

KIC 010196863

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})
010196863-01	OBS	No	1.603229	133.137942	7.8	12.223	8.6	4.2	2.19	7276	0.63	13360.73
010196863-02	OBS	No	20.817820	136.955929	237.3	23.586	27.9	11.4	2.19	7276	3.51	437.77
010196863-03	OBS	No	10.555693	133.528838	204.5	1.696	16.3	15.3	2.19	7276	3.64	1082.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010196863-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
010196863-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
010196863-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

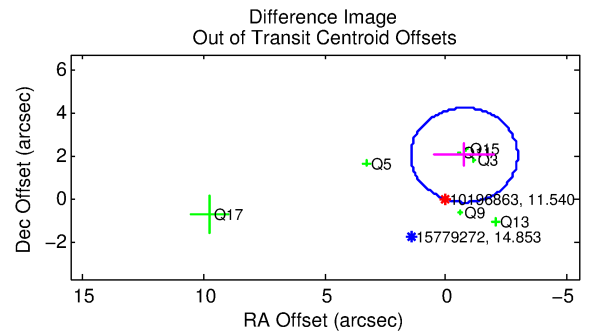
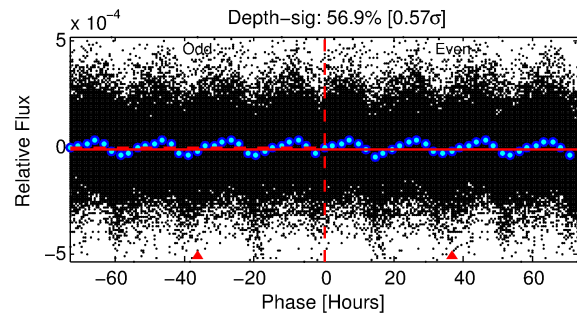
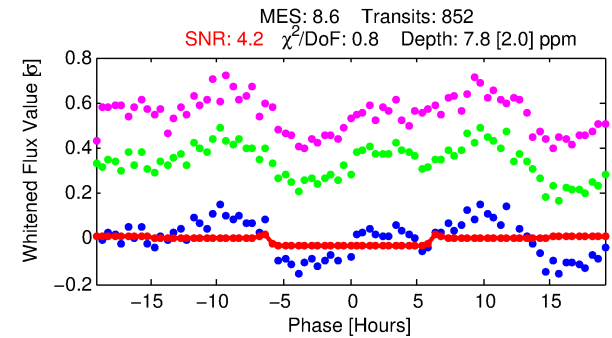
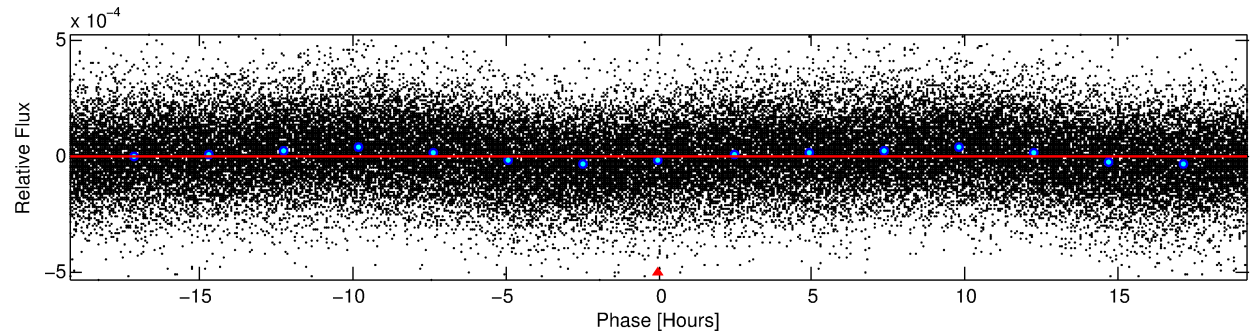
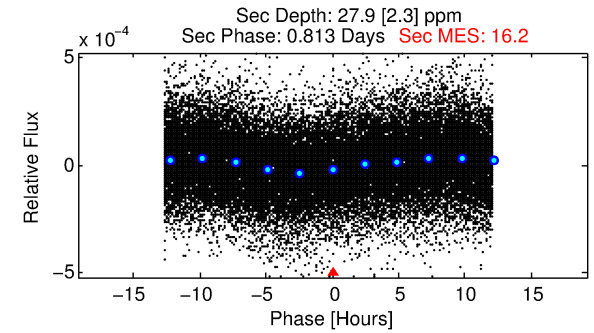
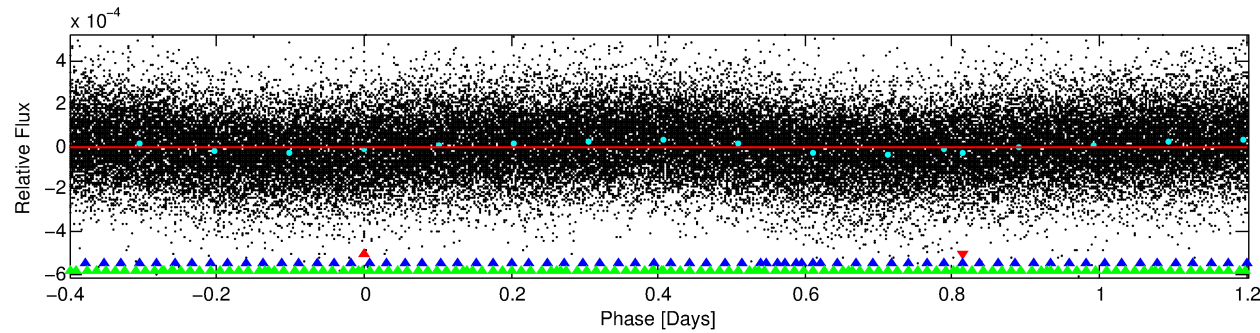
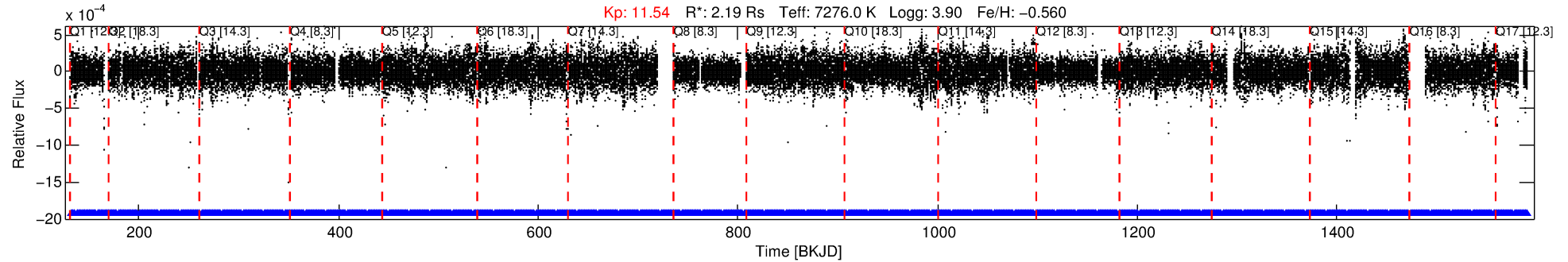
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010196863-01

No Significant Match Found

DV One-Page Summary

KIC: 10196863 Candidate: 1 of 3 Period: 1.603 d



DV Fit Results:

Period = 1.60323 [0.00004] d
Epoch = 133.1379 [0.0100] BKJD
Rp/R* = 0.0026 [0.0028]
a/R* = 1.15 [1.86]
b = 0.47 [10.71]
Seff = 13360.73 [8777.57]
Teq = 2741 [450] K
Rp = 0.63 [0.72] Re
a = 0.0301 [0.0120] AU
Ag = 34.62 [76.97] [0.44σ]
Teffp = 10281 [5490] K [1.37σ]

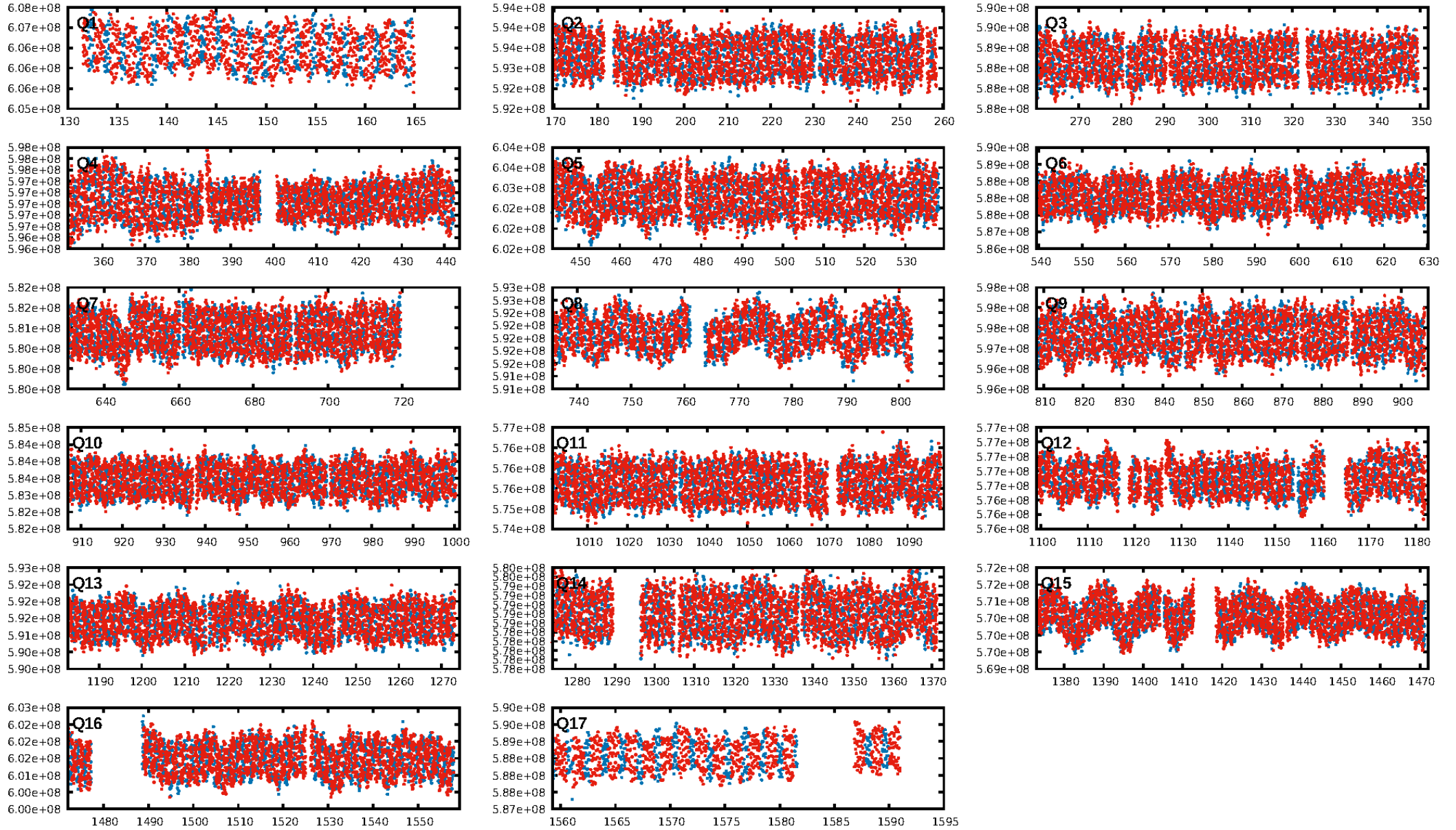
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [17.41σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.74e-77
RollingBand-fgt: 1.00 [813/813]
GhostDiagnostic-chr: 1.788
Centroid-sig: 83.5%
Centroid-so: 0.495 arcsec [0.54σ]
OotOffset-rm: 2.177 arcsec [2.96σ]
KicOffset-rm: 2.203 arcsec [3.29σ]
OotOffset-st: 0/3/0/4 [7]
KicOffset-st: 0/3/0/4 [7]
DiffImageQuality-fgm: 0.29 [2/7]
DiffImageOverlap-fno: 1.00 [17/17]

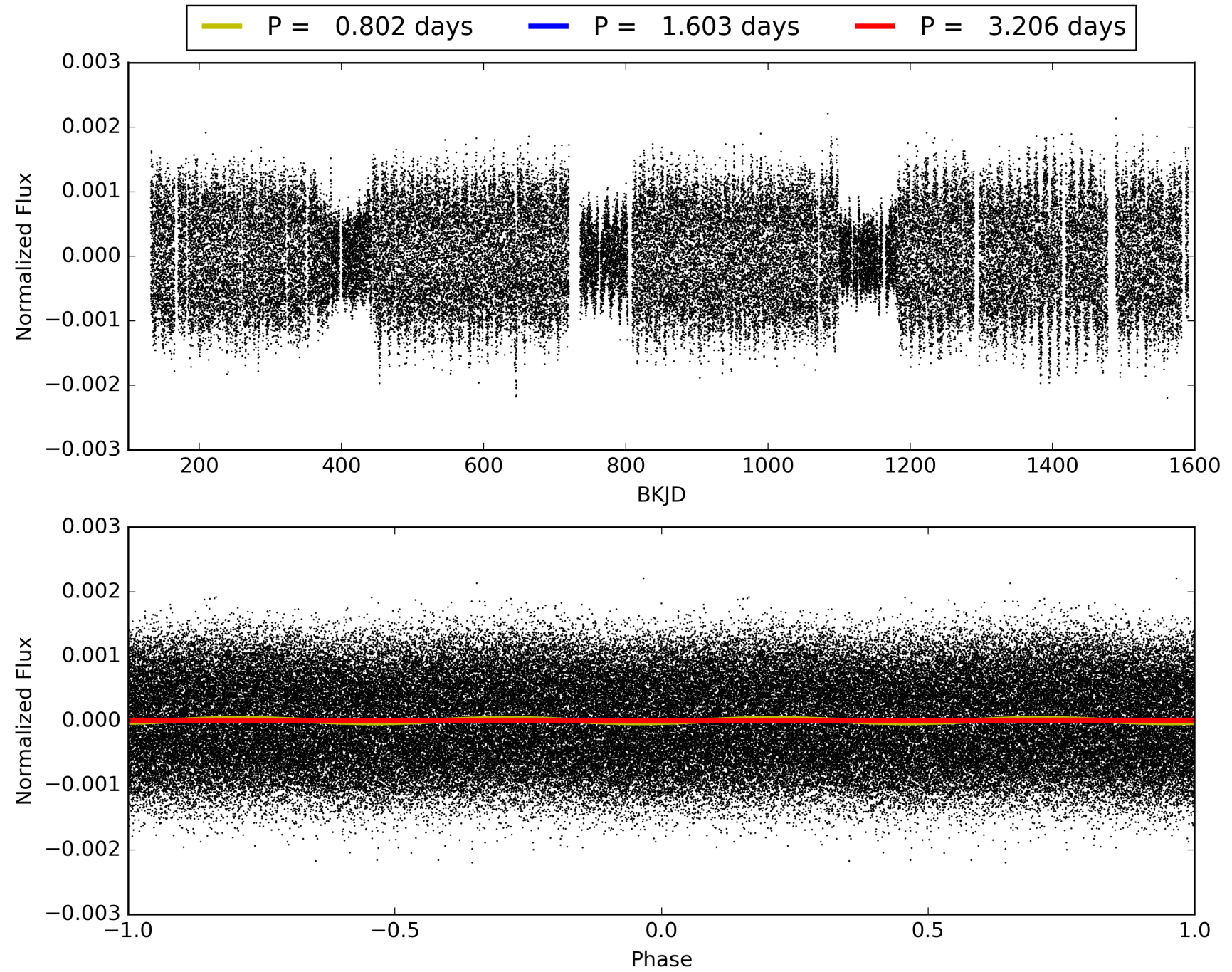
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:13:31 Z

