

KIC 012353720

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})
012353720-01	OBS	7524.01	1.953268	133.149837	1385.9	1.477	169.8	278.7	3.93	6450	17.50	17387.28
012353720-02	OBS	No	1.953294	132.164364	616.3	1.256	132.3	145.2	3.93	6450	11.47	17386.98
012353720-03	OBS	No	365.543414	373.510747	188.1	13.555	7.4	5.9	3.93	6450	5.79	16.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012353720-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
012353720-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
012353720-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_ALT—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.

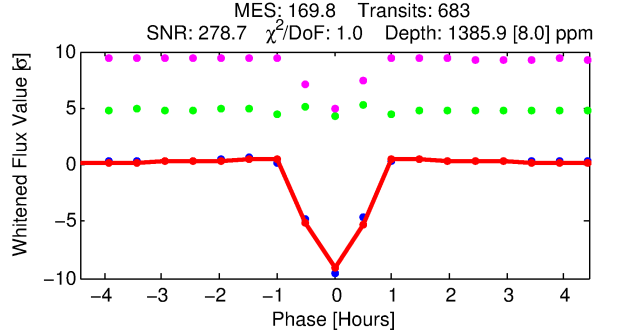
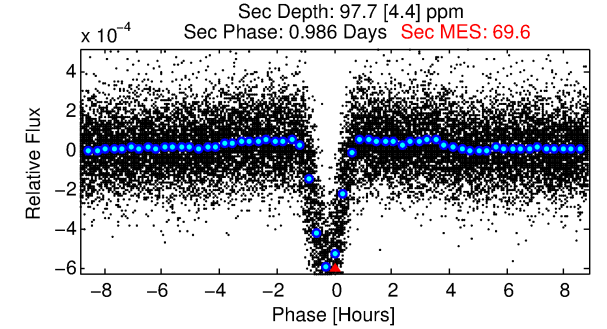
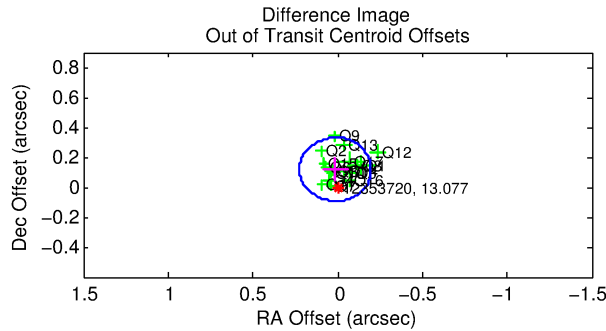
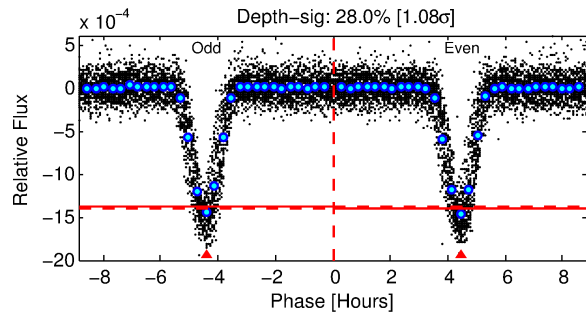
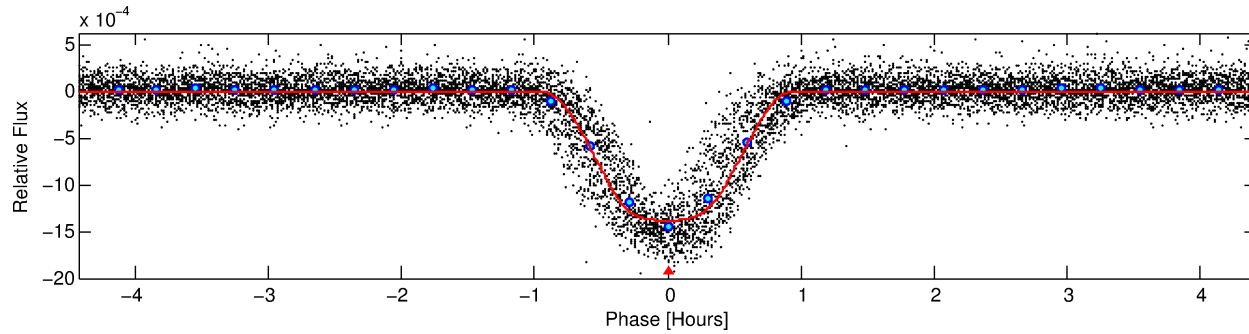
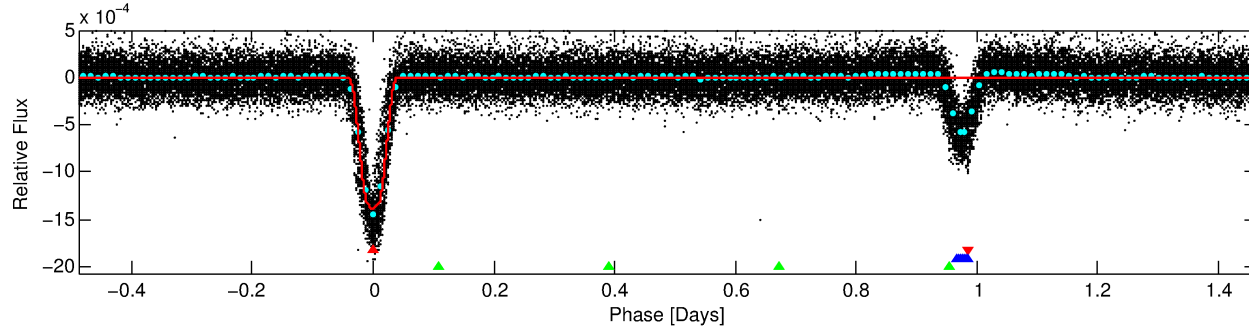
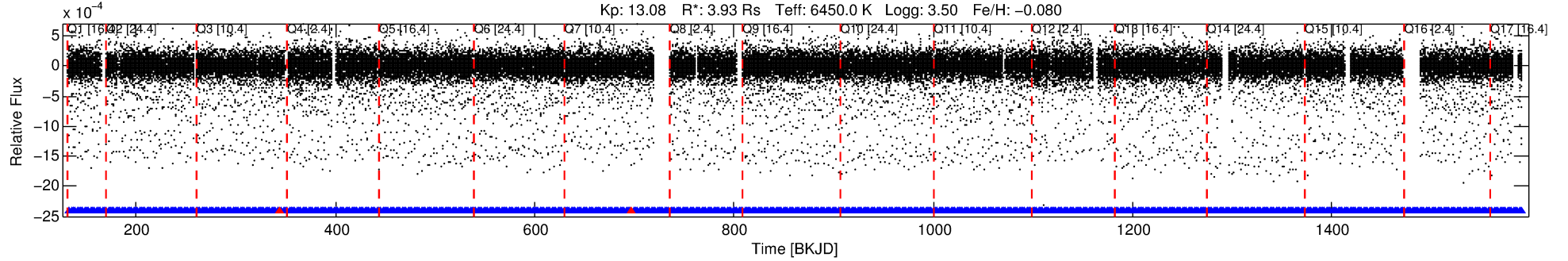
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012353720-01

No Significant Match Found

DV One-Page Summary

KIC: 12353720 Candidate: 1 of 3 Period: 1.953 d
KOI: K07524.01 Corr: 0.933



DV Fit Results:

Period = 1.95327 [0.00000] d
Epoch = 133.1498 [0.0001] BKJD
Rp/R* = 0.0408 [0.0003]
a/R* = 5.03 [0.17]
b = 0.92 [0.01]
Seff = 17387.28 [10756.55]
Teq = 2928 [453] K
Rp = 17.50 [6.72] Re
a = 0.0371 [0.0140] AU
Ag = 0.24 [0.15] [-5.15 σ]
Teffp = 3173 [95] K [0.53 σ]

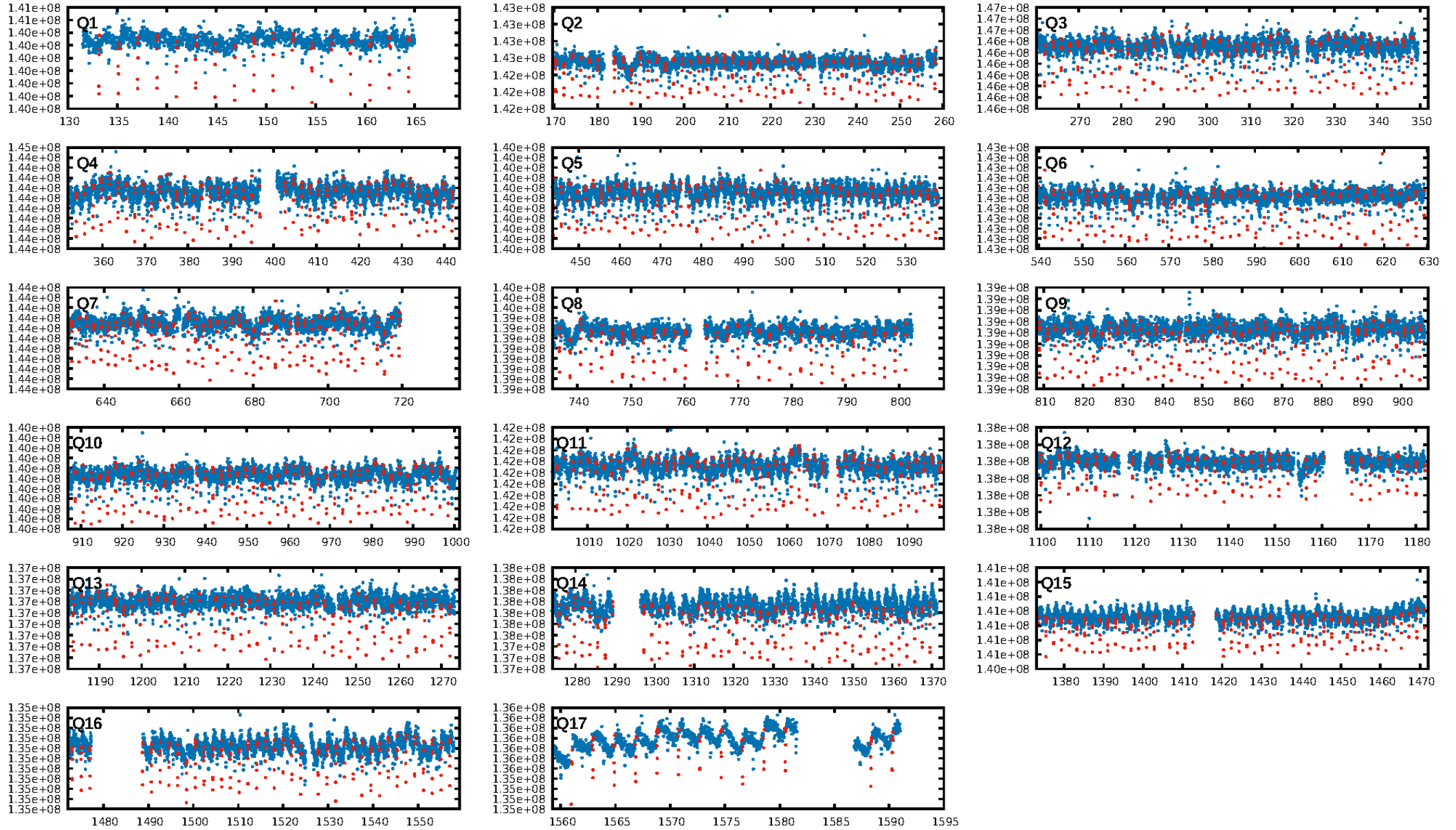
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [651/653]
GhostDiagnostic-chr: 5.214
Centroid-sig: N/A
Centroid-so: 0.389 arcsec [10.73 σ]
OotOffset-rm: 0.119 arcsec [1.69 σ]
KicOffset-rm: 0.129 arcsec [1.80 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

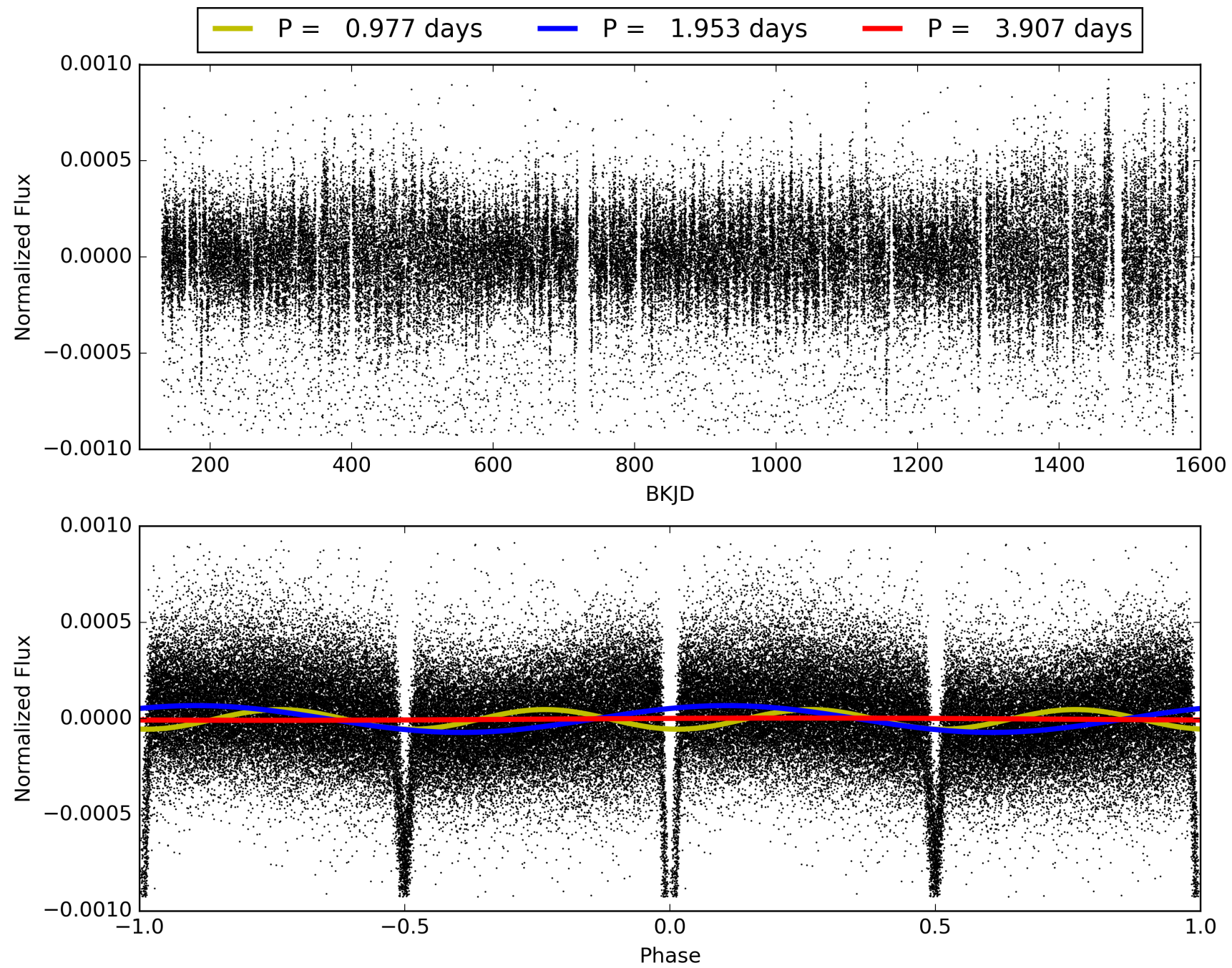
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:28:12 Z

