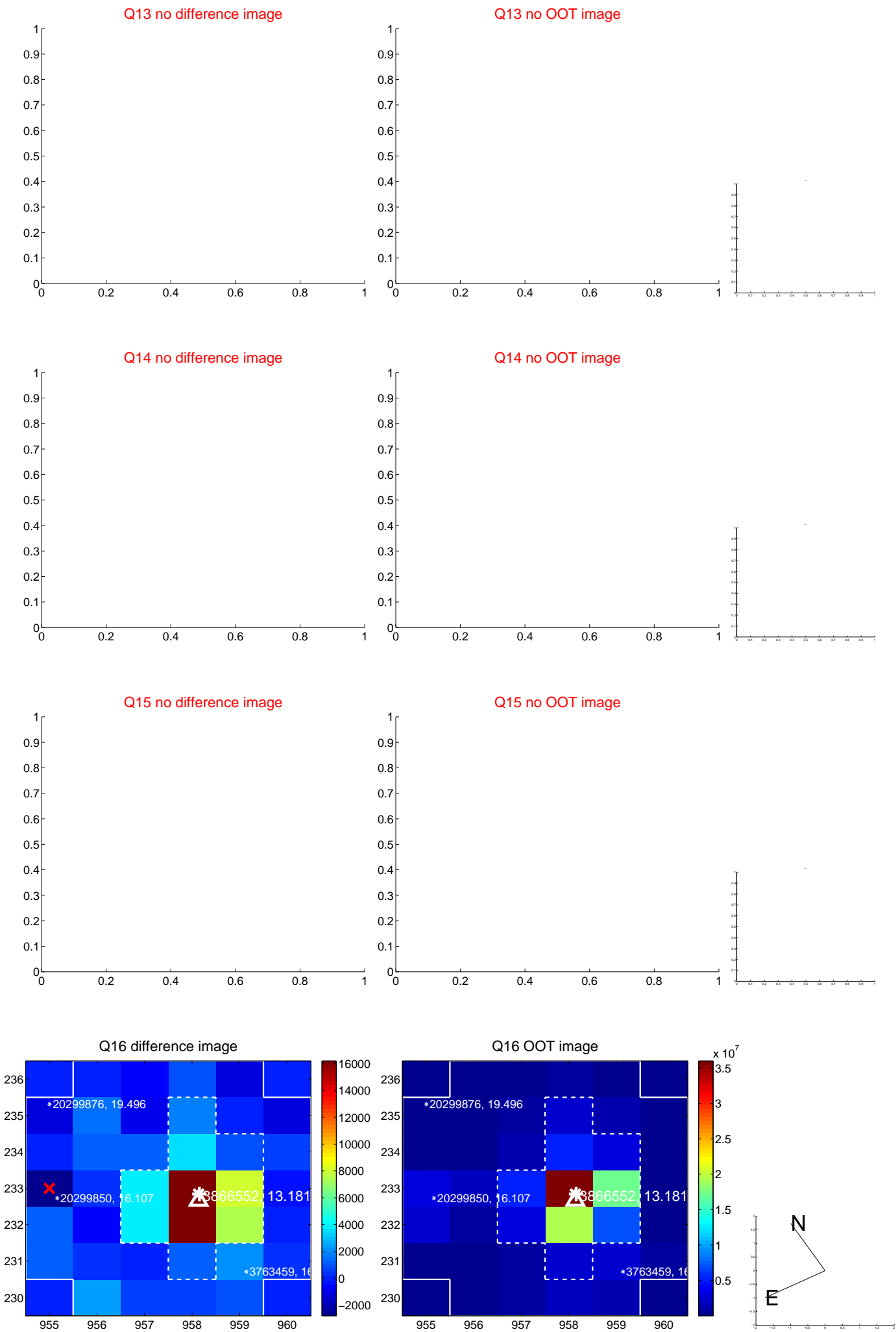
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



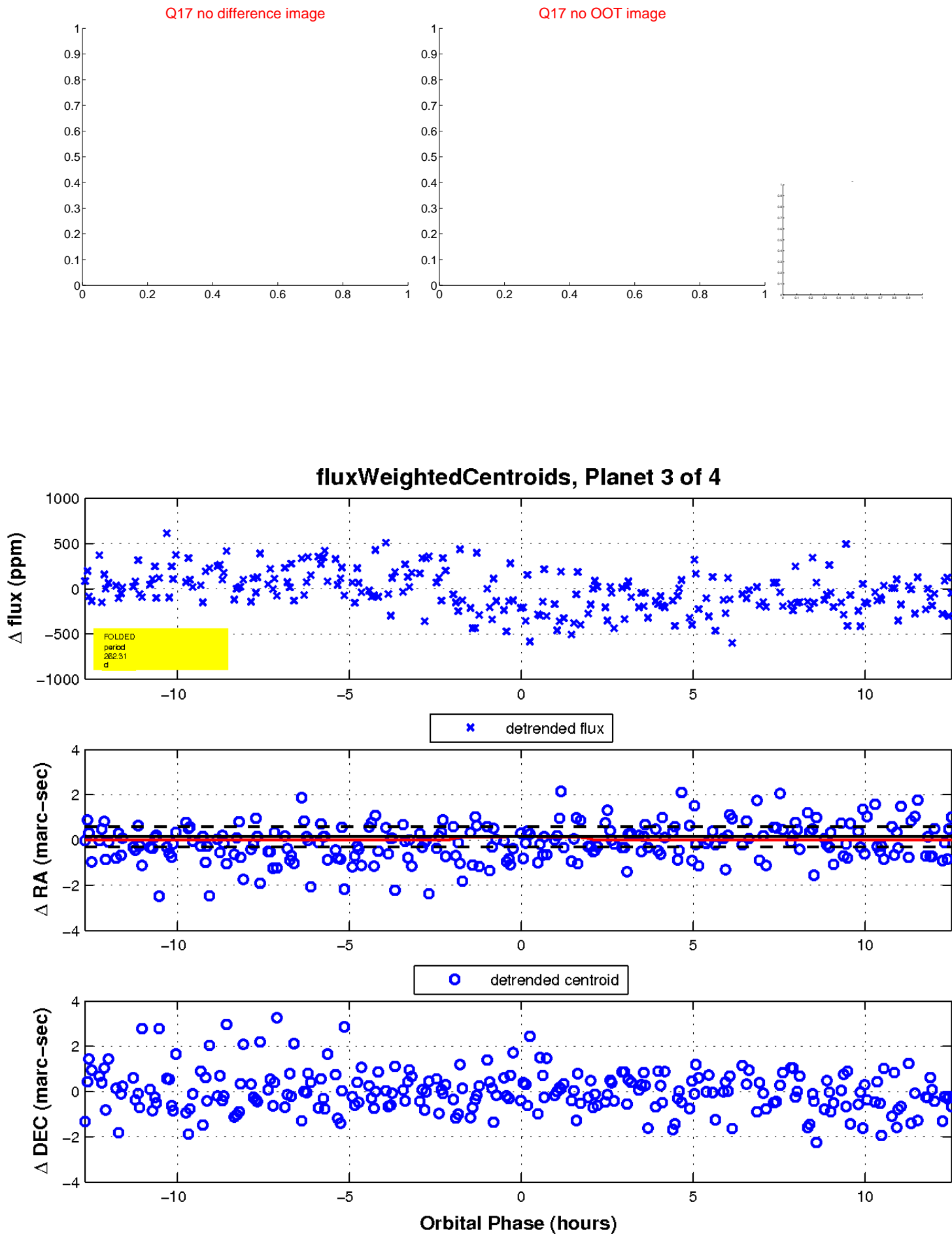
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

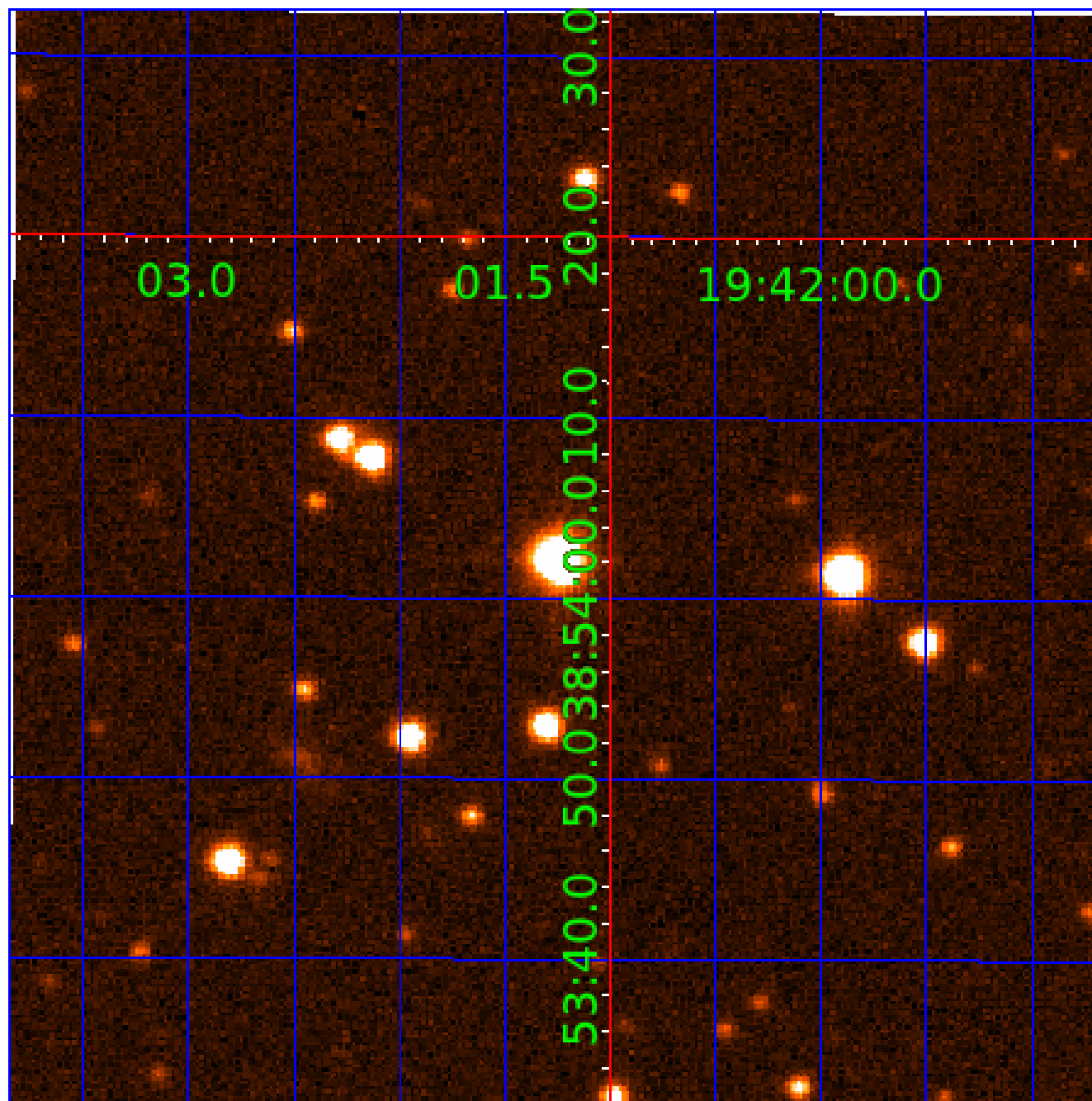


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003866552

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})
003866552-01	OBS	No	3.213262	132.206533	31.4	12.190	7.9	6.6	4.67	6897	2.64	15472.85
003866552-02	OBS	No	133.834667	143.984882	526.0	6.956	11.2	10.0	4.67	6897	13.59	107.17
003866552-03	OBS	No	262.307267	242.968973	347.8	4.245	8.0	8.0	4.67	6897	9.89	43.69
003866552-04	OBS	No	317.061935	429.926346	354.1	8.703	7.7	7.1	4.67	6897	9.18	33.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003866552-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003866552-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003866552-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003866552-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—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.