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

TCE 010196863-01, PDC Light Curves

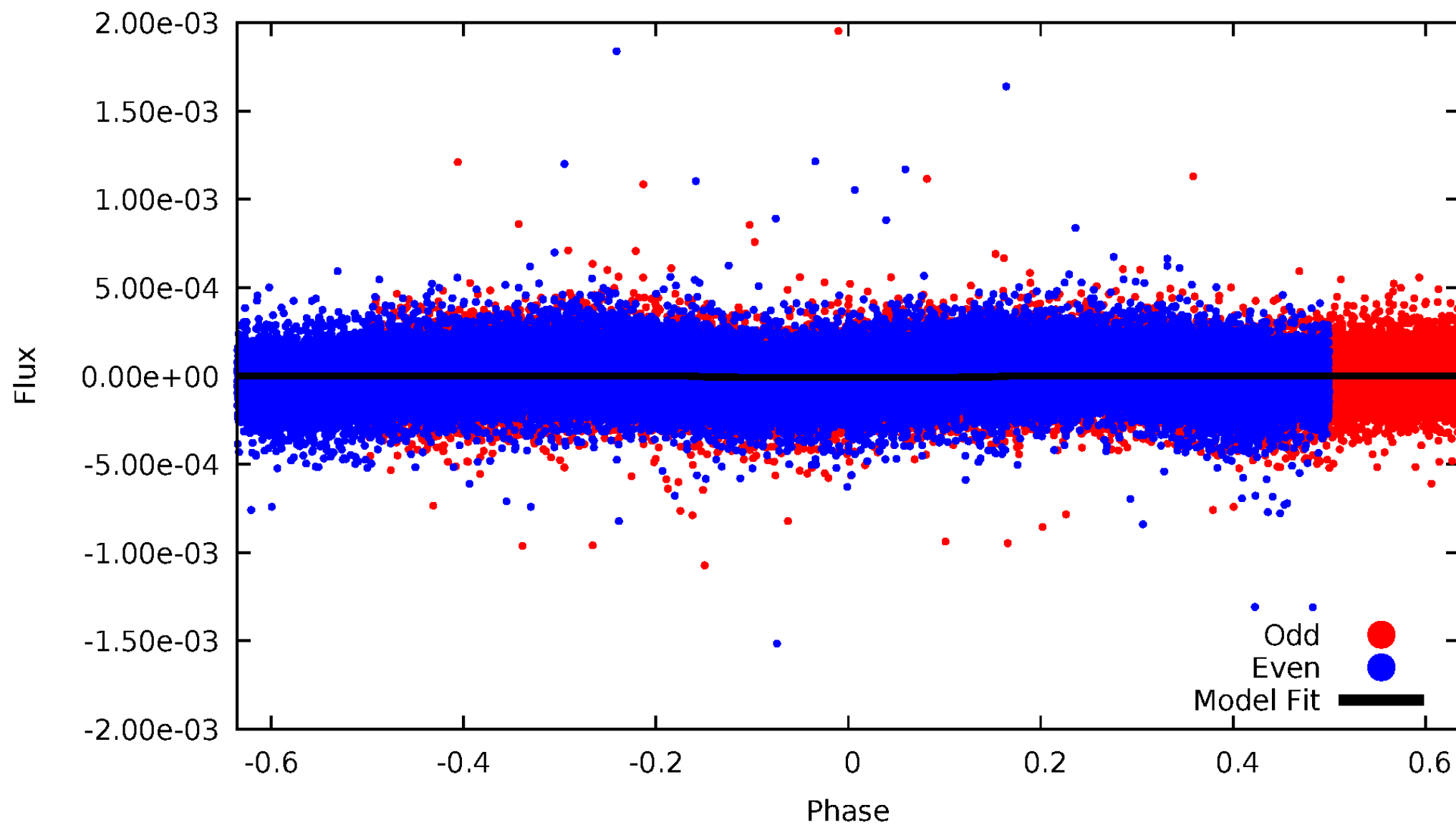


TCE 010196863-01



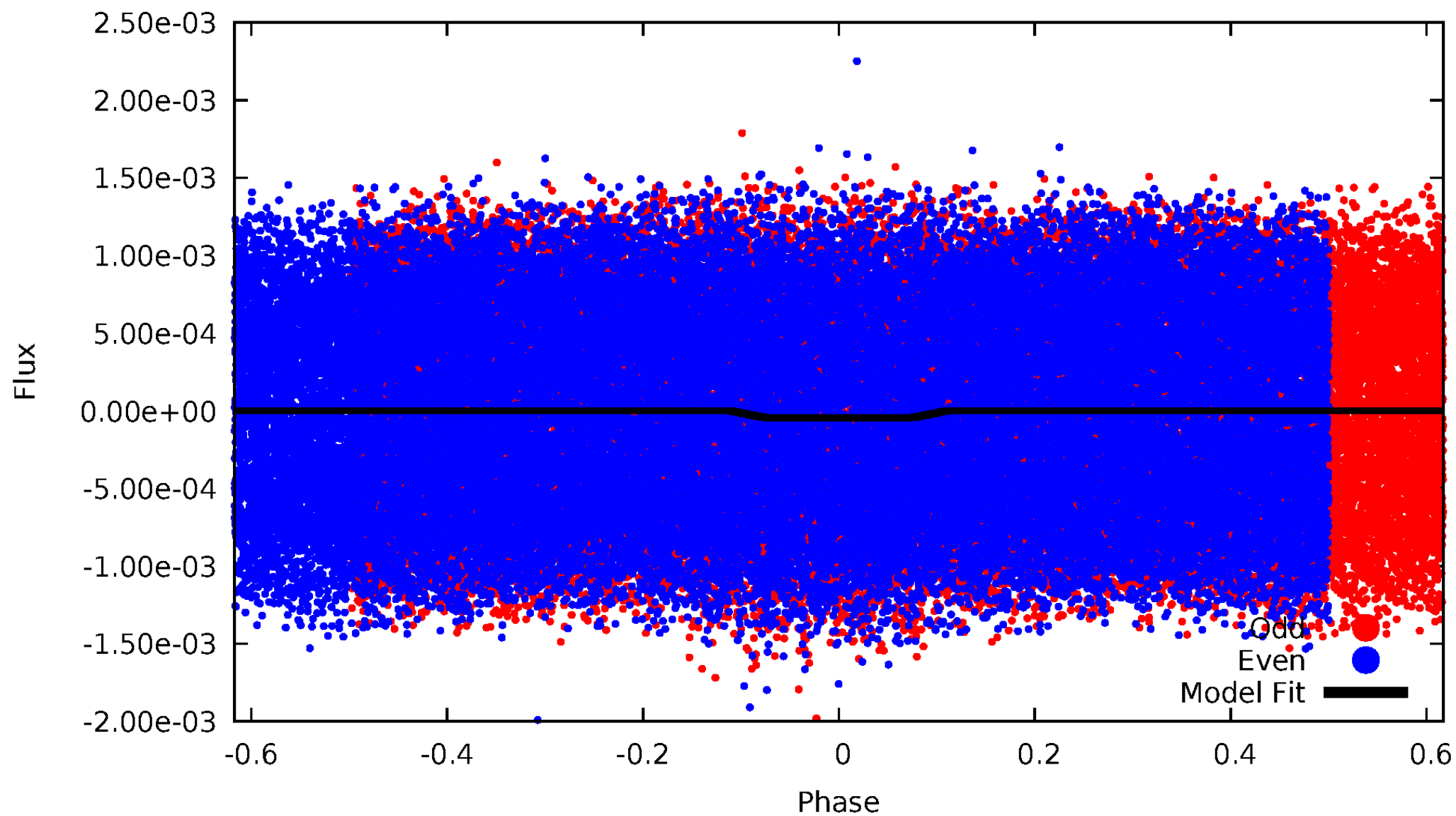
DV Odd/Even

TCE 010196863-01



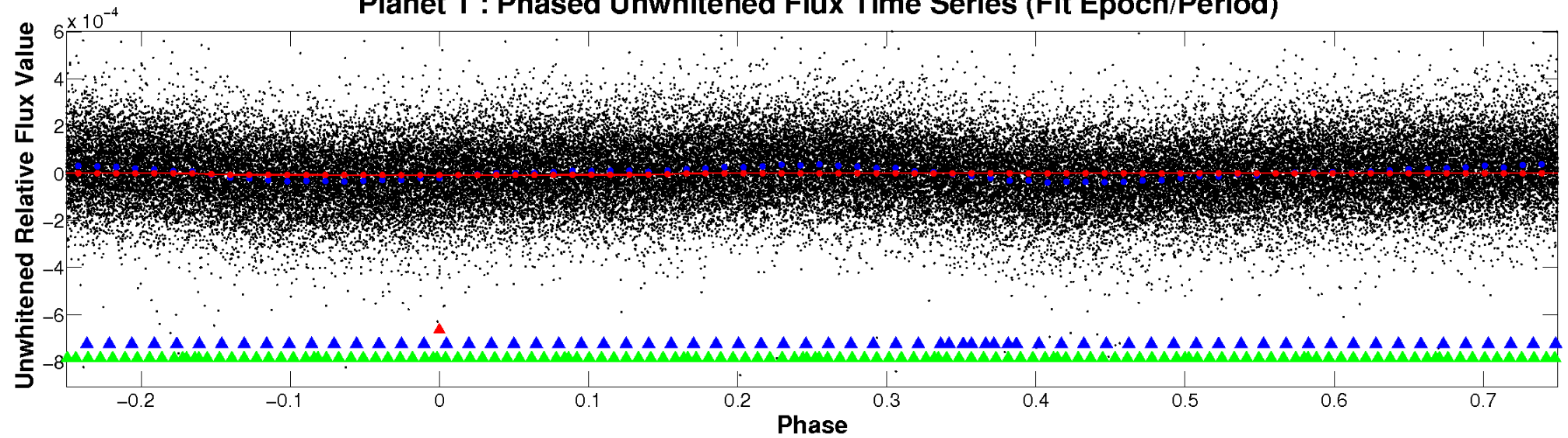
ALT Odd/Even

TCE 010196863-01

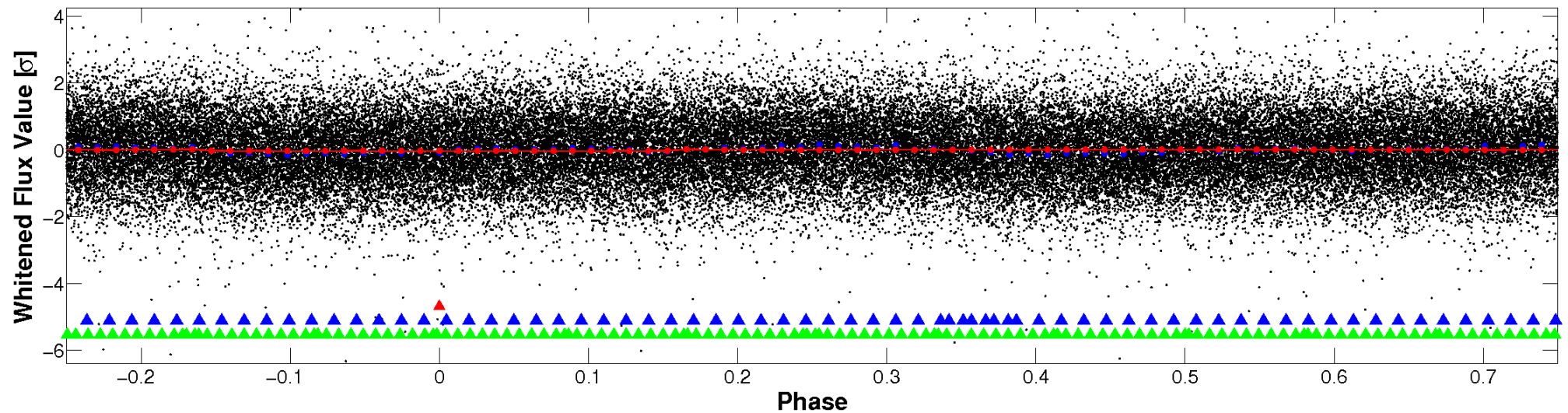


Non-Whitened Vs. Whitened Light Curve

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

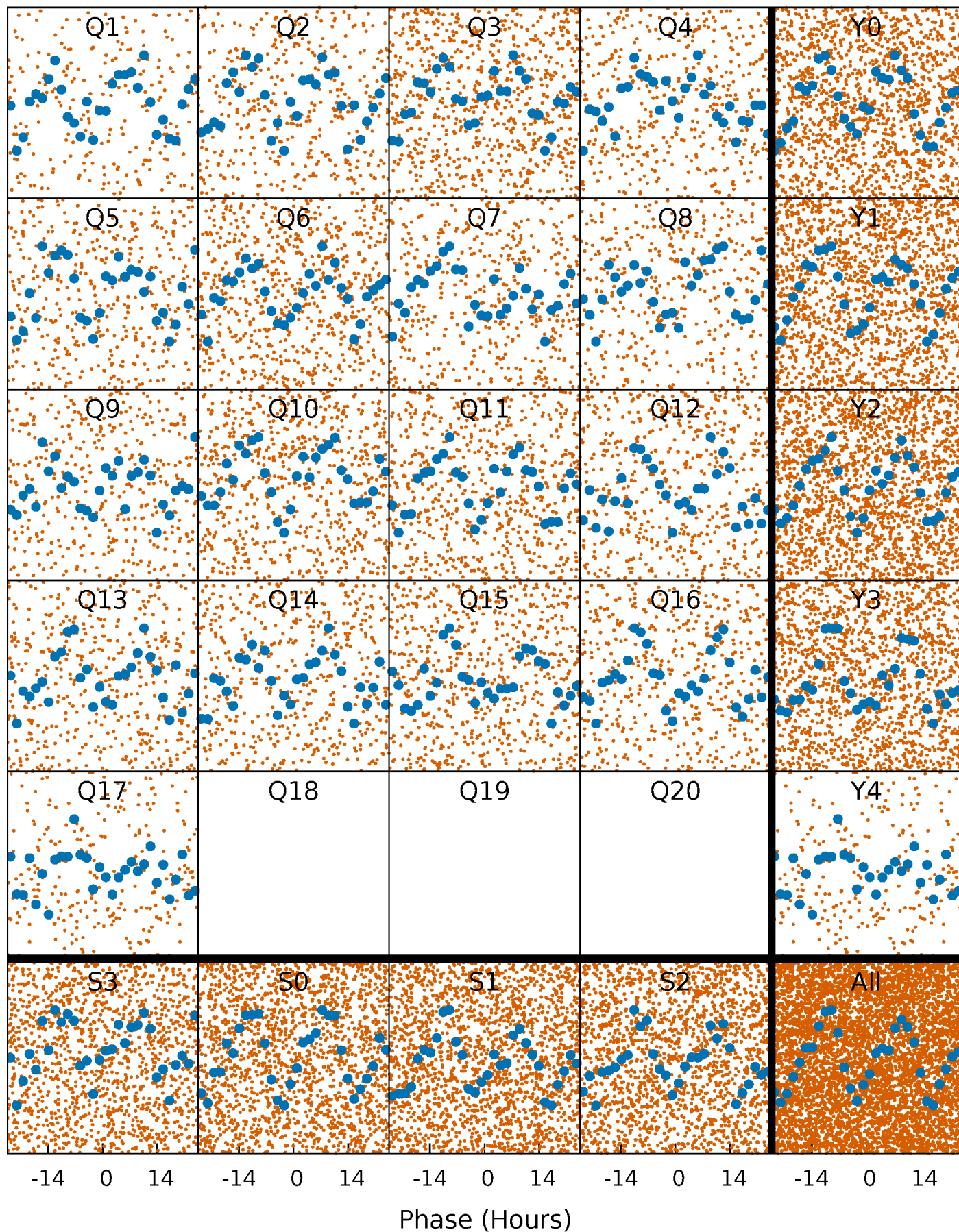


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



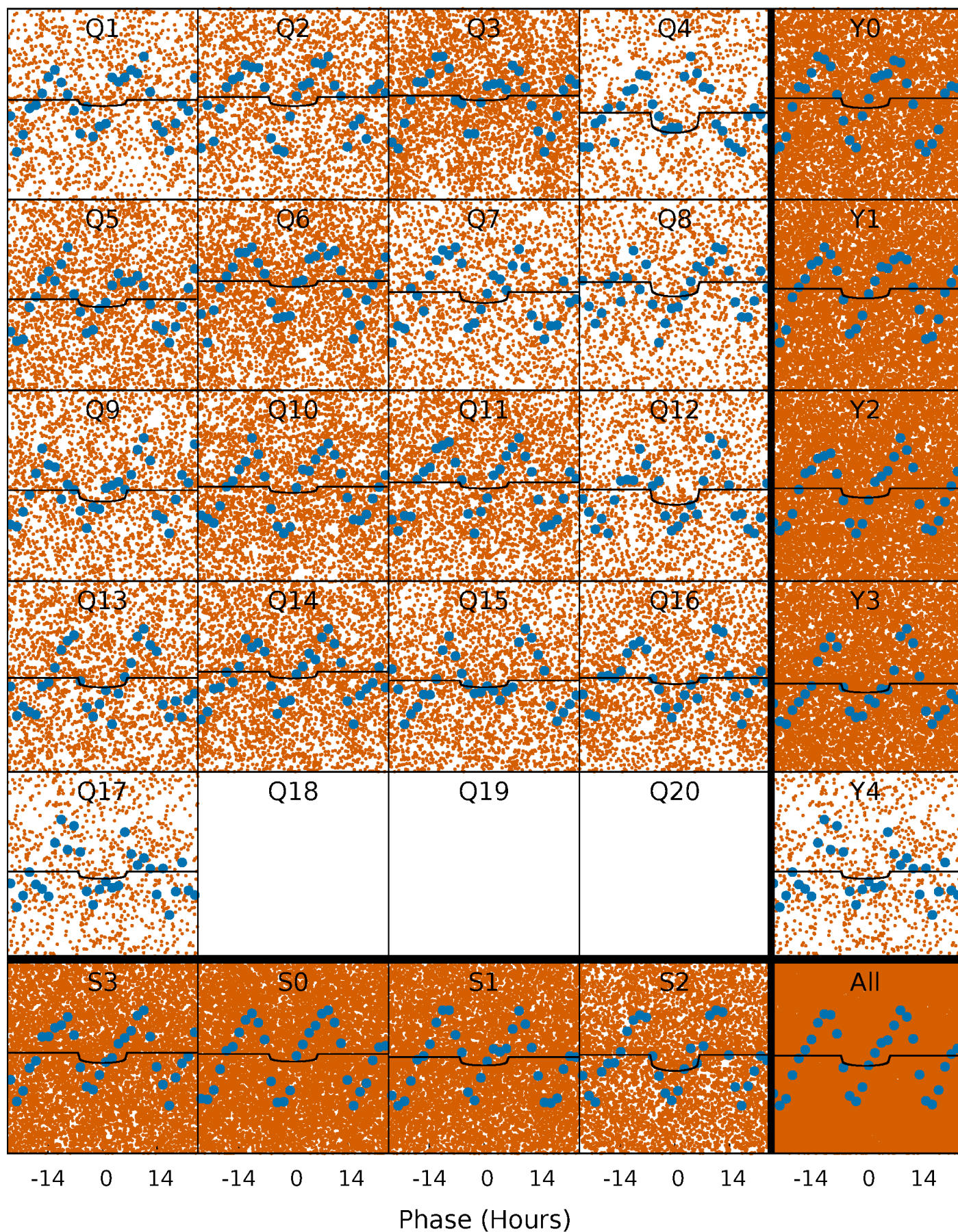
PDC Quarter-Phased Transit Curves

TCE 010196863-01 P= 1.603229 Days $T_0=133.137942$ (BKJD)



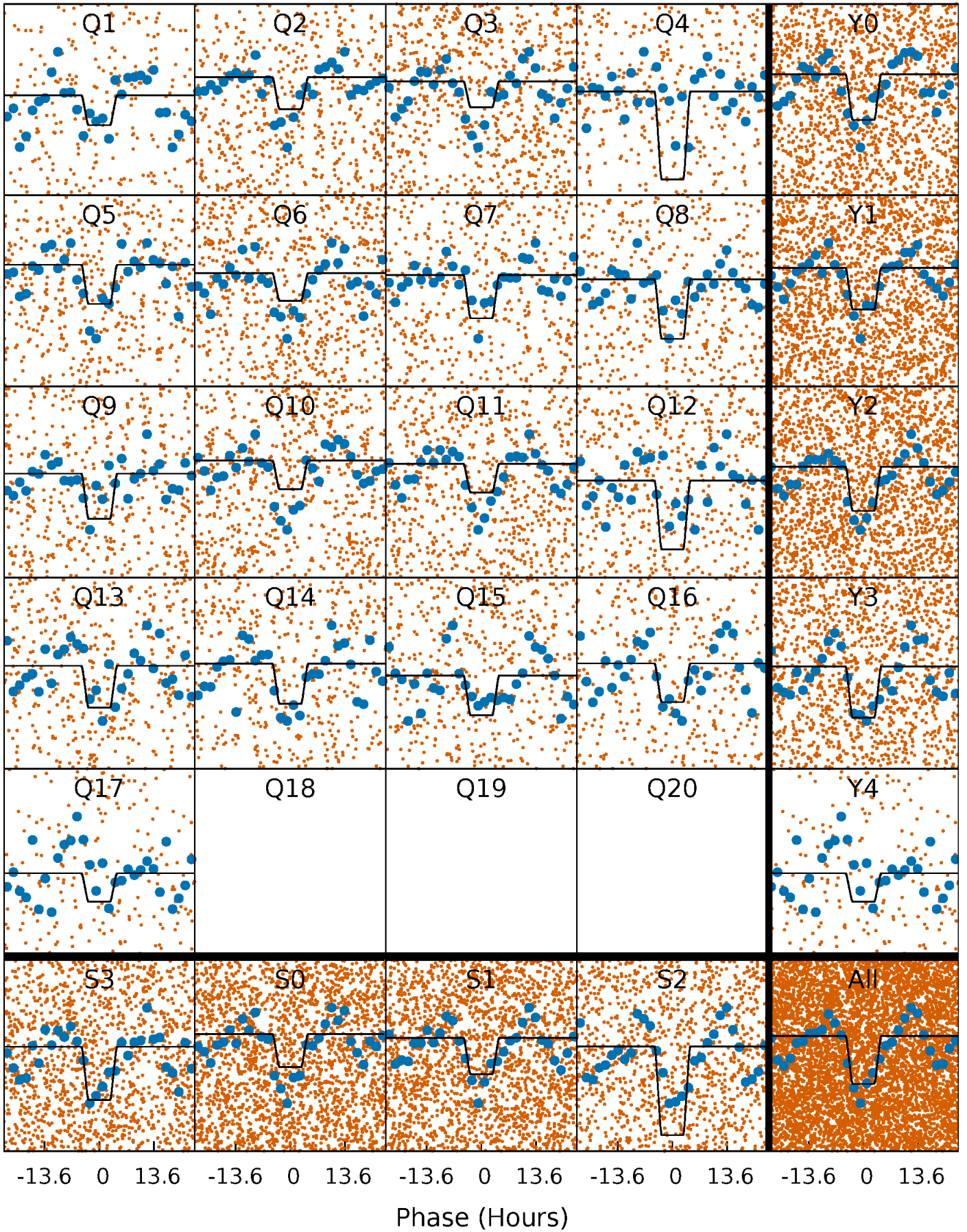
DV Quarter-Phased Transit Curves

TCE 010196863-01 P= 1.603229 Days $T_0=133.137942$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

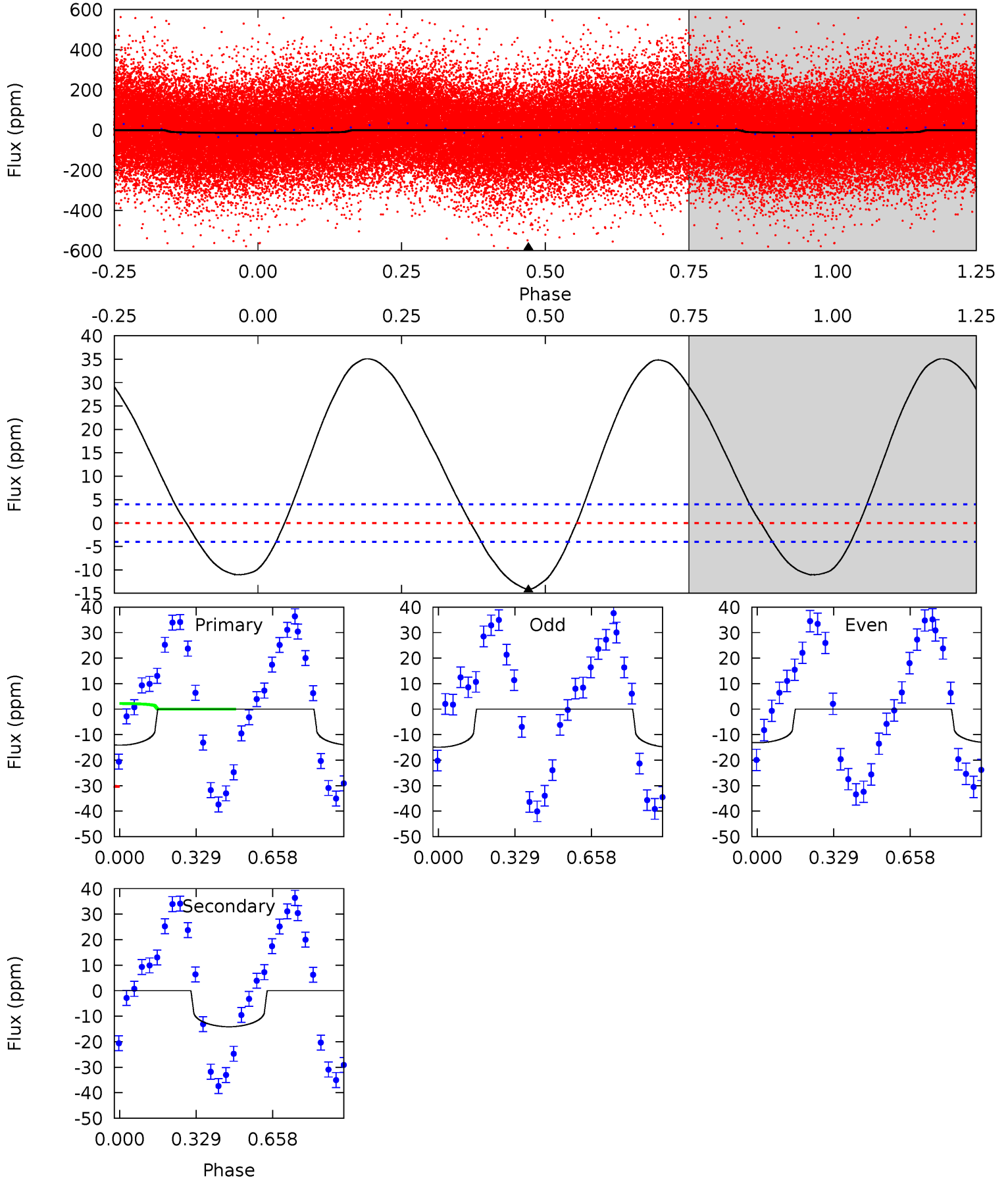
TCE 010196863-01 P= 1.603253 Days $T_0=133.039007$ (BKJD)



DV Model-Shift Uniqueness Test

010196863-01, P = 1.603229 Days, E = 129.931484 Days

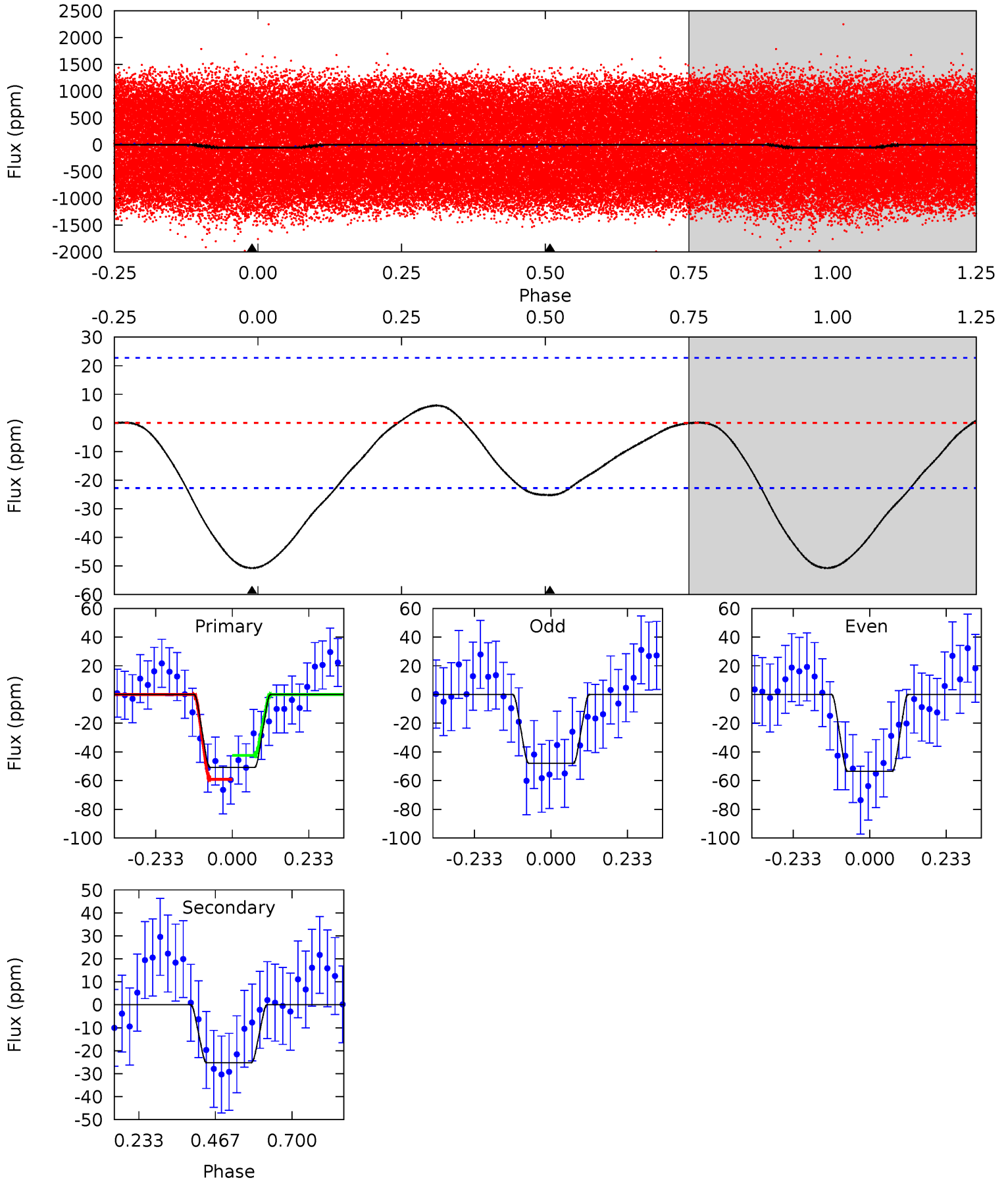
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	15.2	0	0	4.31	0.98	12.6	15.2	15.2	15.2	15.2	0.95	1.14	0.71	15.3



Alt Model-Shift Uniqueness Test

010196863-01, P = 1.603253 Days, E = 131.435754 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.78	4.86	0	0	4.38	1.19	0.45	9.78	9.78	4.86	4.86	0.54	1.08	0.11	1.61



Stellar Parameters For KIC 010196863

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7276^{+233}_{-285}	$3.905^{+0.375}_{-0.125}$	$-0.560^{+0.300}_{-0.300}$	$2.193^{+0.487}_{-0.905}$	$1.410^{+0.187}_{-0.280}$	$0.188^{+0.593}_{-0.071}$
	+3%/-4%	+10%/-3%	+54%/-54%	+22%/-41%	+13%/-20%	+315%/-38%
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 010196863-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-14 ± 1	$0.73^{+0.60}_{-0.47}$	3775^{+292}_{-397}	7786^{+8878}_{-2105}	12^{+90}_{-8}
Alt.	-25 ± 5	$1.54^{+0.73}_{-0.63}$	3753^{+293}_{-398}	6011^{+1931}_{-991}	$5.264^{+9.812}_{-2.995}$

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 $A_{obs} \gg 1.0$

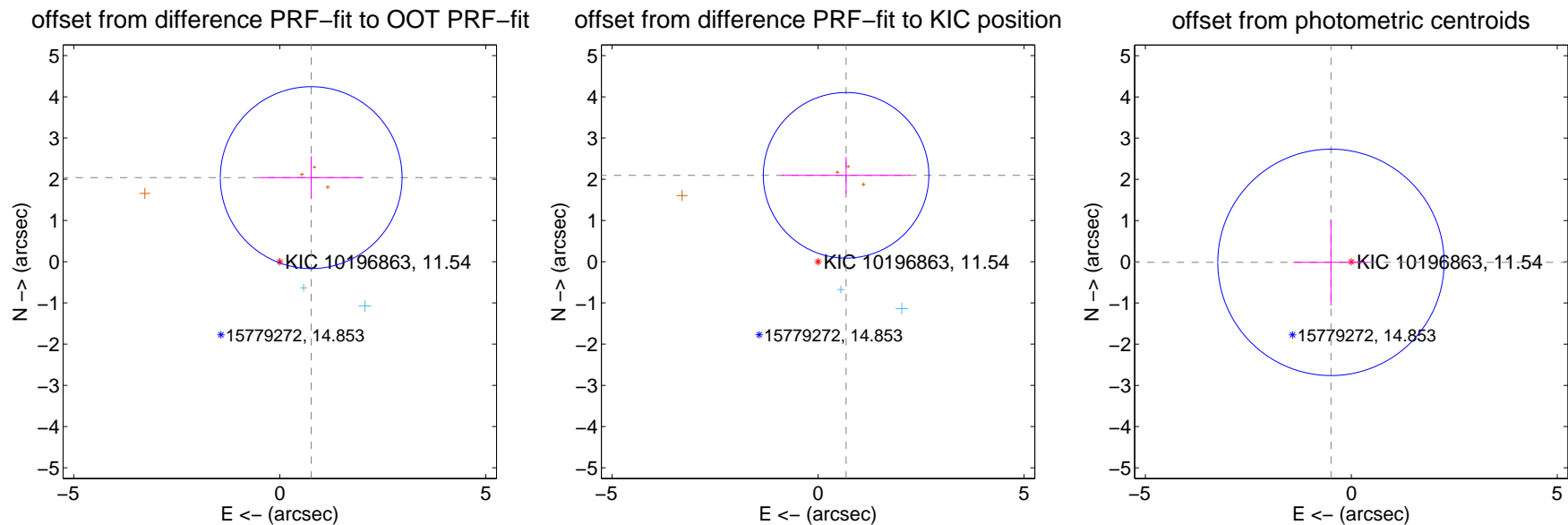
DV Centroid Data

Supplemental centroid analysis for 010196863-01. **Kepler magnitude: 11.54.** Transit SNR 4.16

There are 2 quarters with good PRF difference image offsets

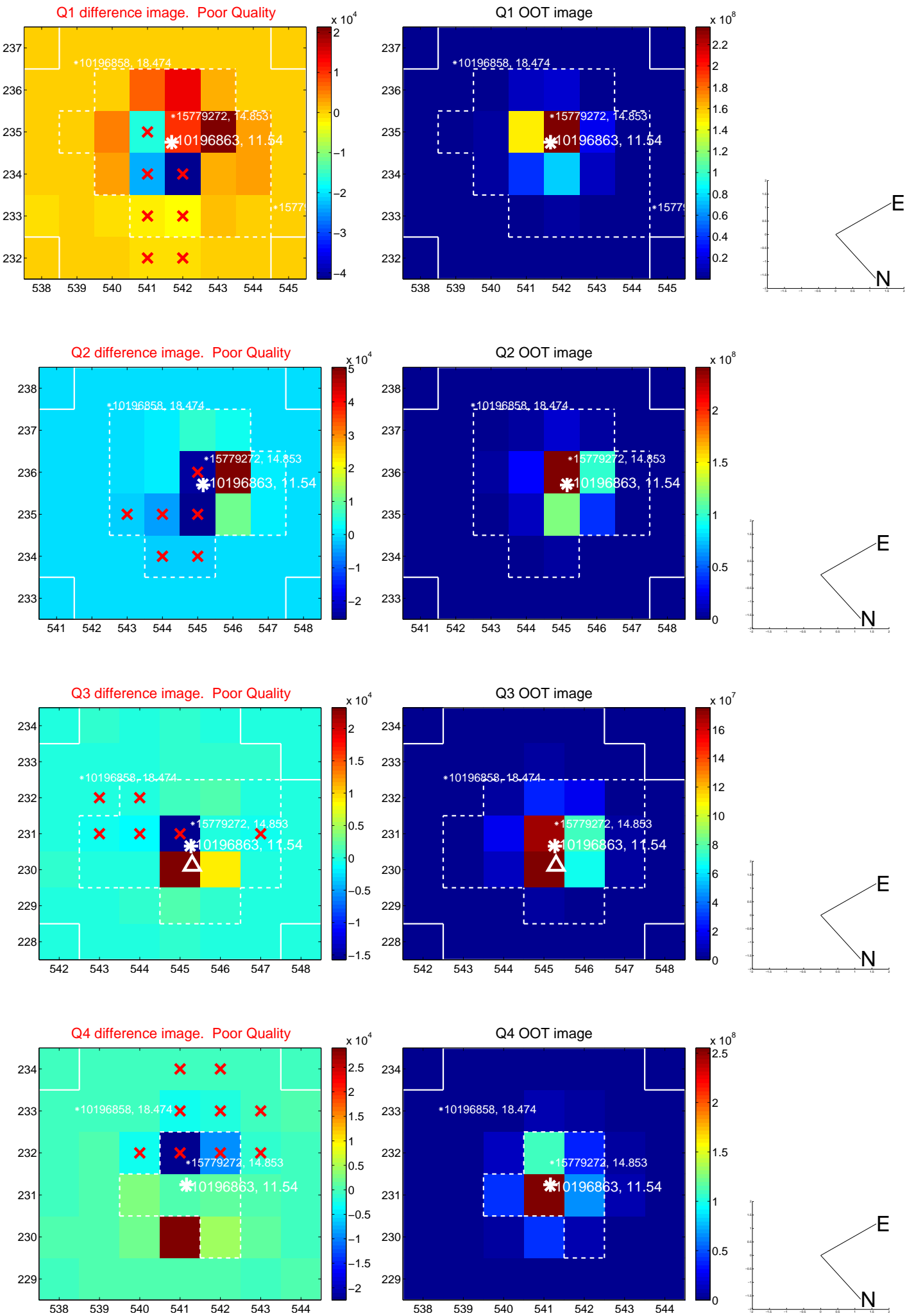
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.177 ± 0.735	2.96	-0.762 ± 1.245	2.040 ± 0.521
PRF-fit source offset from KIC position	2.203 ± 0.670	3.29	-0.680 ± 1.564	2.096 ± 0.448
photometric centroid source offset	0.49 ± 0.92	0.54	0.49 ± 0.92	-0.01 ± 1.04

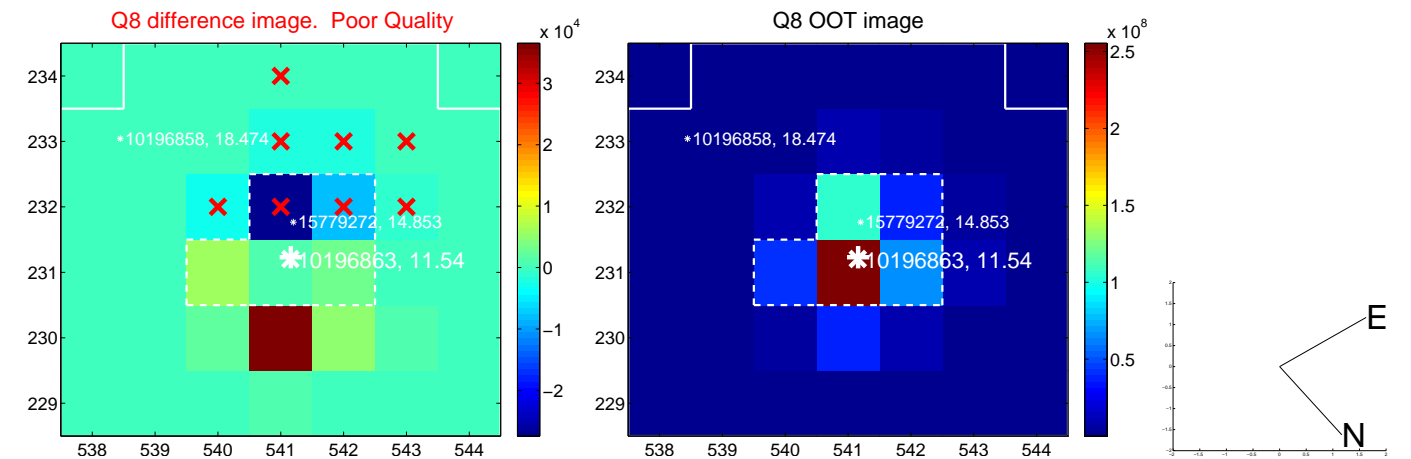
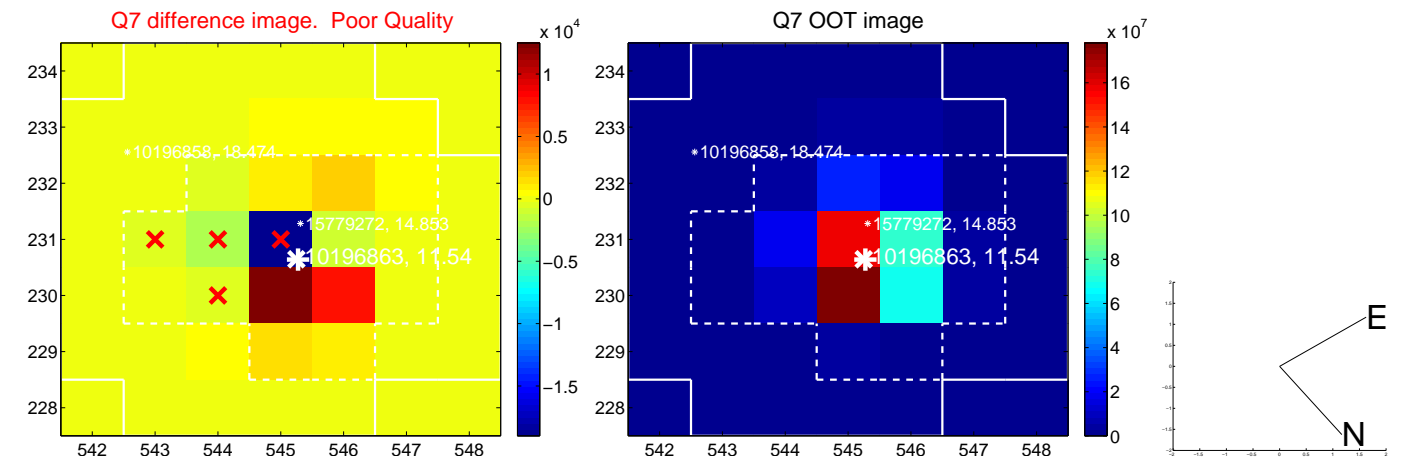
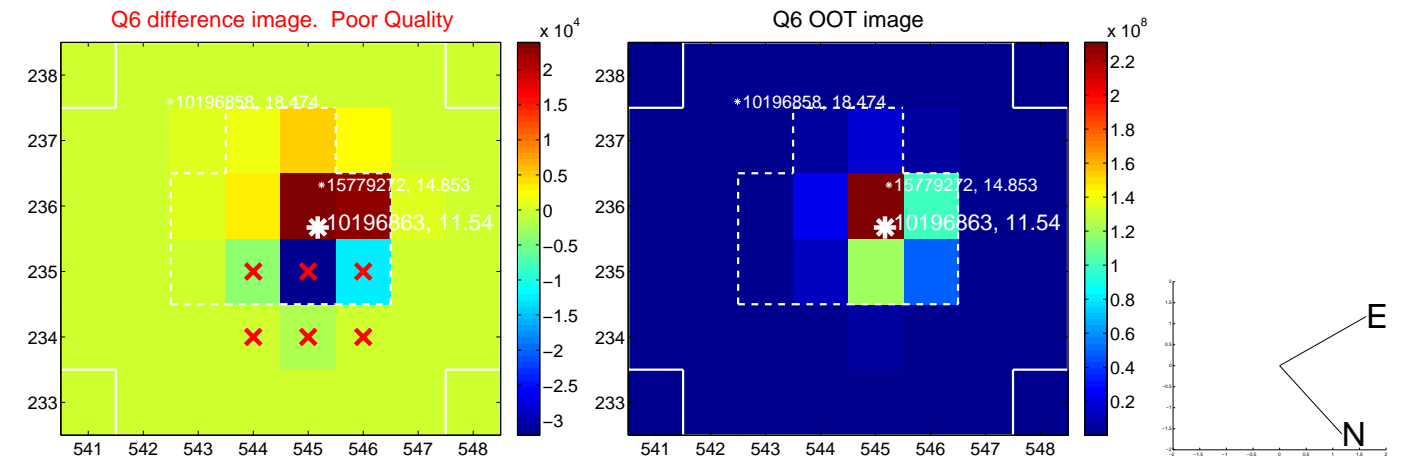
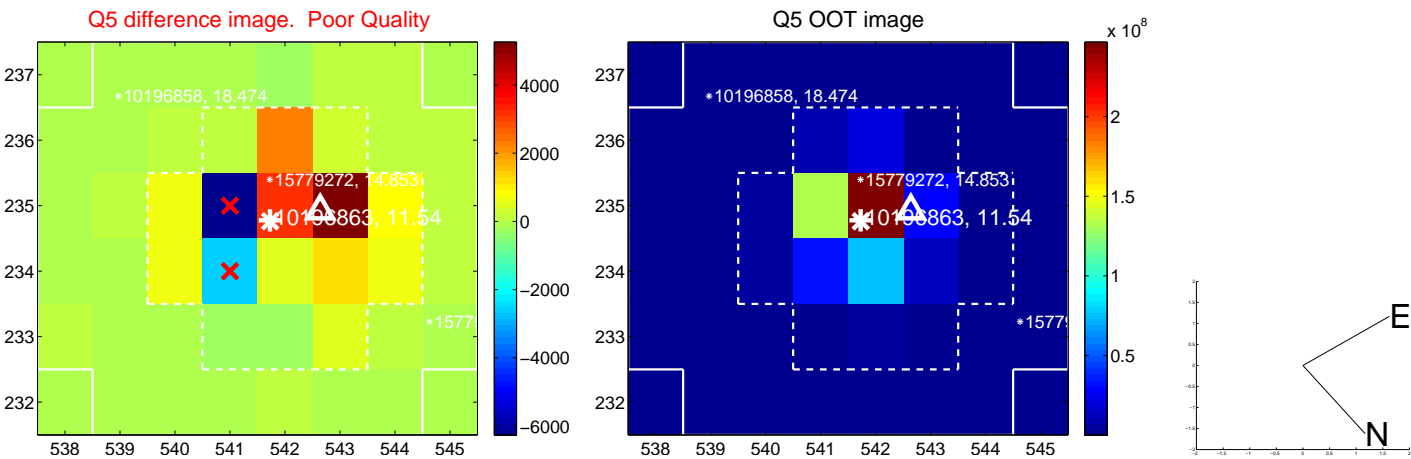