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

TCE 012353720-01, PDC Light Curves

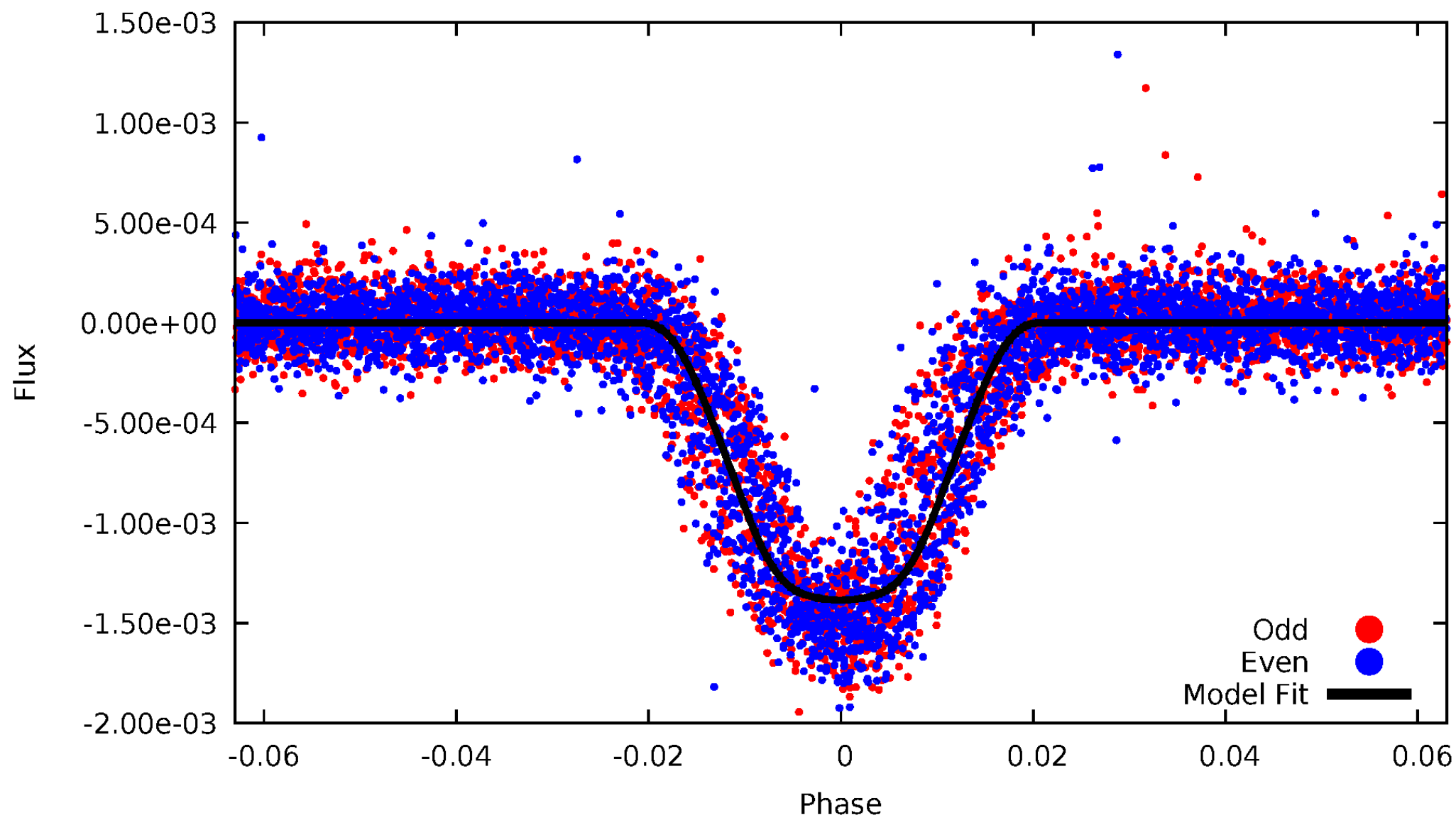


TCE 012353720-01



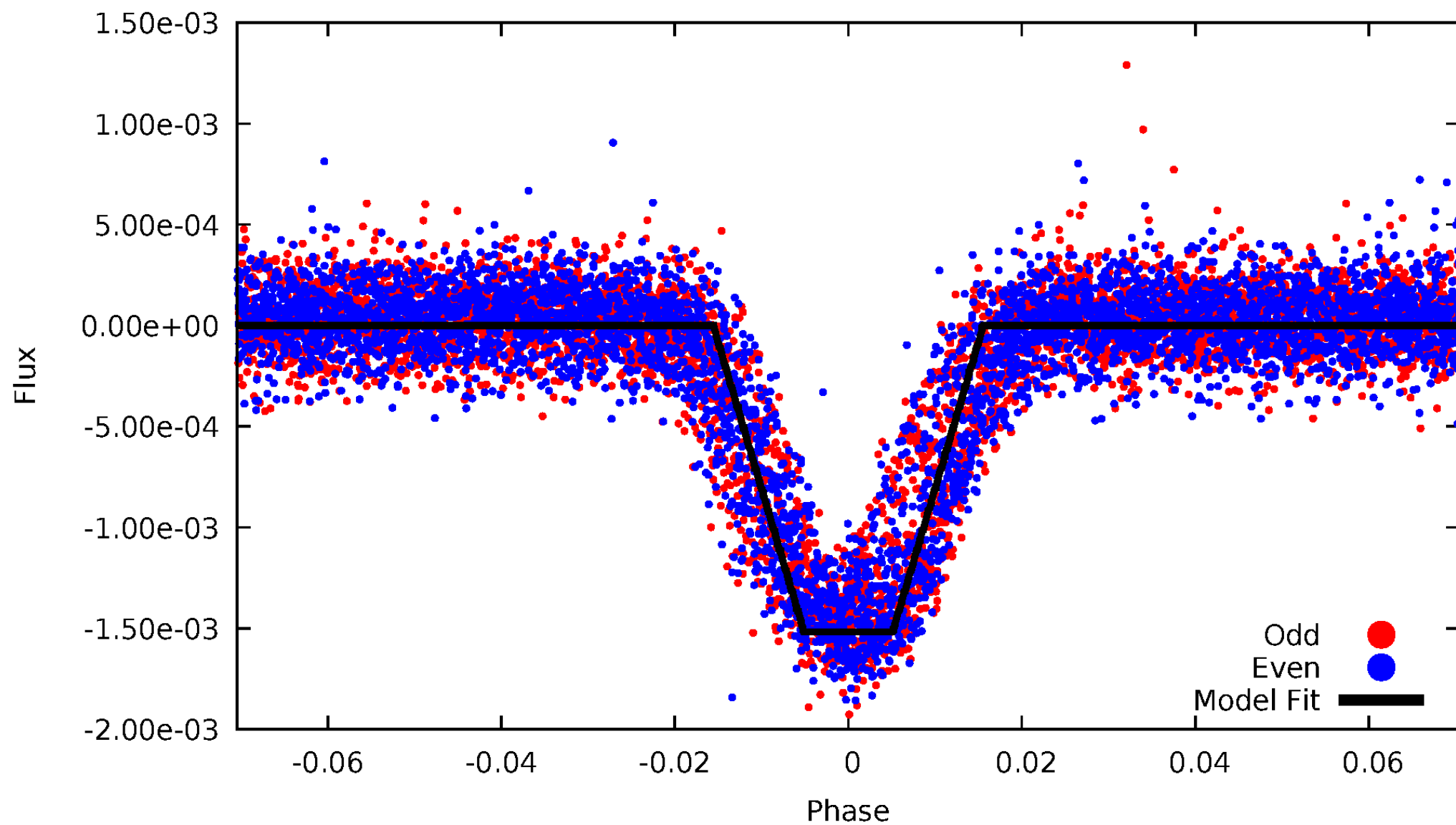
DV Odd/Even

TCE 012353720-01



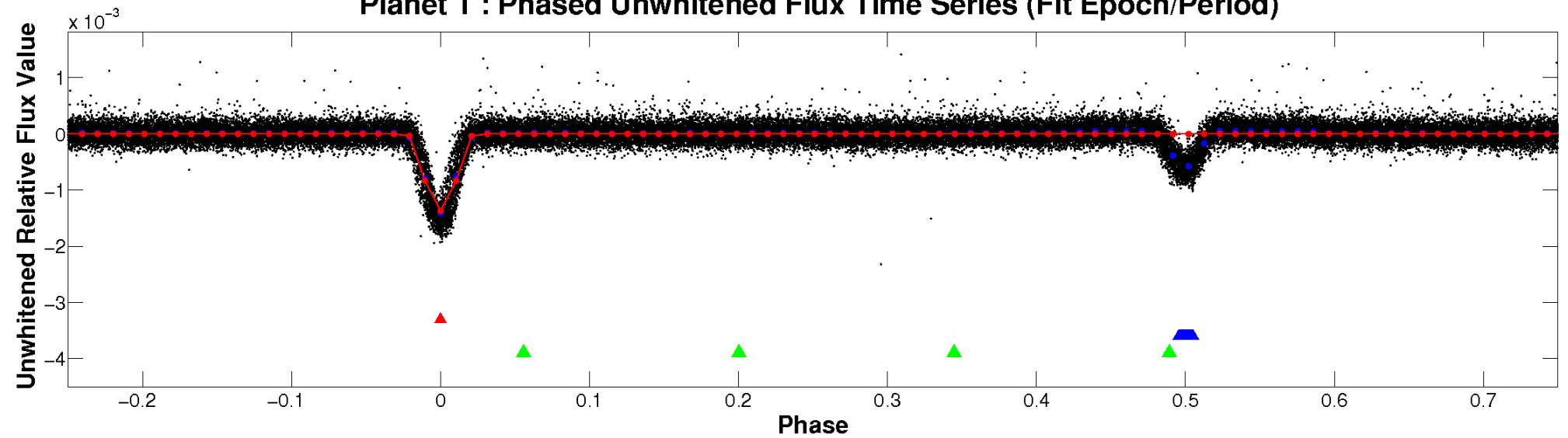
ALT Odd/Even

TCE 012353720-01

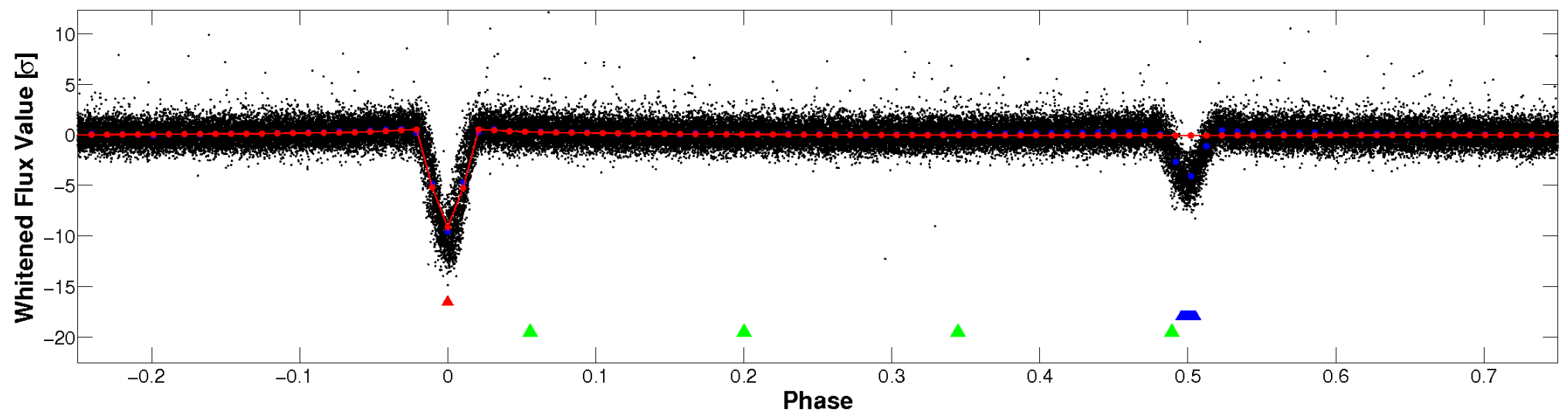


Non-Whitened Vs. Whitened Light Curve

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

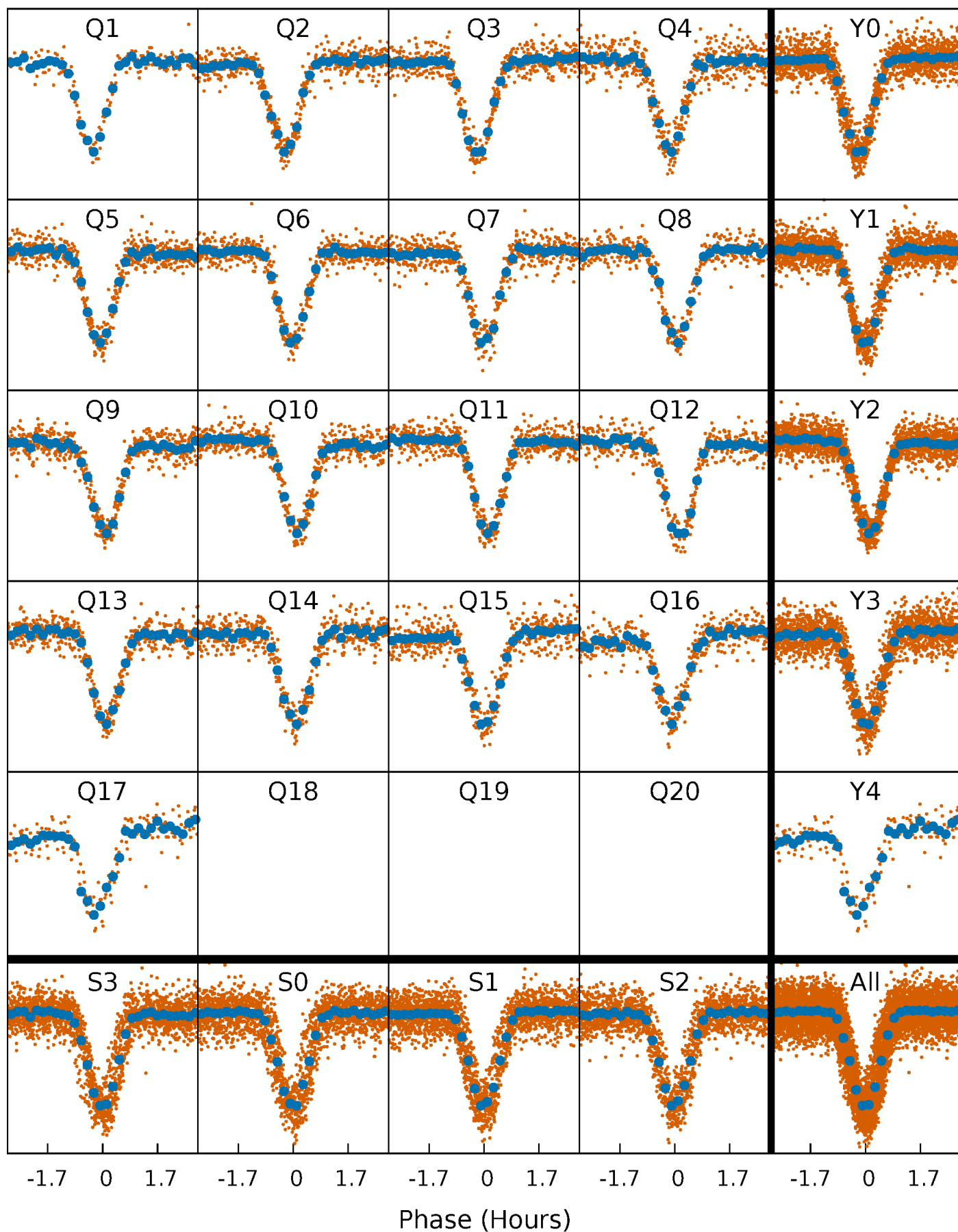


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



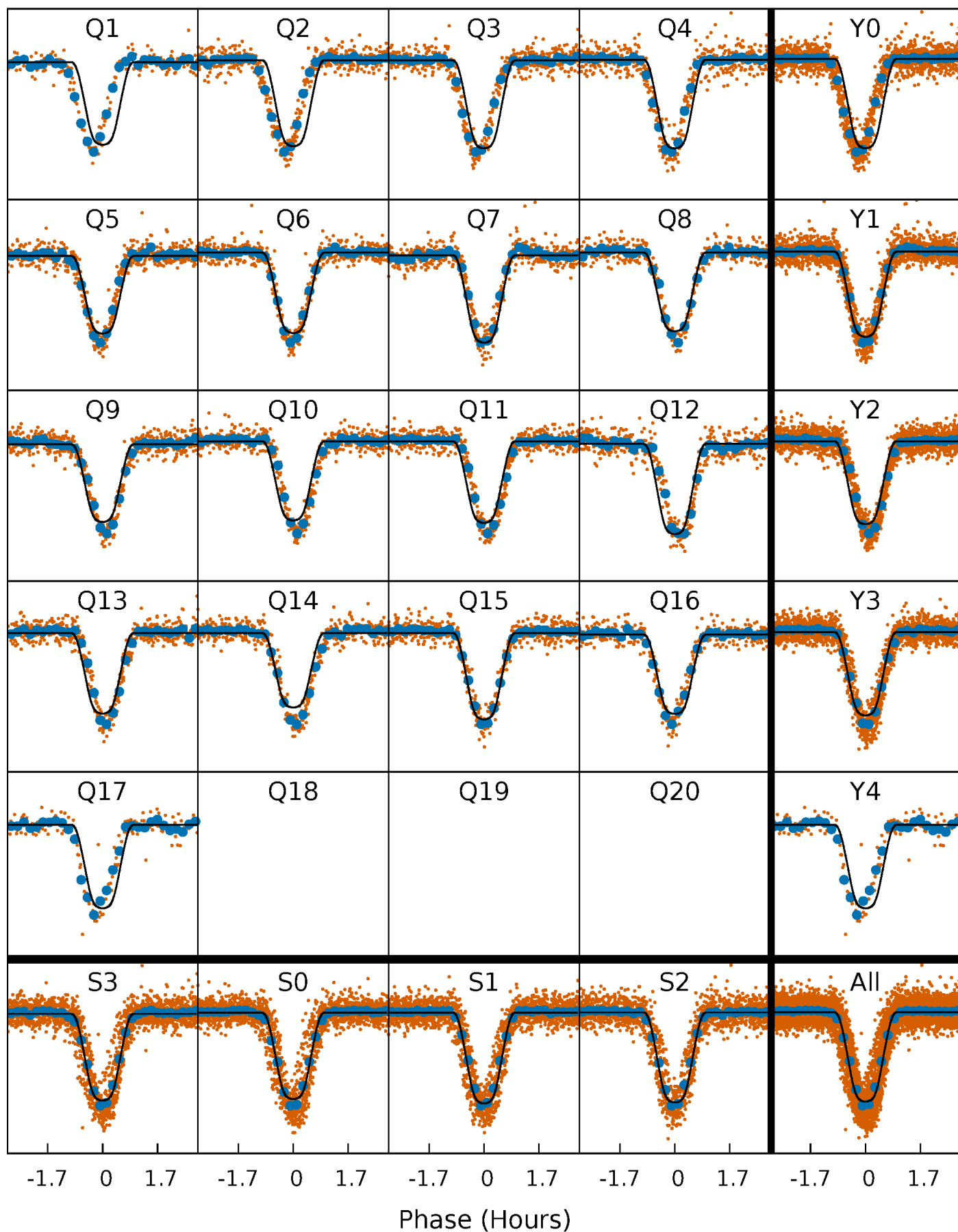
PDC Quarter-Phased Transit Curves

TCE 012353720-01 P= 1.953268 Days $T_0=133.149837$ (BKJD)



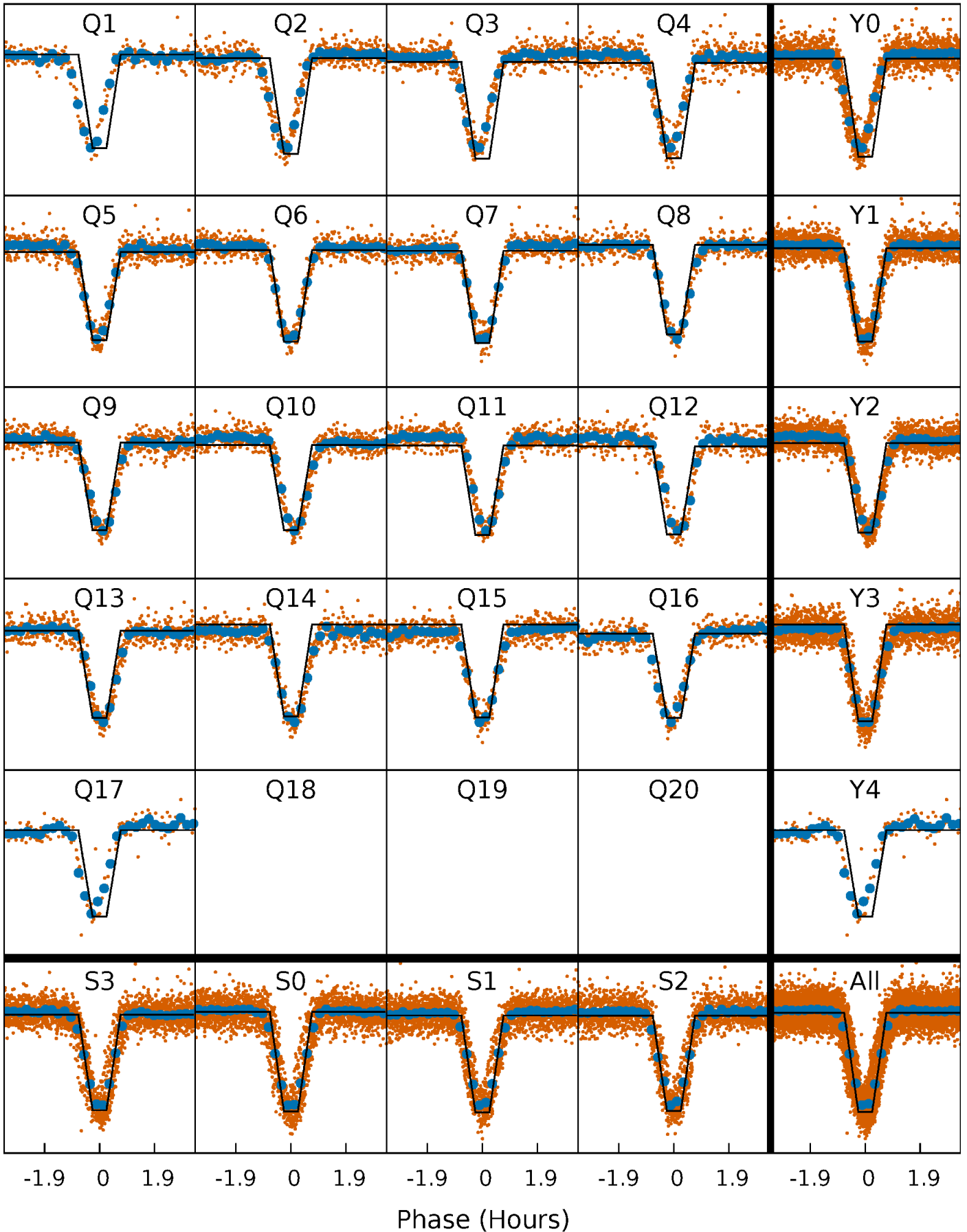
DV Quarter-Phased Transit Curves

TCE 012353720-01 P= 1.953268 Days $T_0=133.149837$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