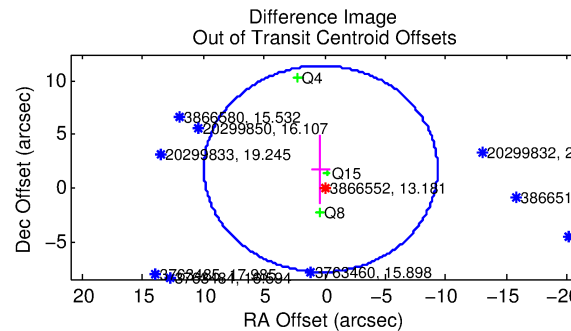
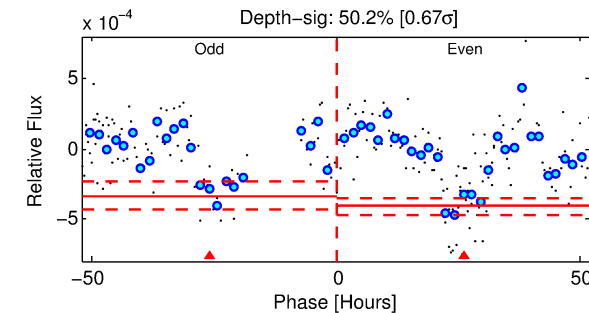
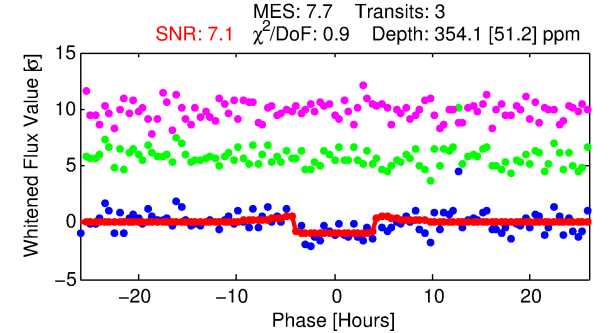
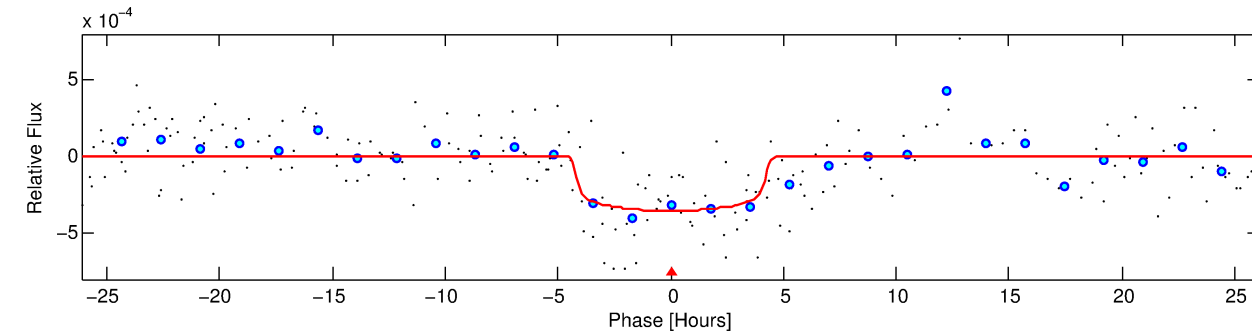
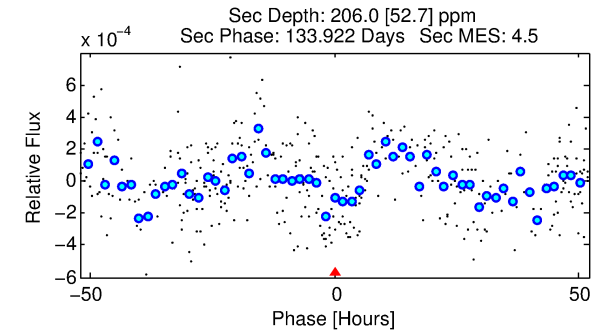
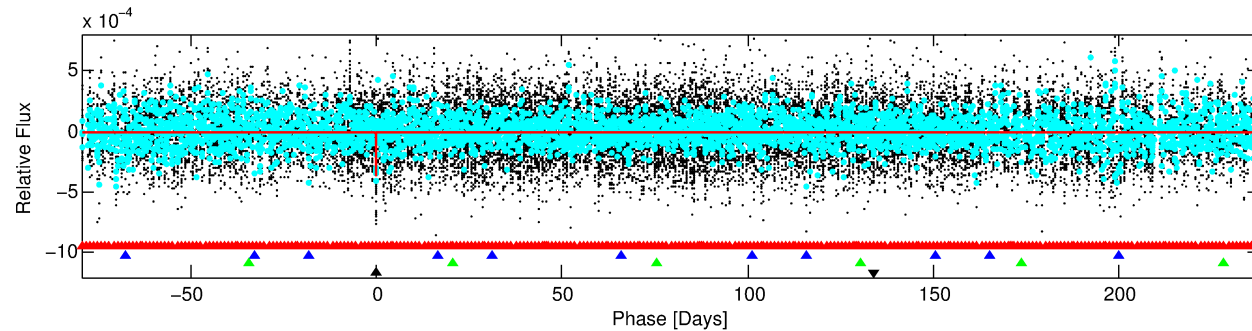
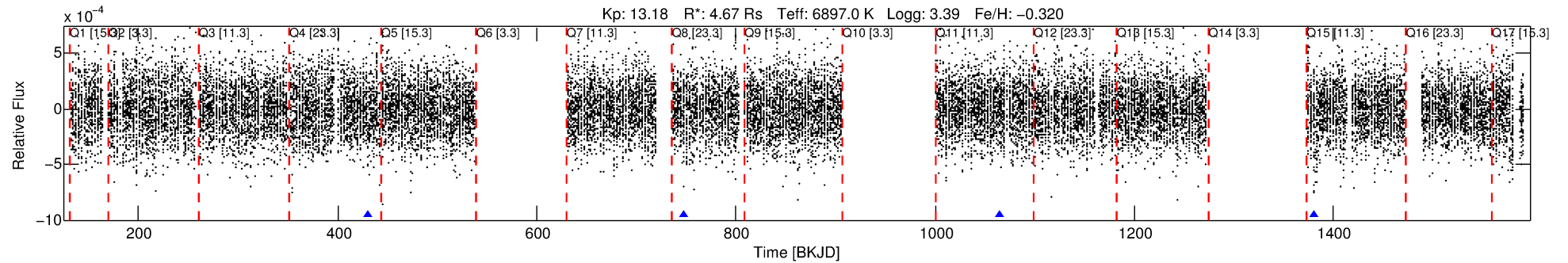
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003866552-04

No Significant Match Found

DV One-Page Summary

KIC: 3866552 Candidate: 4 of 4 Period: 317.062 d



DV Fit Results:

Period = 317.06194 [0.00572] d
Epoch = 429.9263 [0.0110] BKJD
Rp/R* = 0.0180 [0.0100]
a/R* = 234.45 [735.65]
b = 0.57 [3.71]
Seff = 33.93 [20.14]
Teq = 615 [91] K
Rp = 9.18 [6.14] Re
a = 1.1405 [0.4124] AU
Ag = 1748.91 [2230.11] [0.78 σ]
Teff = 6153 [1760] K [3.14 σ]