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

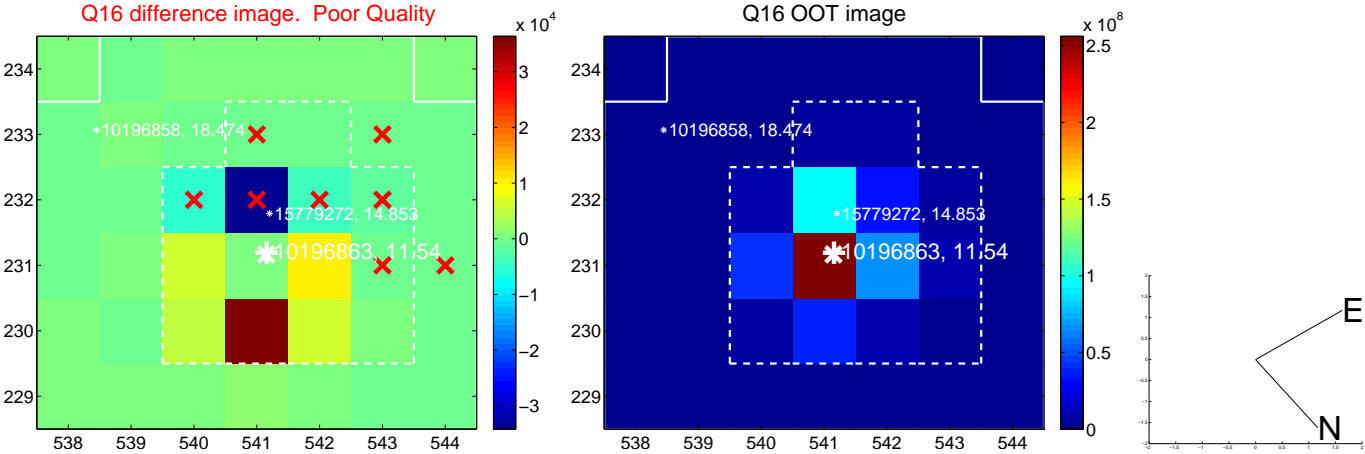
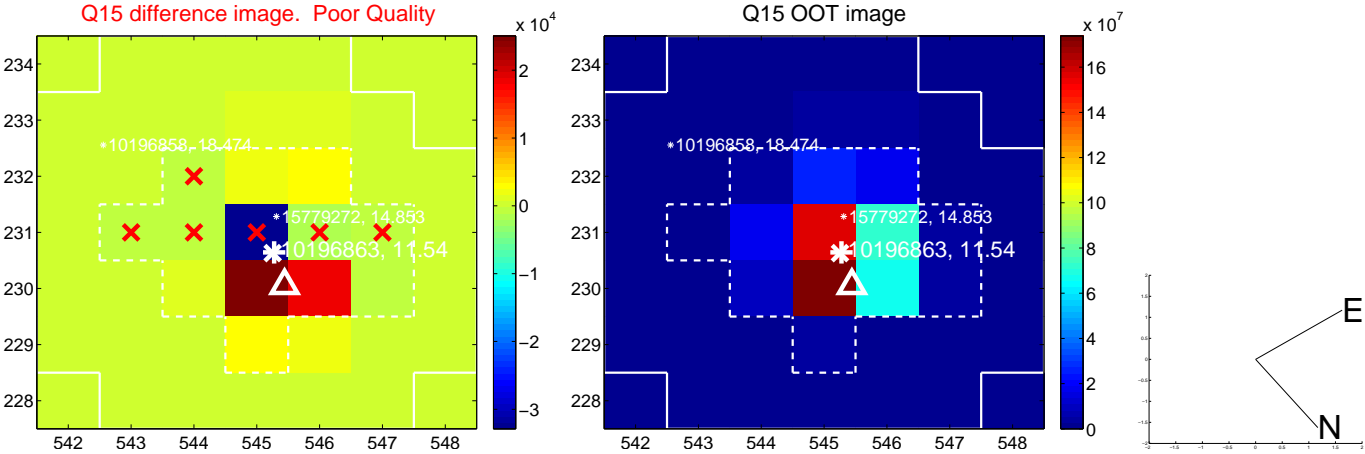
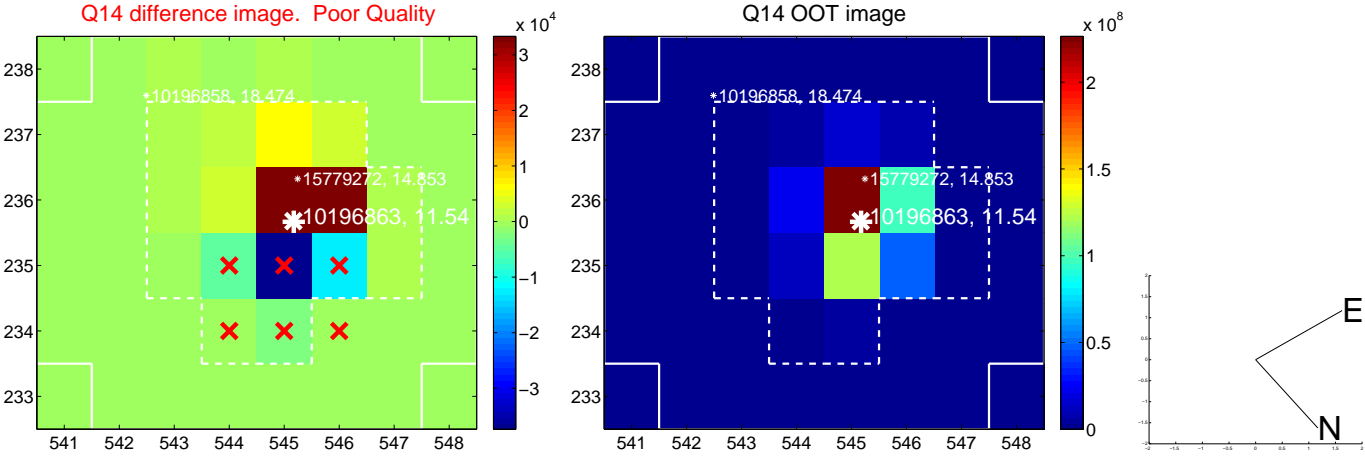
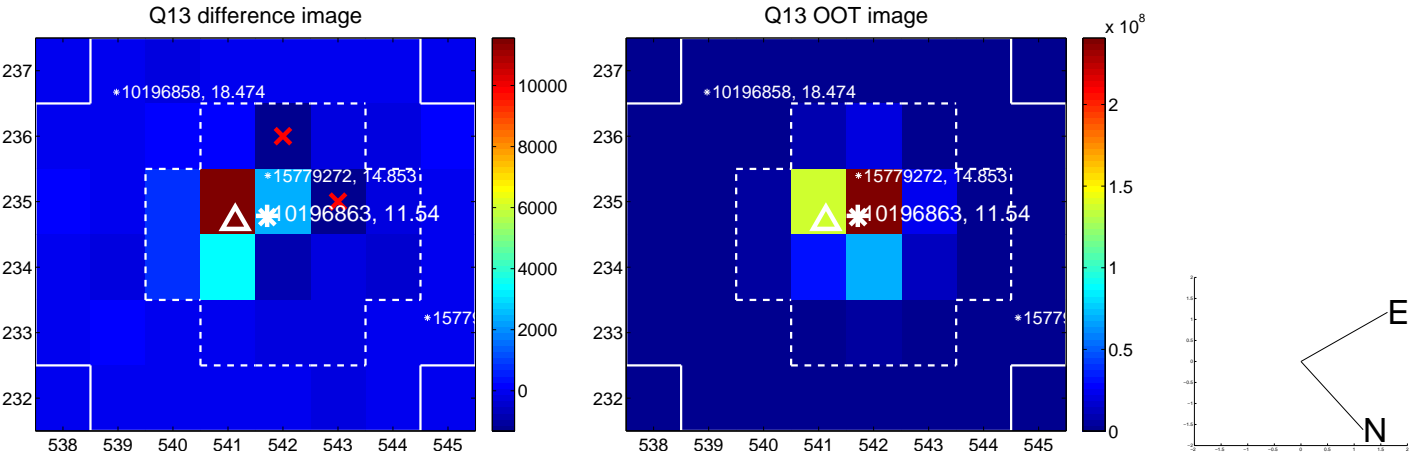
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

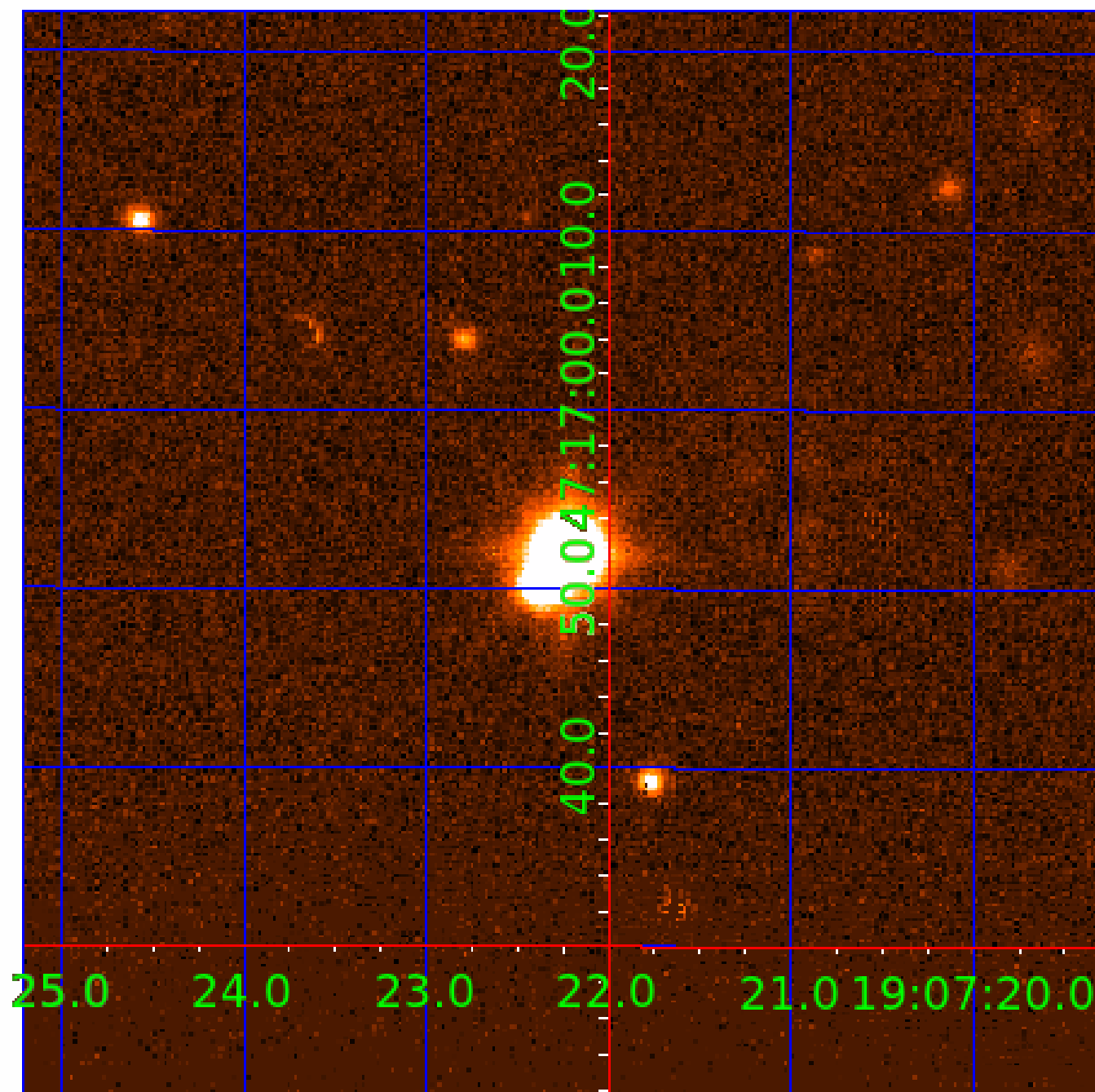


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010196863

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})
010196863-01	OBS	No	1.603229	133.137942	7.8	12.223	8.6	4.2	2.19	7276	0.63	13360.73
010196863-02	OBS	No	20.817820	136.955929	237.3	23.586	27.9	11.4	2.19	7276	3.51	437.77
010196863-03	OBS	No	10.555693	133.528838	204.5	1.696	16.3	15.3	2.19	7276	3.64	1082.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010196863-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
010196863-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
010196863-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

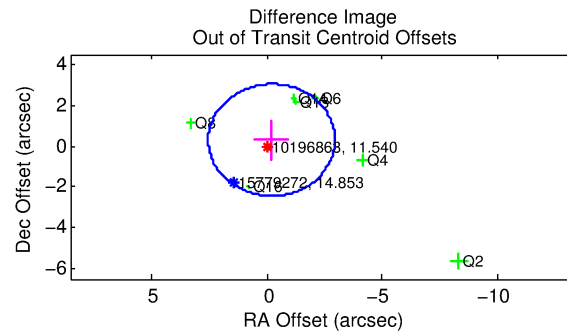
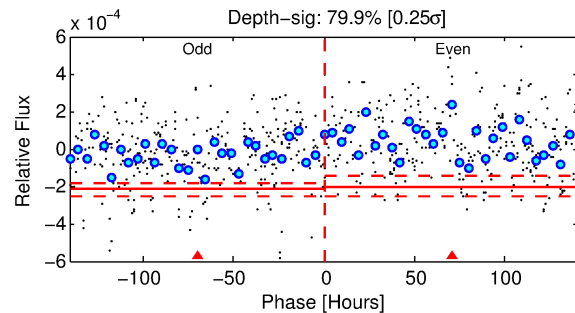
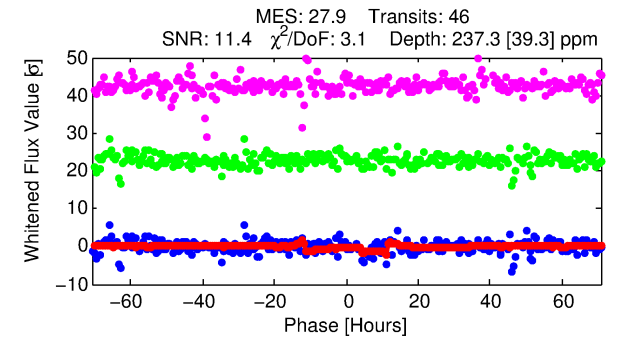
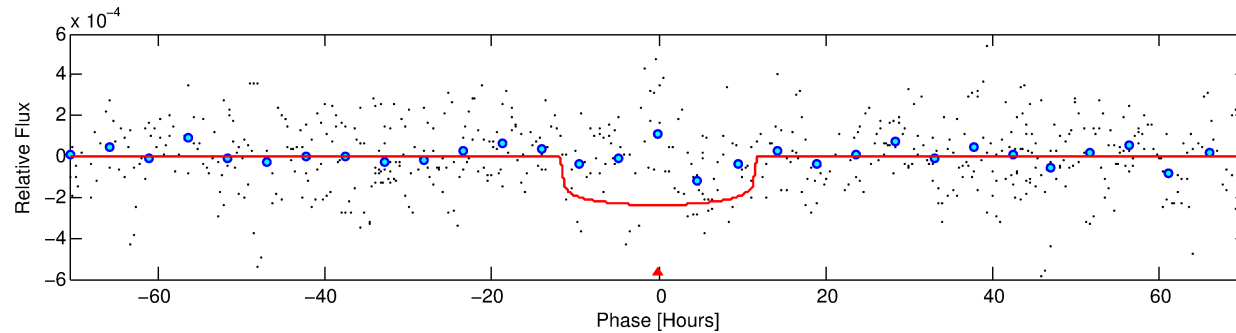
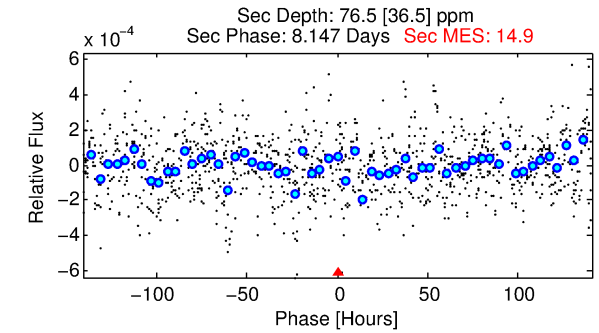
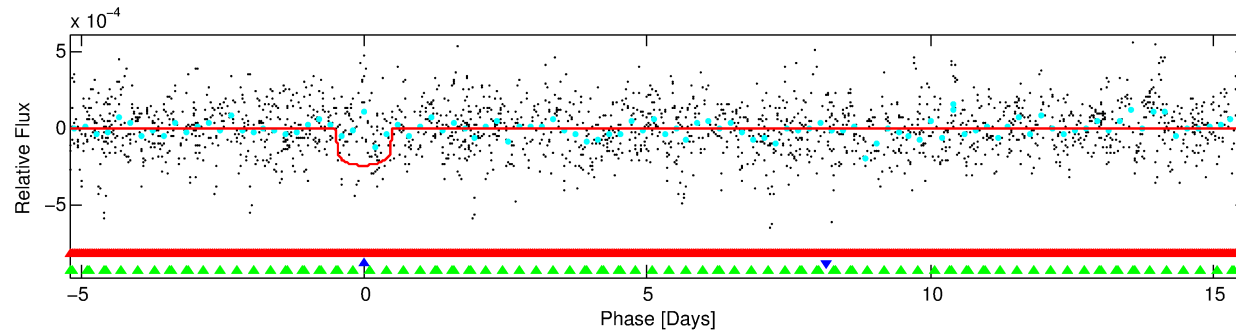
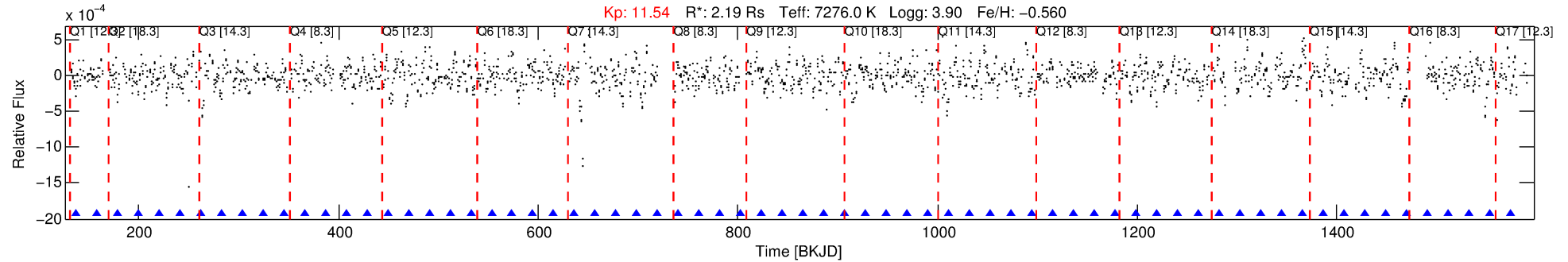
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010196863-02

No Significant Match Found

DV One-Page Summary

KIC: 10196863 Candidate: 2 of 3 Period: 20.818 d



DV Fit Results:

Period = 20.81782 [0.00287] d
Epoch = 136.9559 [0.0667] BKJD
Rp/R* = 0.0147 [0.0035]
a/R* = 5.94 [7.28]
b = 0.52 [1.75]
Seff = 437.77 [287.60]
Teq = 1166 [192] K
Rp = 3.51 [1.67] Re
a = 0.1661 [0.0661] AU
Ag = 94.09 [87.36] [1.07 σ]
Teffp = 5616 [972] K [4.49 σ]

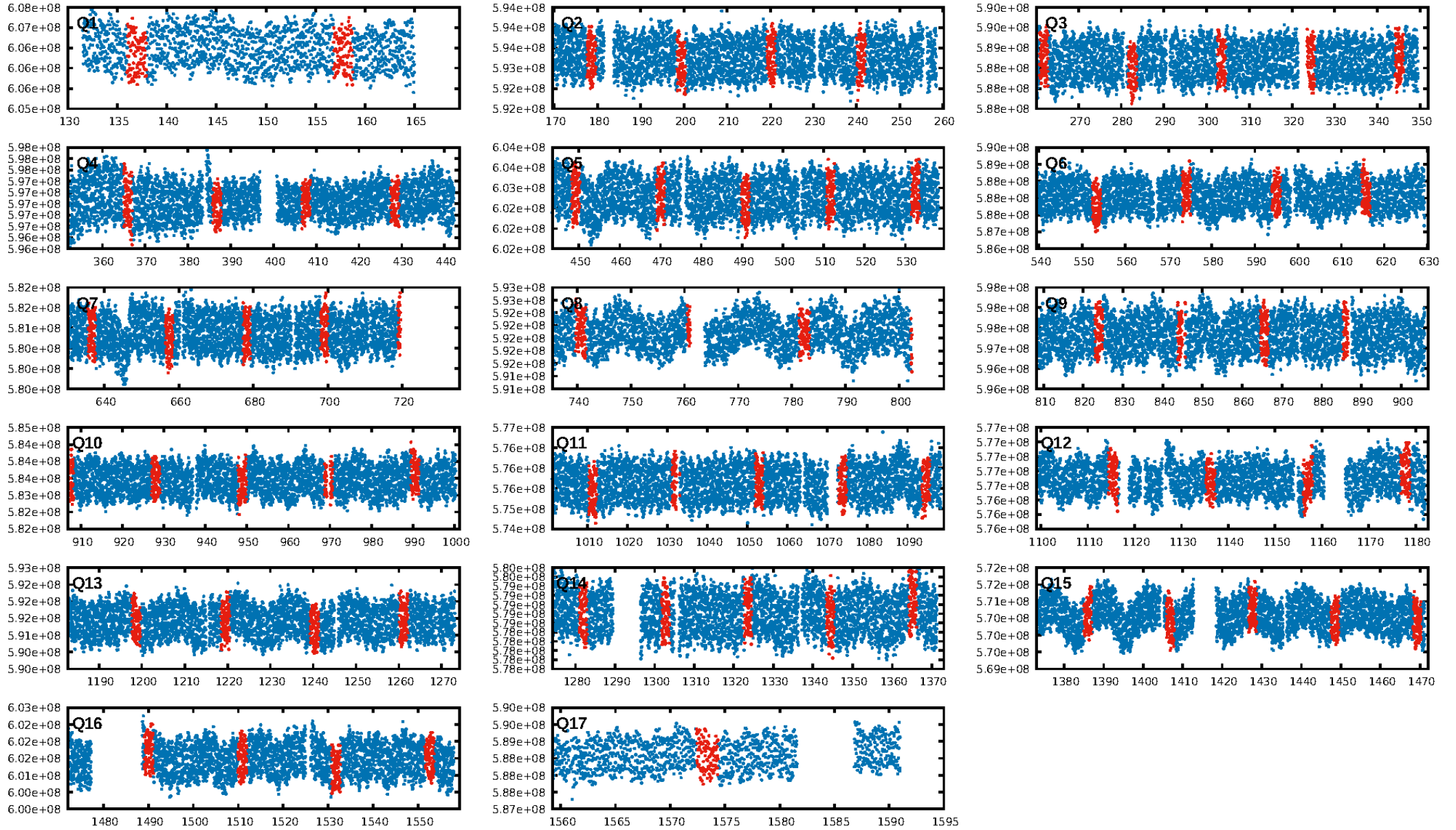
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.42 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.33e-73
RollingBand-fgt: 1.00 [43/43]
GhostDiagnostic-chr: 0.05055
Centroid-sig: 52.8%
Centroid-so: 0.186 arcsec [1.61 σ]
OotOffset-rm: 0.370 arcsec [0.41 σ]
OotOffset-st: 3/0/3/1 [7]
KicOffset-rm: 0.345 arcsec [0.36 σ]
KicOffset-st: 3/0/3/1 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.00 [0/17]

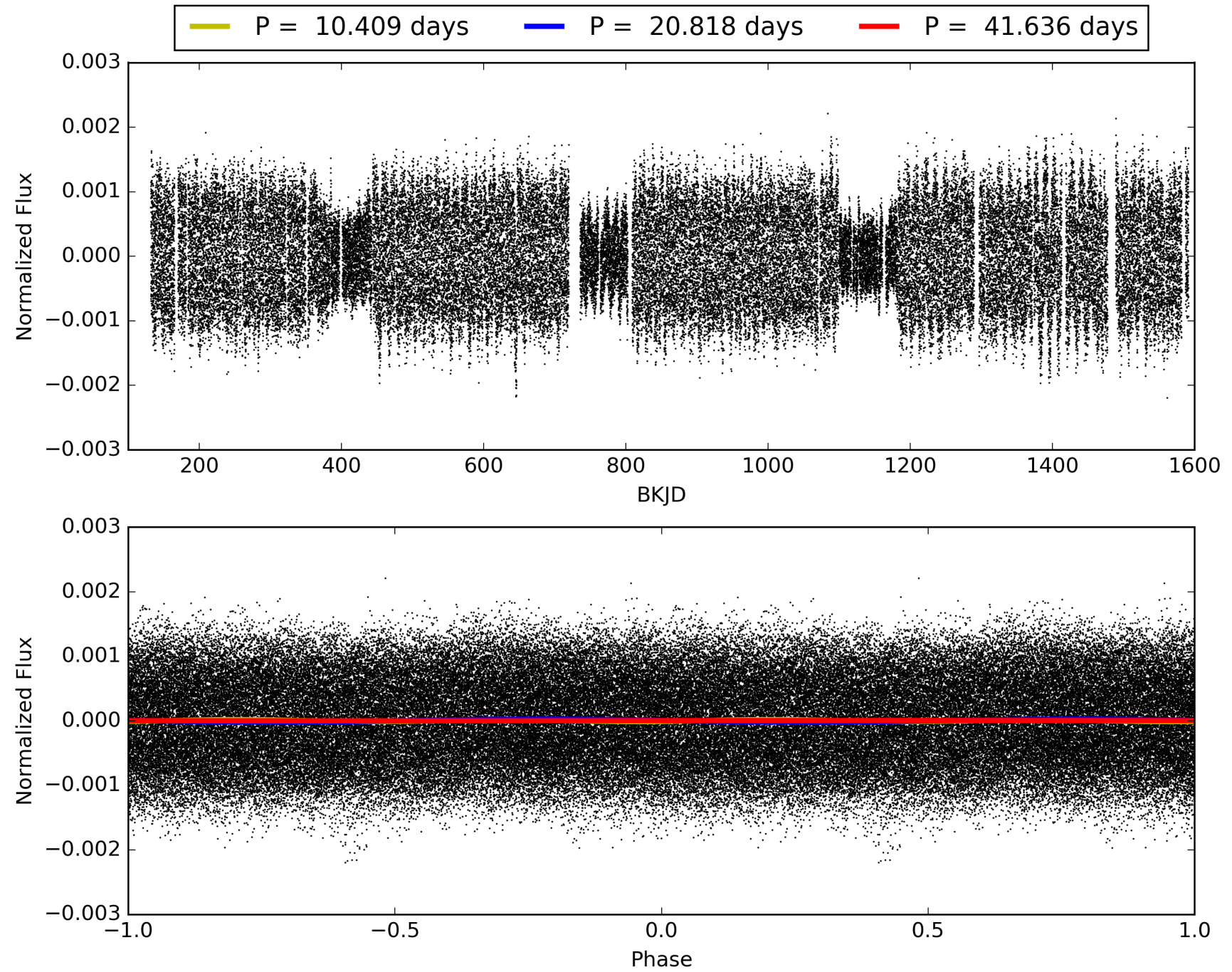
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:13:43 Z