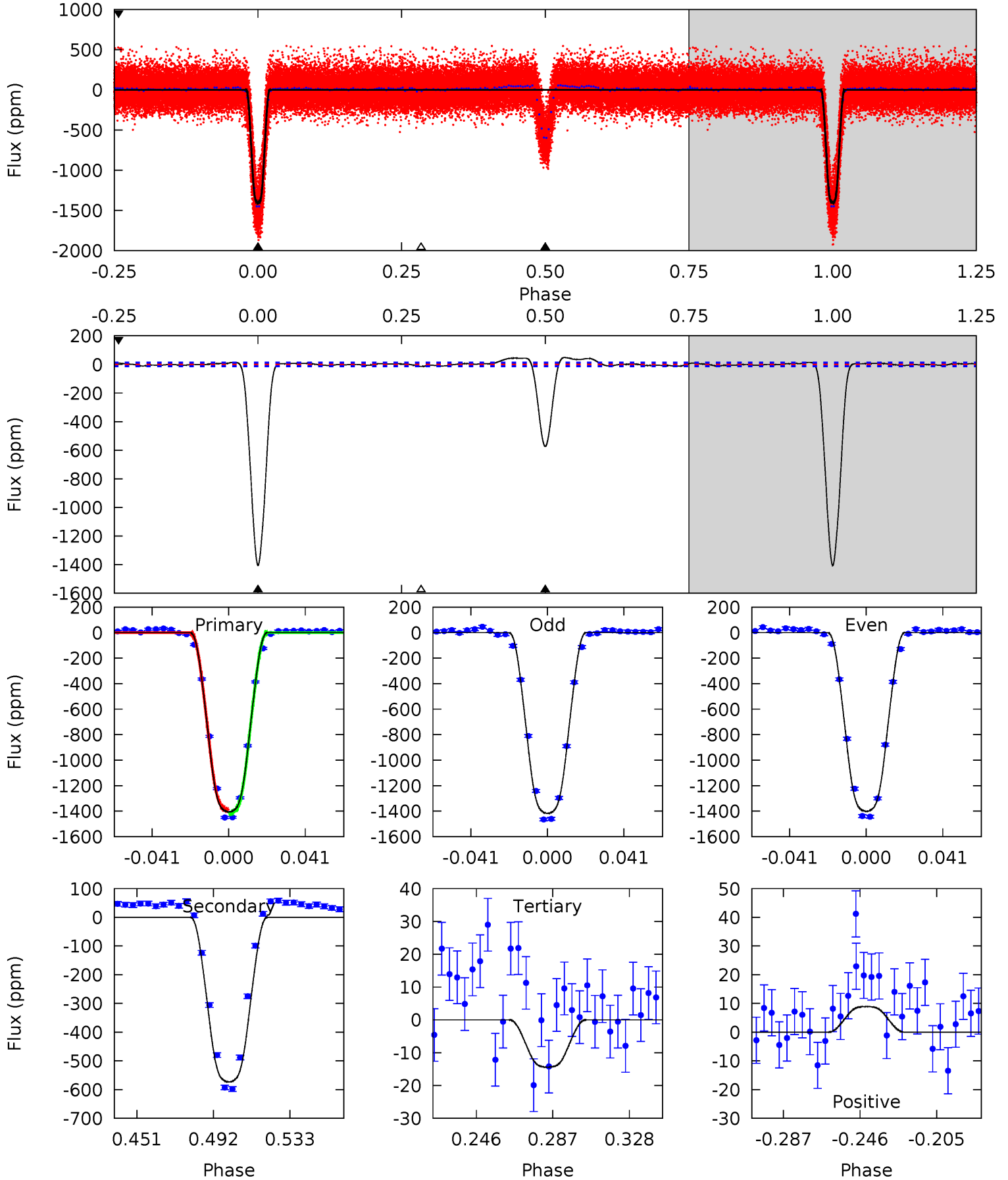
TCE 012353720-01 P= 1.953270 Days $T_0=133.148786$ (BKJD)



DV Model-Shift Uniqueness Test

012353720-01, P = 1.953268 Days, E = 131.196569 Days

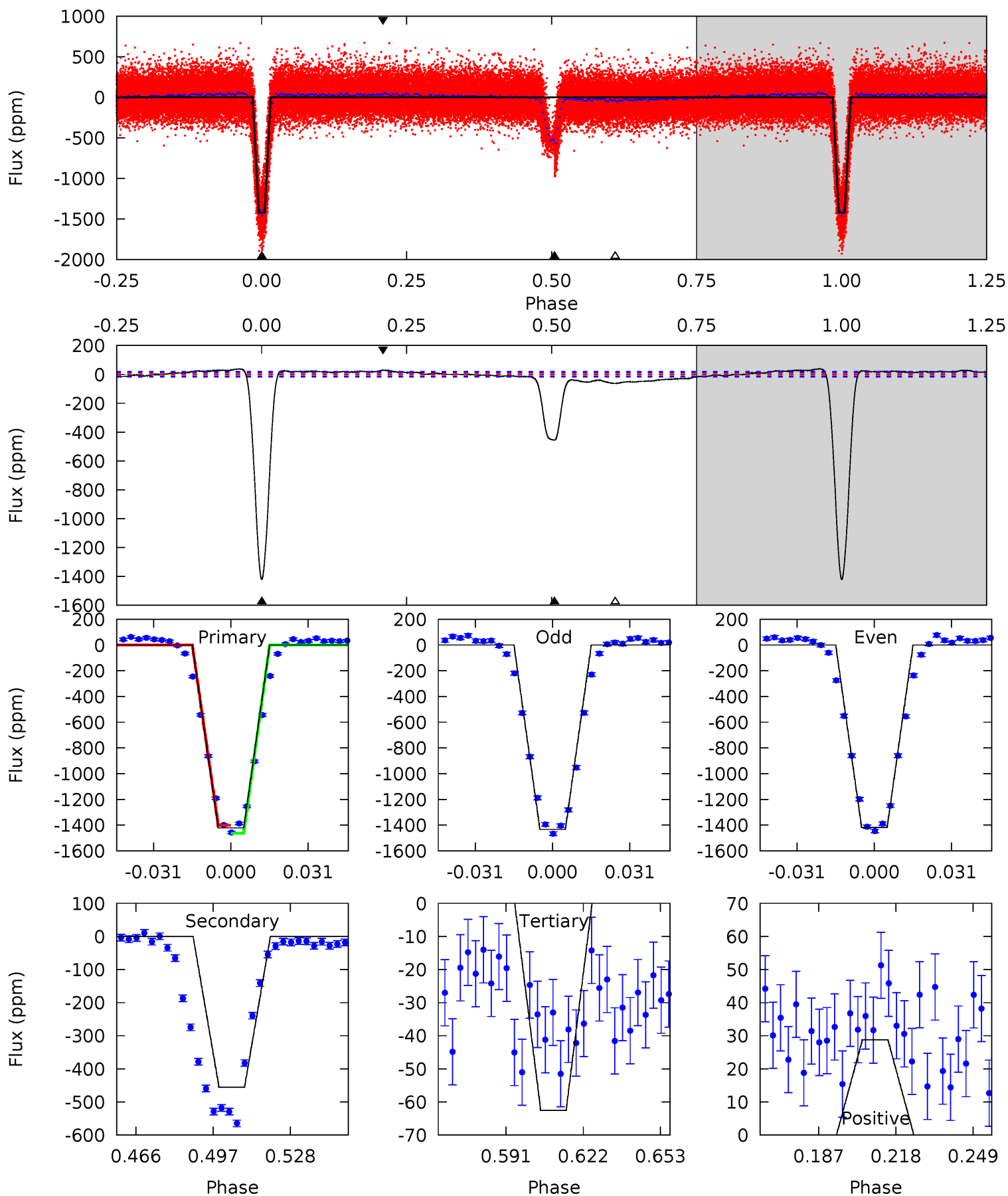
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
543.3	221.7	5.58	3.45	4.75	2.04	5.11	537.7	539.8	216.1	218.2	2.97	1.00	0.03	4.91



Alt Model-Shift Uniqueness Test

012353720-01, P = 1.953270 Days, E = 131.195516 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
423.0	135.7	18.6	8.57	4.80	2.16	7.86	404.4	414.4	117.1	127.1	2.06	1.01	0.03	9.09



Stellar Parameters For KIC 012353720

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6450^{+176}_{-176}	$3.501^{+0.360}_{-0.090}$	$-0.080^{+0.350}_{-0.250}$	$3.928^{+0.402}_{-1.507}$	$1.782^{+0.163}_{-0.381}$	$0.041^{+0.105}_{-0.012}$
	+3%/-3%	+10%/-3%	+438%/-312%	+10%/-38%	+9%/-21%	+254%/-29%
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 012353720-01 / KOI 7524.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-574 ± 3	$17.22^{+1.39}_{-3.75}$	4009^{+228}_{-402}	4810^{+123}_{-134}	$1.497^{+0.808}_{-0.222}$
Alt.	-456 ± 3	$16.76^{+1.23}_{-3.72}$	4041^{+201}_{-382}	4623^{+115}_{-115}	$1.266^{+0.592}_{-0.181}$

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 $A_{obs} \gg 1.0$

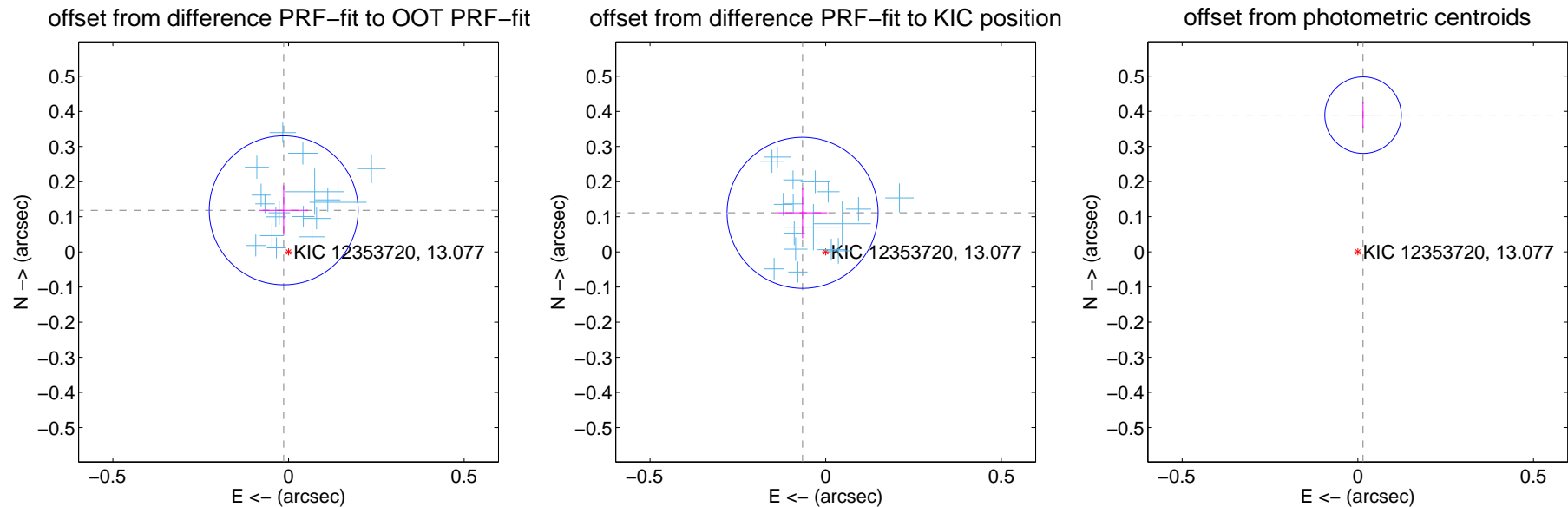
DV Centroid Data

Supplemental centroid analysis for 012353720-01. Kepler magnitude: 13.08. Transit SNR 278.74

There are 17 quarters with good PRF difference image offsets

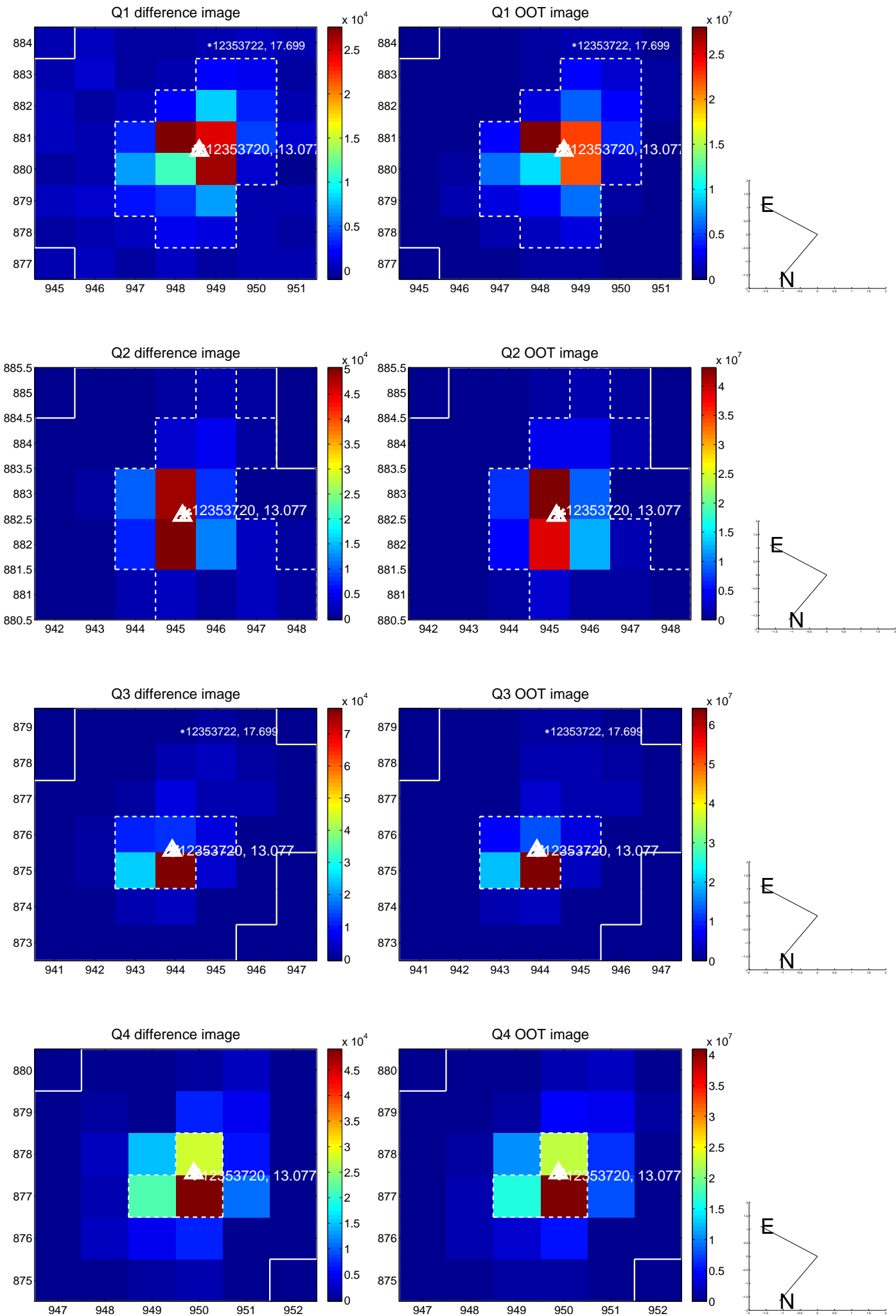
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.119 ± 0.071	1.69	0.014 ± 0.070	0.118 ± 0.071
PRF-fit source offset from KIC position	0.129 ± 0.072	1.80	0.066 ± 0.070	0.111 ± 0.072
photometric centroid source offset	0.39 ± 0.04	10.73	-0.01 ± 0.03	0.39 ± 0.04