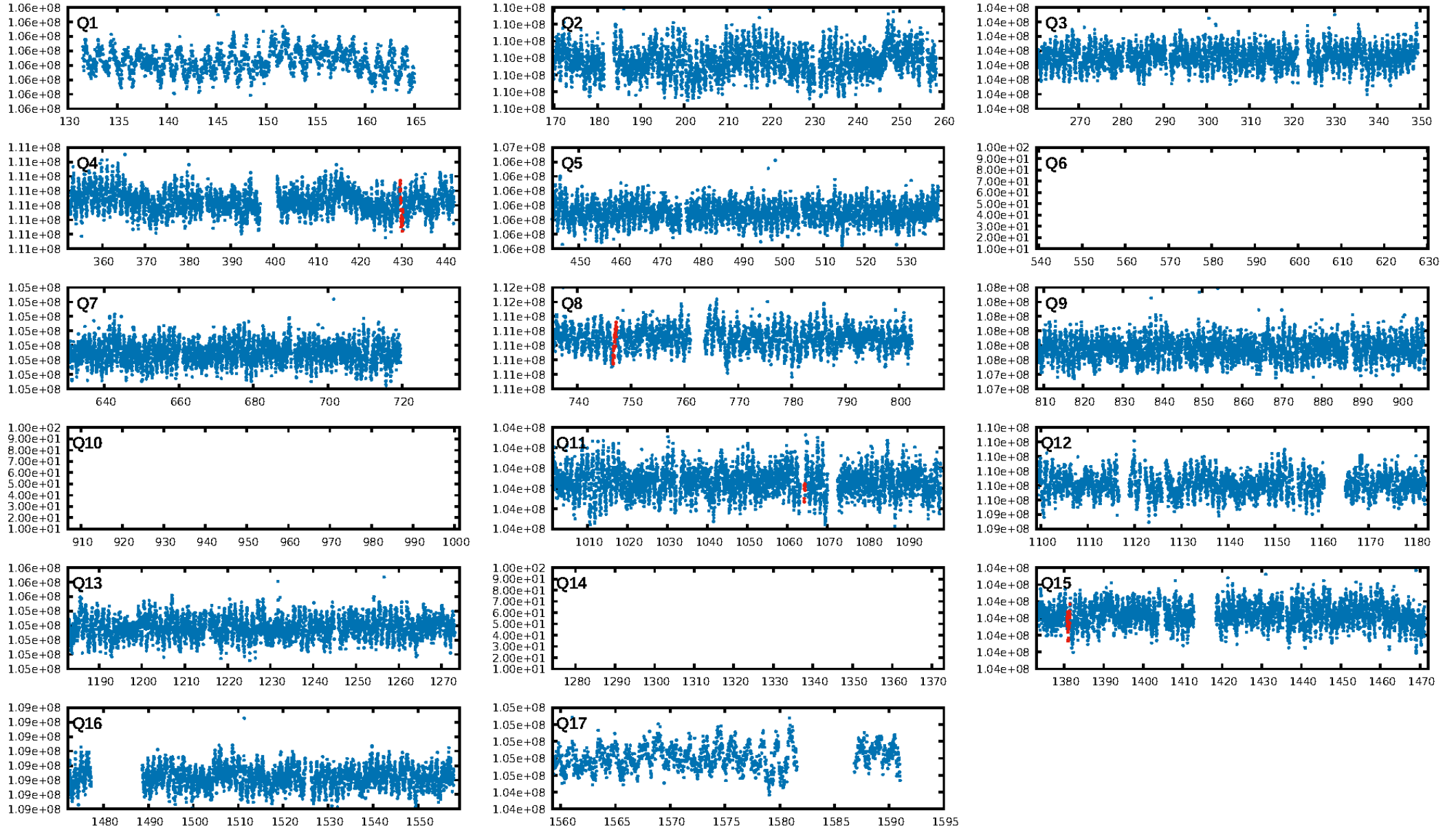
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [135.72 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 22.2%
ModelChiSquareGof-sig: 95.7%
Bootstrap-pfa: 7.27e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.291
Centroid-sig: N/A
Centroid-so: 1.907 arcsec [1.66 σ]
OotOffset-rm: 1.813 arcsec [0.56 σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-rm: 1.707 arcsec [0.50 σ]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

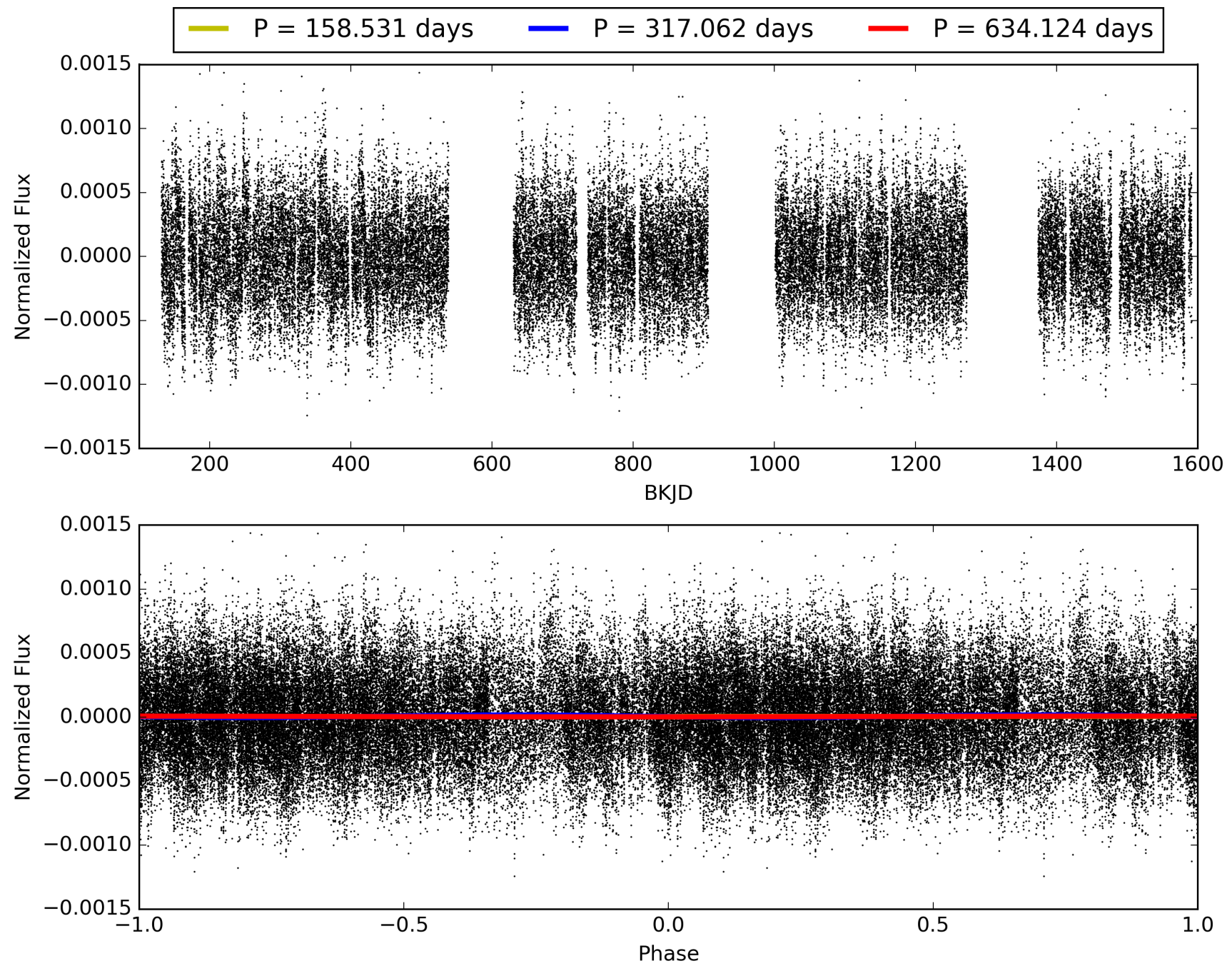
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:59:17 Z