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

TCE 010196863-02, PDC Light Curves

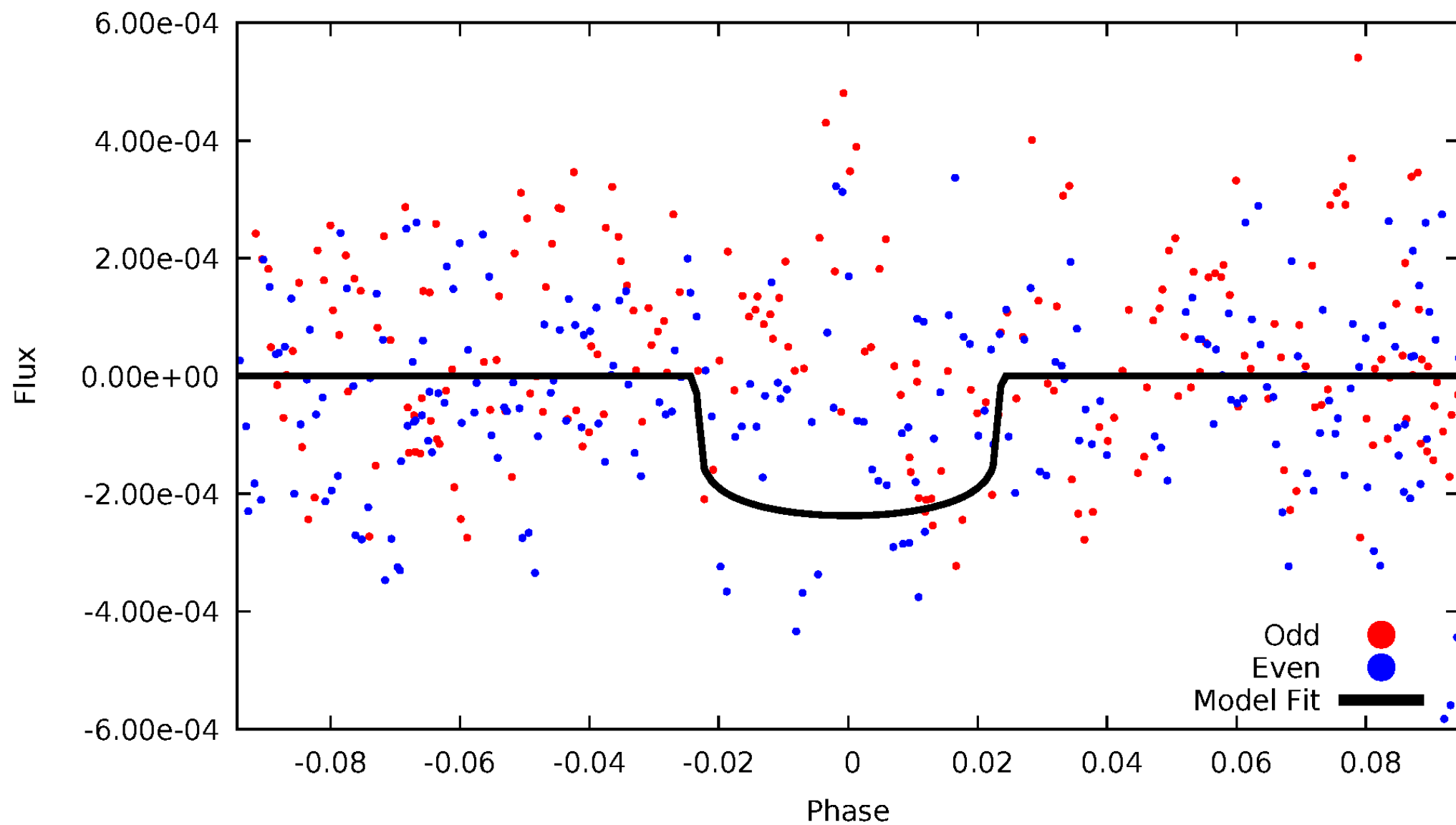


TCE 010196863-02



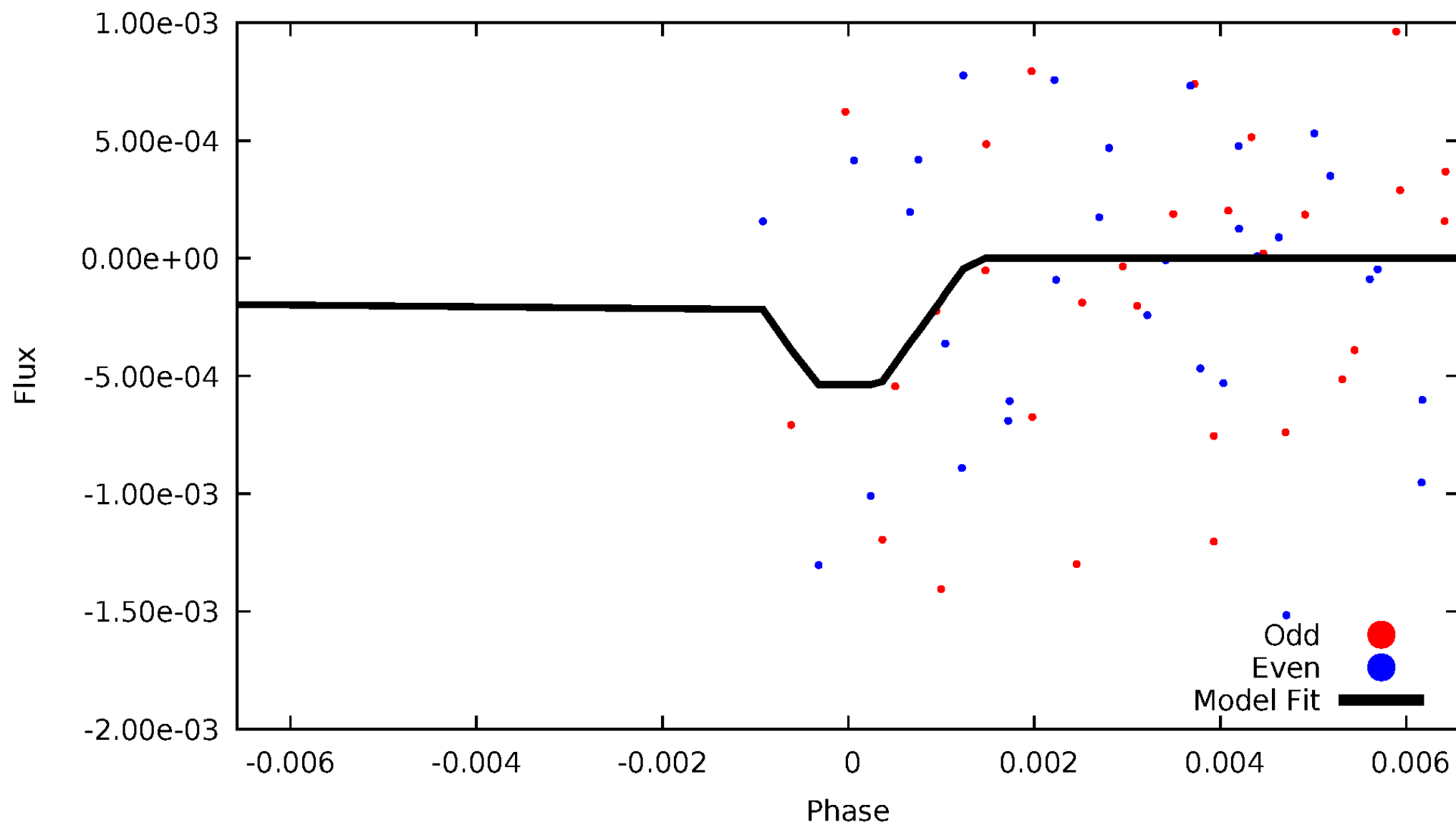
DV Odd/Even

TCE 010196863-02



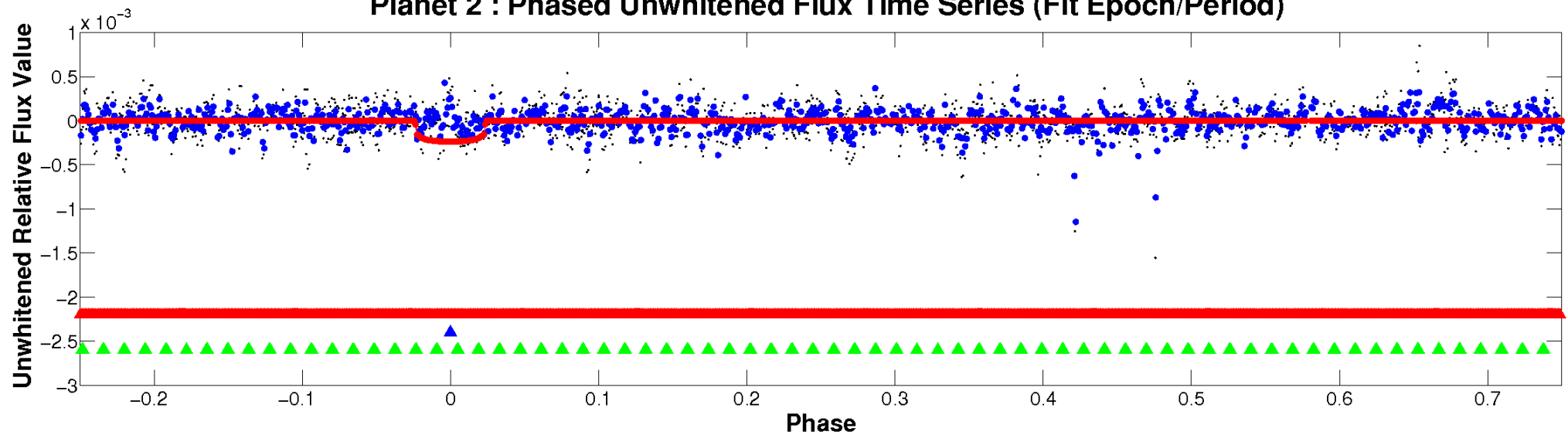
ALT Odd/Even

TCE 010196863-02

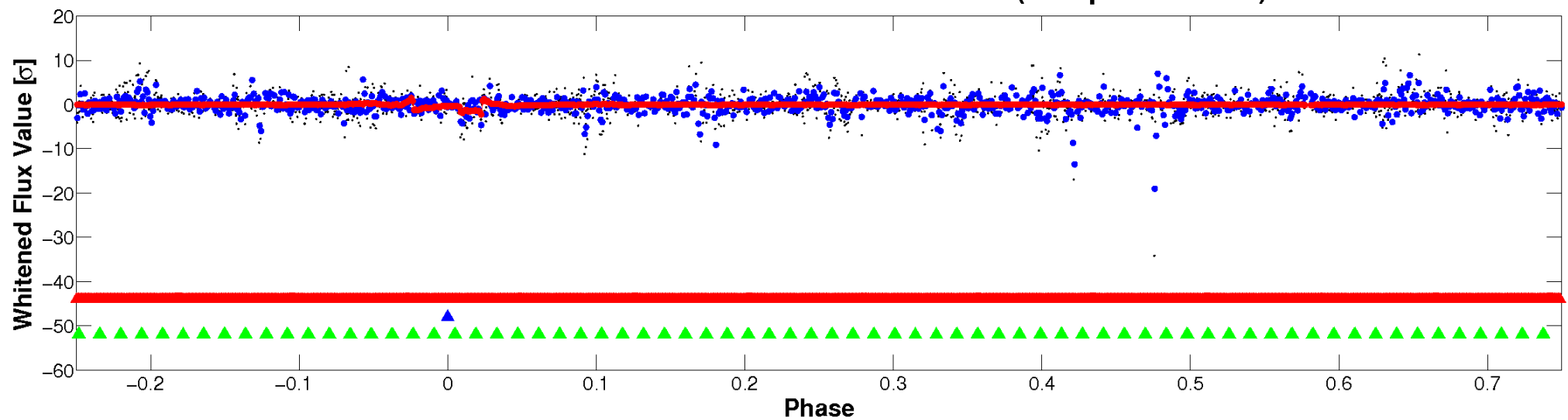


Non-Whitened Vs. Whitened Light Curve

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

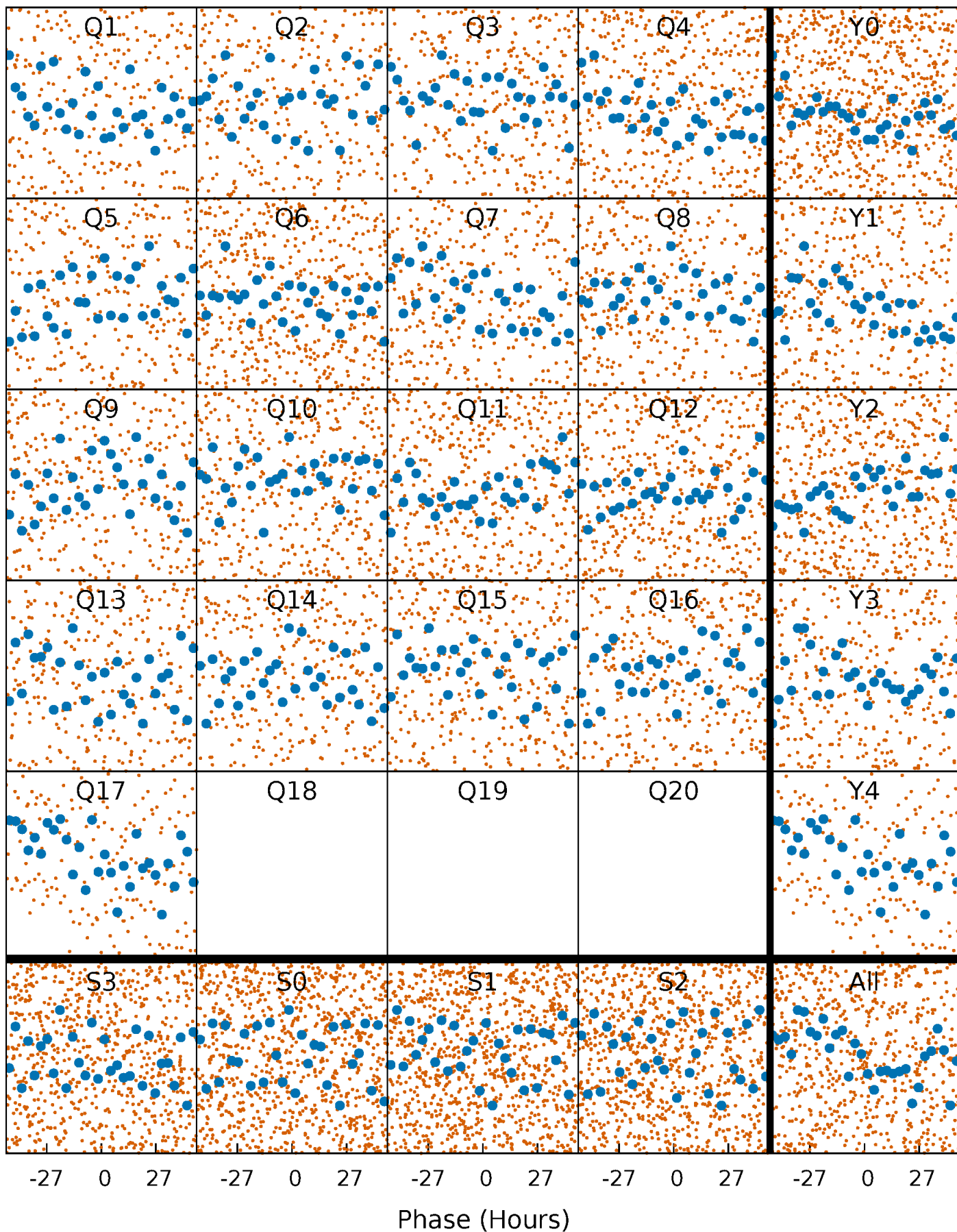


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



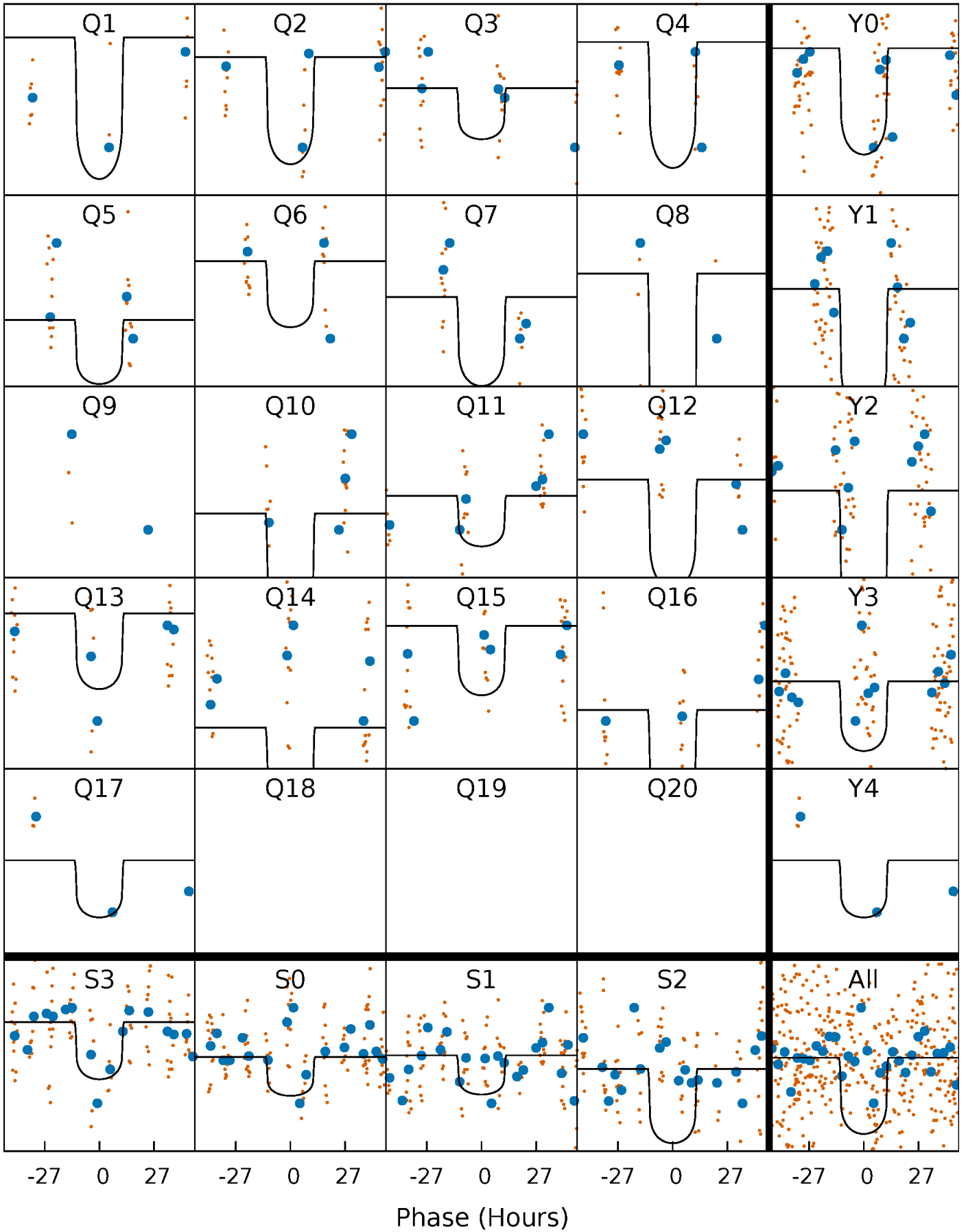
PDC Quarter-Phased Transit Curves

TCE 010196863-02 P= 20.817820 Days $T_0=136.955929$ (BKJD)



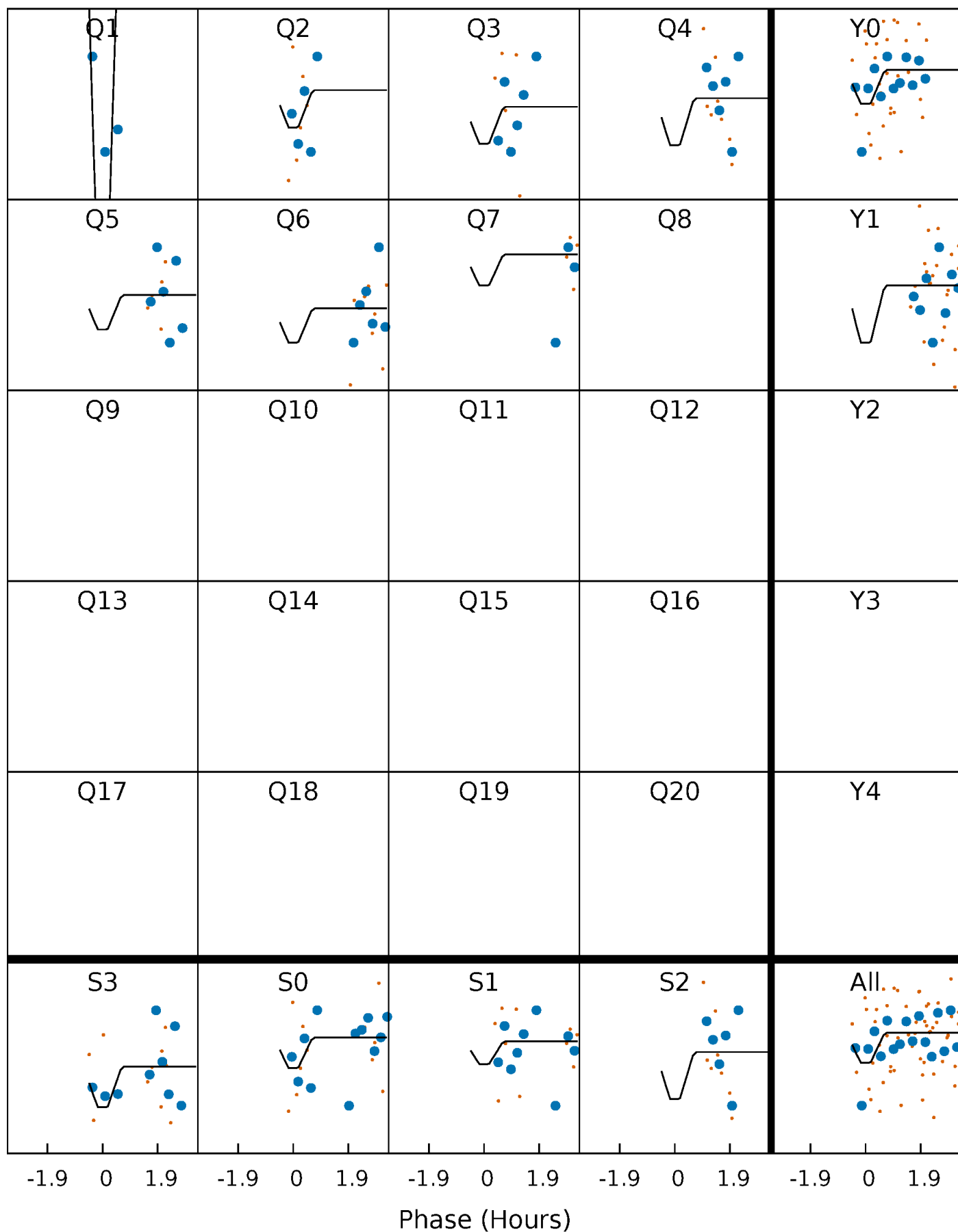
DV Quarter-Phased Transit Curves

TCE 010196863-02 P= 20.817820 Days $T_0=136.955929$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

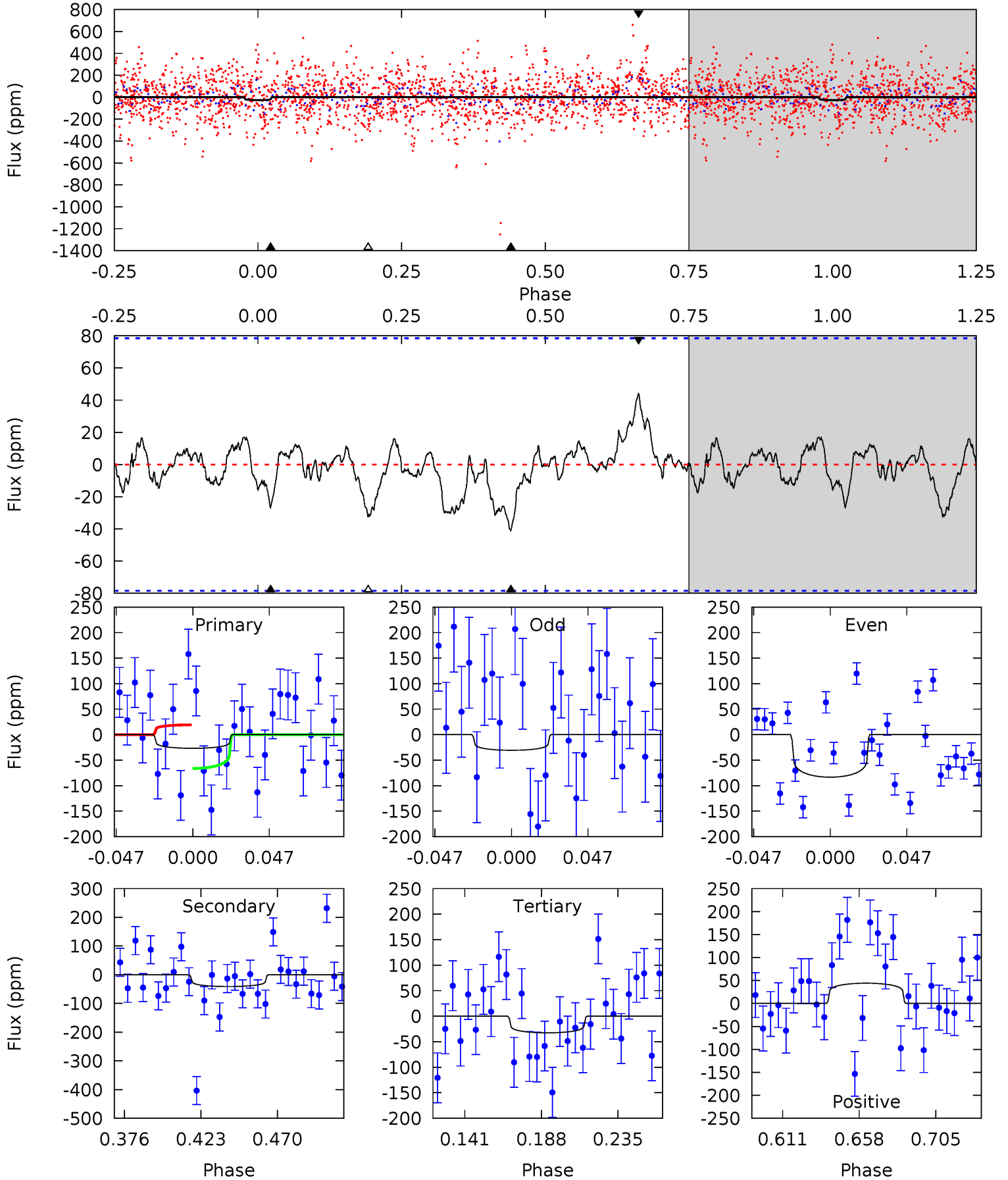
TCE 010196863-02 P= 20.836549 Days $T_0=137.150971$ (BKJD)