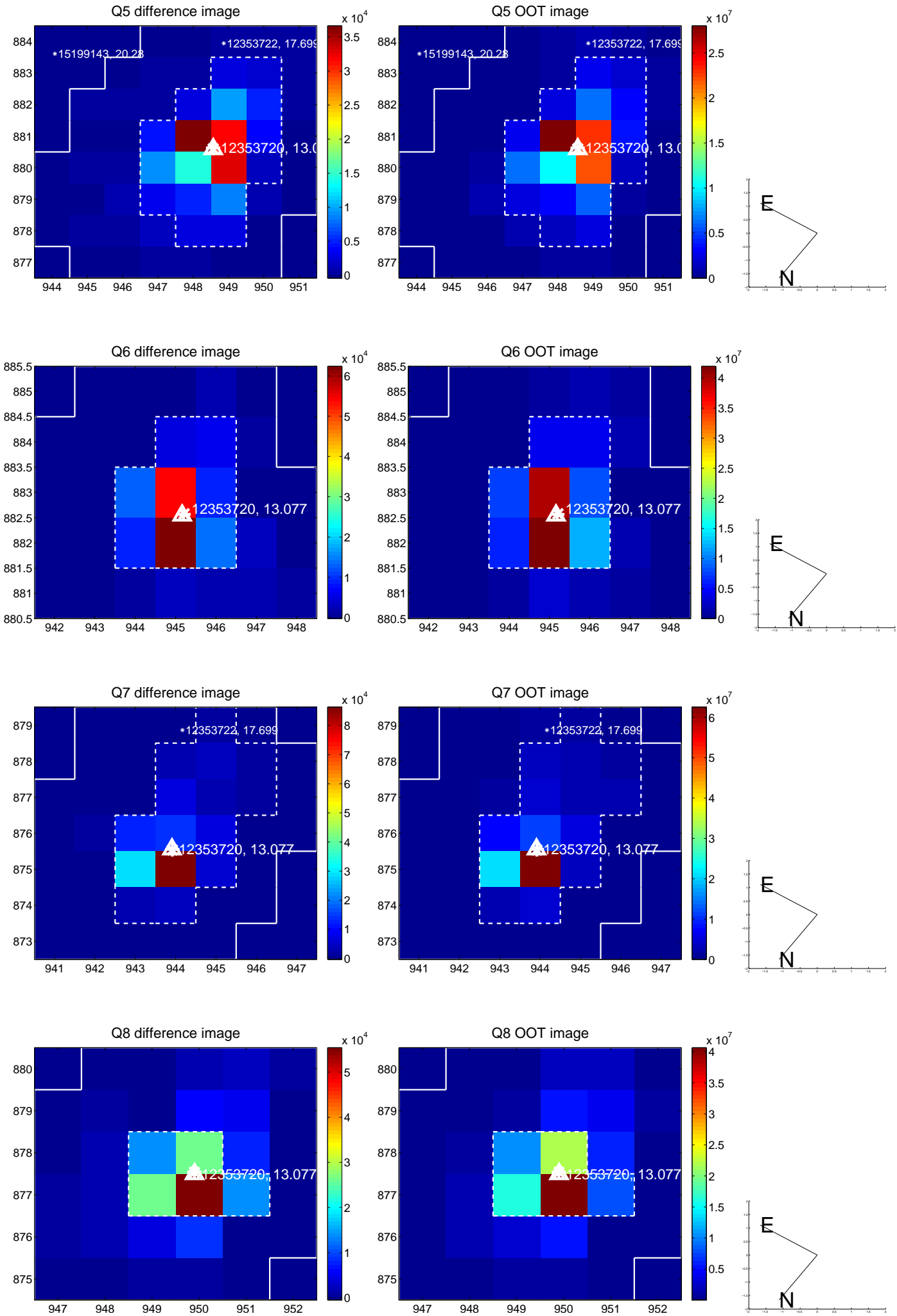


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

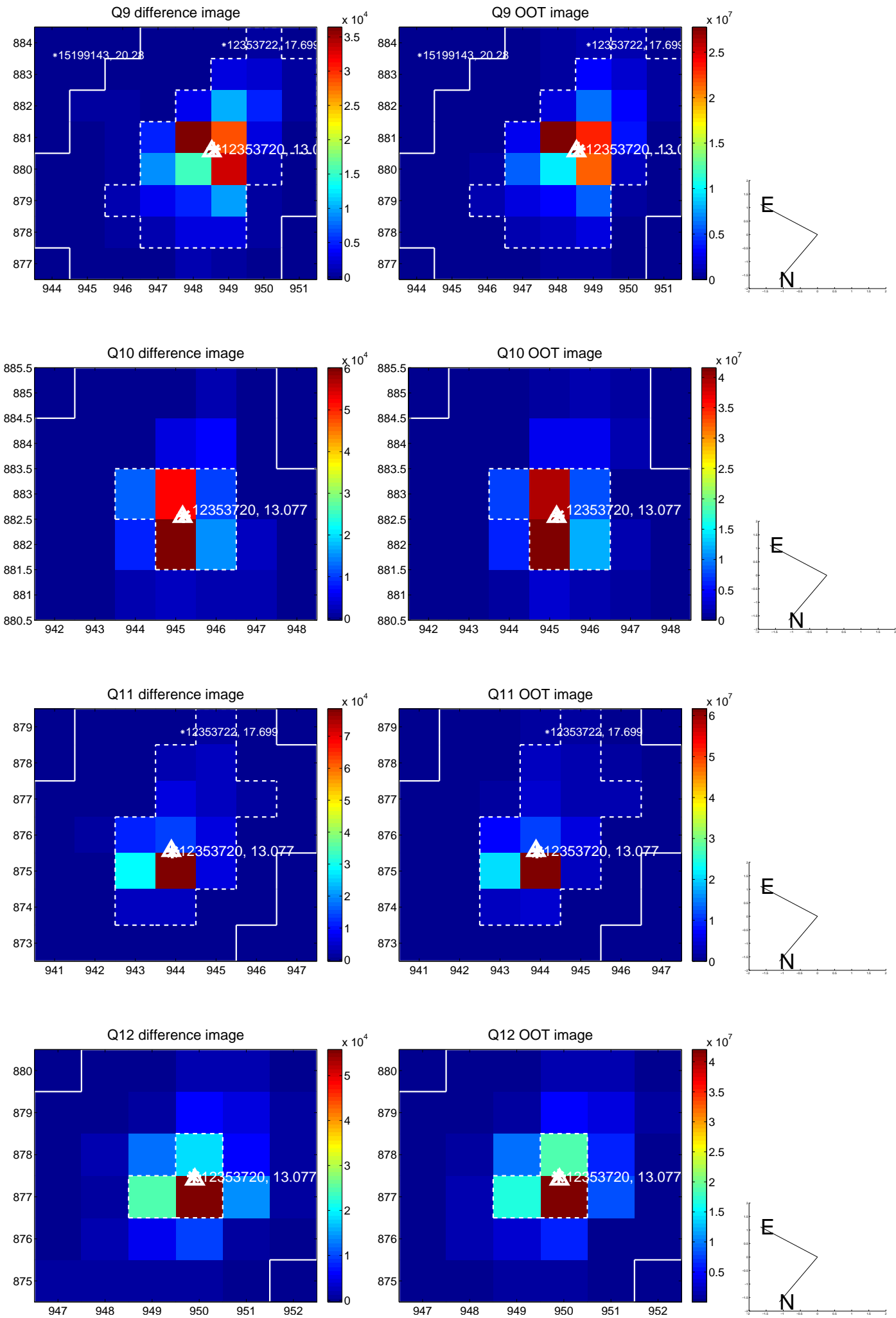
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



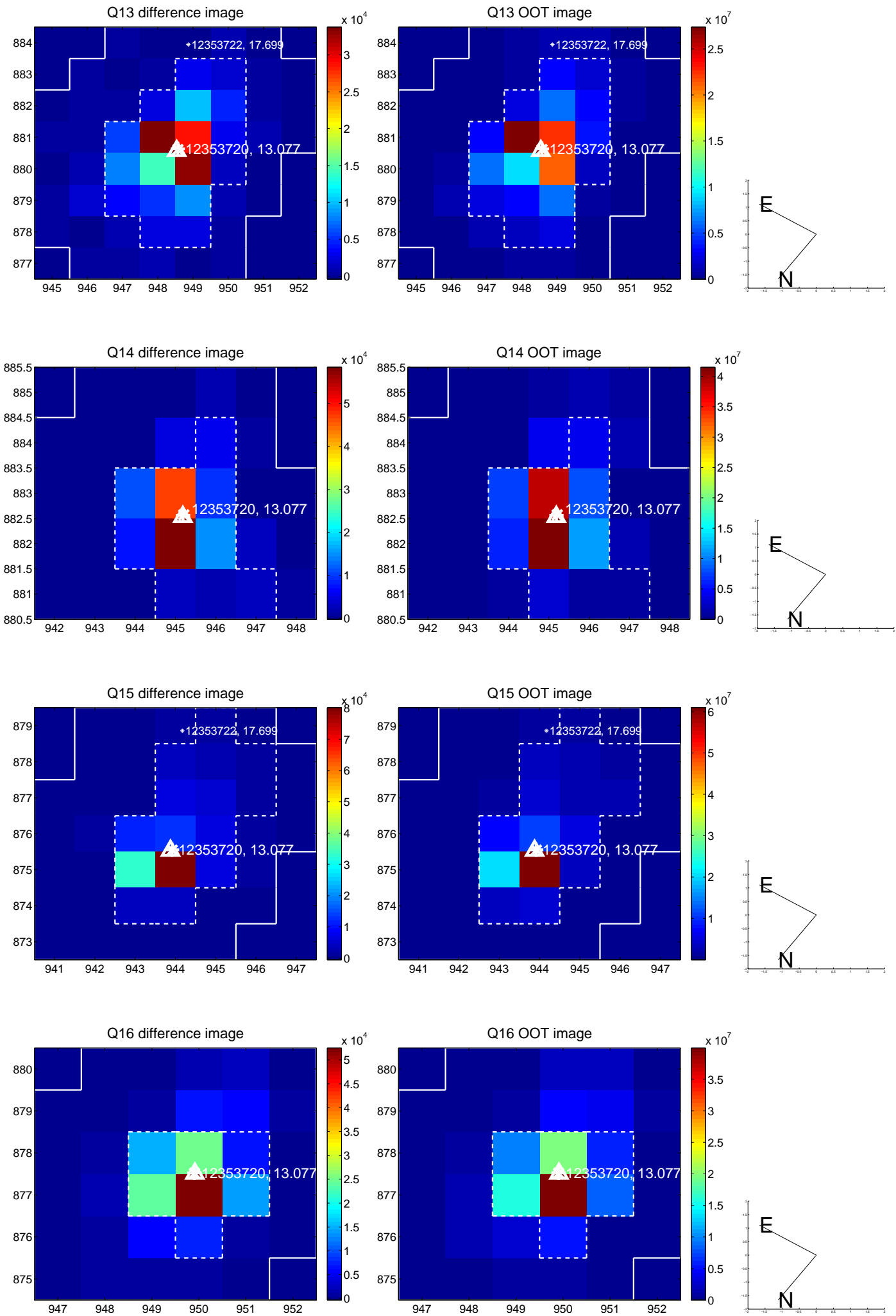
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



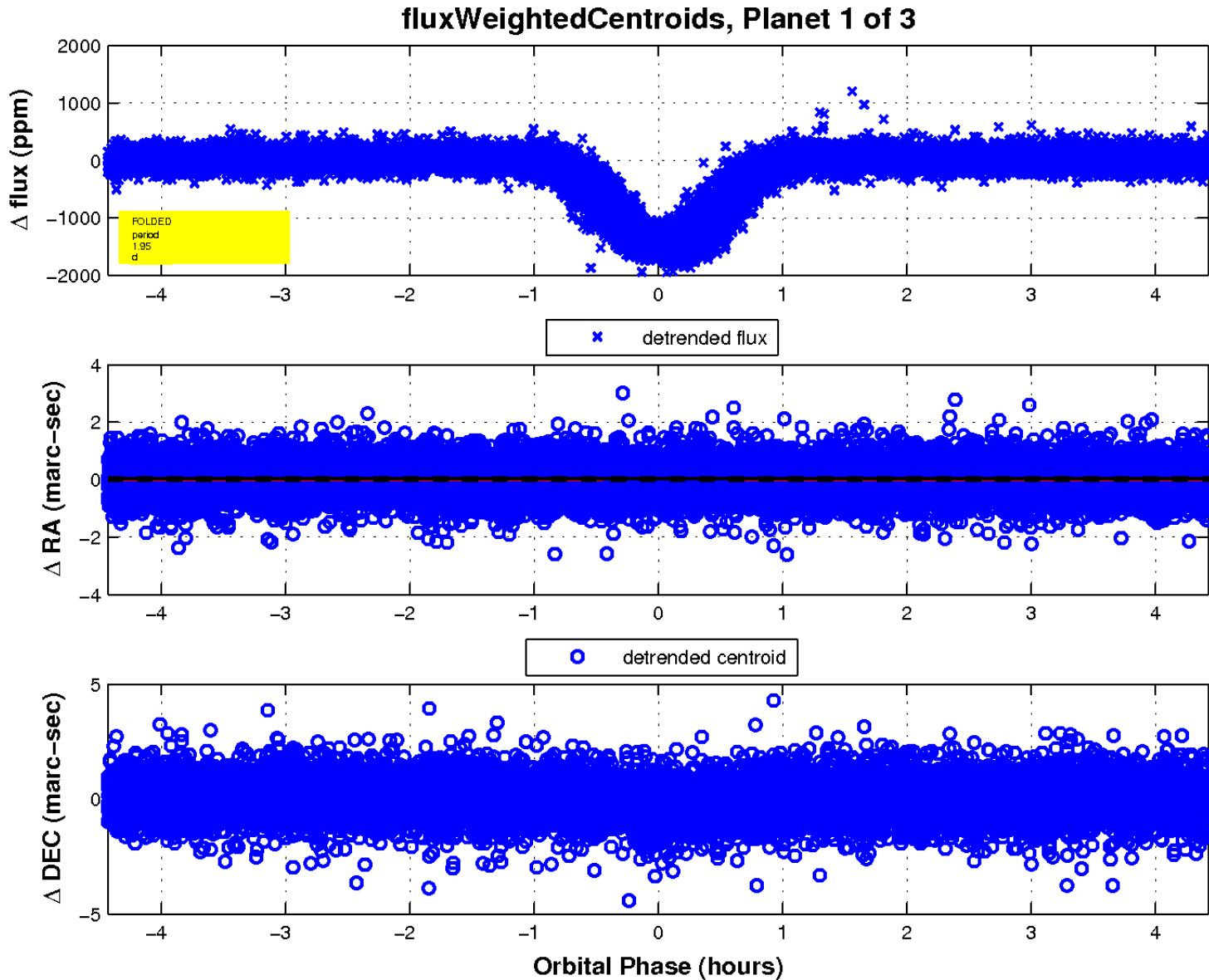
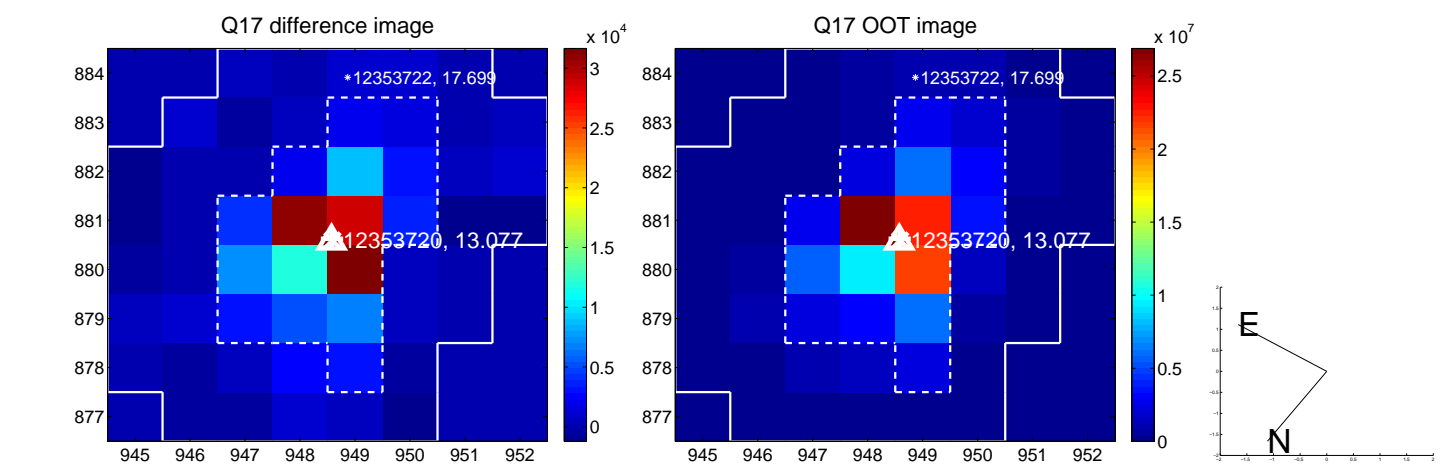
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

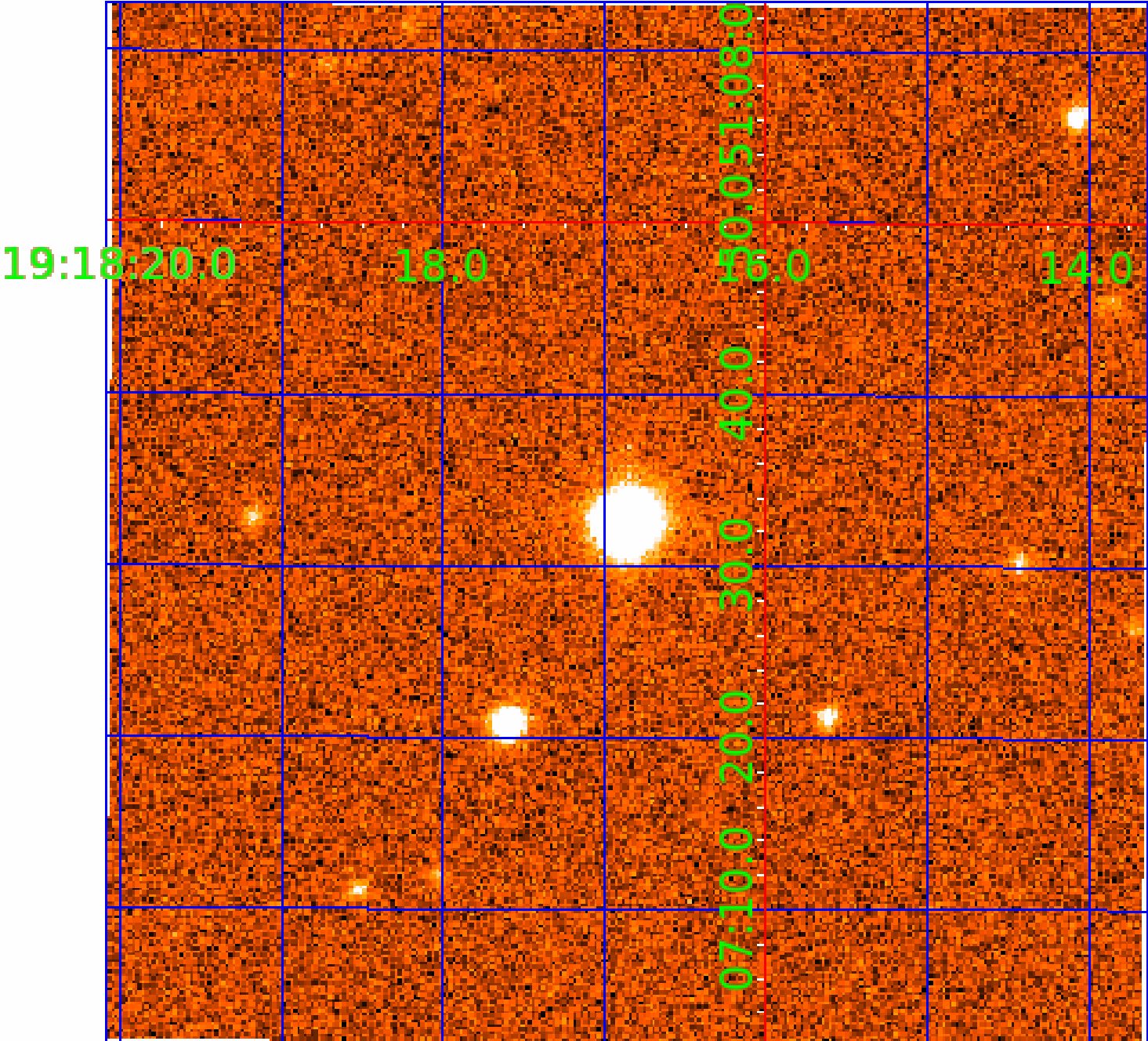


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012353720

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})
012353720-01	OBS	7524.01	1.953268	133.149837	1385.9	1.477	169.8	278.7	3.93	6450	17.50	17387.28
012353720-02	OBS	No	1.953294	132.164364	616.3	1.256	132.3	145.2	3.93	6450	11.47	17386.98
012353720-03	OBS	No	365.543414	373.510747	188.1	13.555	7.4	5.9	3.93	6450	5.79	16.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012353720-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
012353720-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
012353720-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_ALT—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 012353720-02