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

TCE 003866552-04, PDC Light Curves

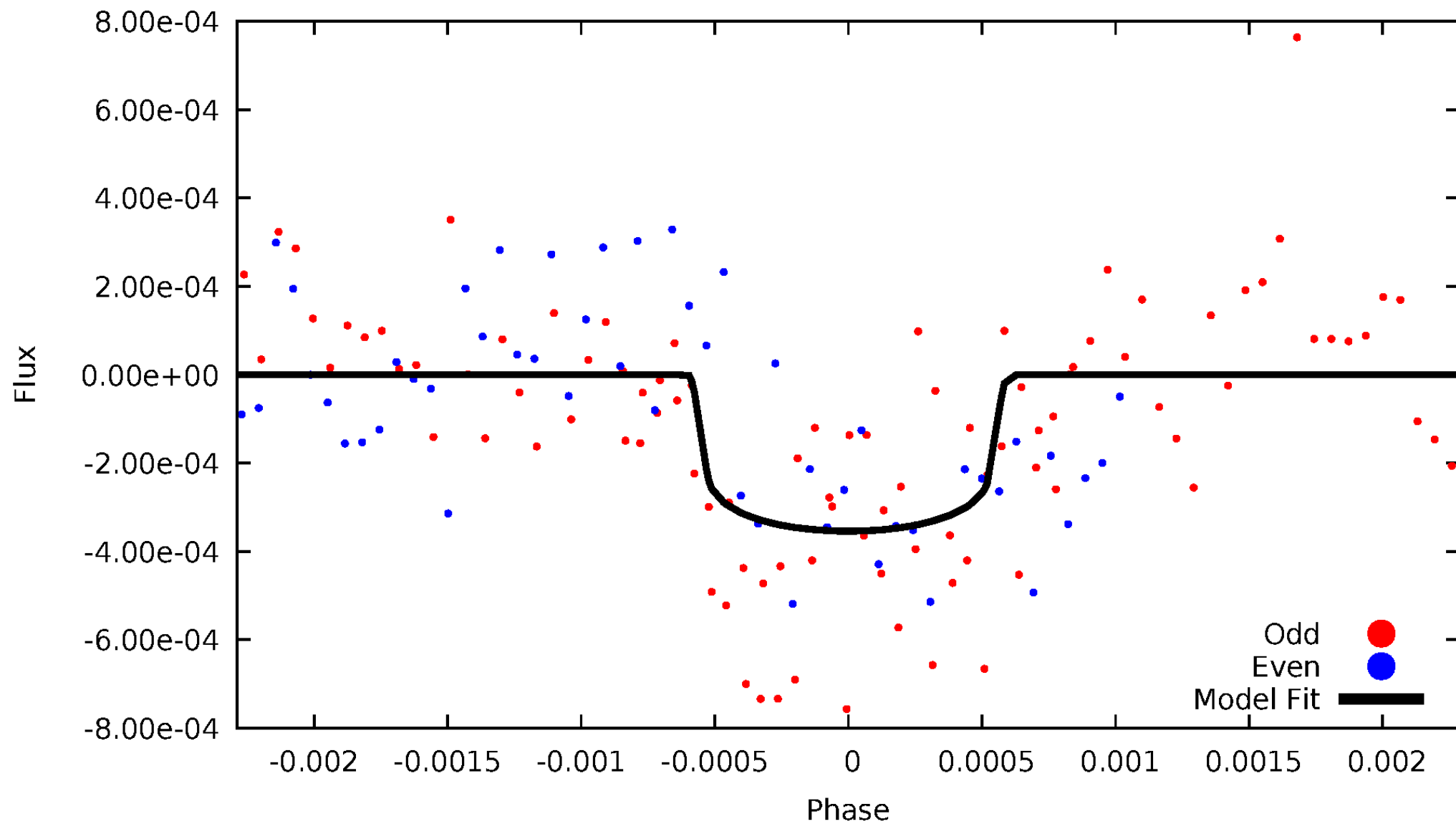


TCE 003866552-04



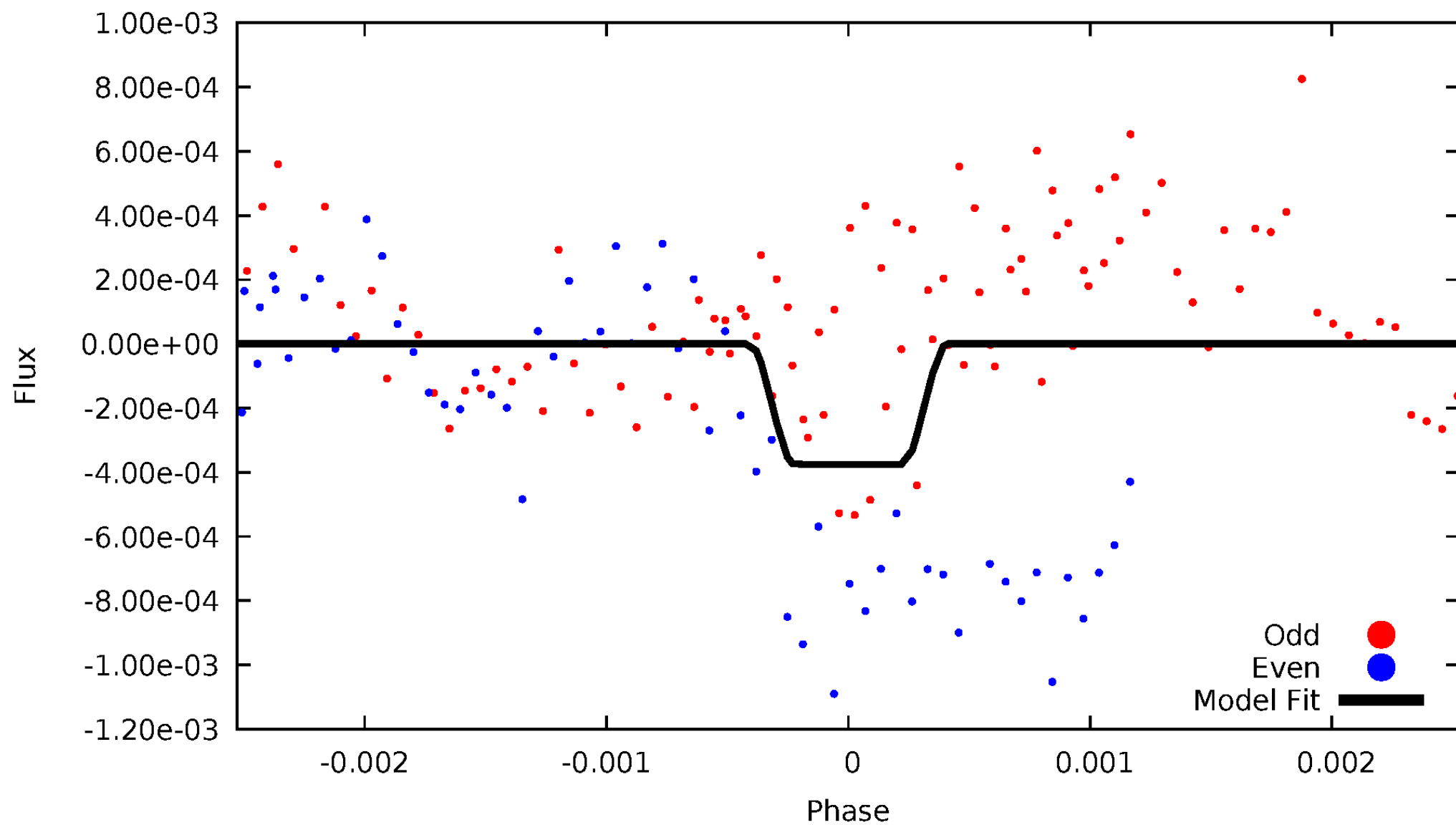
DV Odd/Even

TCE 003866552-04



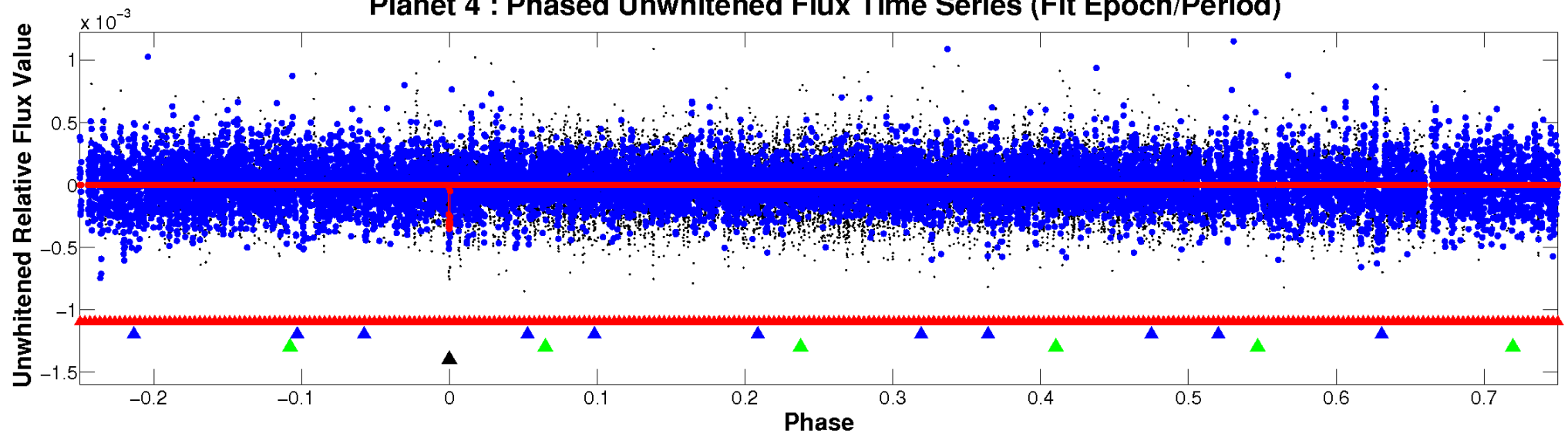
ALT Odd/Even

TCE 003866552-04

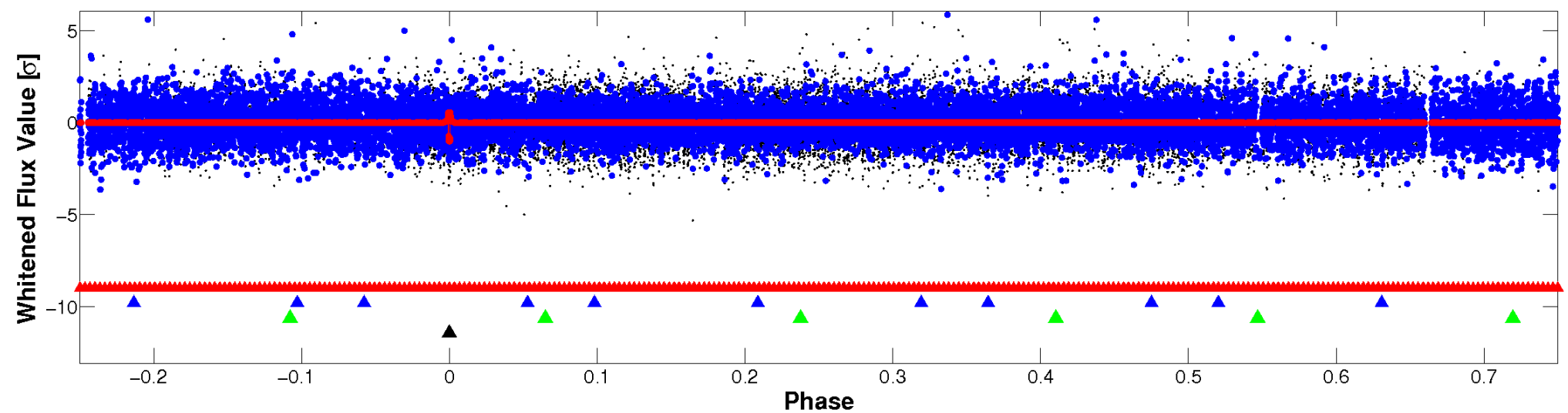


Non-Whitened Vs. Whitened Light Curve

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