DV Model-Shift Uniqueness Test

010196863-02, P = 20.817820 Days, E = 116.138109 Days

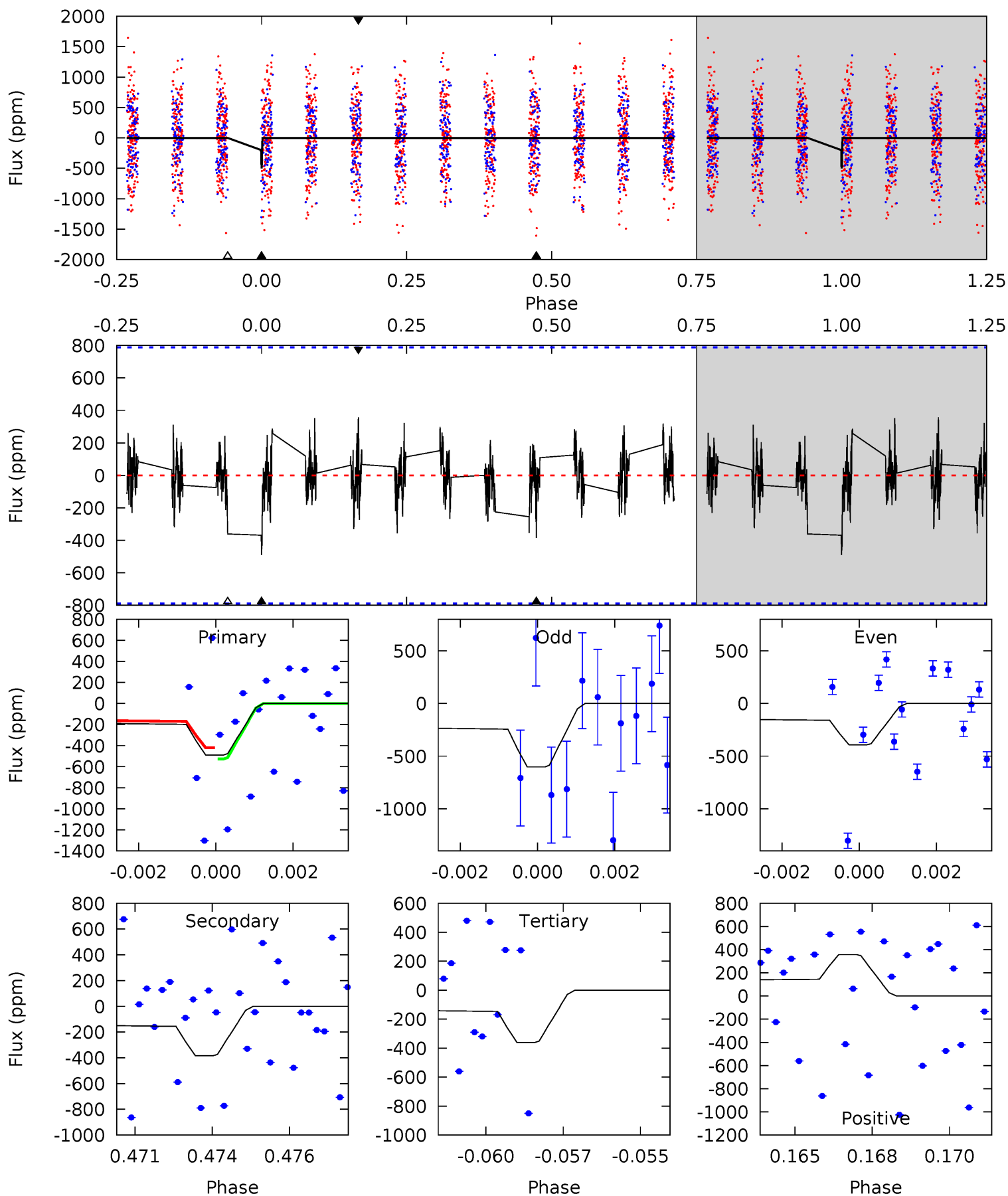
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.61	2.46	1.96	2.65	4.72	1.99	0.76	-0.35	-1.05	0.51	-0.19	1.57	0.80	0.52	1.43



Alt Model-Shift Uniqueness Test

010196863-02, P = 20.836549 Days, E = 116.314422 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.28	2.57	2.42	2.40	5.29	3.04	0.79	0.86	0.88	0.15	0.17	0.71	0.56	0.42	0.30



Stellar Parameters For KIC 010196863

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7276^{+233}_{-285}	$3.905^{+0.375}_{-0.125}$	$-0.560^{+0.300}_{-0.300}$	$2.193^{+0.487}_{-0.905}$	$1.410^{+0.187}_{-0.280}$	$0.188^{+0.593}_{-0.071}$
	+3%/-4%	+10%/-3%	+54%/-54%	+22%/-41%	+13%/-20%	+315%/-38%
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 010196863-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-41 ± 17	$3.33^{+1.03}_{-1.08}$	1594^{+127}_{-183}	4814^{+749}_{-611}	53^{+77}_{-28}
Alt.	-383 ± 149	$5.27^{+1.21}_{-1.28}$	1599^{+117}_{-159}	6583^{+981}_{-921}	203^{+174}_{-97}

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 $A_{obs} \gg 1.0$

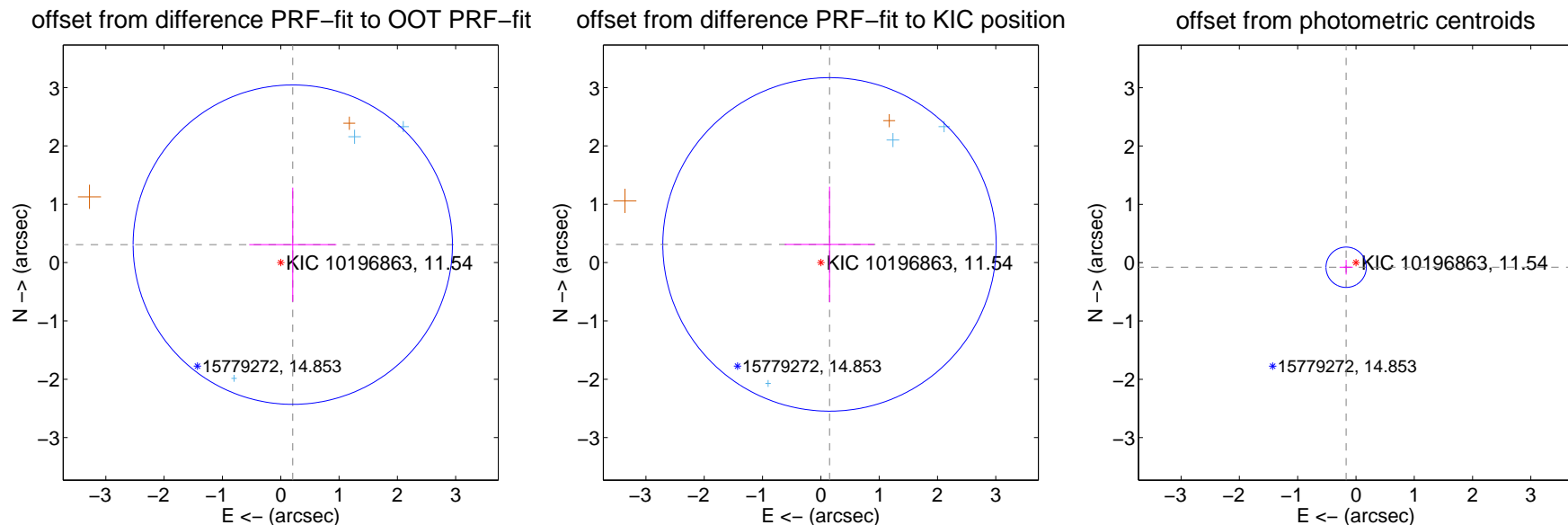
DV Centroid Data

Supplemental centroid analysis for 010196863-02. **Kepler magnitude: 11.54**. Transit SNR 11.42

There are 4 quarters with good PRF difference image offsets

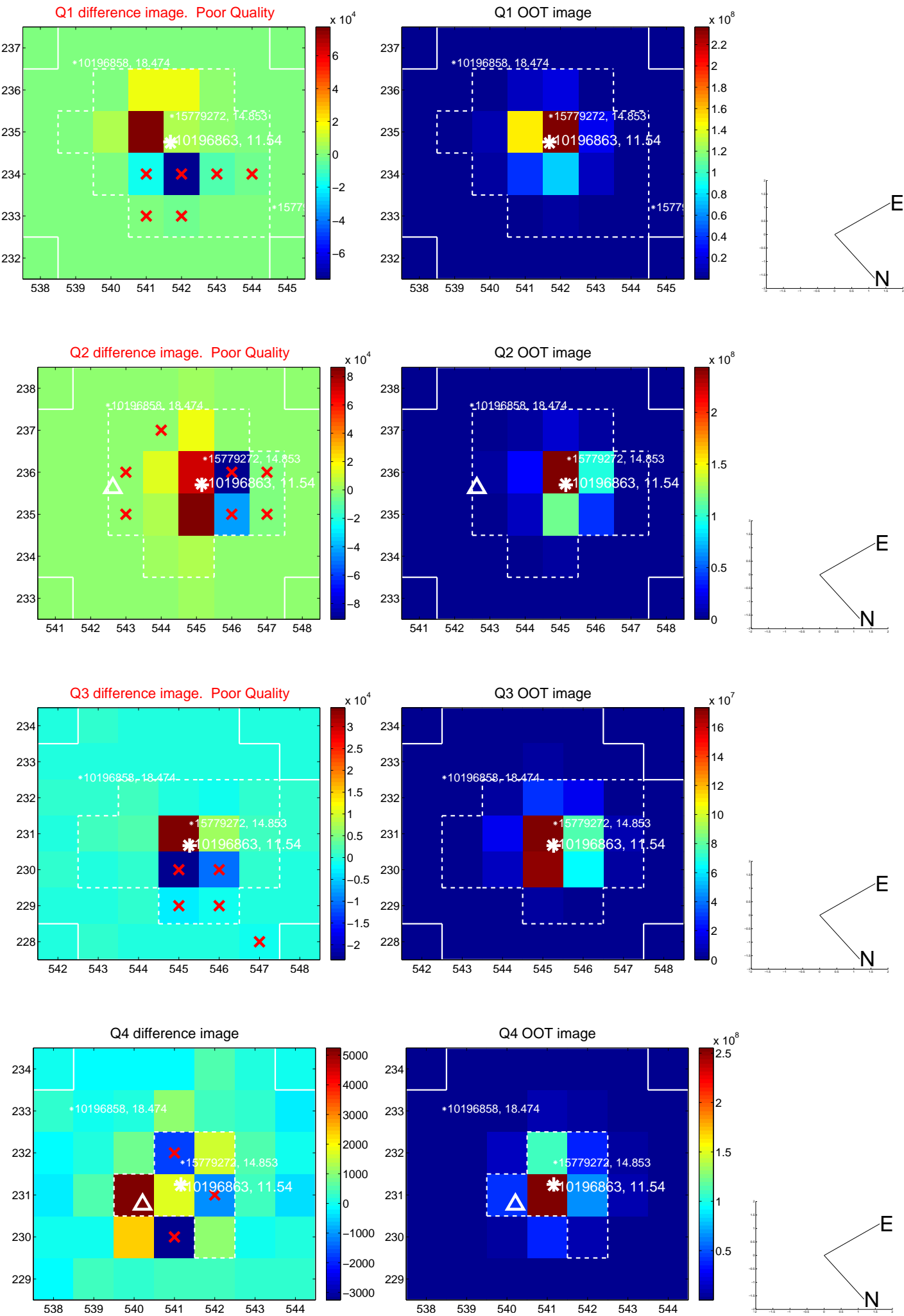
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.370 ± 0.912	0.41	-0.206 ± 0.747	0.307 ± 0.978
PRF-fit source offset from KIC position	0.345 ± 0.953	0.36	-0.148 ± 0.768	0.312 ± 0.990
photometric centroid source offset	0.19 ± 0.12	1.61	0.17 ± 0.11	-0.08 ± 0.13

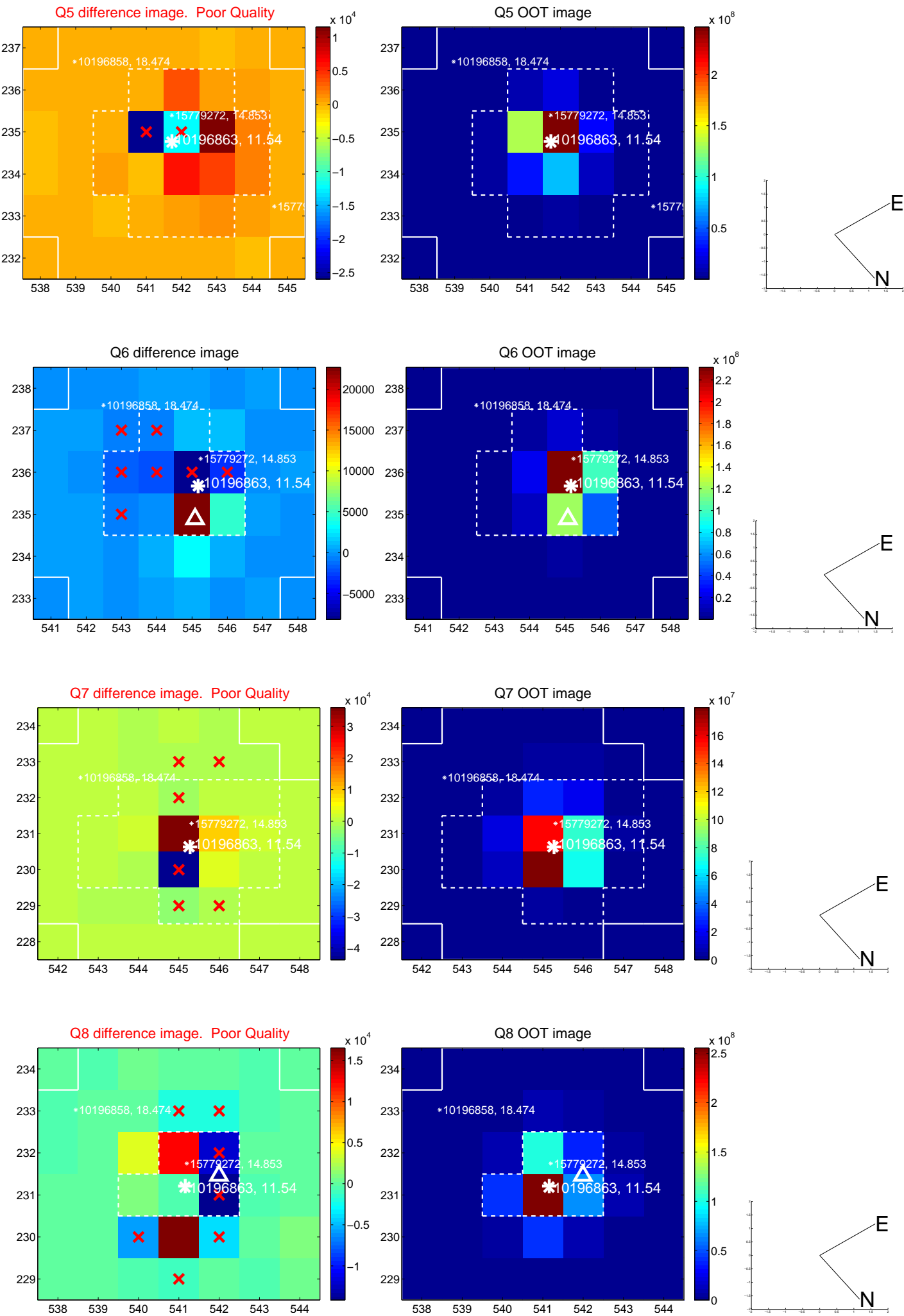


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

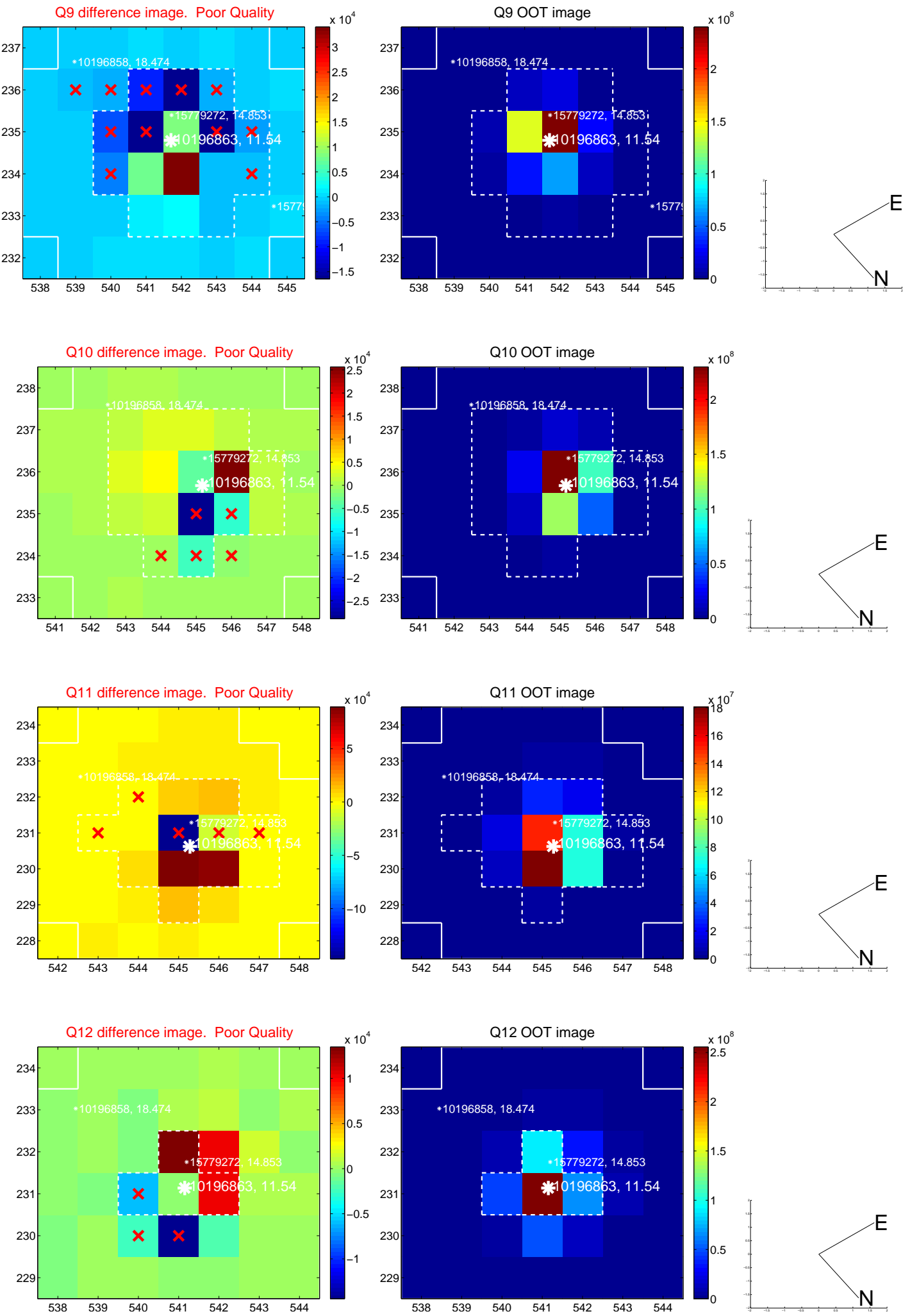
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



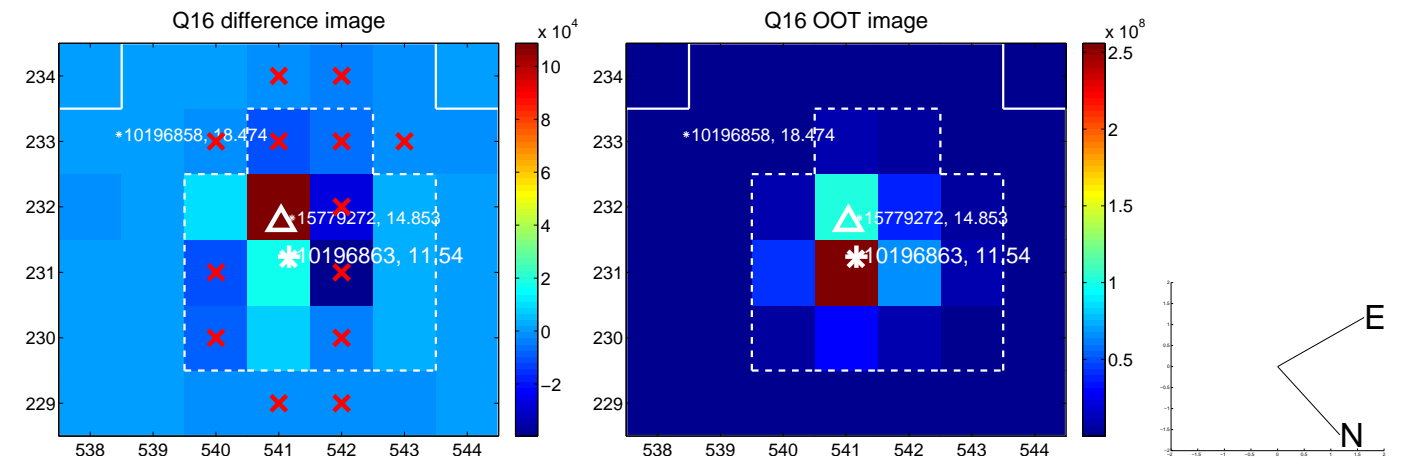
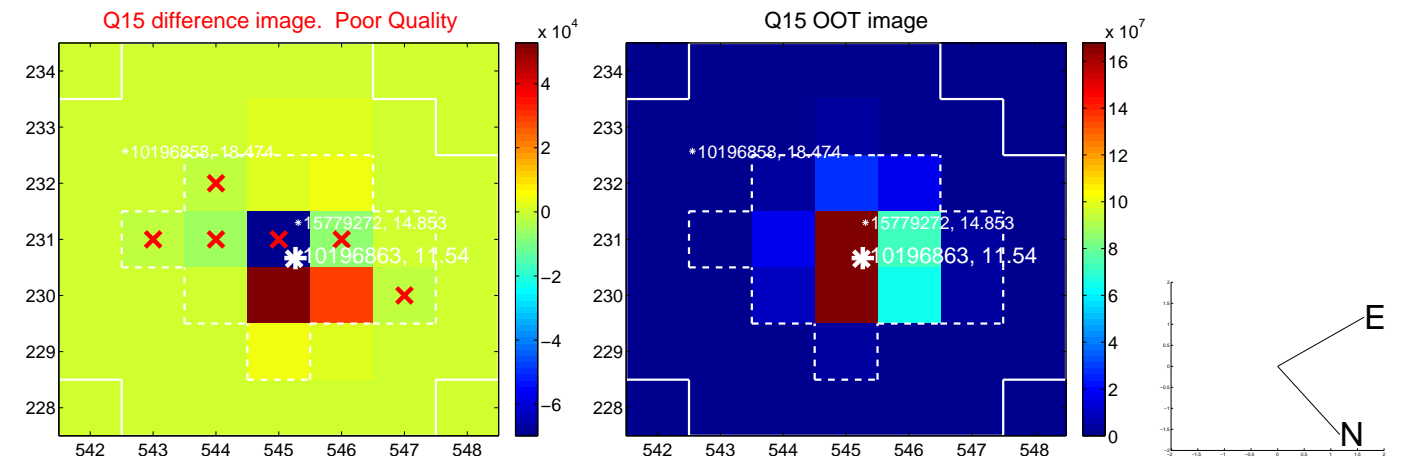
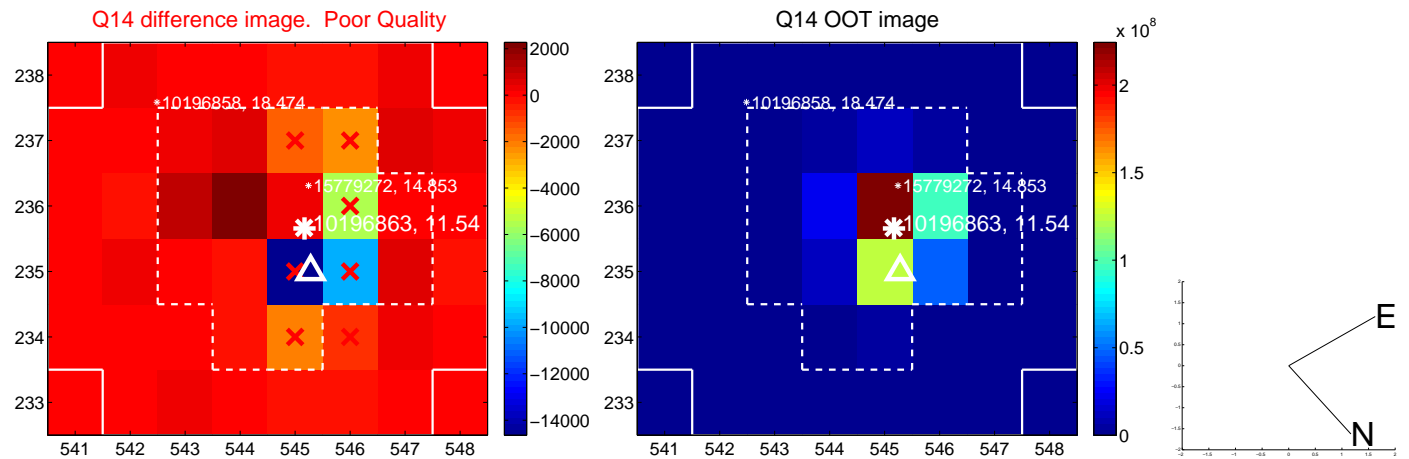
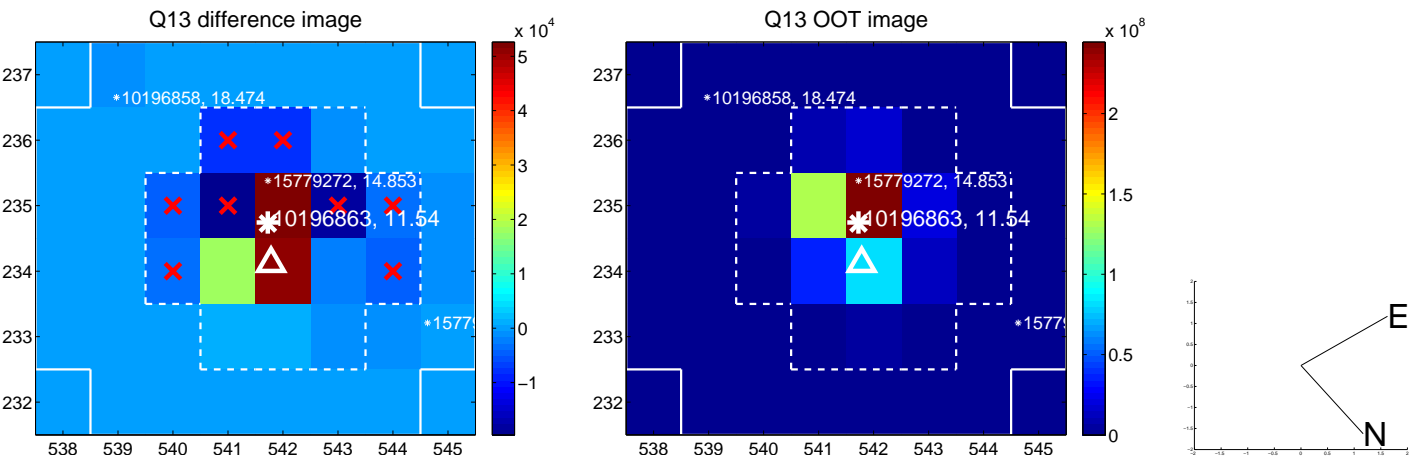
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