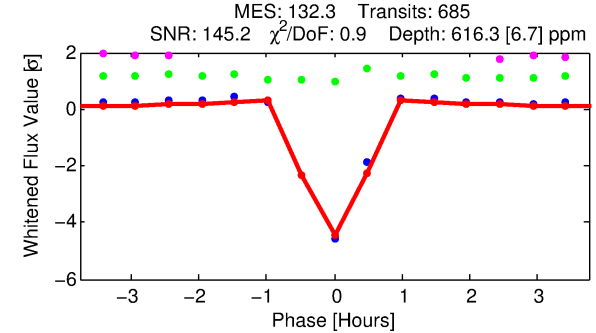
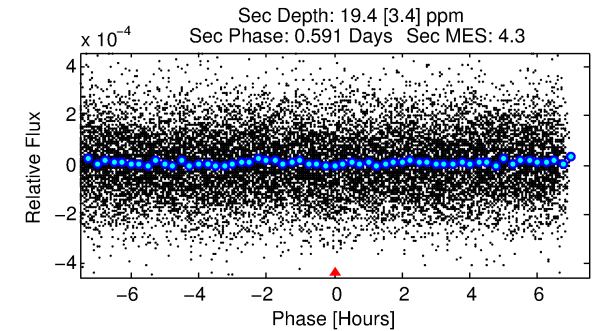
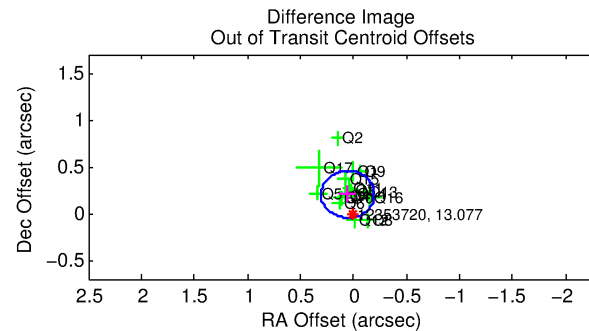
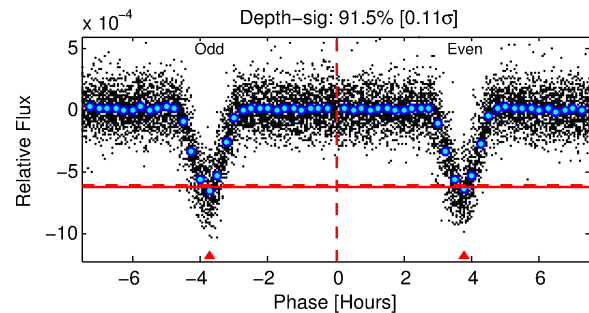
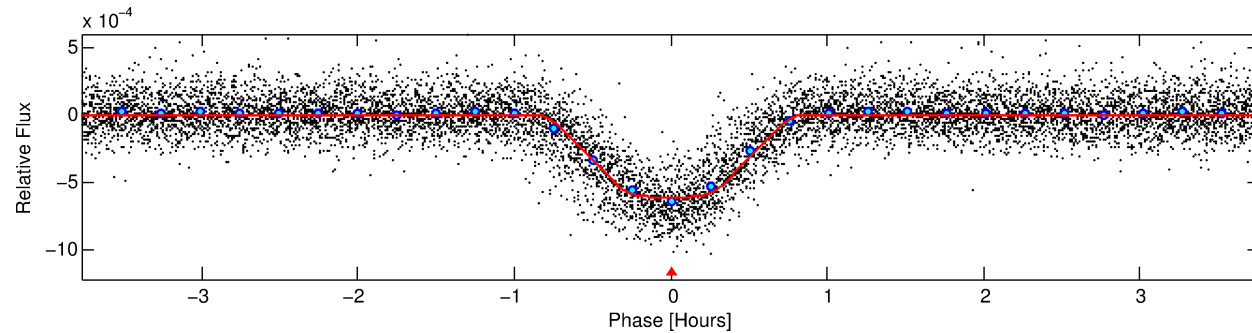
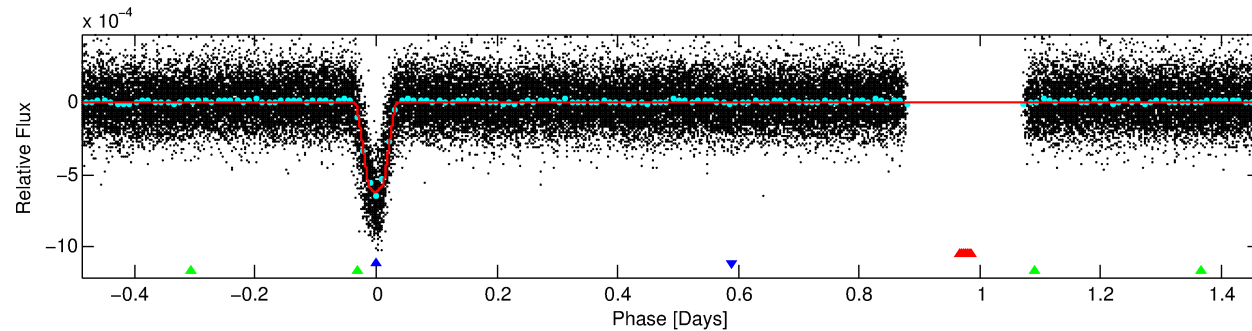
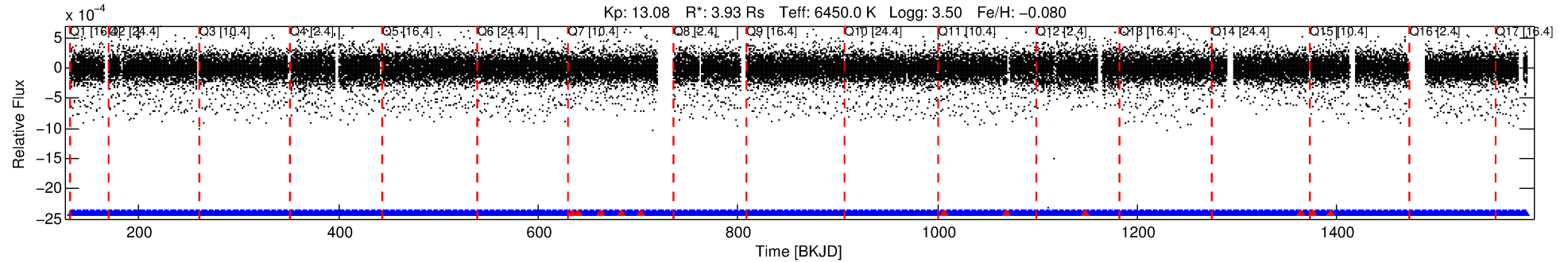
No Significant Match Found

DV One-Page Summary

KIC: 12353720 Candidate: 2 of 3 Period: 1.953 d

KOI: K07524 Corr: No Ephemeris Match

Kp: 13.08 R*: 3.93 Rs Teff: 6450.0 K Logg: 3.50 Fe/H: -0.080



DV Fit Results:

Period = 1.95329 [0.00000] d
Epoch = 132.1644 [0.0001] BKJD
Rp/R* = 0.0268 [0.0009]
a/R* = 5.93 [1.08]
b = 0.90 [0.04]
Seff = 17386.98 [10756.36]
Teq = 2928 [453] K
Rp = 11.47 [4.42] Re
a = 0.0371 [0.0140] AU
Ag = 0.11 [0.07] [-12.47σ]
Teffp = 2617 [143] K [-0.65σ]

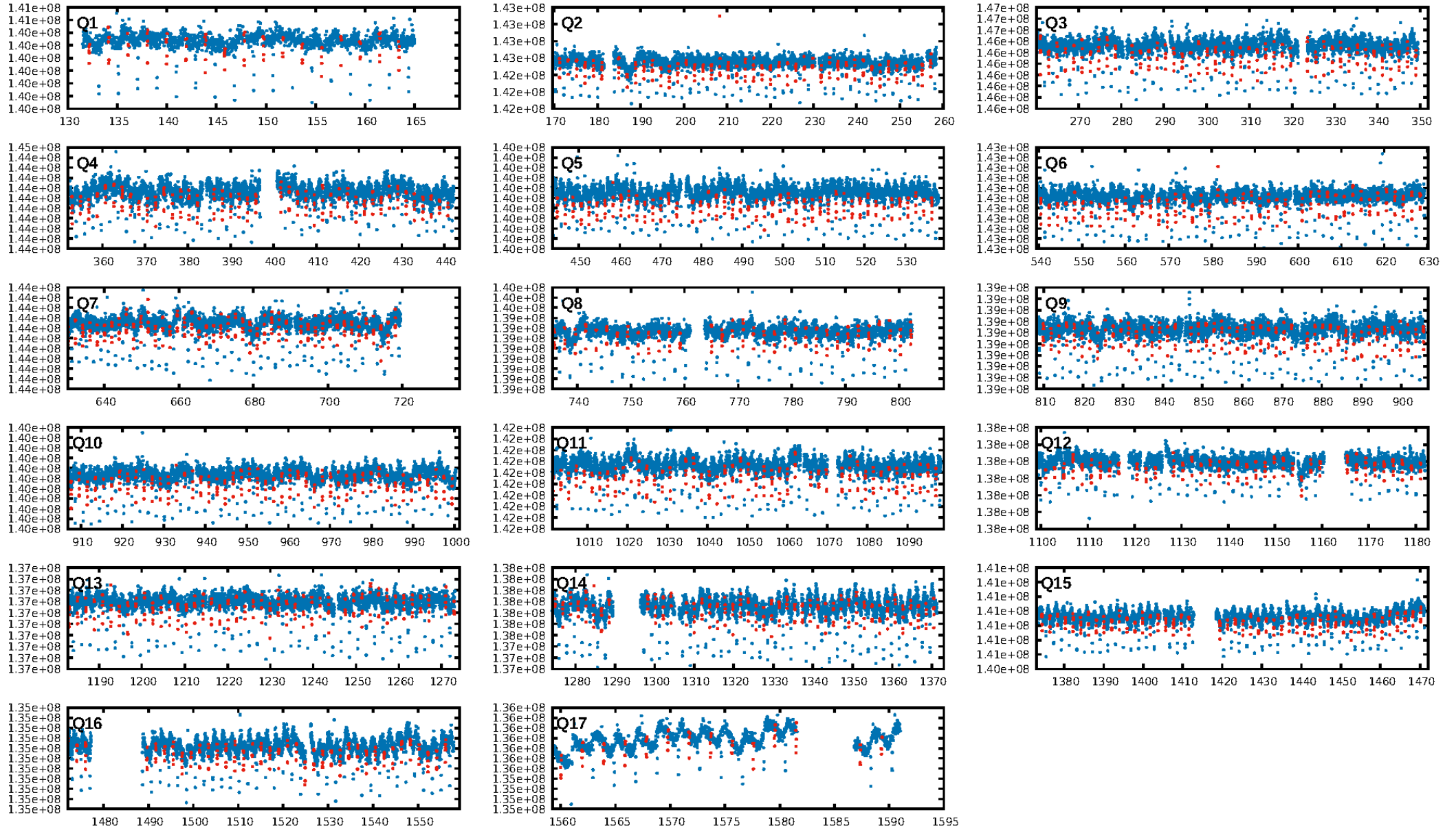
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [641.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [643/654]
GhostDiagnostic-chr: 7.649
Centroid-sig: N/A
Centroid-so: 0.591 arcsec [7.07σ]
OotOffset-rm: 0.211 arcsec [2.52σ]
KicOffset-rm: 0.216 arcsec [2.49σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

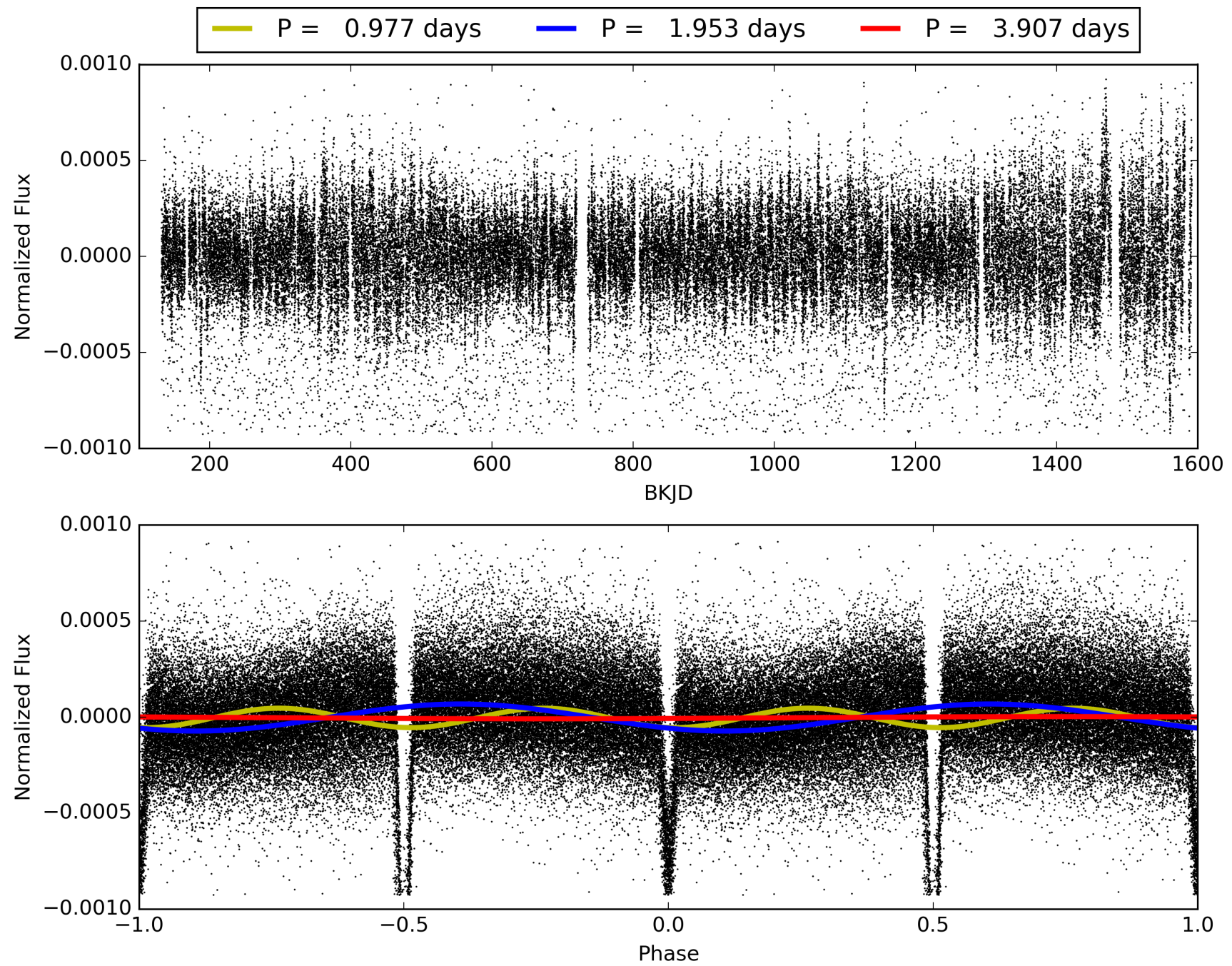
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:28:19 Z