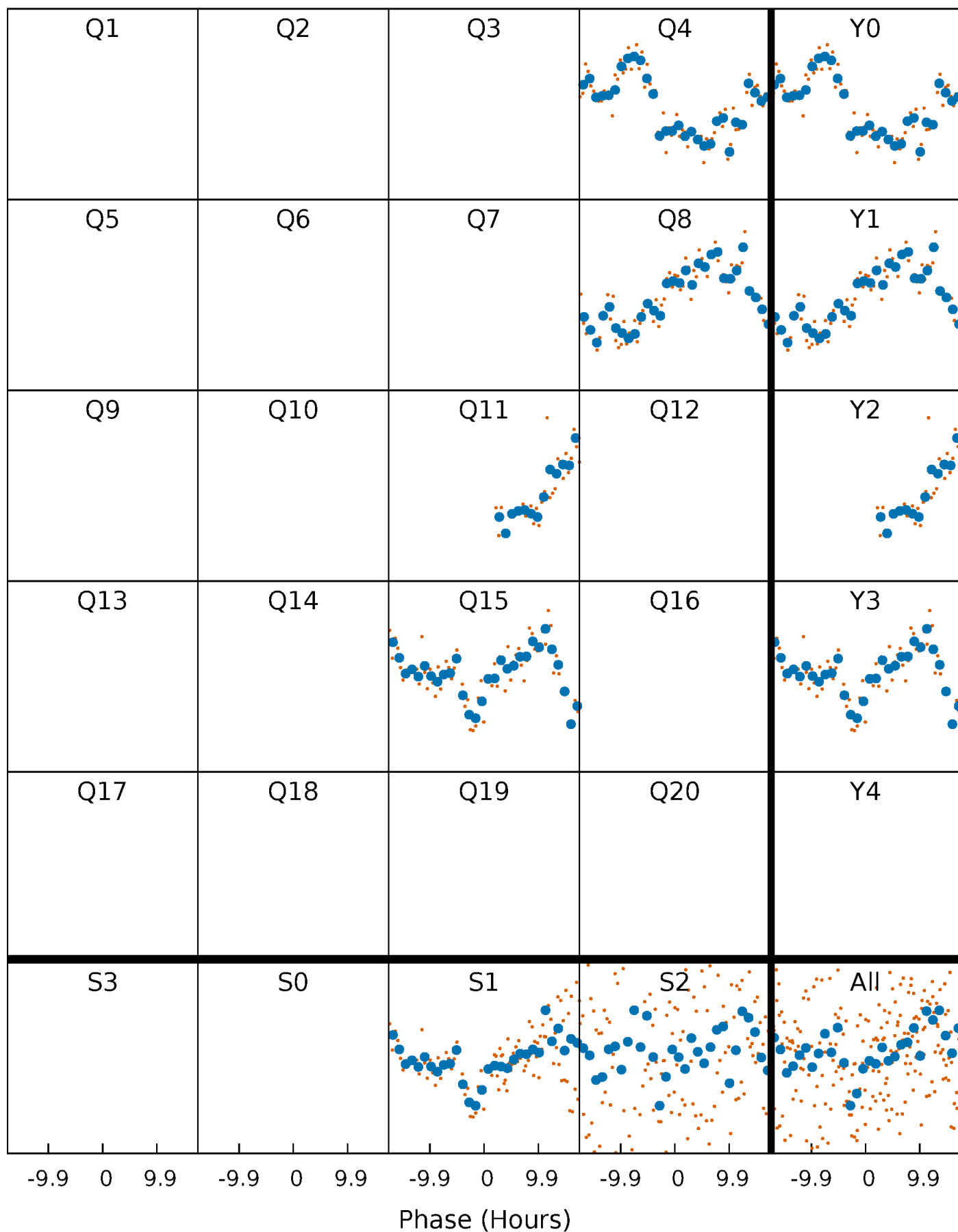


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



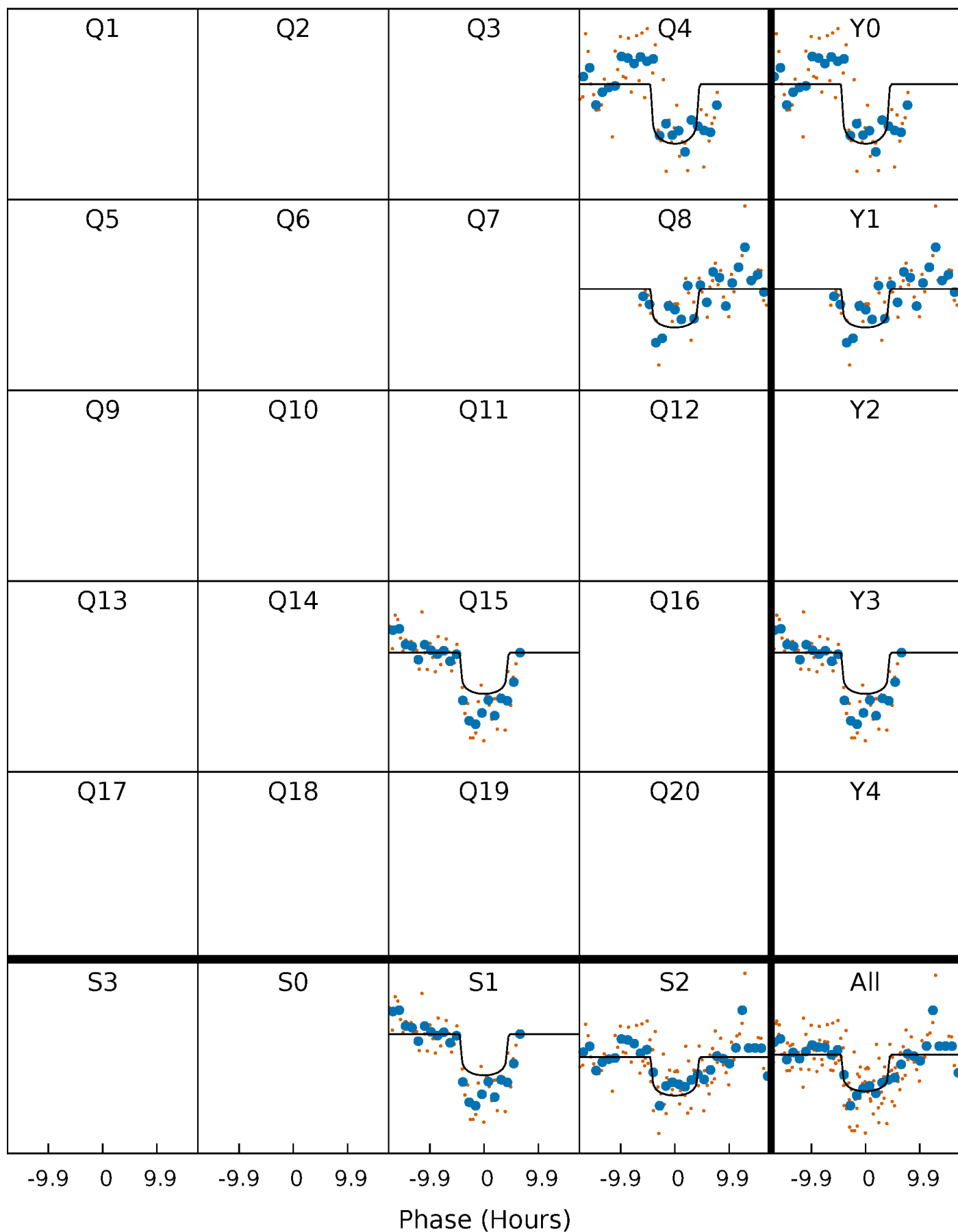
PDC Quarter-Phased Transit Curves

TCE 003866552-04 $P=317.061935$ Days $T_0=429.926346$ (BKJD)



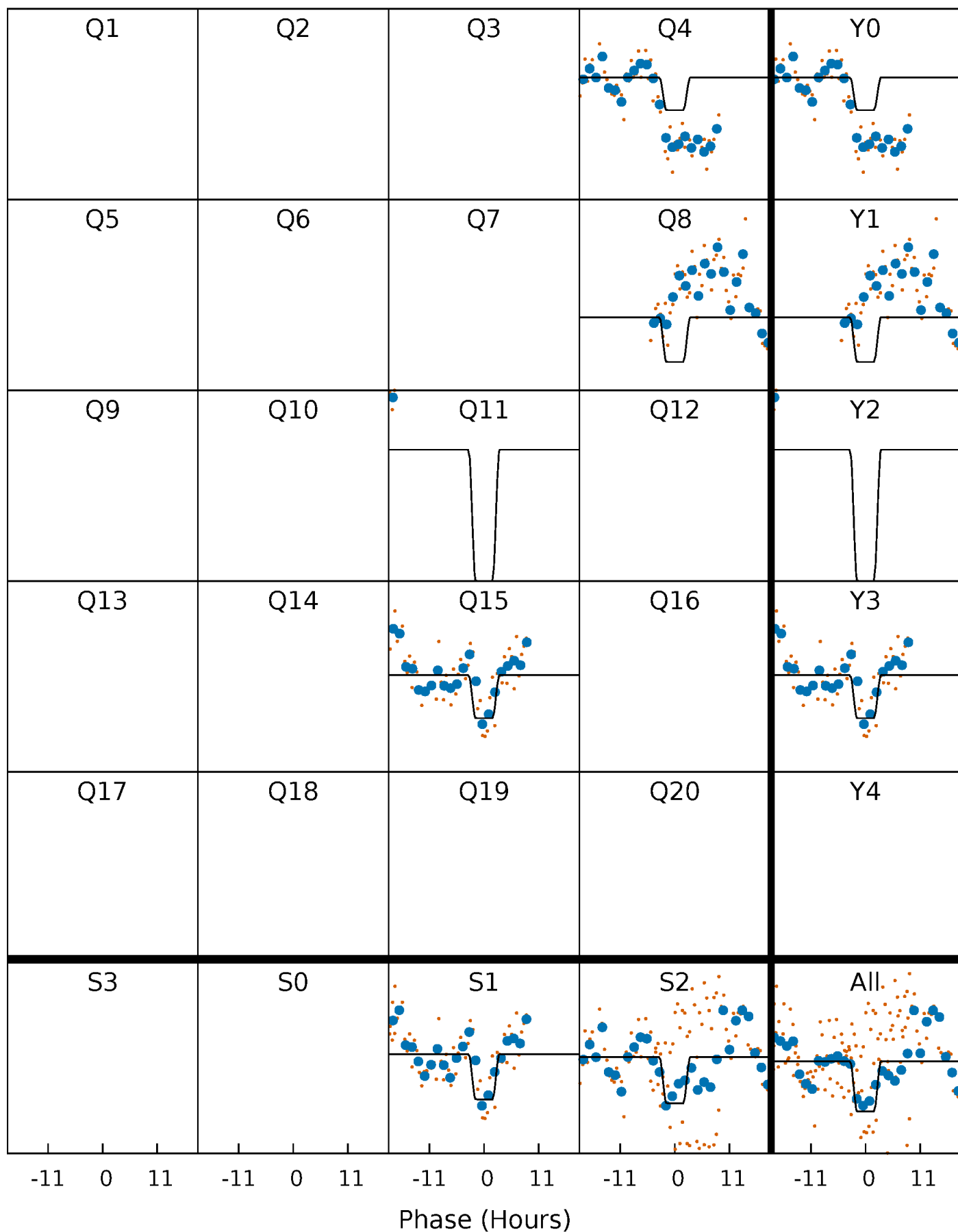
DV Quarter-Phased Transit Curves

TCE 003866552-04 $P=317.061935$ Days $T_0=429.926346$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