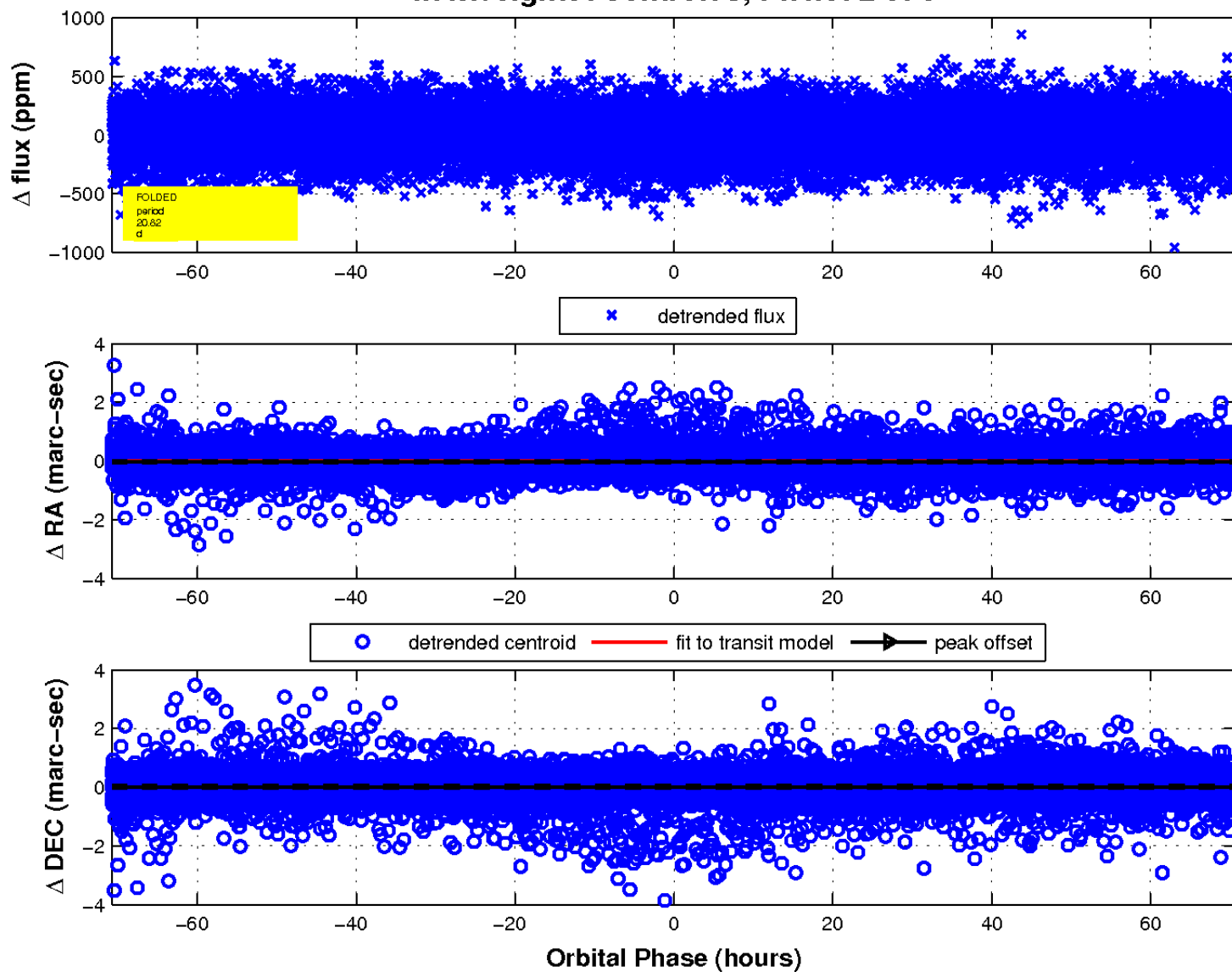
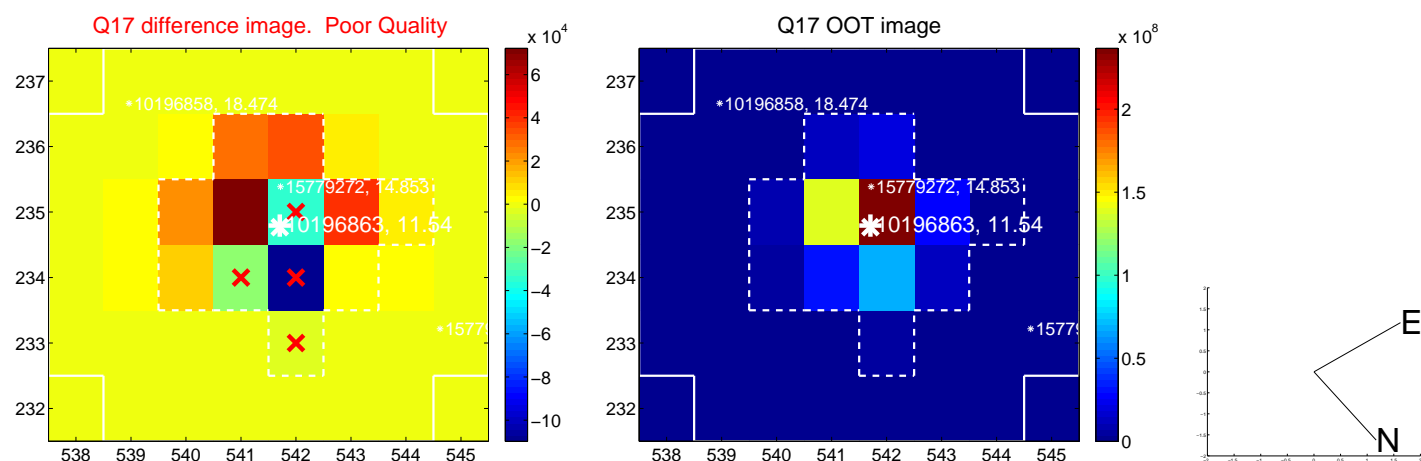
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

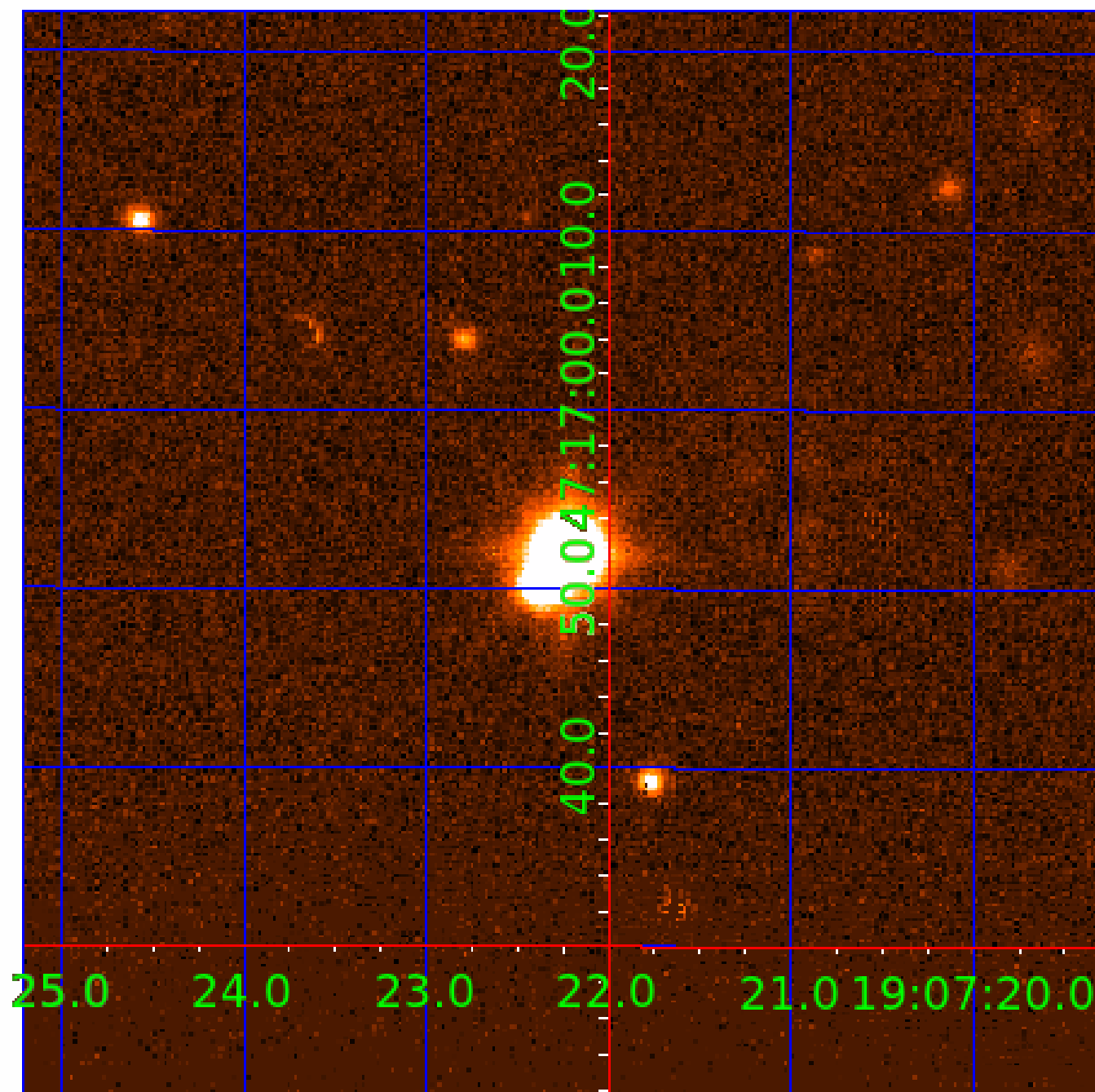


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010196863

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})
010196863-01	OBS	No	1.603229	133.137942	7.8	12.223	8.6	4.2	2.19	7276	0.63	13360.73
010196863-02	OBS	No	20.817820	136.955929	237.3	23.586	27.9	11.4	2.19	7276	3.51	437.77
010196863-03	OBS	No	10.555693	133.528838	204.5	1.696	16.3	15.3	2.19	7276	3.64	1082.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010196863-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
010196863-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
010196863-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

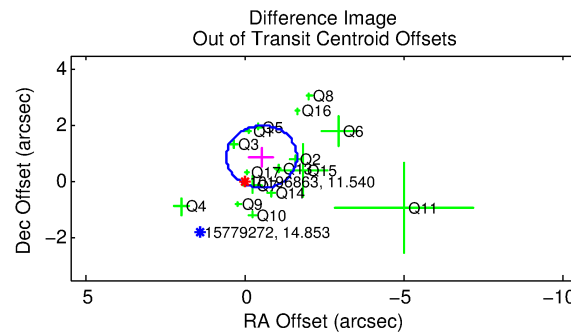
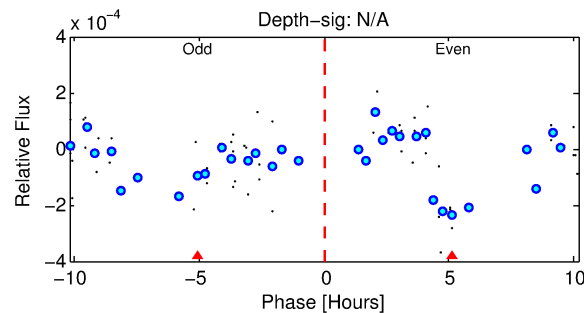
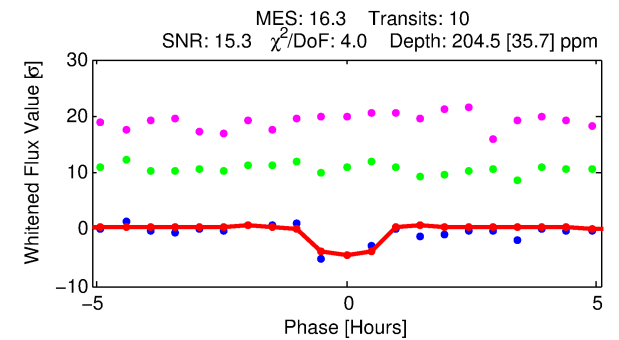
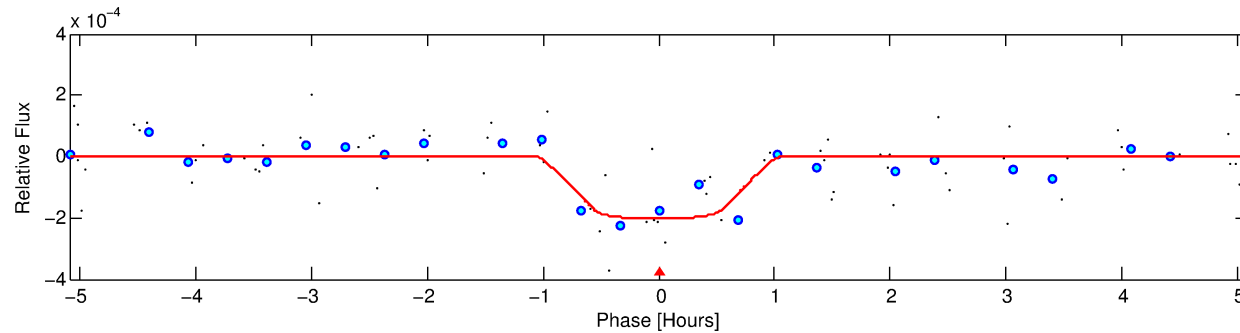
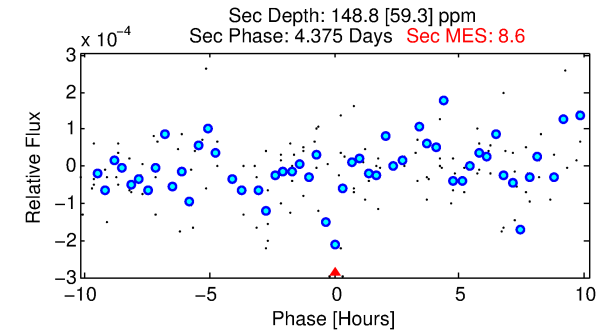
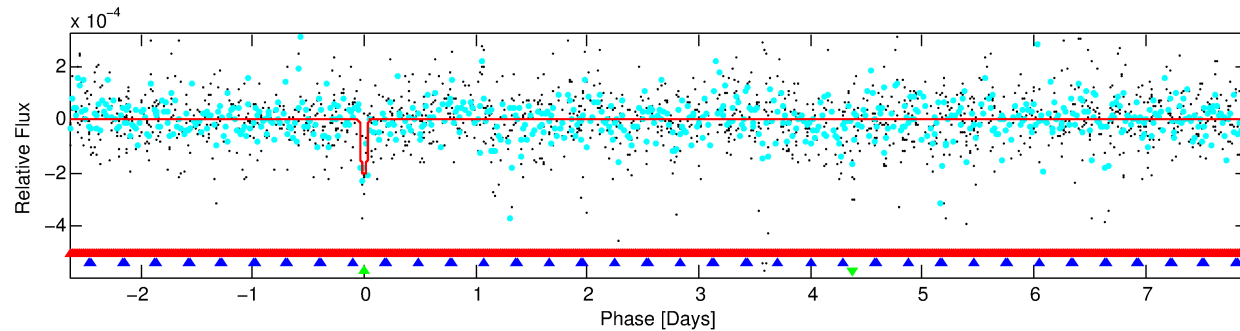
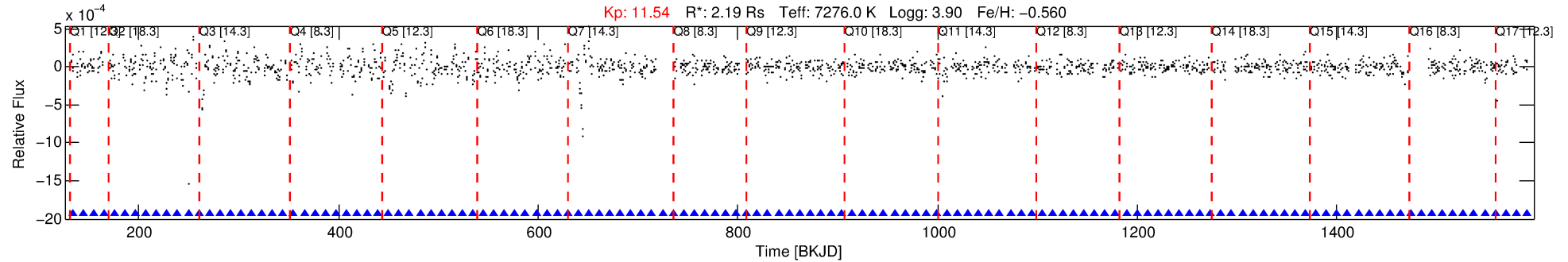
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010196863-03

No Significant Match Found

DV One-Page Summary

KIC: 10196863 Candidate: 3 of 3 Period: 10.556 d



DV Fit Results:

Period = 10.55569 [0.00011] d
Epoch = 133.5288 [0.0085] BKJD
Rp/R* = 0.0152 [0.0096]
a/R* = 22.31 [85.47]
b = 0.90 [0.81]
Seff = 1082.70 [711.30]
Teq = 1463 [240] K
Rp = 3.64 [2.74] Re
a = 0.1056 [0.0421] AU
Ag = 68.81 [100.66] [0.67] σ
Teffp = 6513 [2159] K [2.33] σ

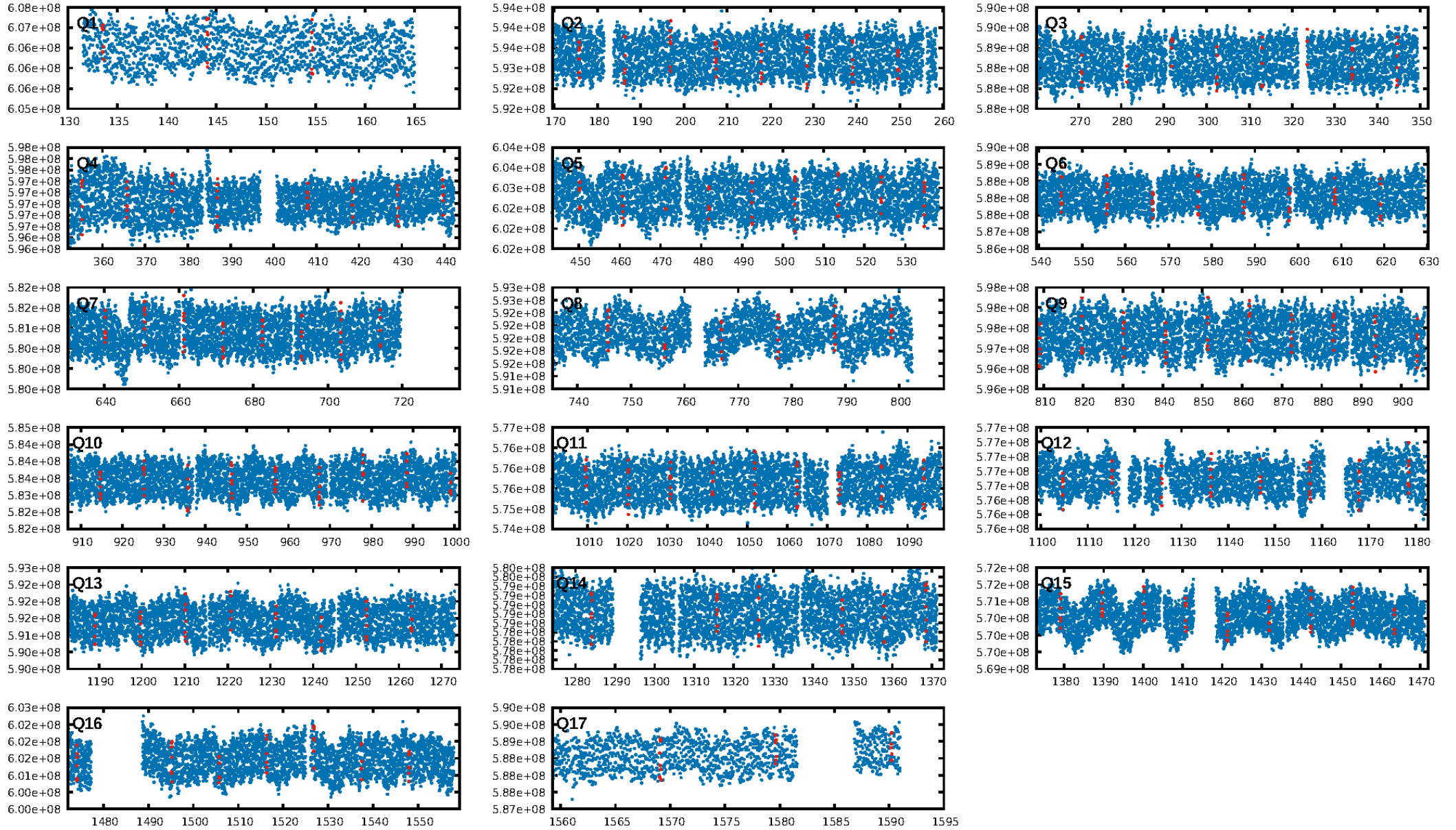
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.41 σ]
LongPeriod-sig: 100.0% [10.42 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 57.8%
Bootstrap-pfa: 1.42e-48
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -0.5506
Centroid-sig: 1.6%
Centroid-so: 0.327 arcsec [1.73 σ]
OotOffset-rm: 1.026 arcsec [2.77 σ]
KicOffset-rm: 0.989 arcsec [2.73 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 1.00 [17/17]

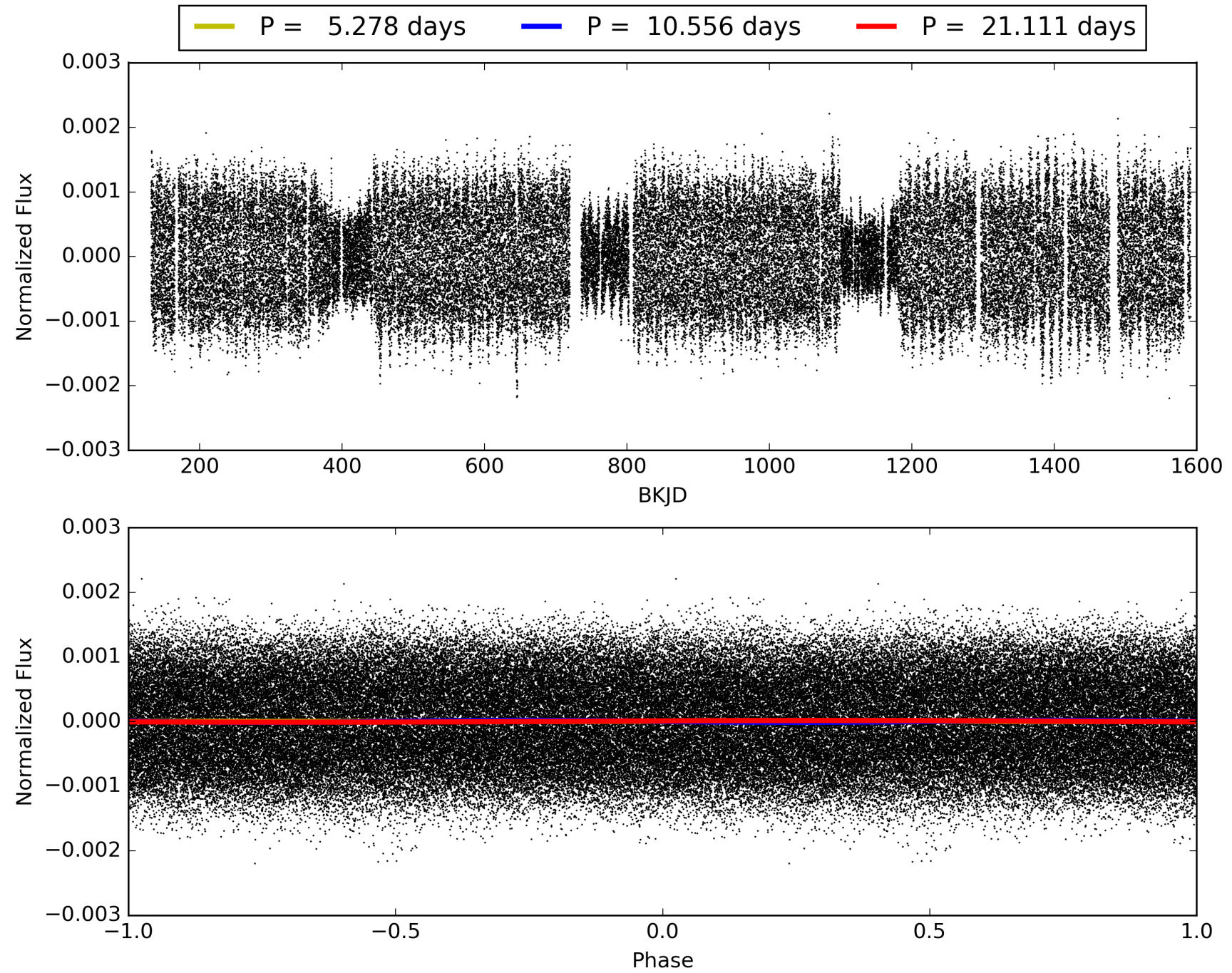
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:13:46 Z