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

TCE 012353720-02, PDC Light Curves

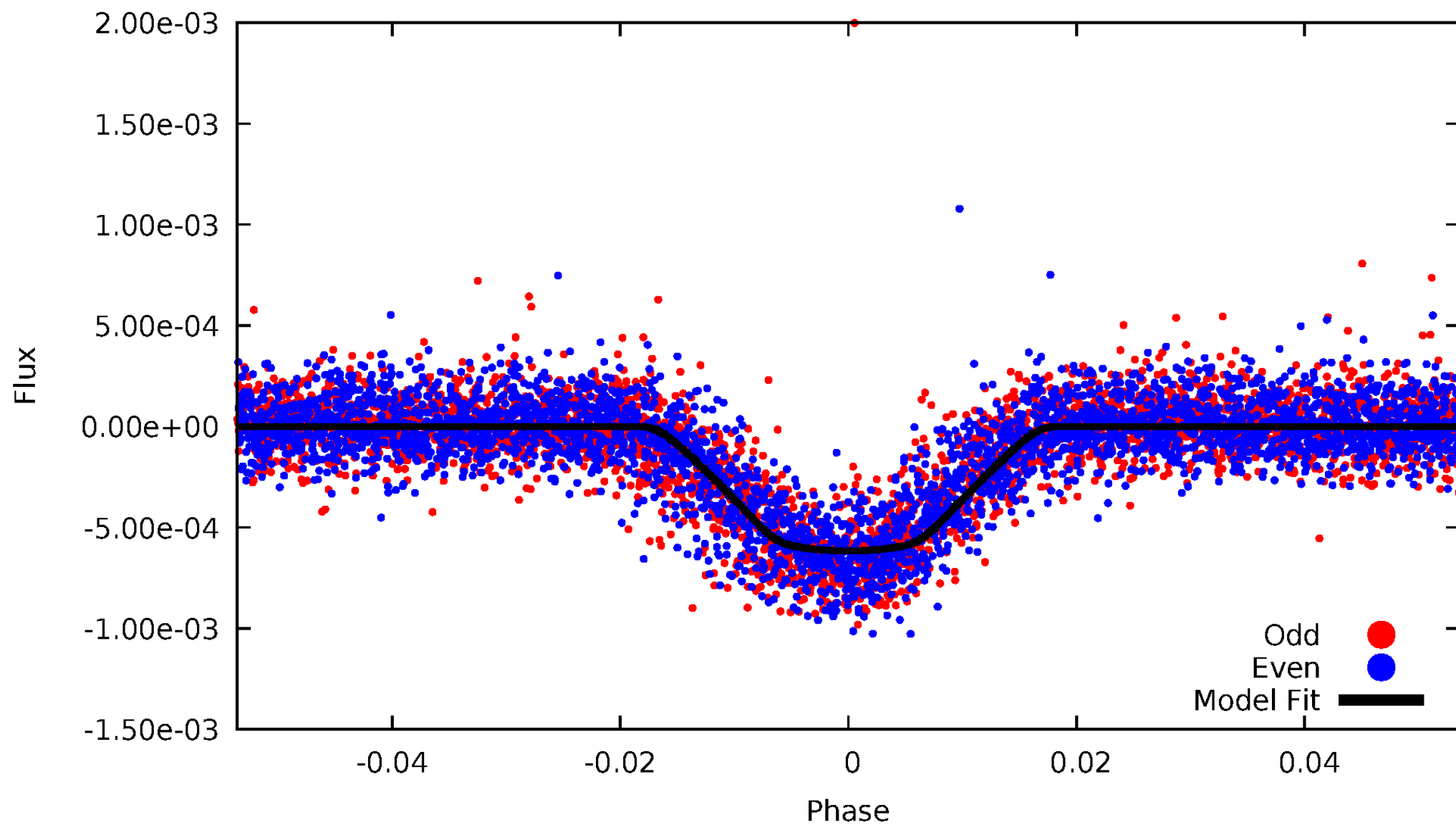


TCE 012353720-02



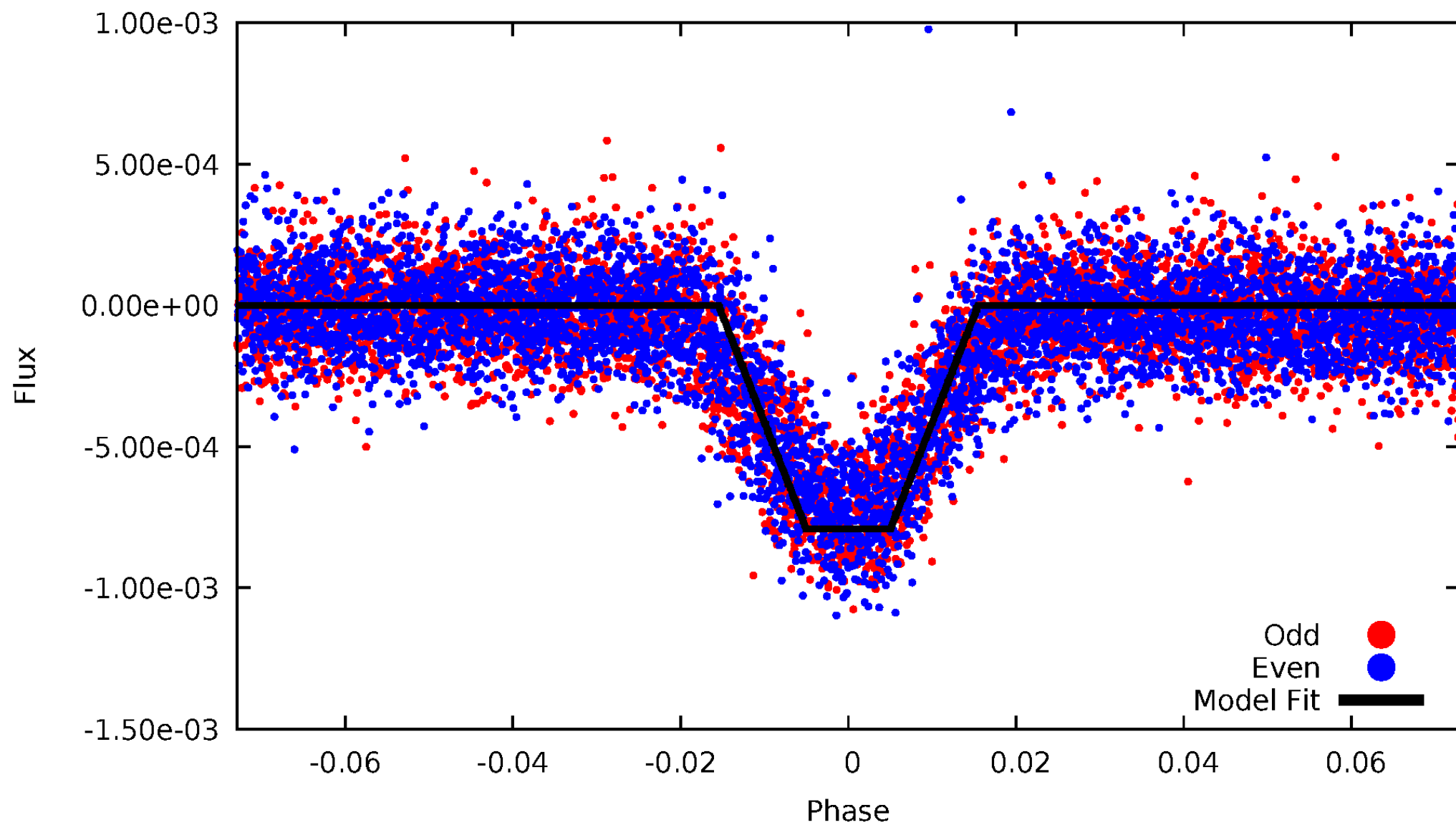
DV Odd/Even

TCE 012353720-02



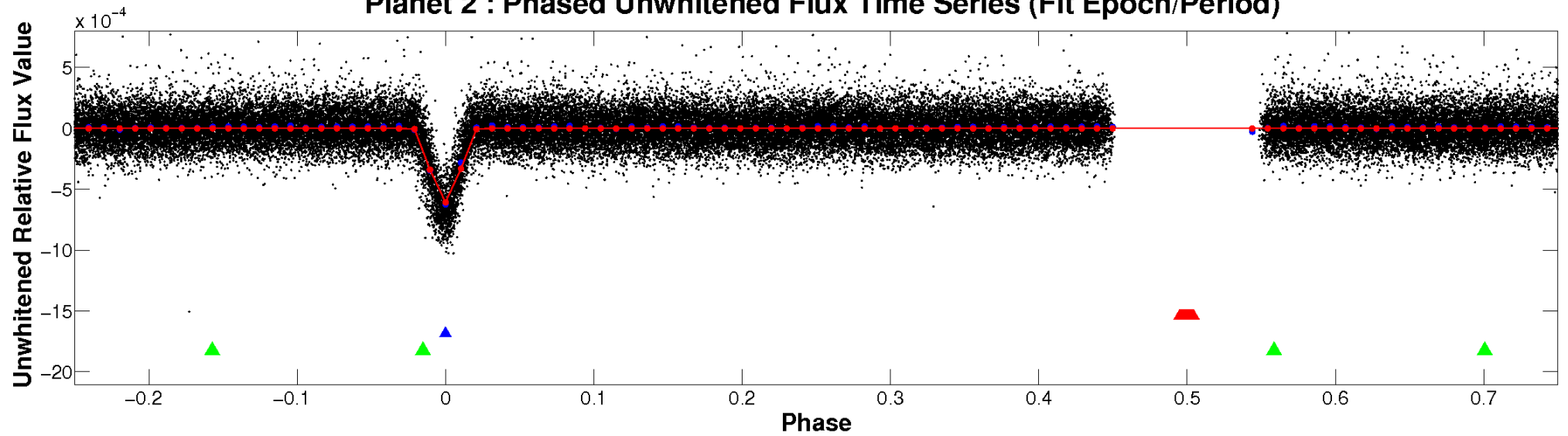
ALT Odd/Even

TCE 012353720-02

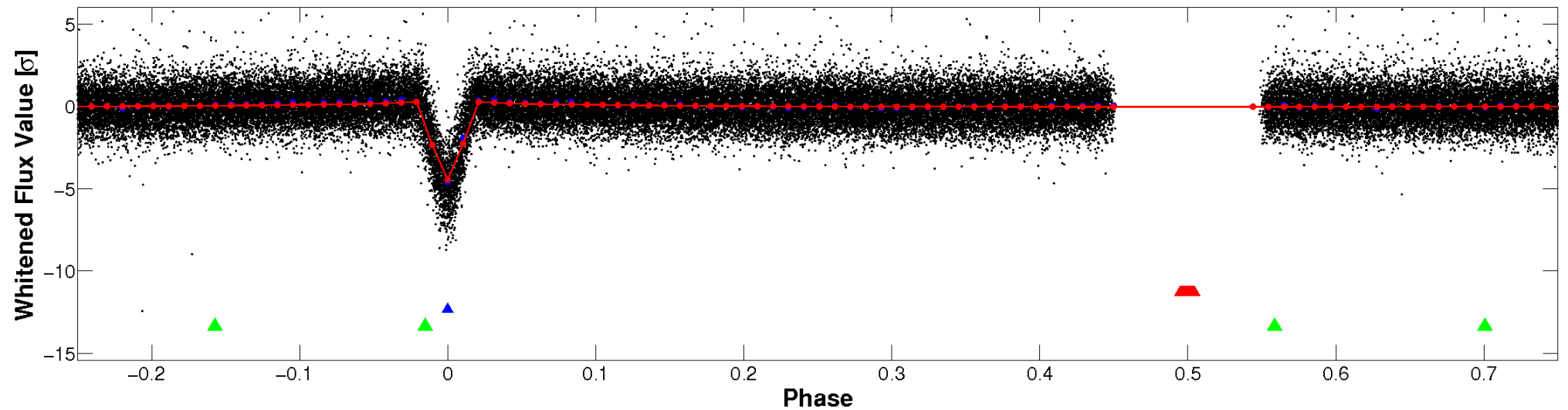


Non-Whitened Vs. Whitened Light Curve

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

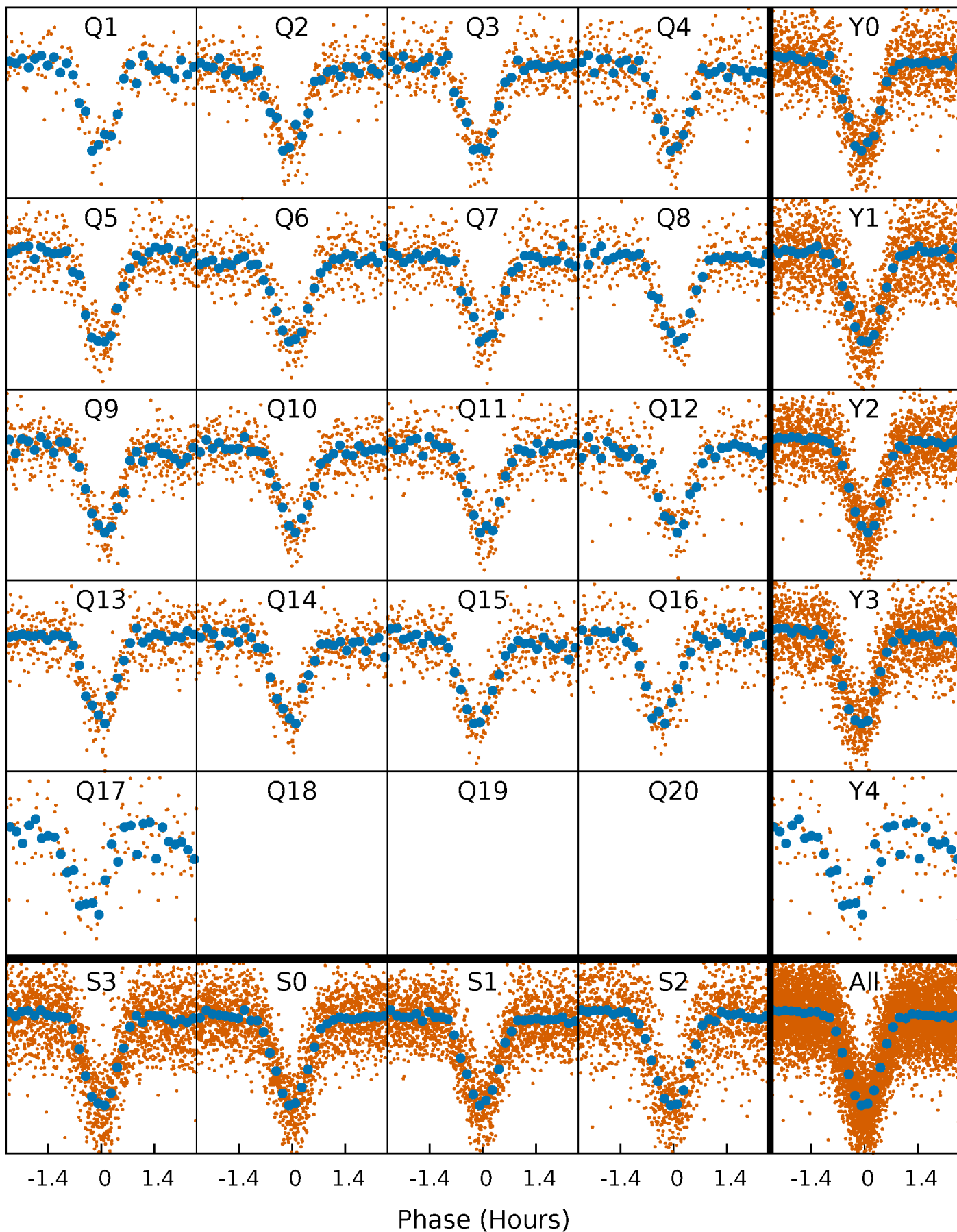


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



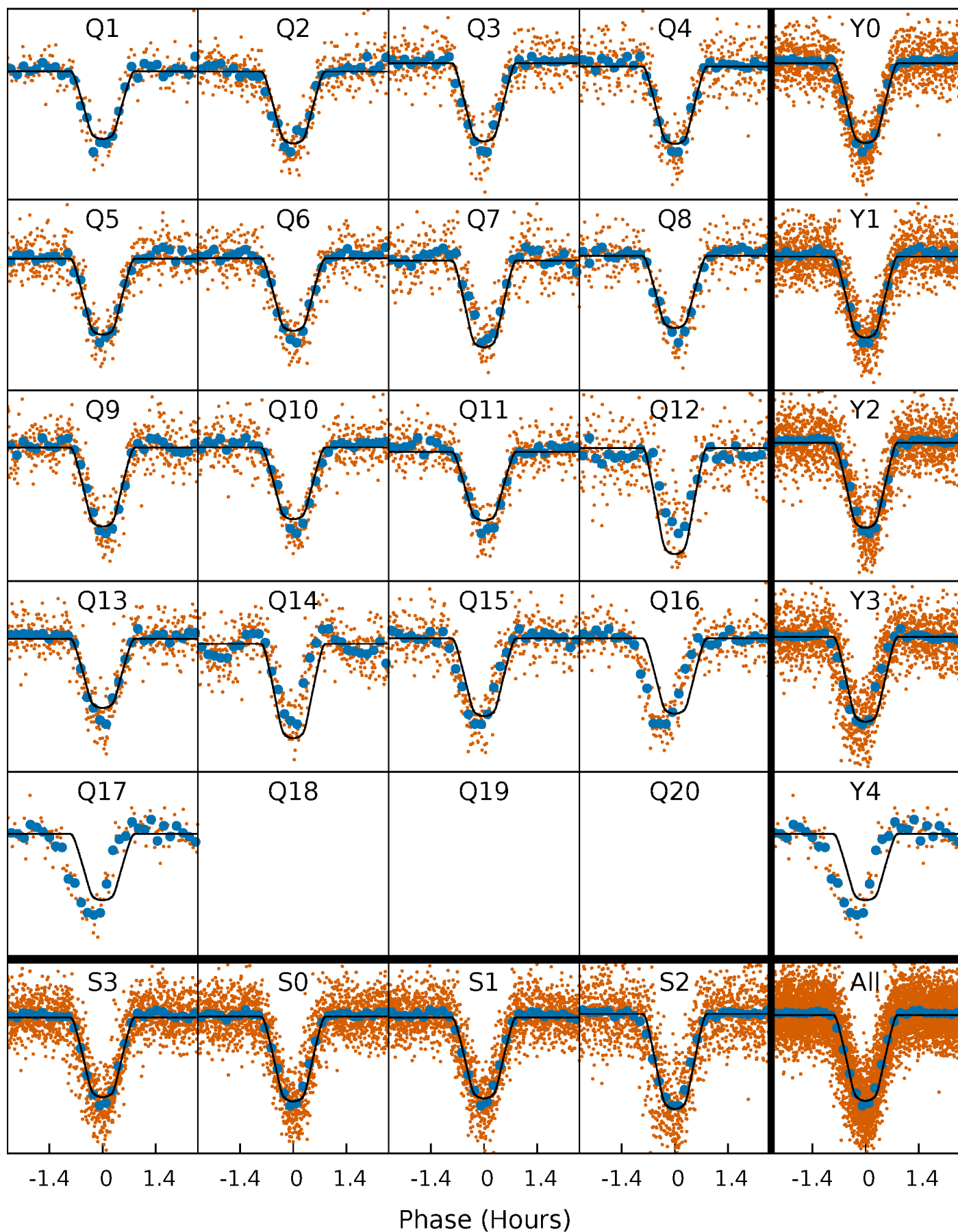
PDC Quarter-Phased Transit Curves

TCE 012353720-02 P= 1.953294 Days $T_0=132.164364$ (BKJD)



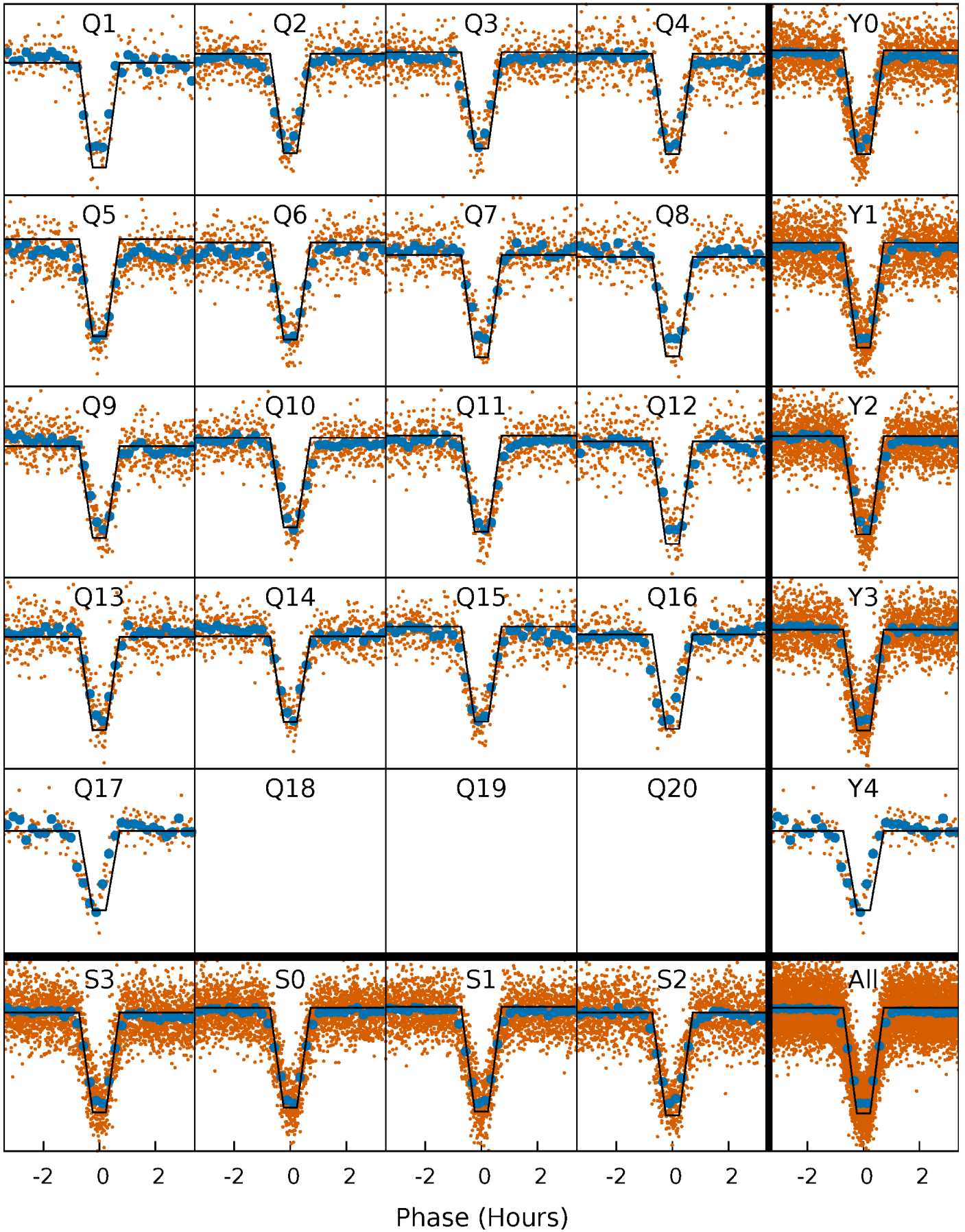
DV Quarter-Phased Transit Curves

TCE 012353720-02 P= 1.953294 Days $T_0=132.164364$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

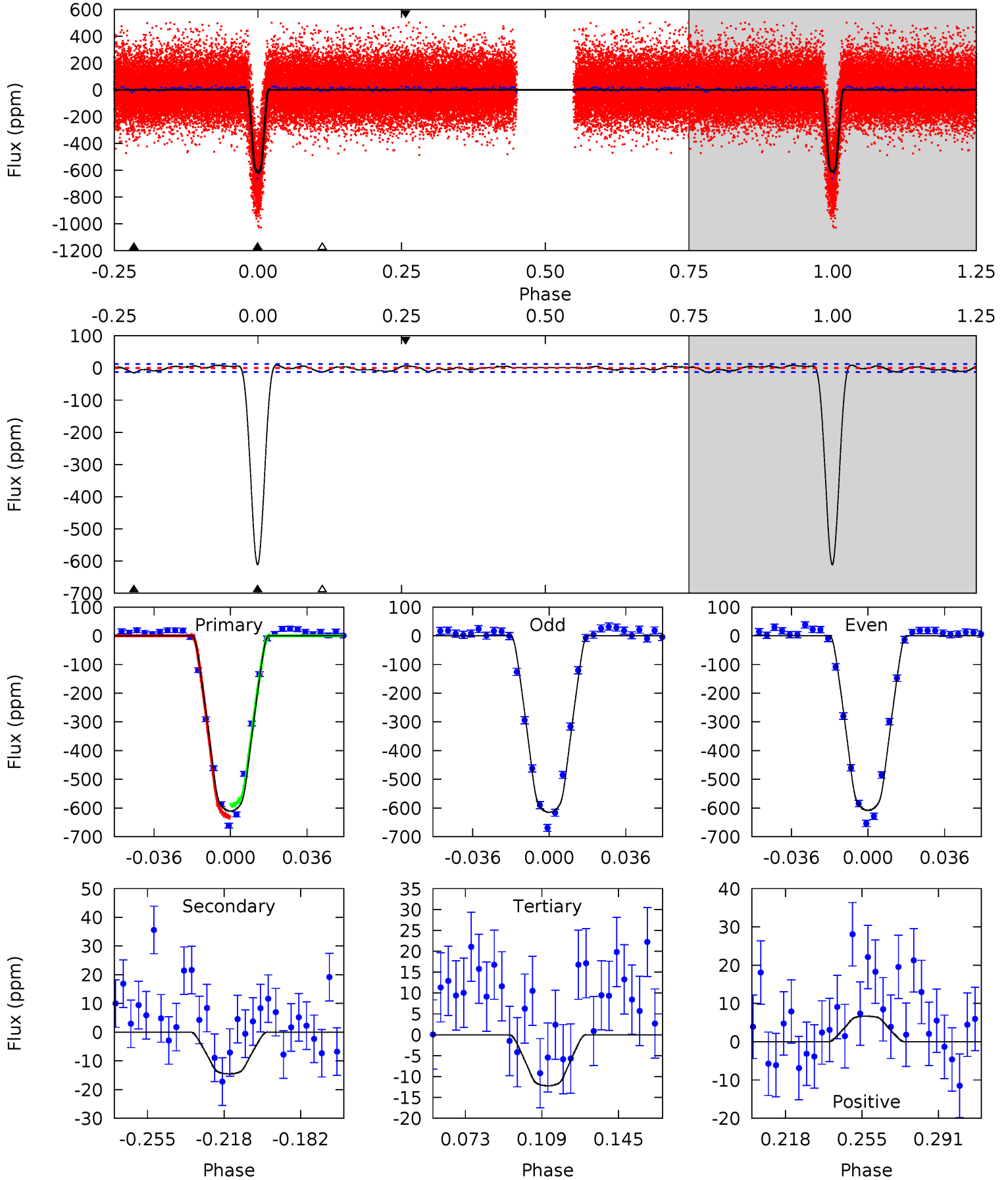
TCE 012353720-02 $P = 1.953283$ Days $T_0 = 132.167151$ (BKJD)