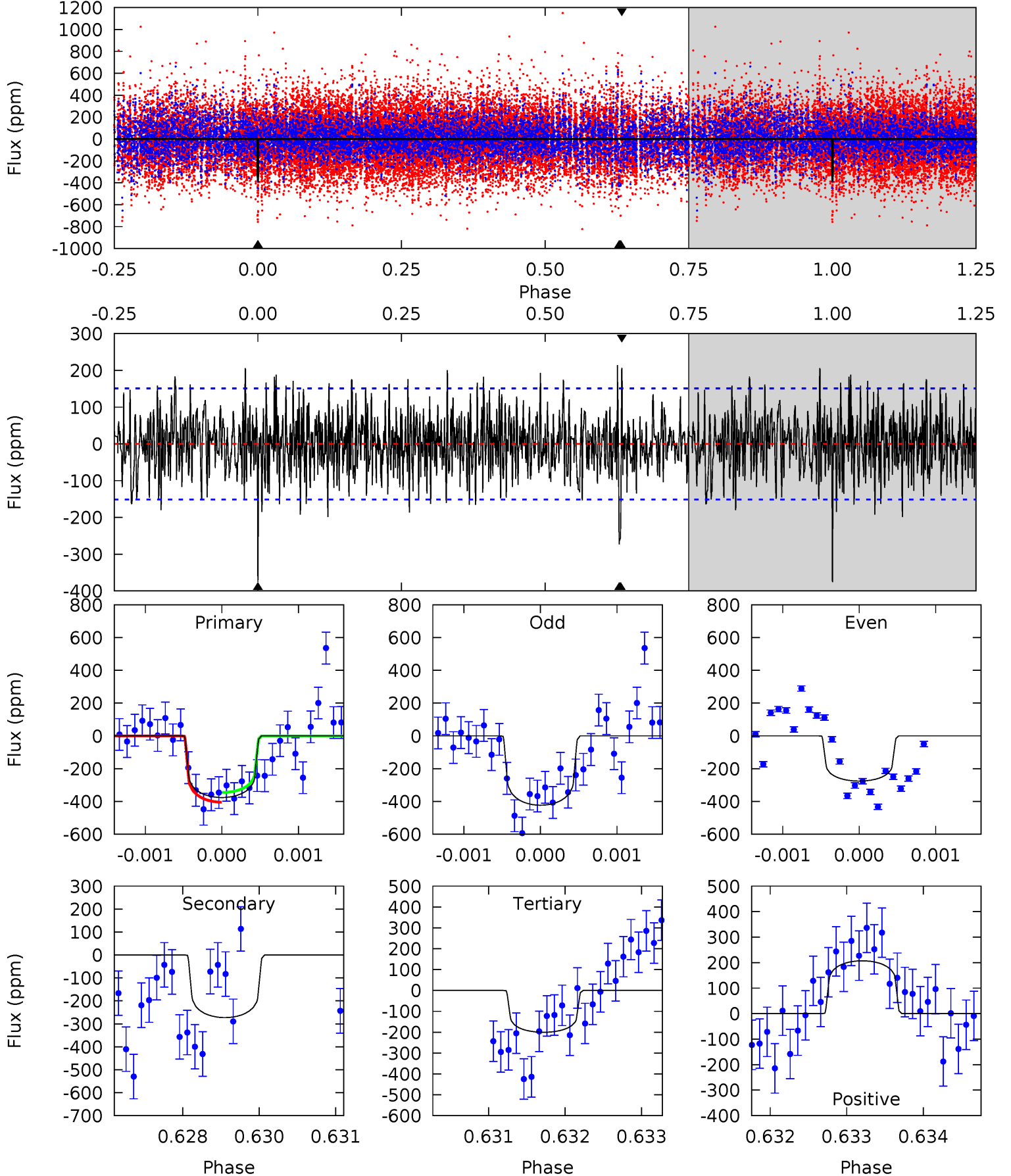
TCE 003866552-04 $P=317.047117$ Days $T_0=429.878814$ (BKJD)



DV Model-Shift Uniqueness Test

003866552-04, P = 317.061935 Days, E = 112.864411 Days

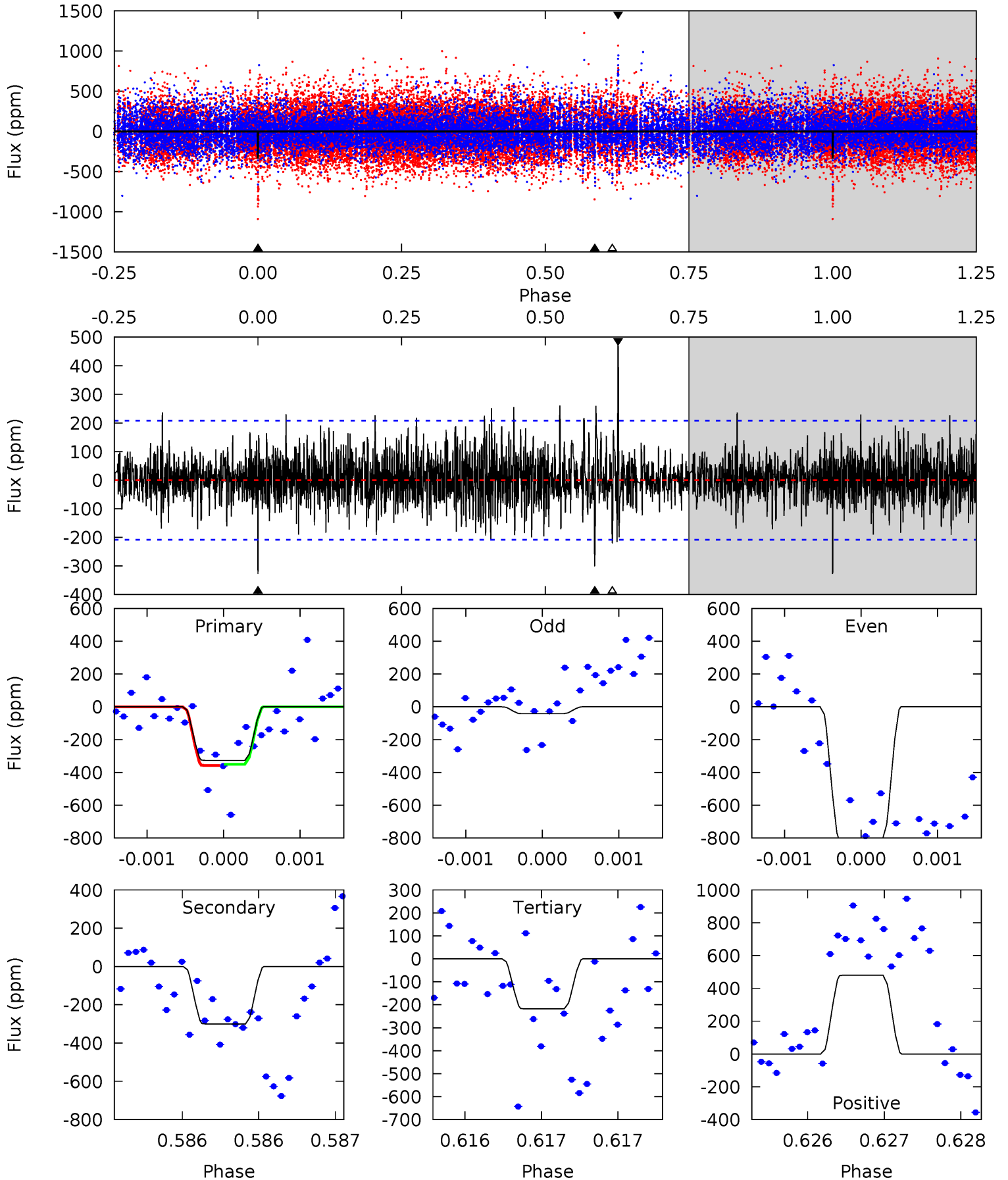
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	9.78	7.18	7.42	5.42	3.24	2.32	6.29	6.05	2.59	2.35	2.46	1.30	0.36	1.06



Alt Model-Shift Uniqueness Test

003866552-04, P = 317.047117 Days, E = 112.831697 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.63	7.93	5.75	12.7	5.49	3.36	1.76	2.88	-4.05	2.18	-4.76	9.80	1.09	0.60	0.10



Stellar Parameters For KIC 003866552

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.394^{+0.340}_{-0.060}$	$-0.320^{+0.350}_{-0.300}$	$4.666^{+0.412}_{-1.752}$	$1.967^{+0.134}_{-0.336}$	$0.027^{+0.069}_{-0.005}$
	+3%/-3%	+10%/-2%	+109%/-94%	+9%/-38%	+7%/-17%	+251%/-20%
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 003866552-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-273 ± 28	$8.45^{+5.07}_{-4.14}$	839^{+46}_{-77}	6505^{+3373}_{-1170}	2766^{+7907}_{-1679}
Alt.	-300 ± 38	$9.19^{+5.16}_{-4.68}$	844^{+45}_{-77}	6479^{+3345}_{-1203}	2555^{+8160}_{-1527}

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 $A_{obs} \gg 1.0$

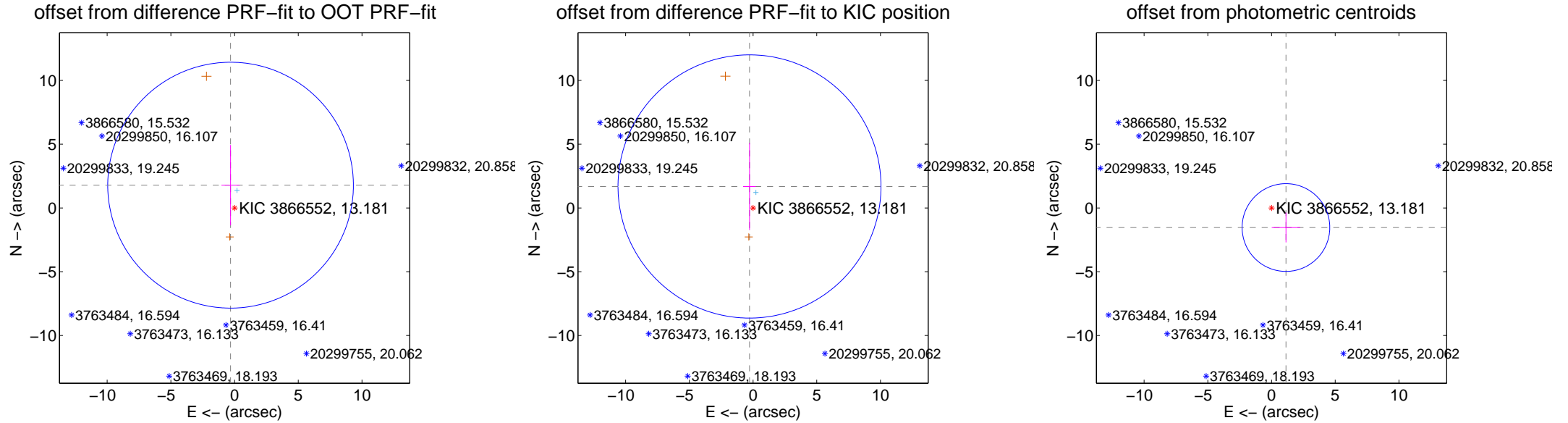
DV Centroid Data

Supplemental centroid analysis for 003866552-04. Kepler magnitude: 13.18. Transit SNR 7.08