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

TCE 010196863-03, PDC Light Curves

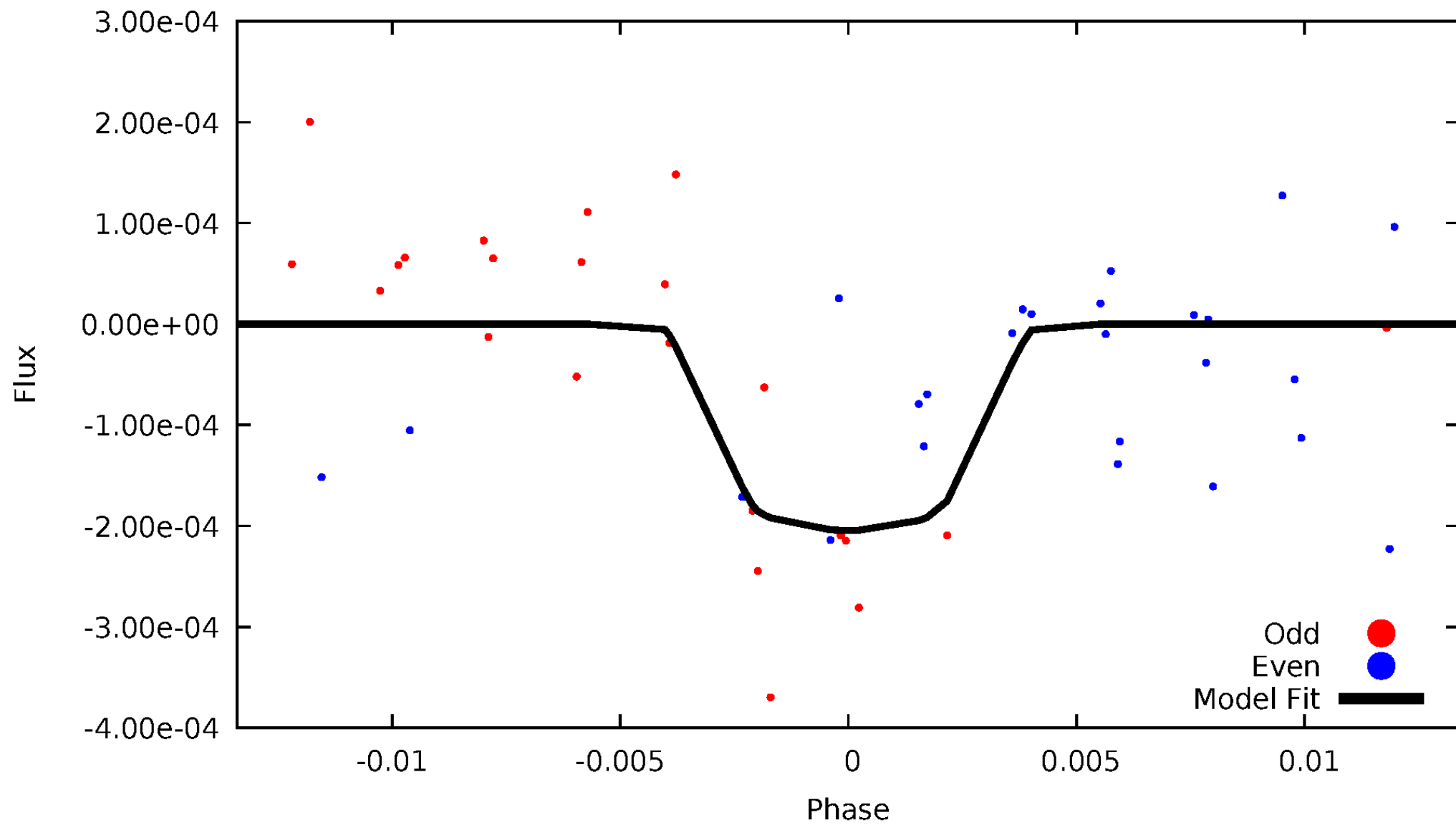


TCE 010196863-03



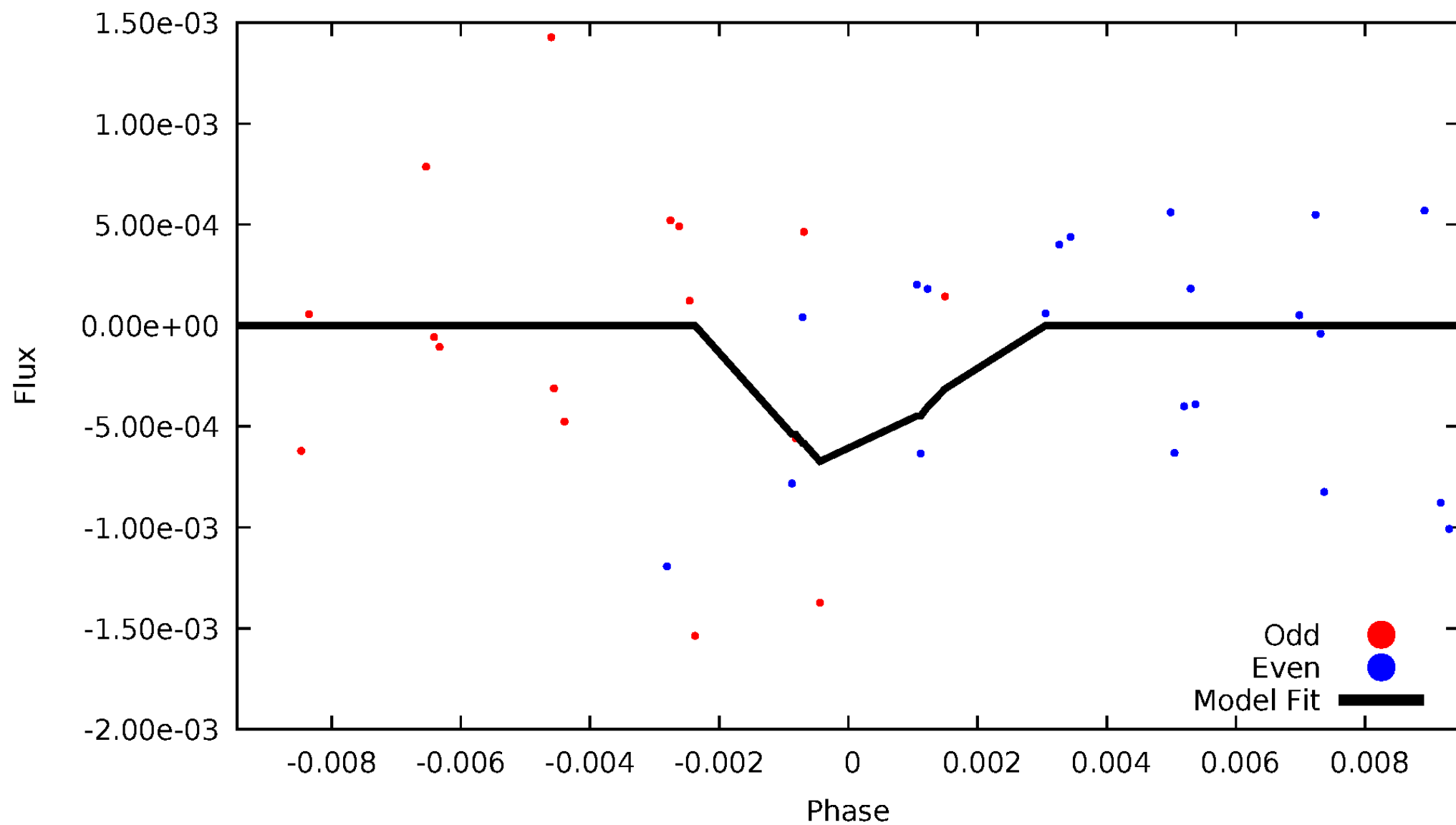
DV Odd/Even

TCE 010196863-03

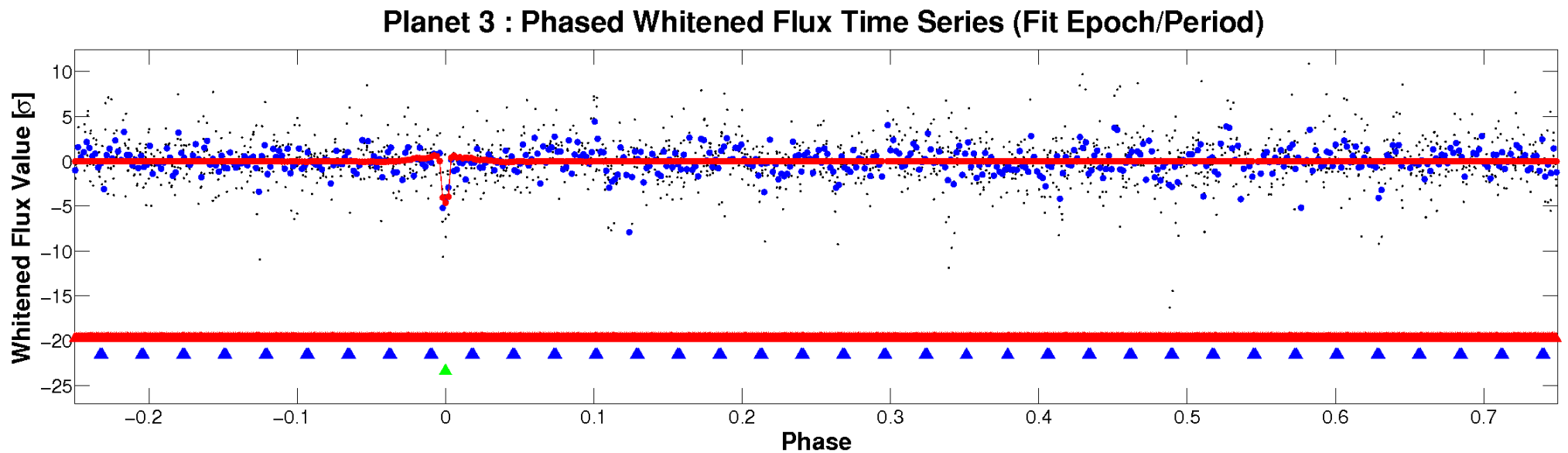
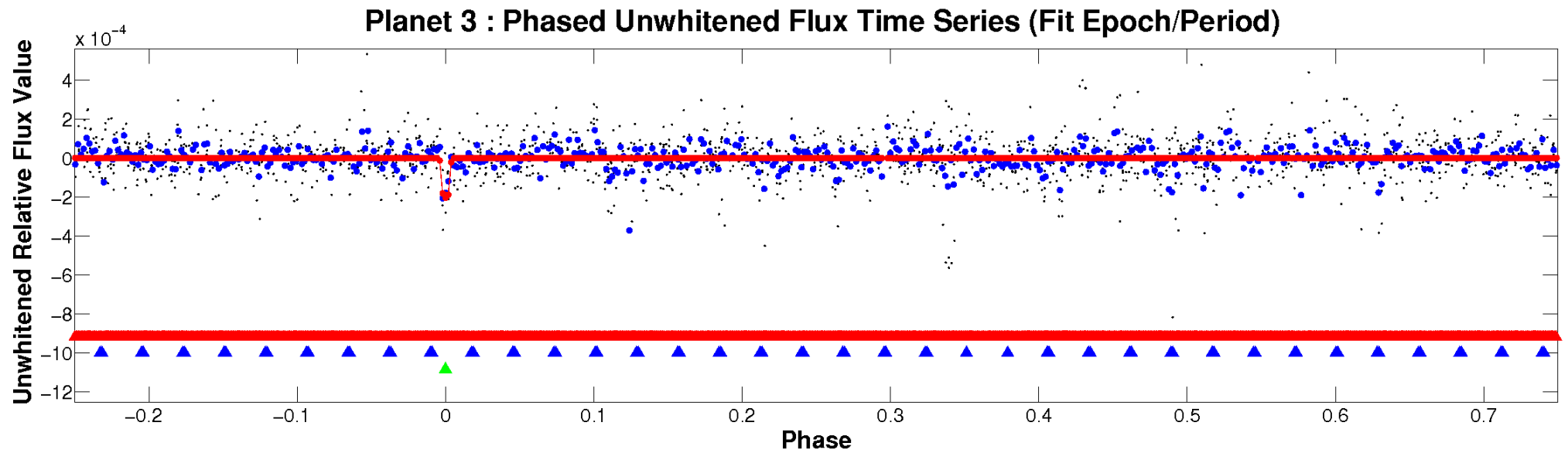


ALT Odd/Even

TCE 010196863-03

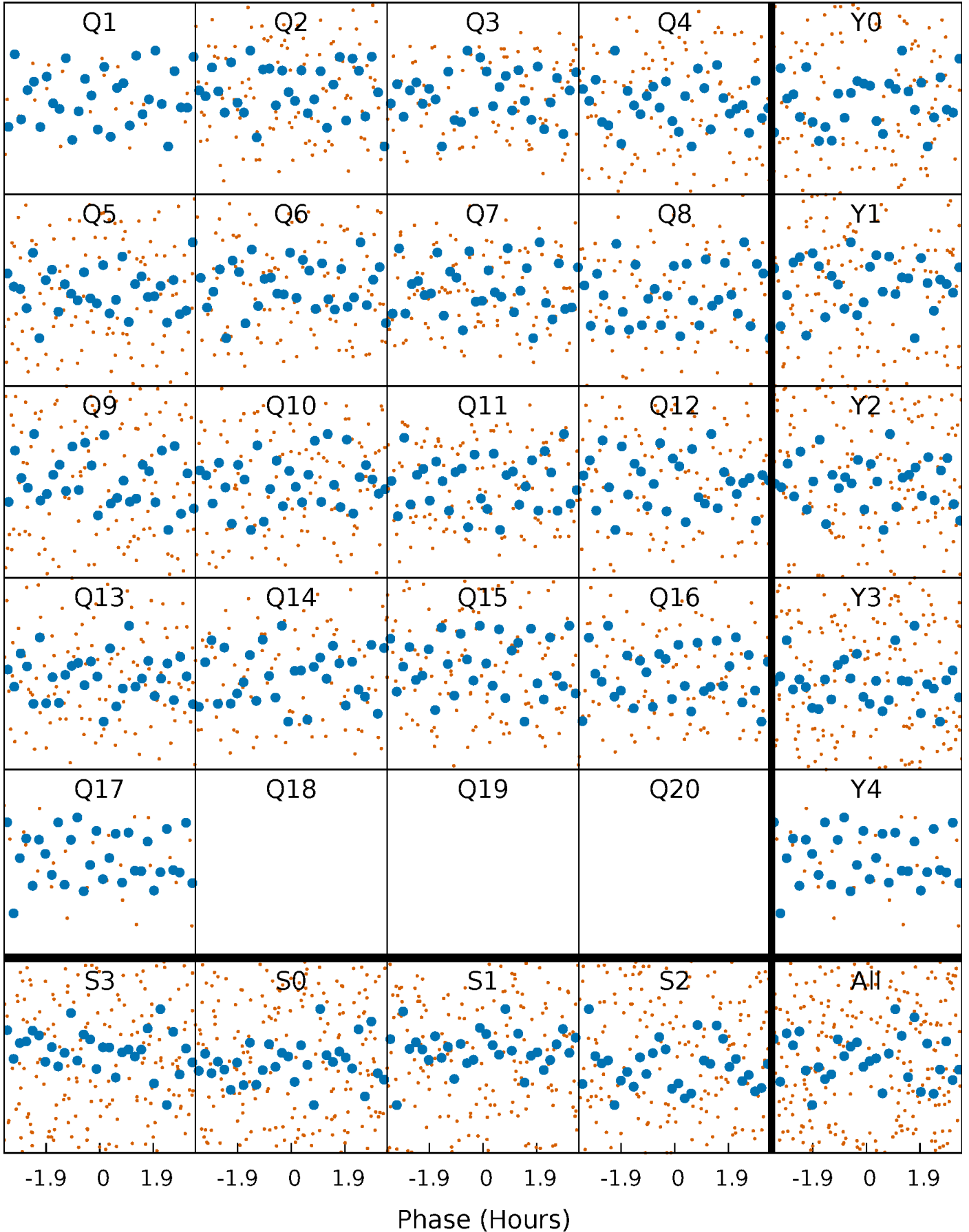


Non-Whitened Vs. Whitened Light Curve



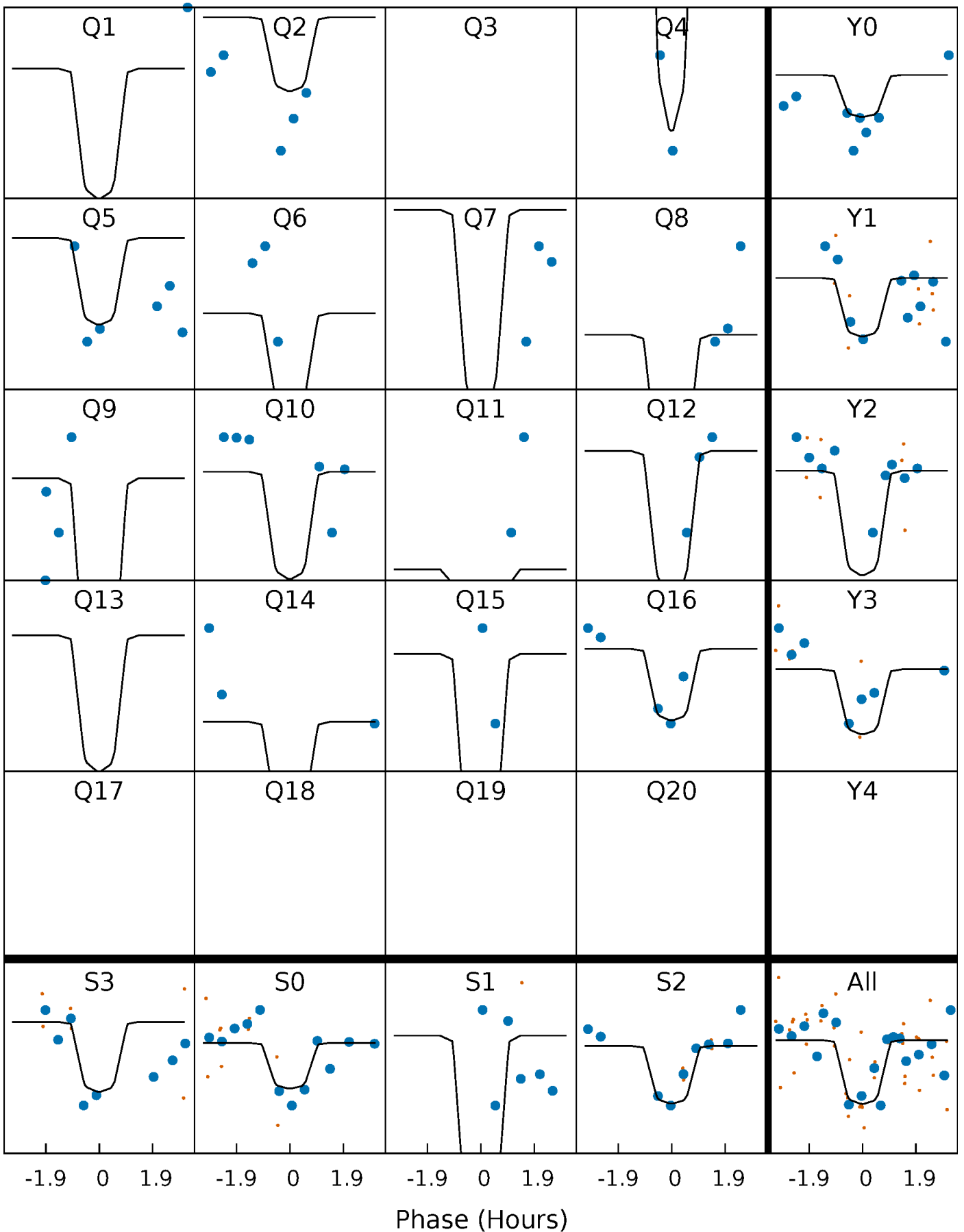
PDC Quarter-Phased Transit Curves

TCE 010196863-03 P= 10.555693 Days $T_0=133.528838$ (BKJD)



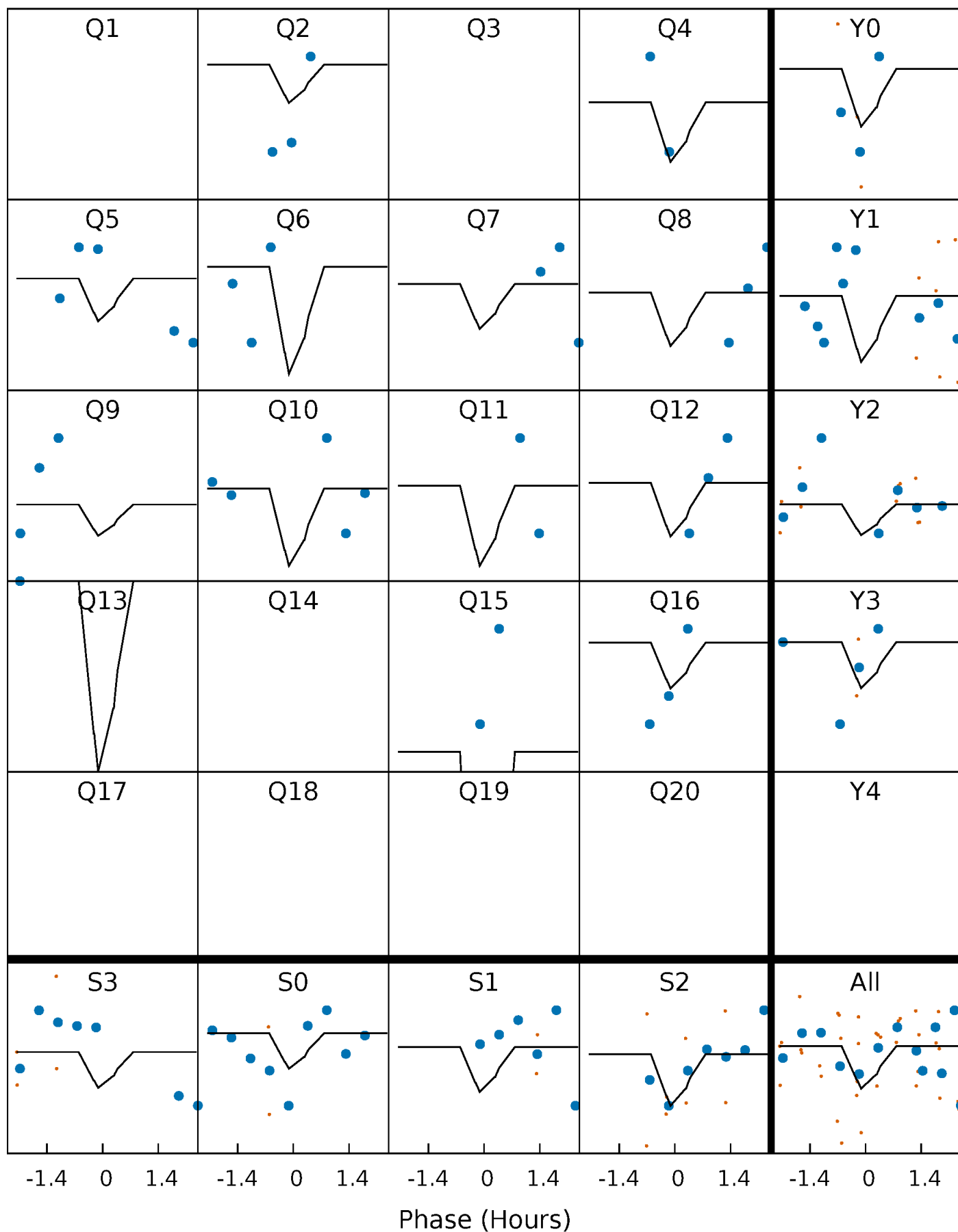
DV Quarter-Phased Transit Curves

TCE 010196863-03 P= 10.555693 Days $T_0=133.528838$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

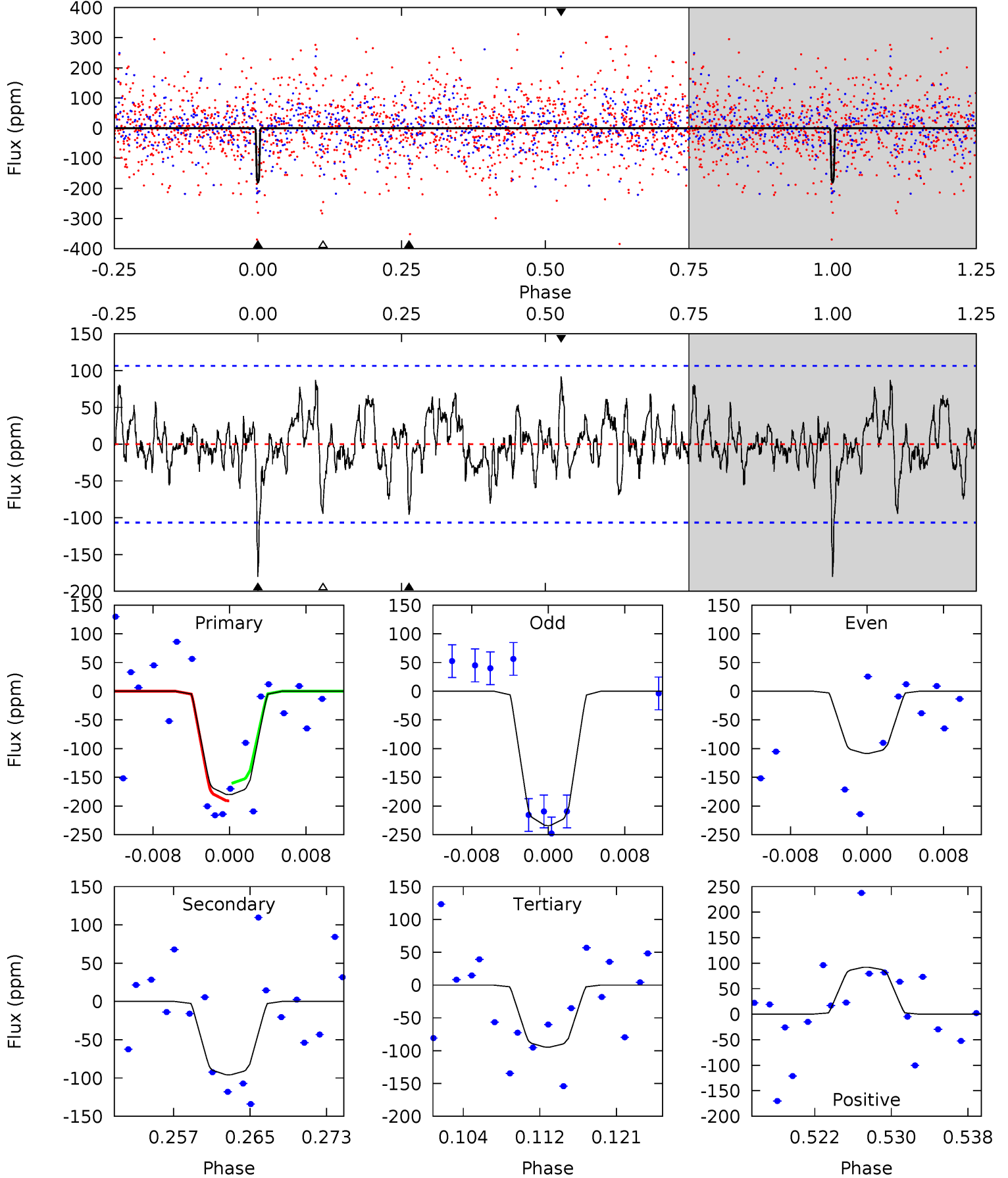
TCE 010196863-03 P= 10.555678 Days $T_0=133.536055$ (BKJD)



DV Model-Shift Uniqueness Test

010196863-03, P = 10.555693 Days, E = 122.973145 Days

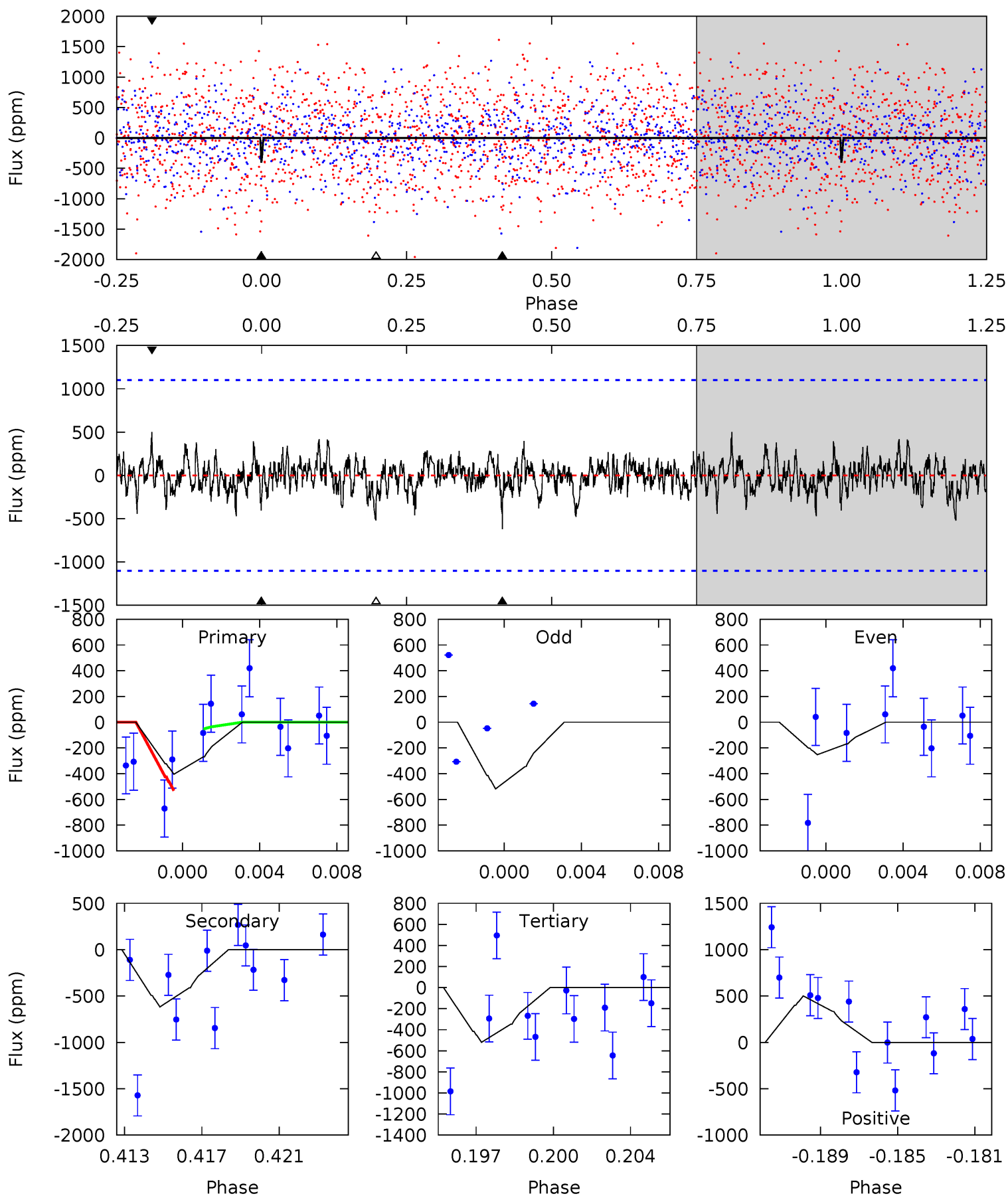
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.57	4.56	4.50	4.38	5.07	2.65	1.39	4.07	4.19	0.06	0.18	2.89	0.95	0.34	0.71



Alt Model-Shift Uniqueness Test

010196863-03, $P = 10.555678$ Days, $E = 122.980377$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.91	2.92	2.45	2.36	5.20	2.88	0.68	-0.55	-0.46	0.46	0.55	0.63	1.03	0.45	1.14



Stellar Parameters For KIC 010196863

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7276^{+233}_{-285}	$3.905^{+0.375}_{-0.125}$	$-0.560^{+0.300}_{-0.300}$	$2.193^{+0.487}_{-0.905}$	$1.410^{+0.187}_{-0.280}$	$0.188^{+0.593}_{-0.071}$
	+3%/-4%	+10%/-3%	+54%/-54%	+22%/-41%	+13%/-20%	+315%/-38%
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 010196863-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-96 ± 21	$3.40^{+2.37}_{-1.93}$	1984^{+166}_{-208}	5654^{+3255}_{-1078}	51^{+224}_{-33}
Alt.	-618 ± 212	$5.59^{+2.69}_{-2.13}$	1998^{+161}_{-204}	7165^{+2513}_{-1384}	114^{+210}_{-66}

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

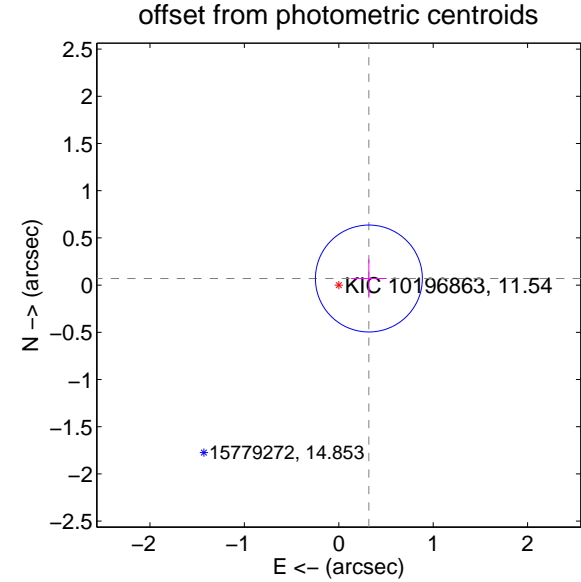
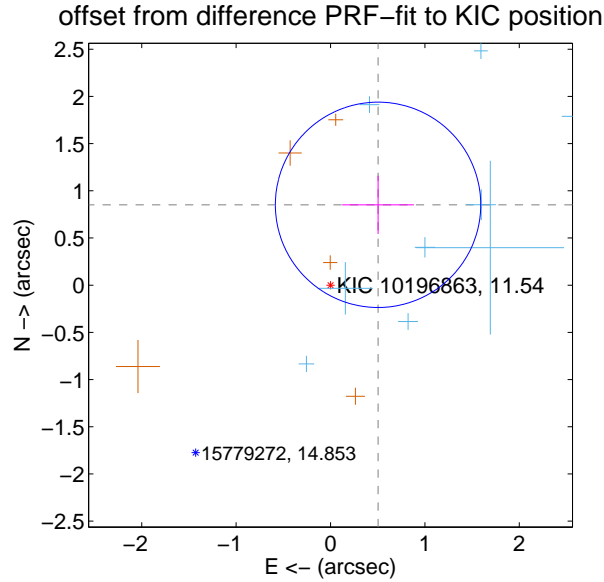
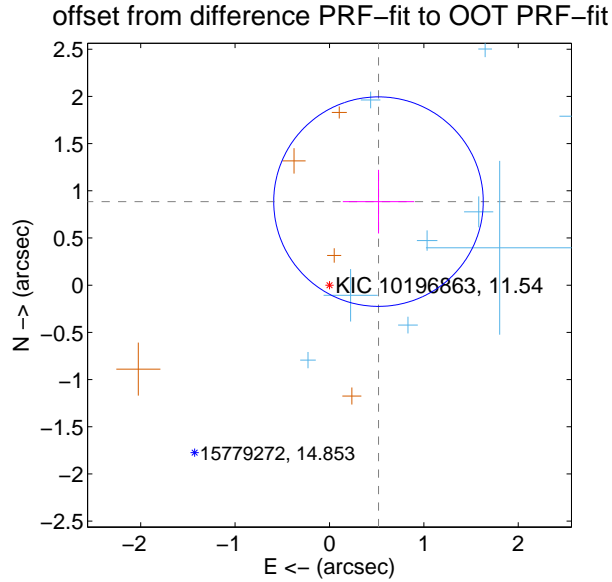
DV Centroid Data

Supplemental centroid analysis for 010196863-03. **Kepler magnitude: 11.54**. Transit SNR 15.31