DV Model-Shift Uniqueness Test

012353720-02, P = 1.953294 Days, E = 130.211070 Days

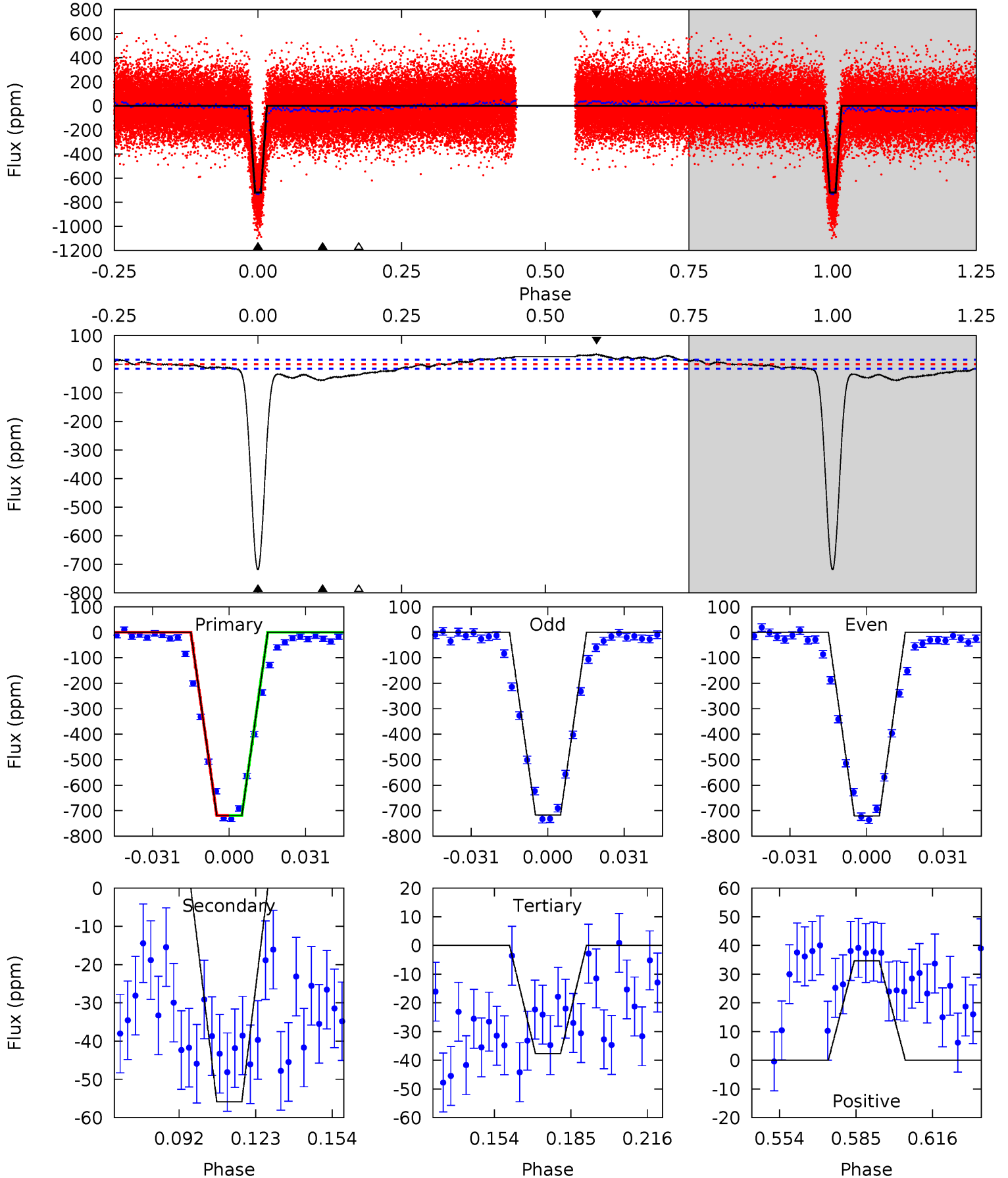
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
234.3	5.57	4.69	2.57	4.77	2.09	1.86	229.7	231.8	0.88	3.00	1.28	0.98	0.01	7.73



Alt Model-Shift Uniqueness Test

012353720-02, P = 1.953283 Days, E = 130.213868 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
221.0	17.2	11.6	10.6	4.81	2.16	6.69	209.4	210.3	5.59	6.53	0.53	0.98	0.05	0.10



Stellar Parameters For KIC 012353720

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6450^{+176}_{-176}	$3.501^{+0.360}_{-0.090}$	$-0.080^{+0.350}_{-0.250}$	$3.928^{+0.402}_{-1.507}$	$1.782^{+0.163}_{-0.381}$	$0.041^{+0.105}_{-0.012}$
	+3%/-3%	+10%/-3%	+438%/-312%	+10%/-38%	+9%/-21%	+254%/-29%
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 012353720-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 3	$11.22^{+1.07}_{-2.26}$	4013^{+216}_{-414}	-3493^{+328}_{-168}	$0.092^{+0.045}_{-0.024}$
Alt.	-56 ± 3	$11.78^{+1.12}_{-2.53}$	4028^{+212}_{-429}	2316^{+856}_{-5186}	$0.310^{+0.161}_{-0.056}$

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 $A_{obs} \gg 1.0$

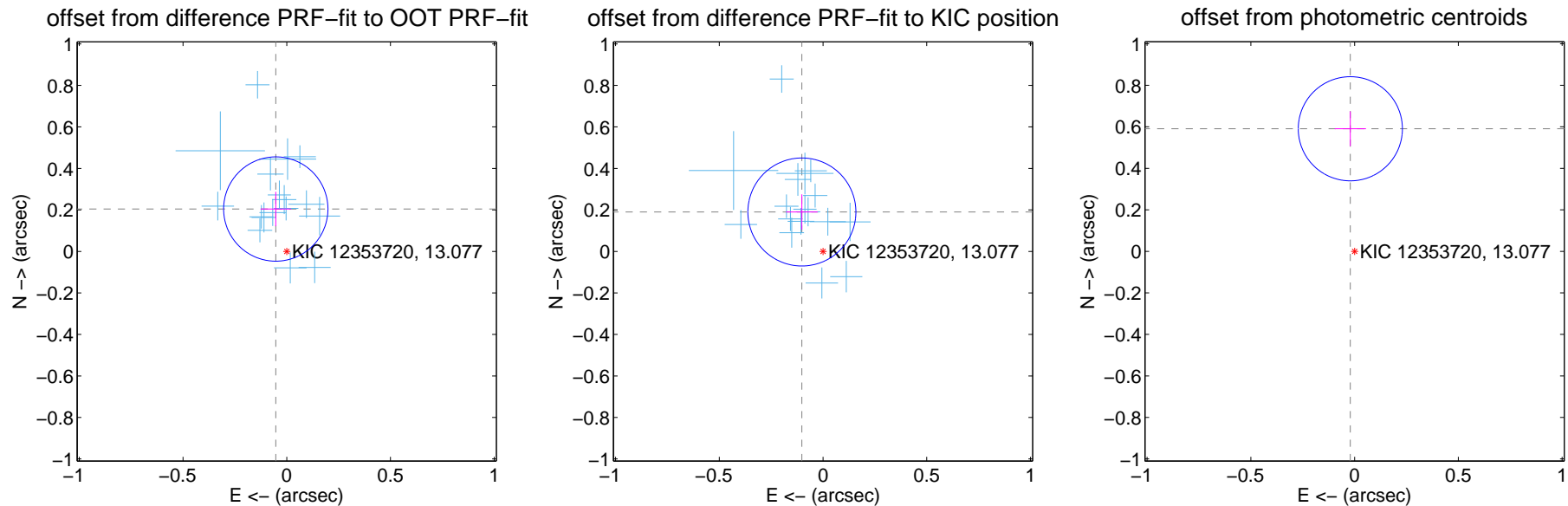
DV Centroid Data

Supplemental centroid analysis for 012353720-02. Kepler magnitude: 13.08. Transit SNR 145.25

There are 17 quarters with good PRF difference image offsets

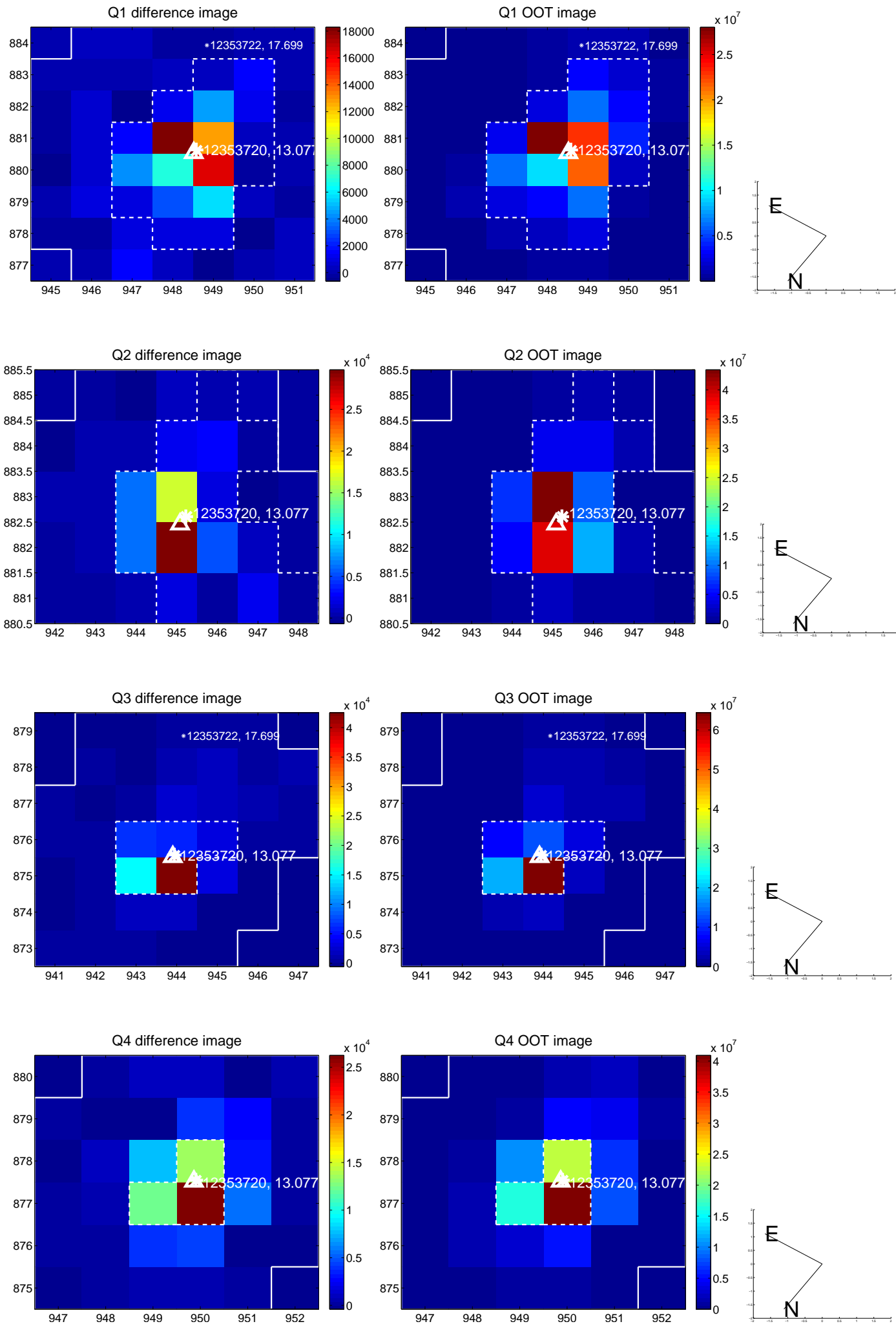
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.211 ± 0.084	2.52	0.053 ± 0.074	0.204 ± 0.083
PRF-fit source offset from KIC position	0.216 ± 0.087	2.49	0.102 ± 0.076	0.190 ± 0.085
photometric centroid source offset	0.59 ± 0.08	7.07	0.02 ± 0.08	0.59 ± 0.08

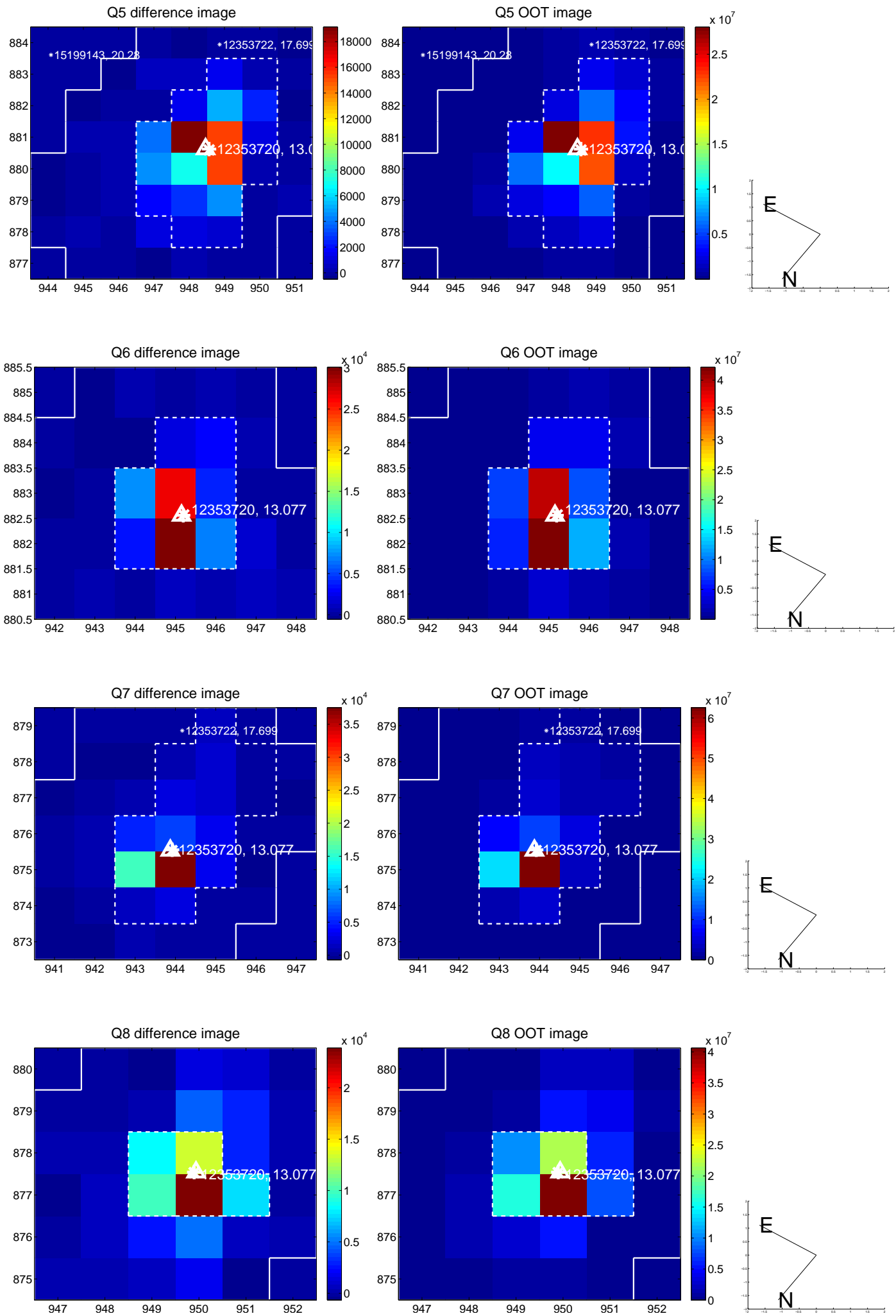


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

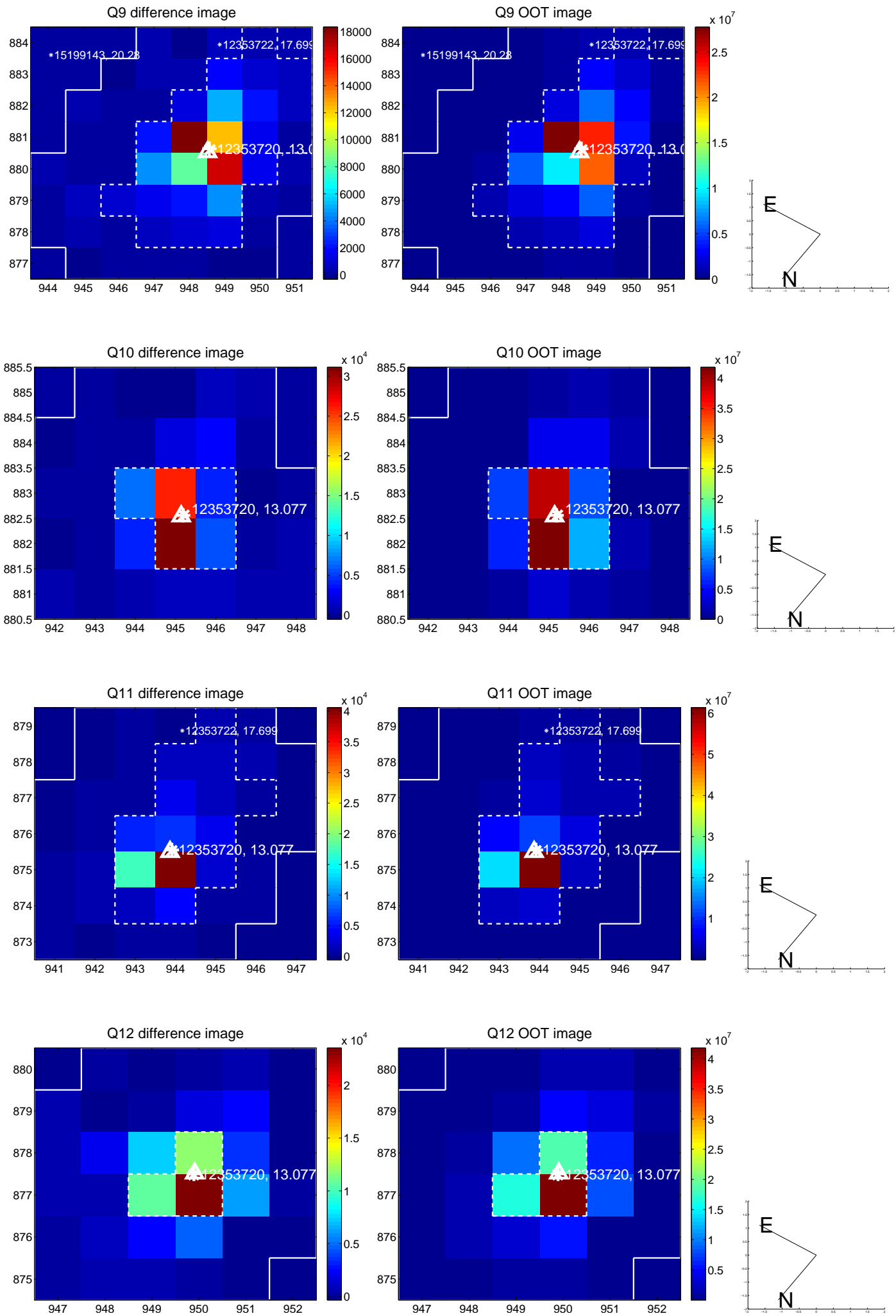
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