There are 1 quarters with good PRF difference image offsets

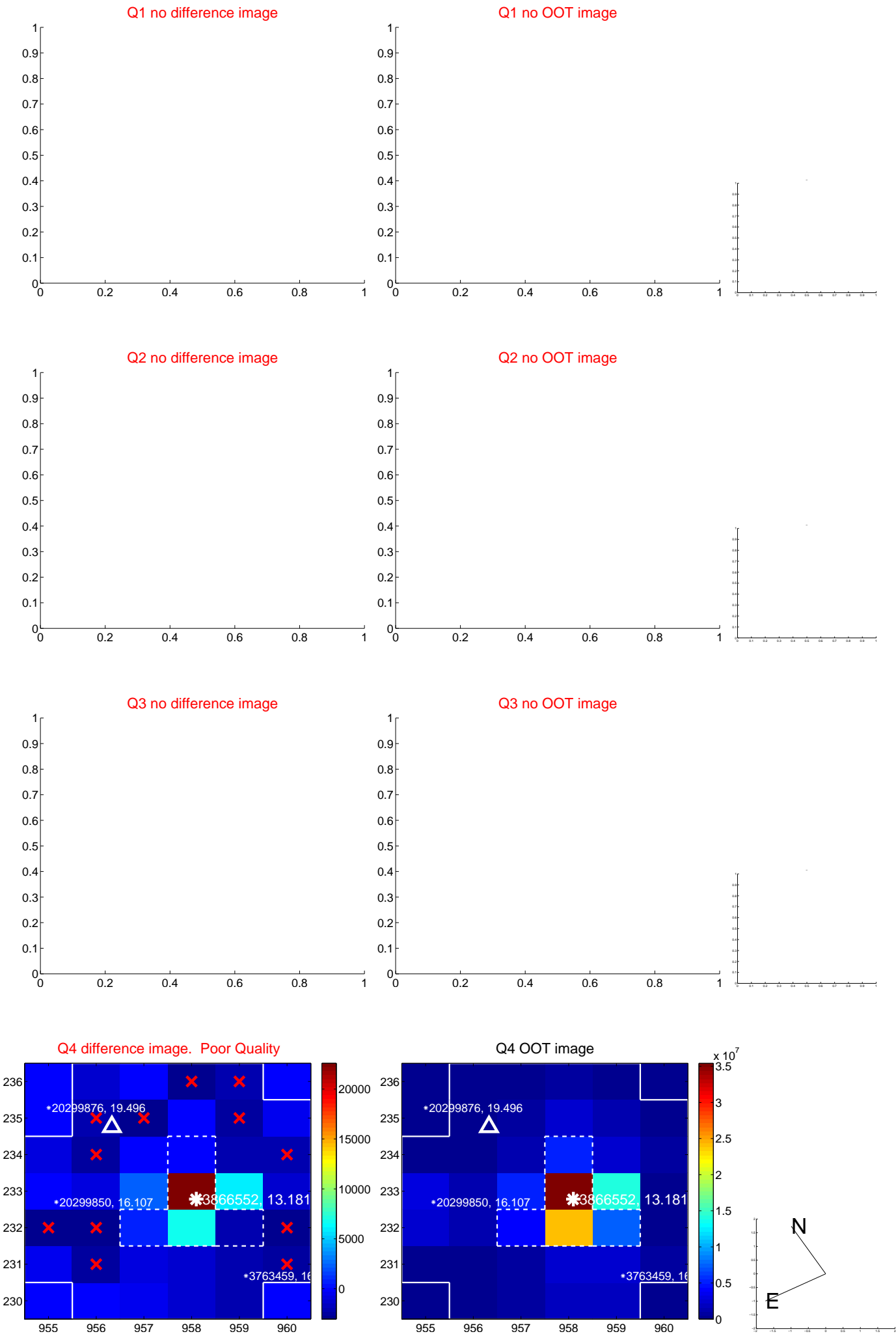
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.813 ± 3.213	0.56	0.315 ± 0.714	1.786 ± 3.149
PRF-fit source offset from KIC position	1.707 ± 3.439	0.50	0.278 ± 0.491	1.684 ± 3.415
photometric centroid source offset	1.91 ± 1.15	1.66	-1.13 ± 1.11	-1.53 ± 1.16



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

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



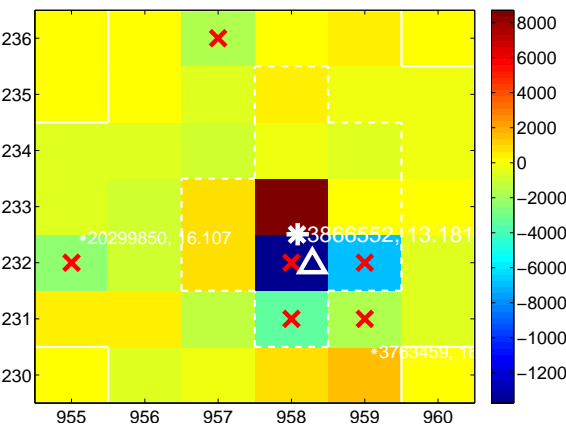
Q7 no difference image



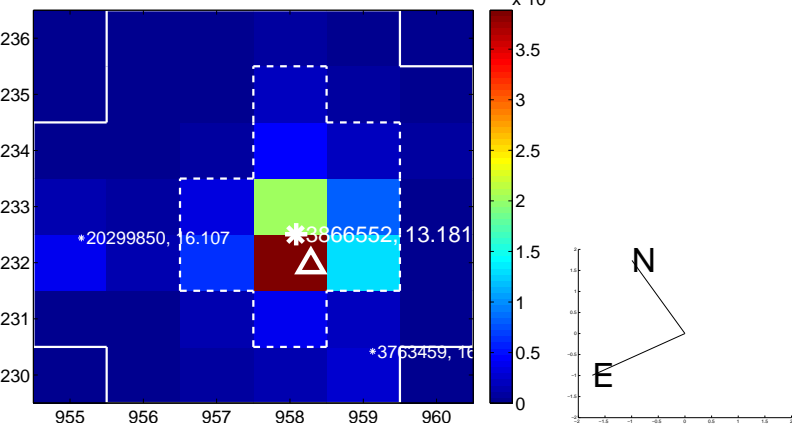
Q7 no OOT image



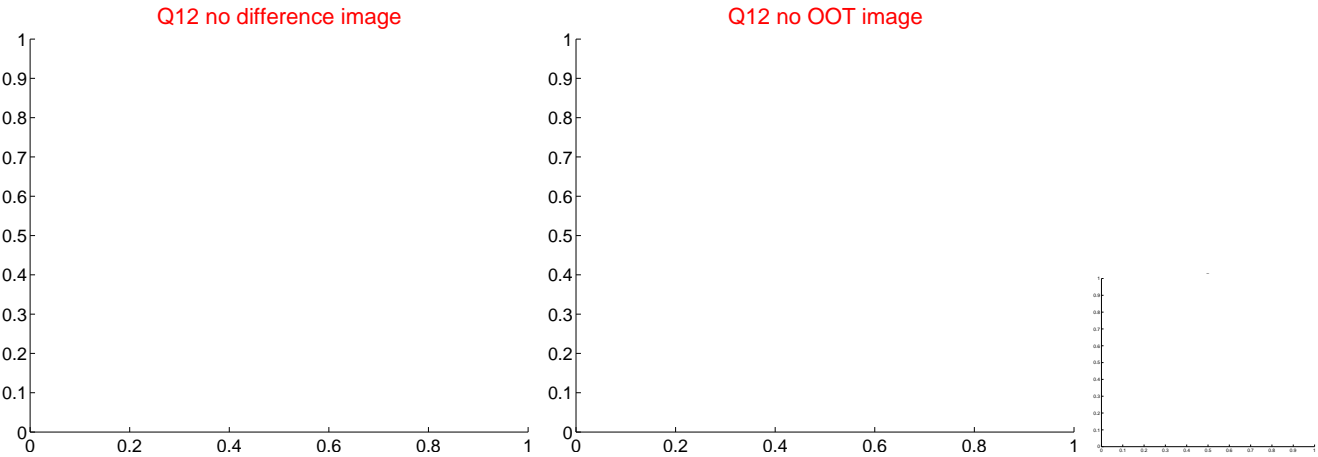
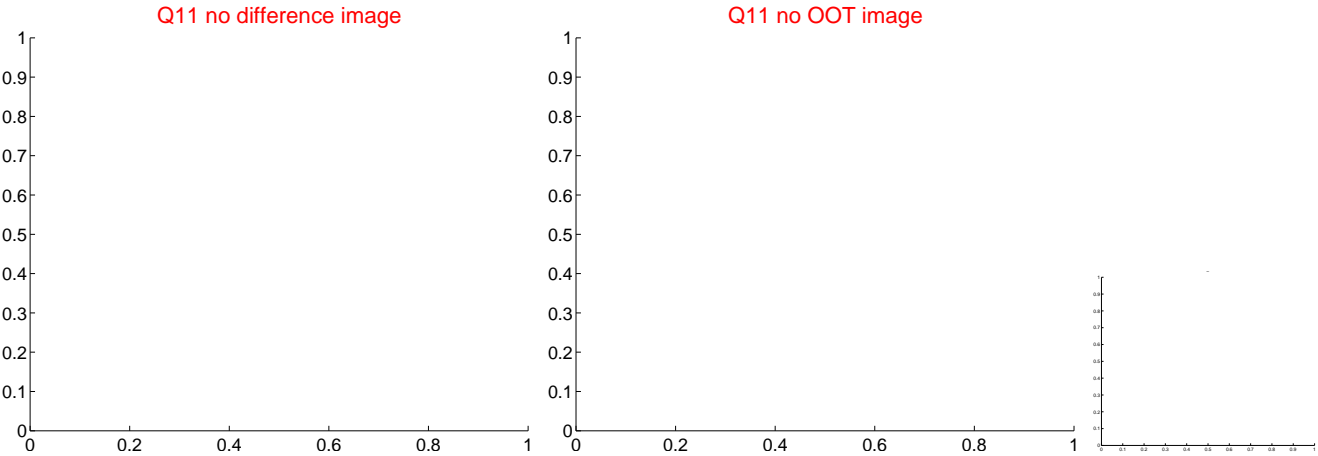
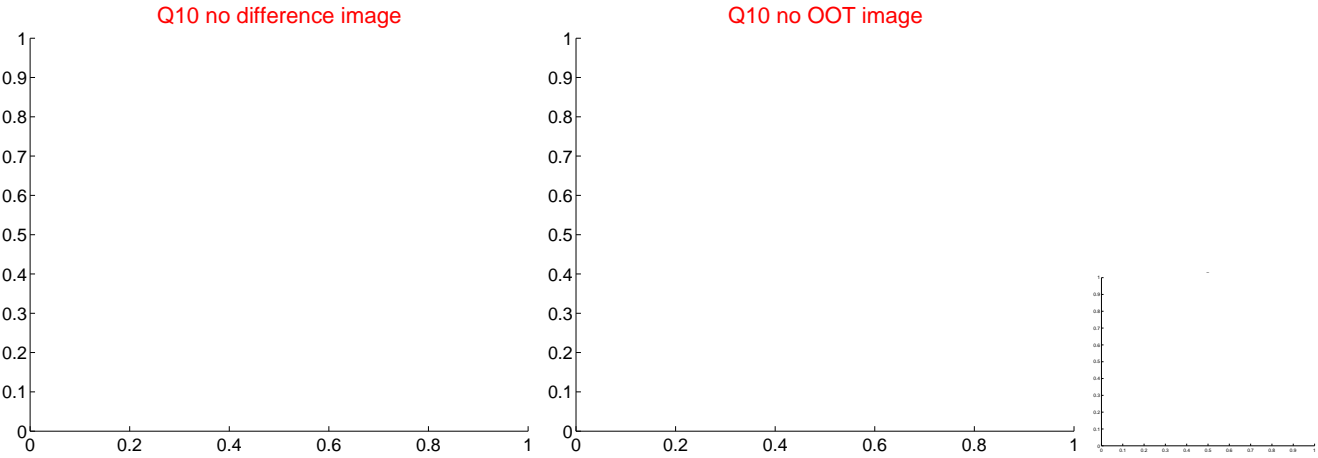
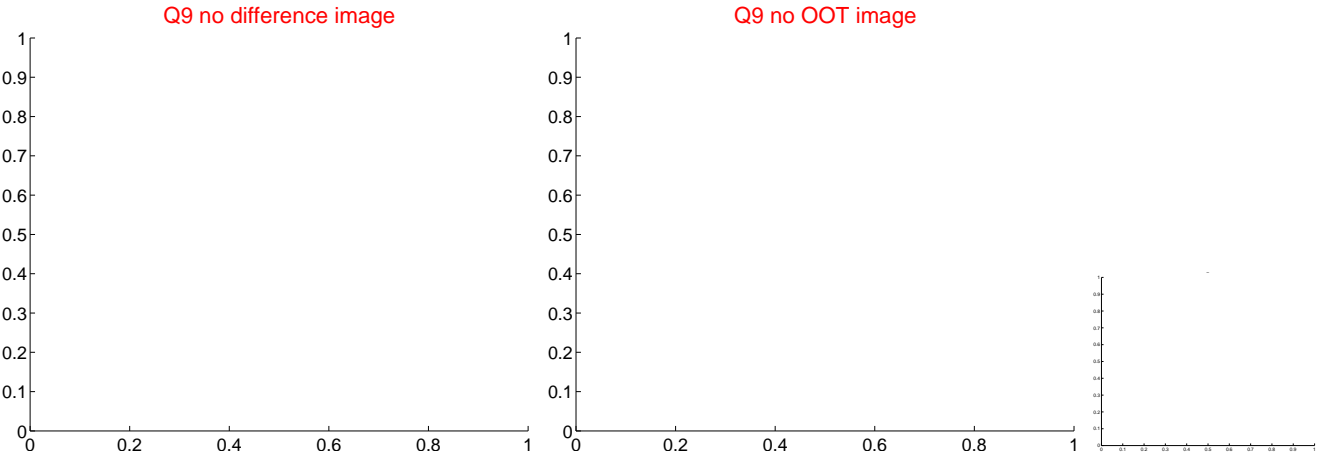
Q8 difference image. Poor Quality