There are 9 quarters with good PRF difference image offsets

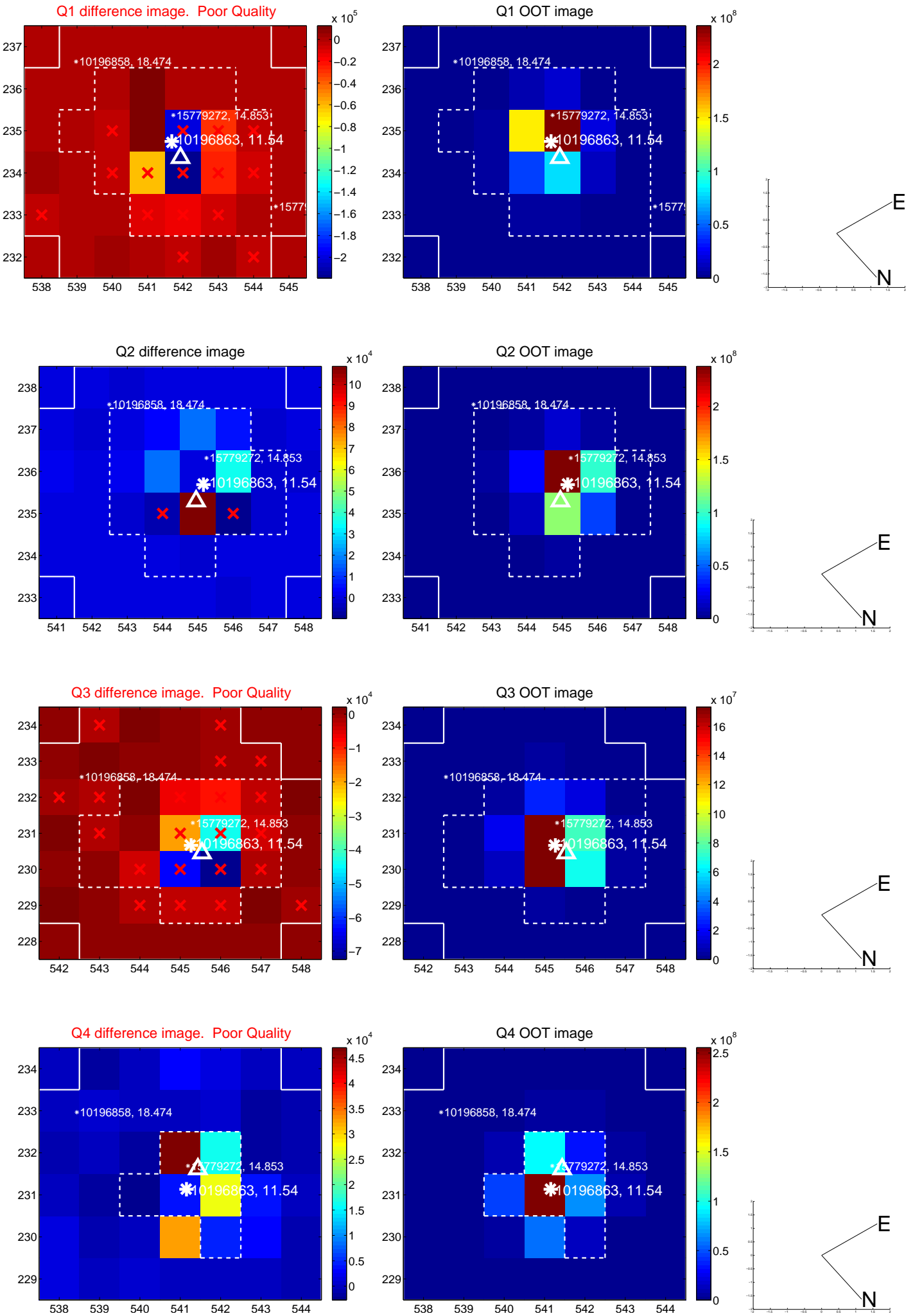
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.026 ± 0.370	2.77	-0.519 ± 0.378	0.885 ± 0.337
PRF-fit source offset from KIC position	0.989 ± 0.363	2.73	-0.504 ± 0.381	0.851 ± 0.308
photometric centroid source offset	0.33 ± 0.19	1.73	-0.32 ± 0.19	0.07 ± 0.20

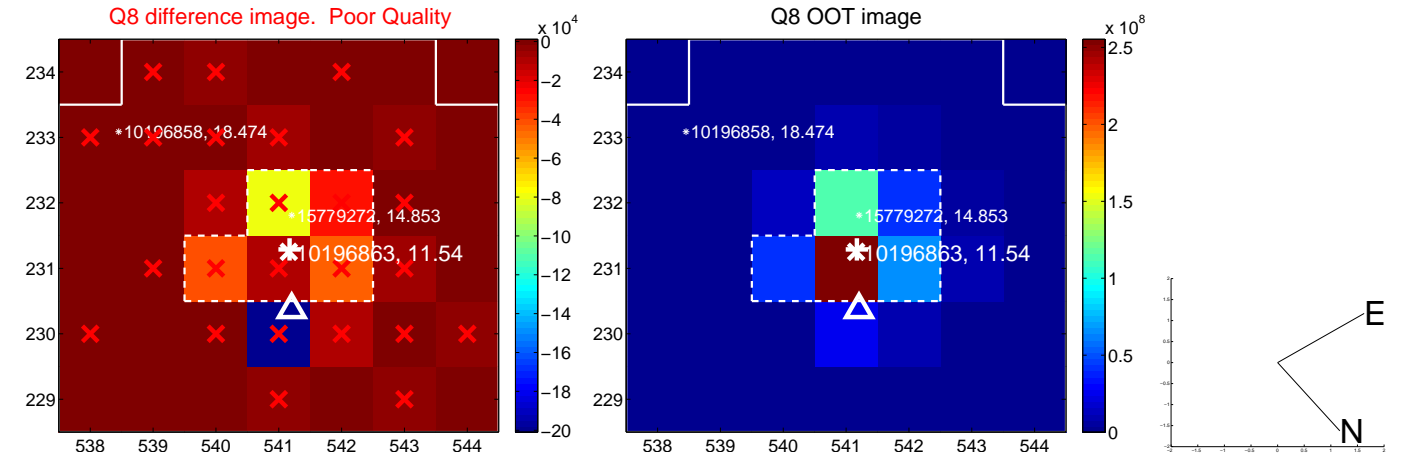
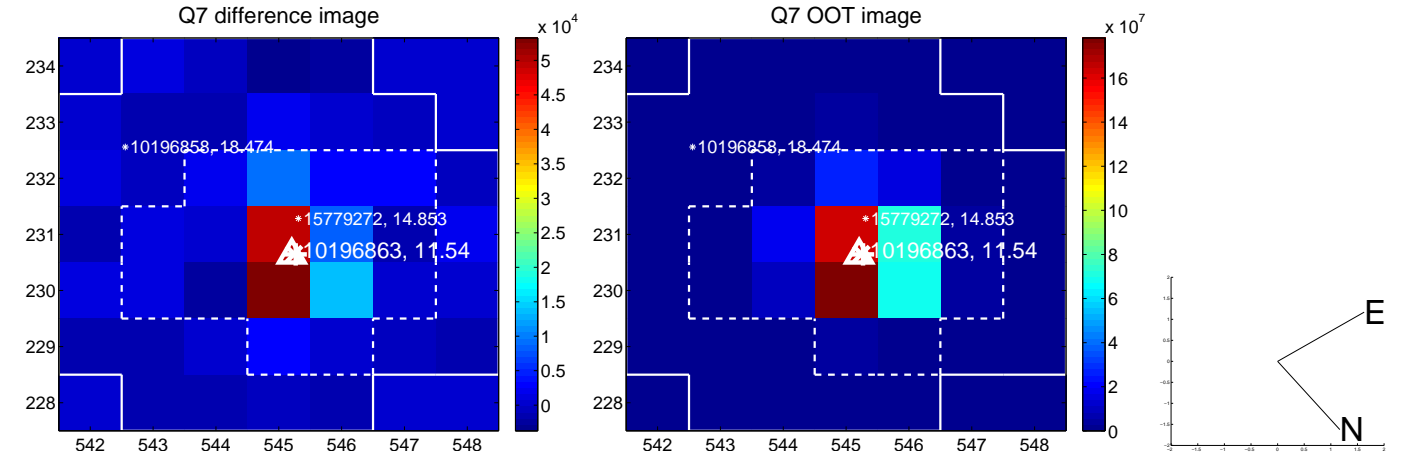
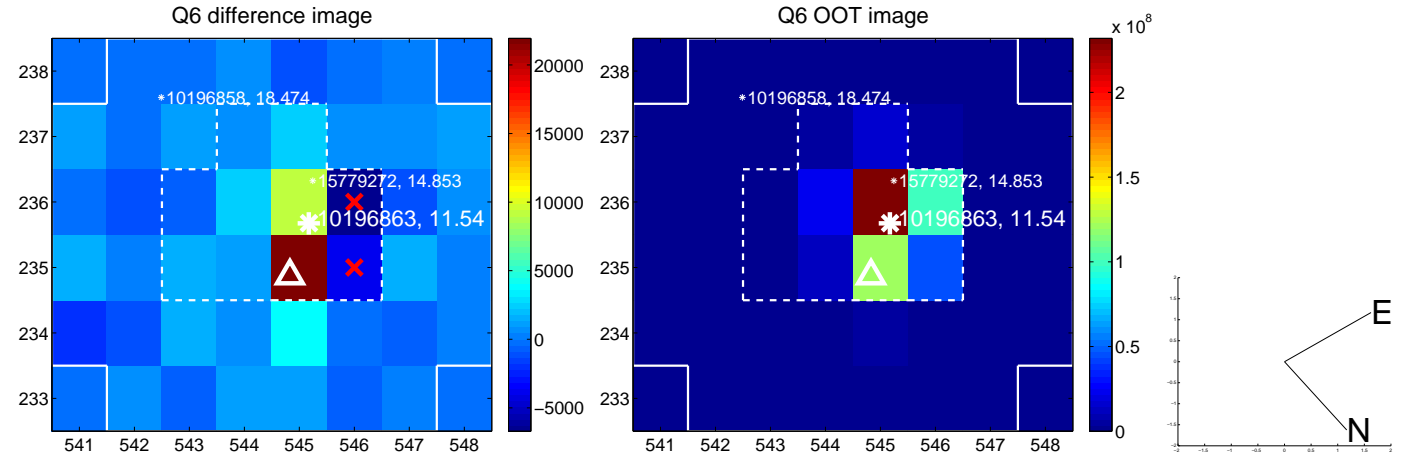
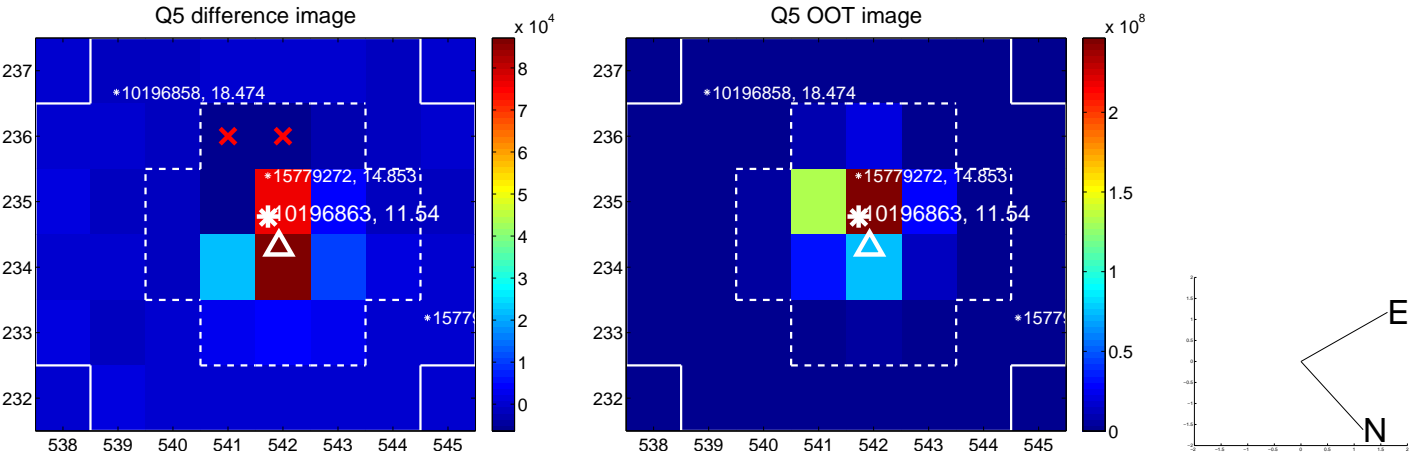


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

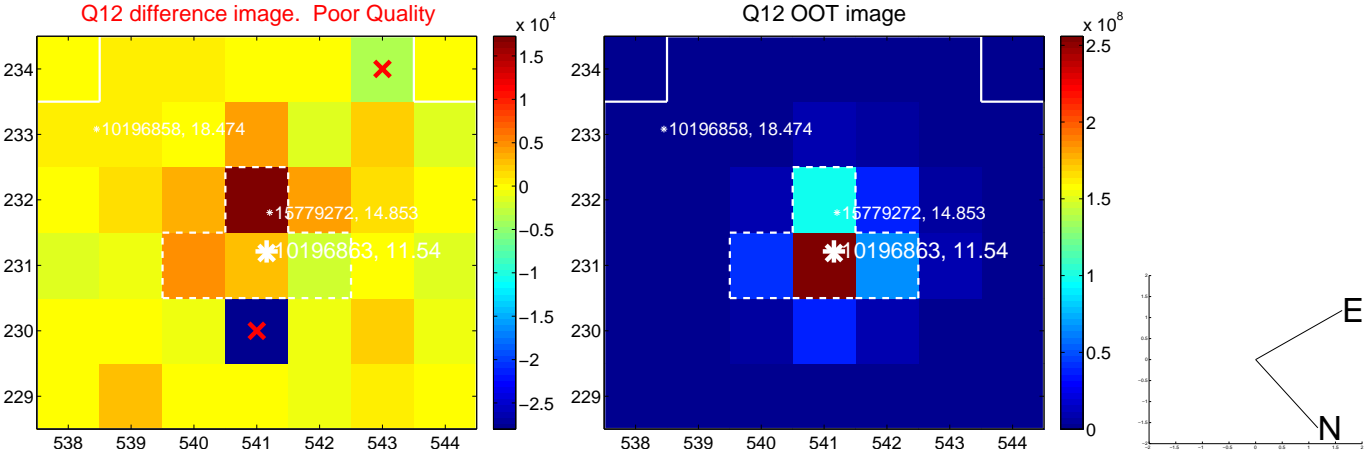
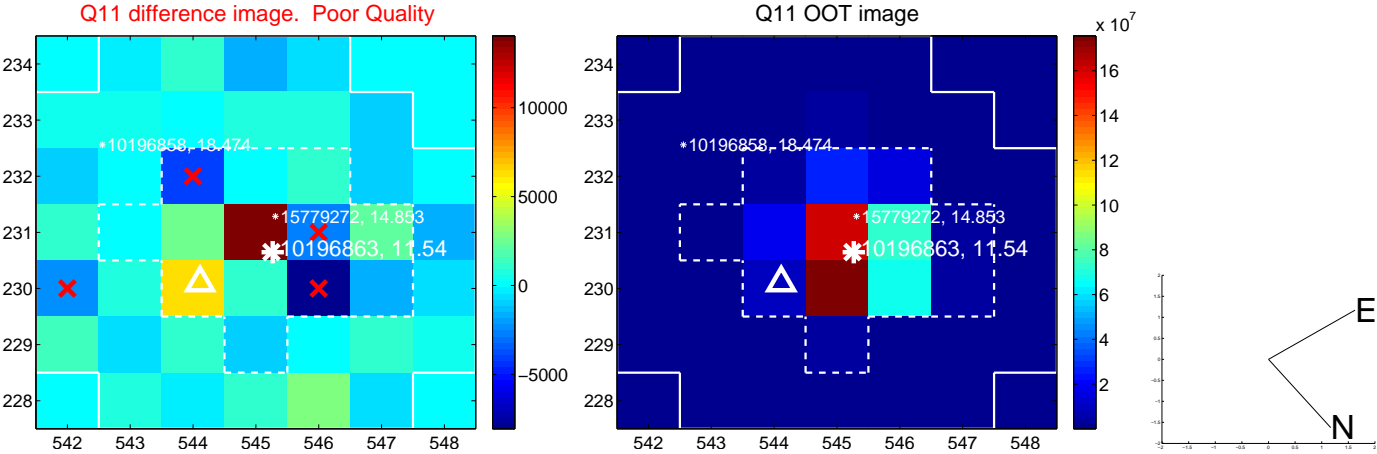
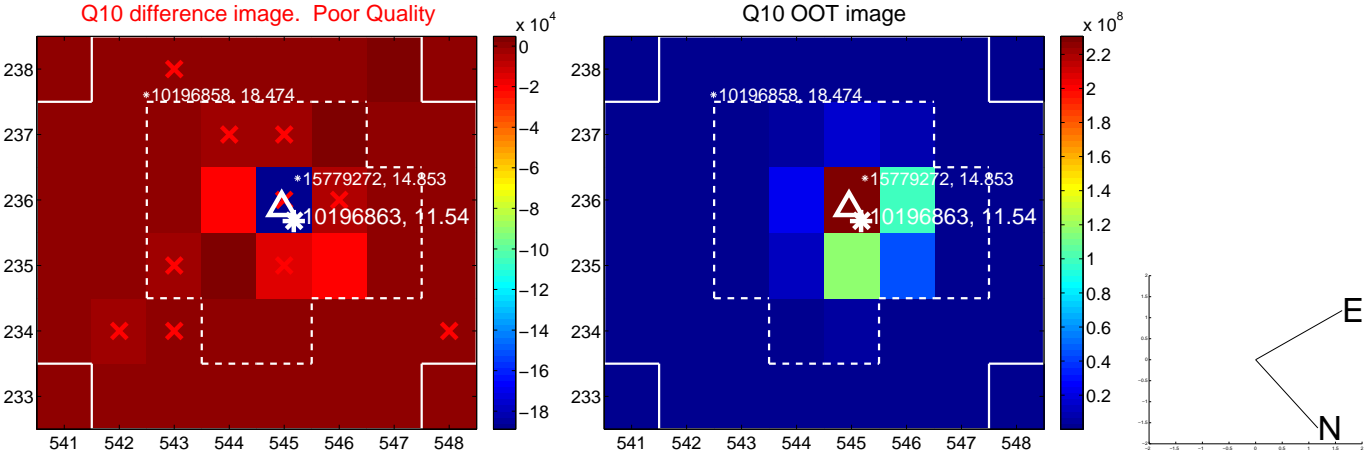
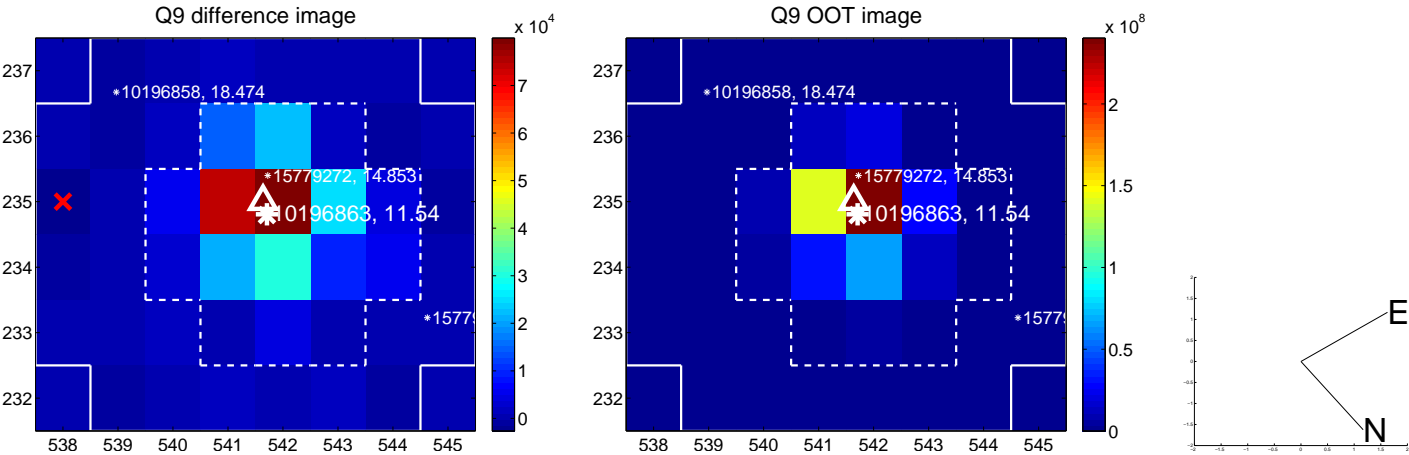
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



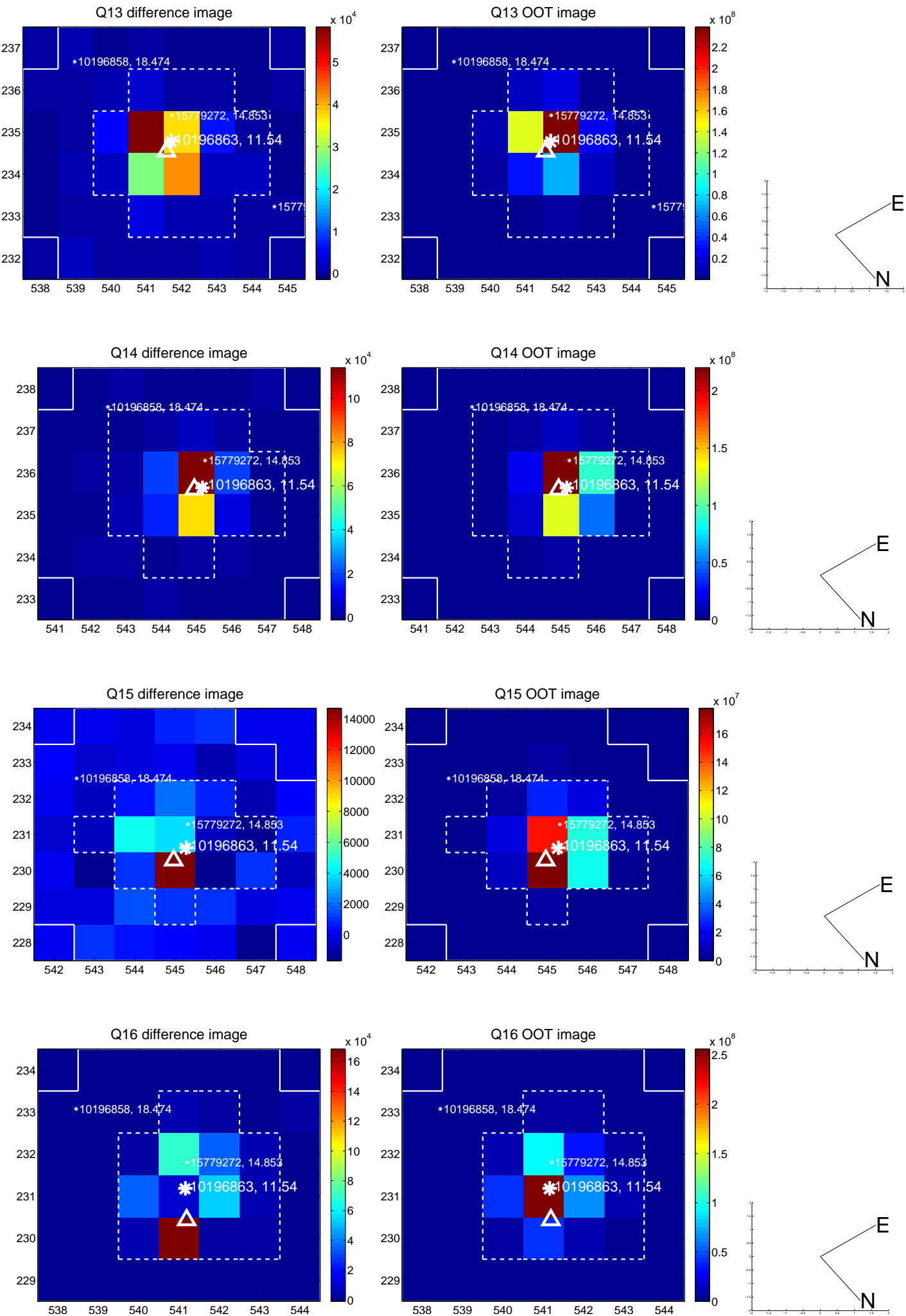
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



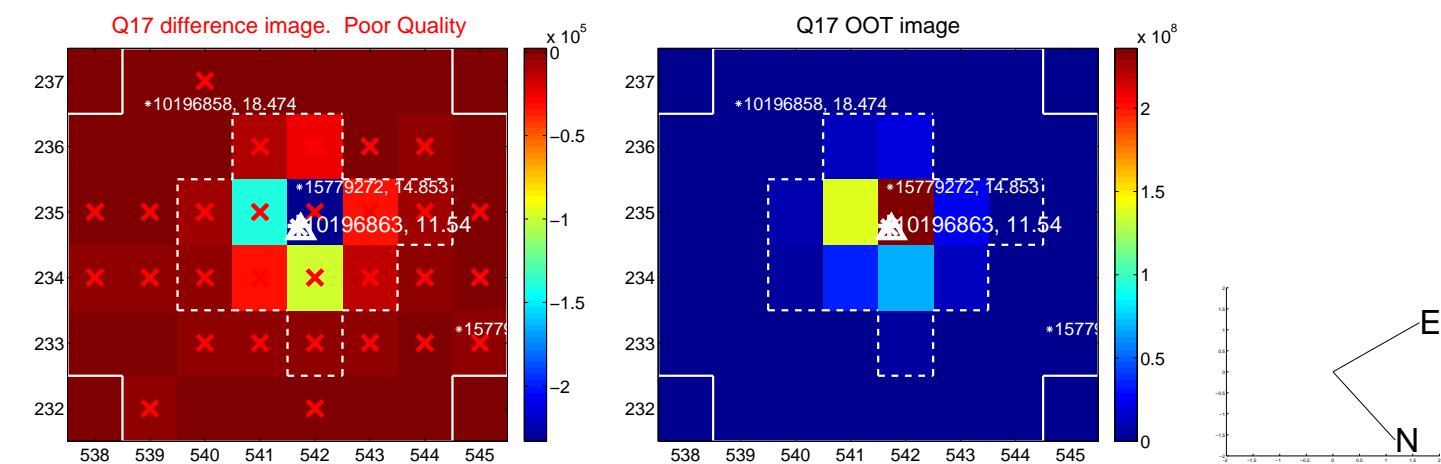
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



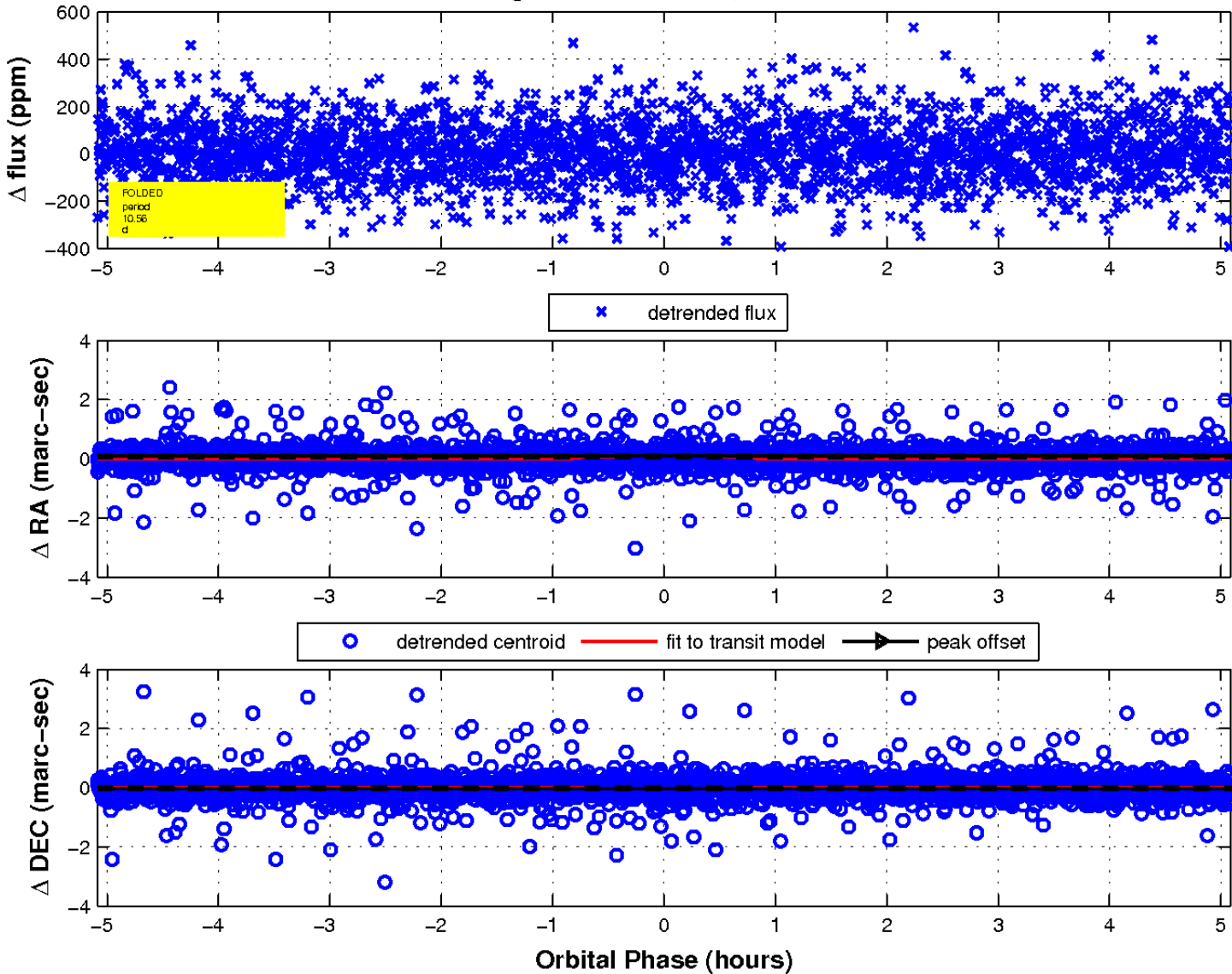
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