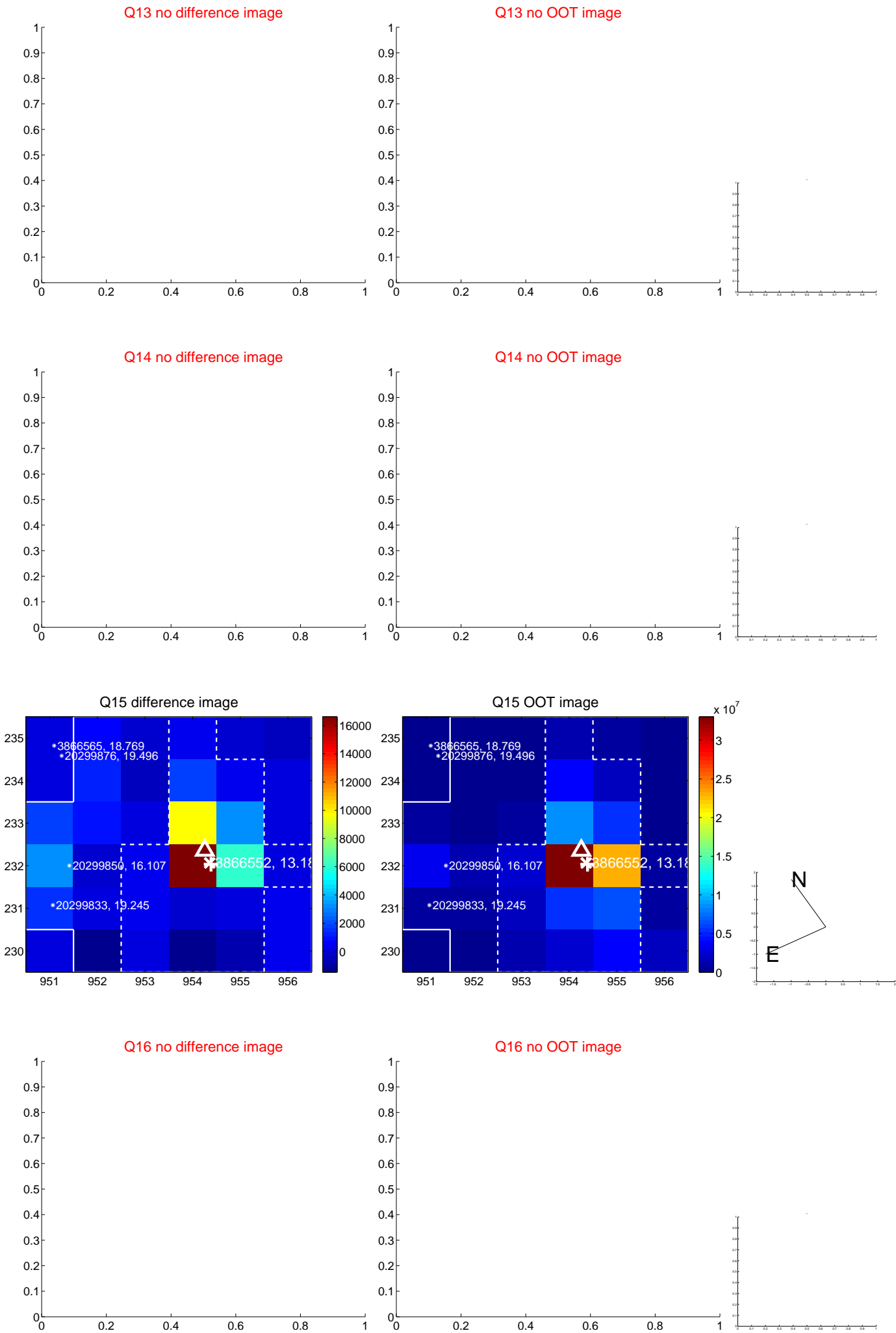
Q8 OOT image



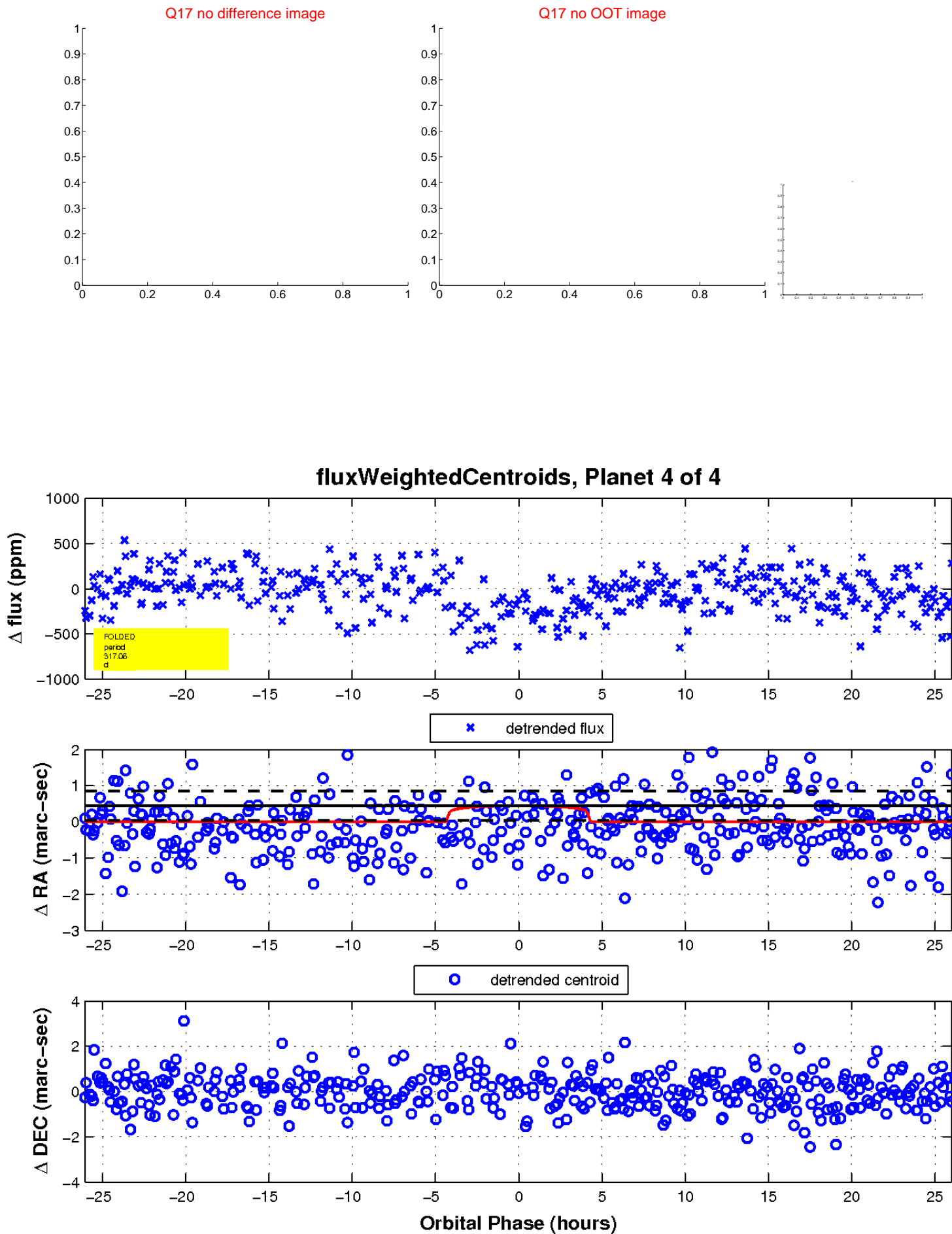
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