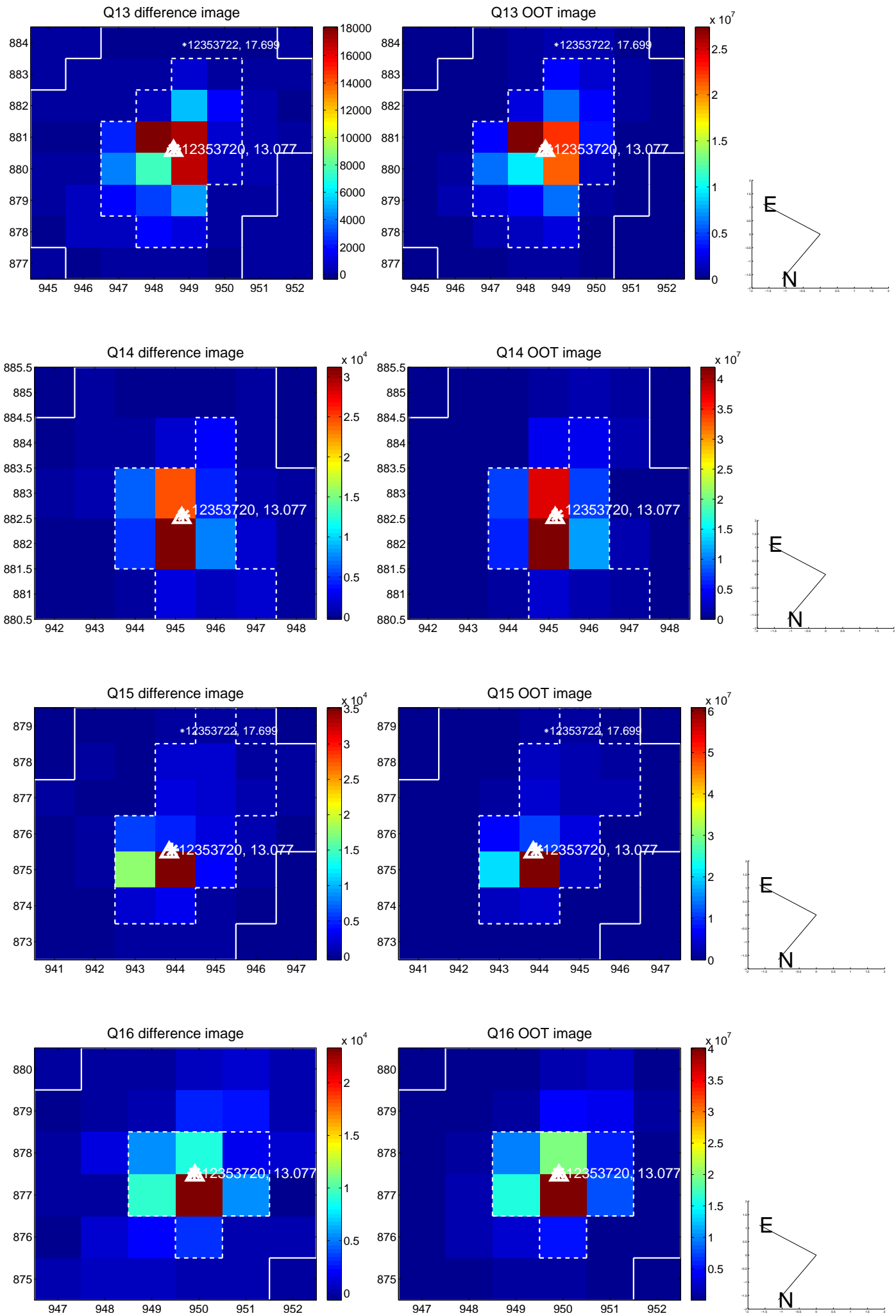
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



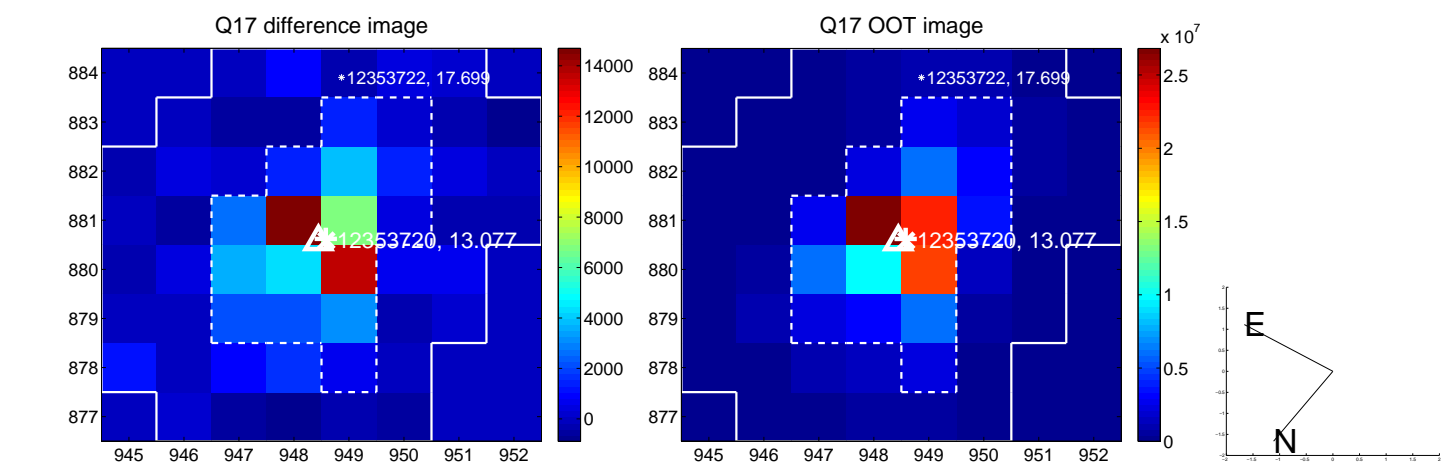
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



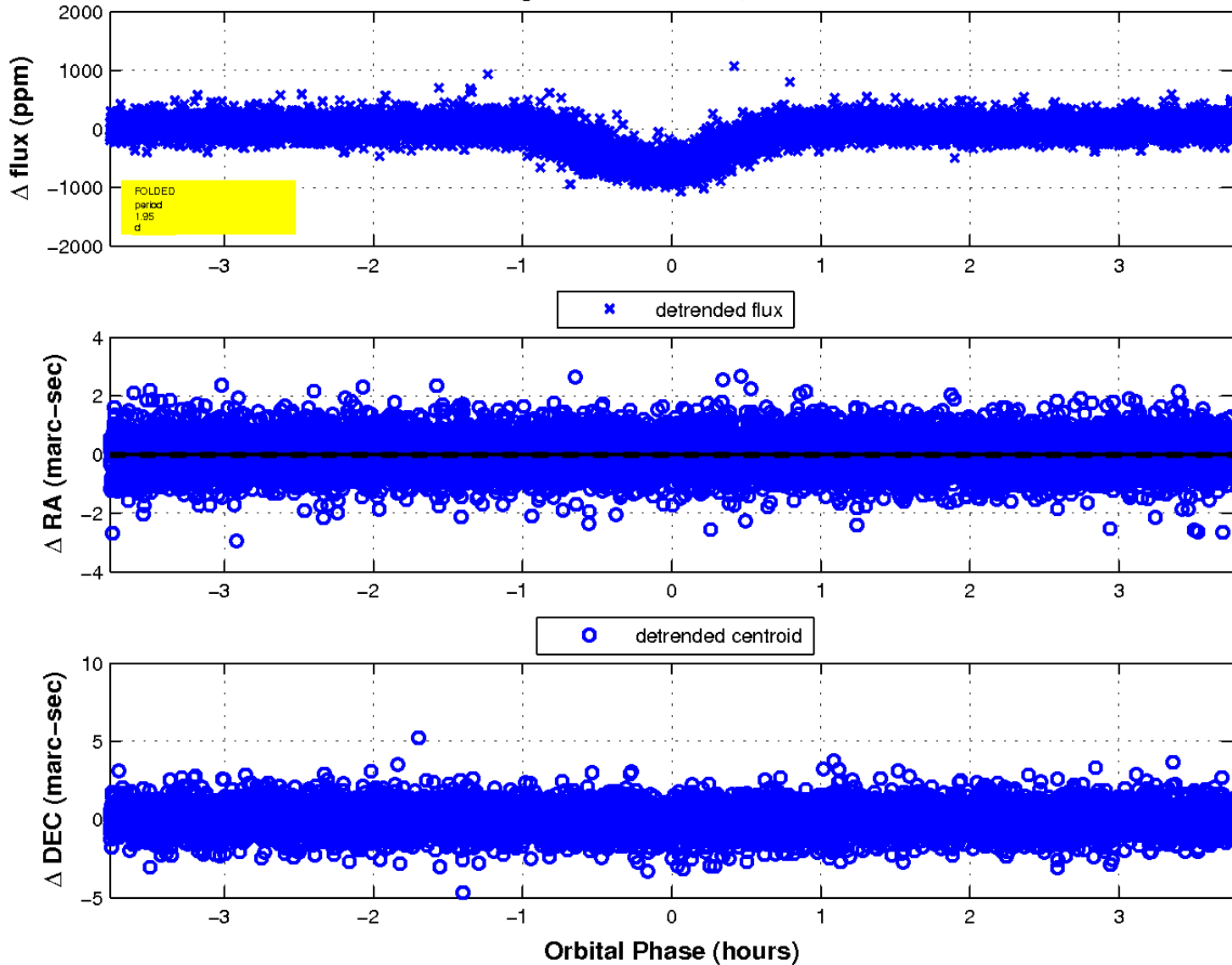
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

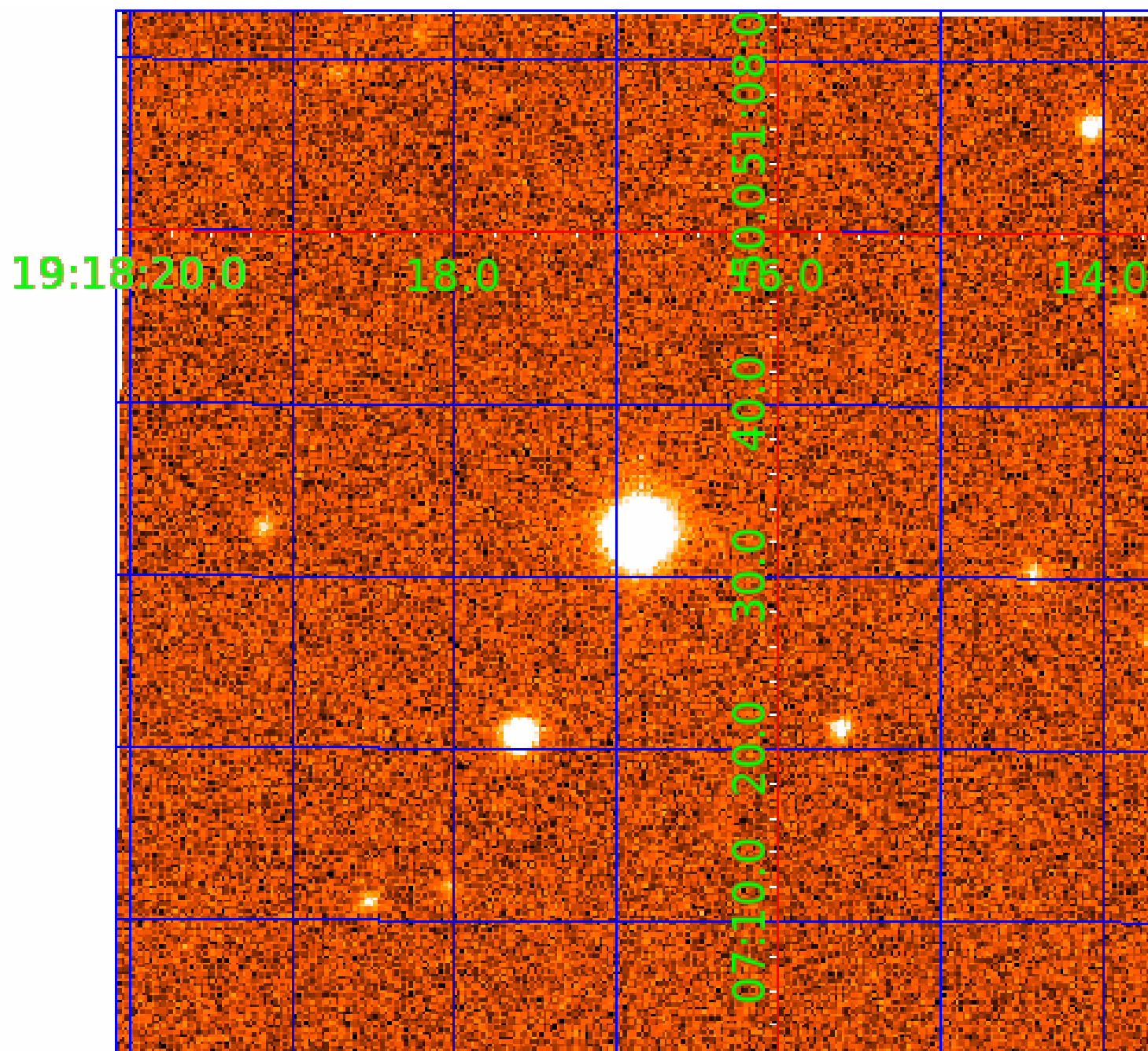


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 012353720

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})
012353720-01	OBS	7524.01	1.953268	133.149837	1385.9	1.477	169.8	278.7	3.93	6450	17.50	17387.28
012353720-02	OBS	No	1.953294	132.164364	616.3	1.256	132.3	145.2	3.93	6450	11.47	17386.98
012353720-03	OBS	No	365.543414	373.510747	188.1	13.555	7.4	5.9	3.93	6450	5.79	16.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012353720-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
012353720-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
012353720-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_ALT—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.

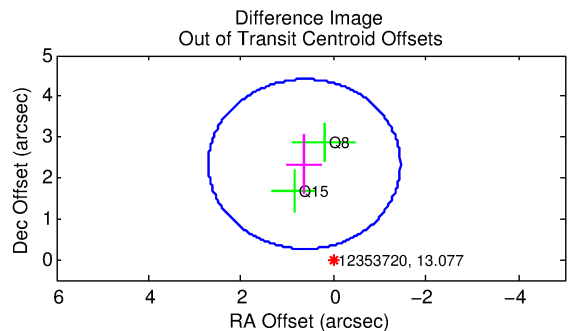
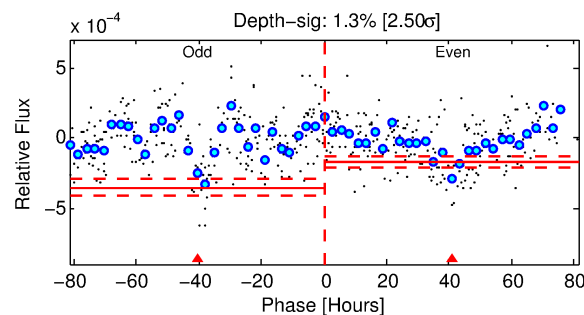
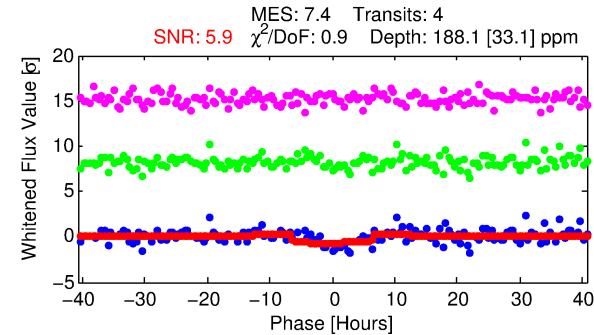
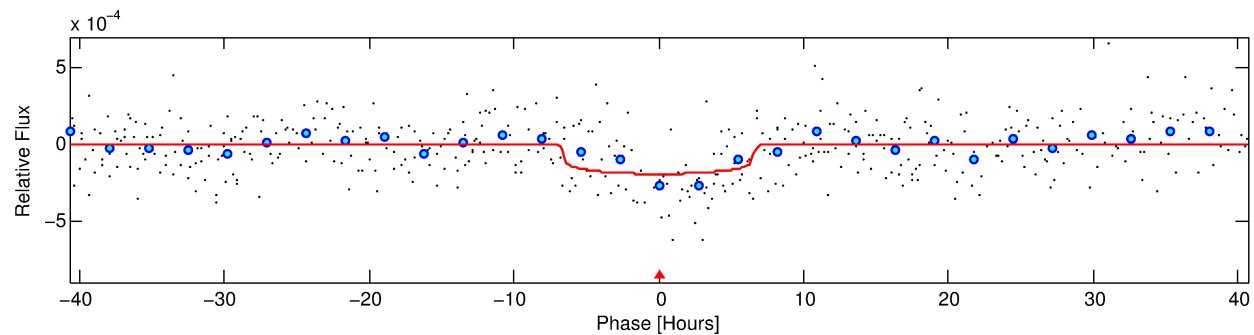
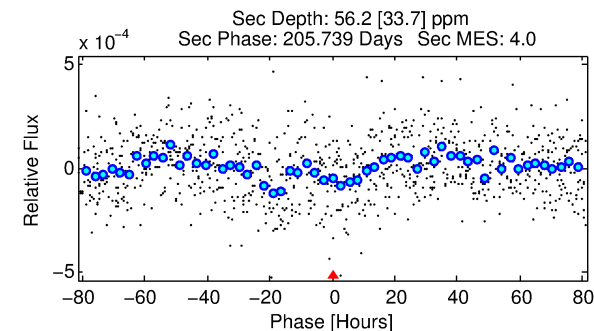
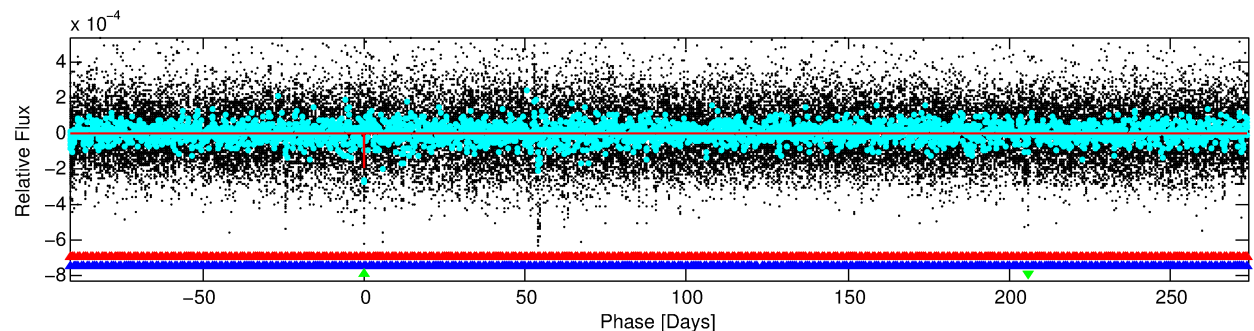
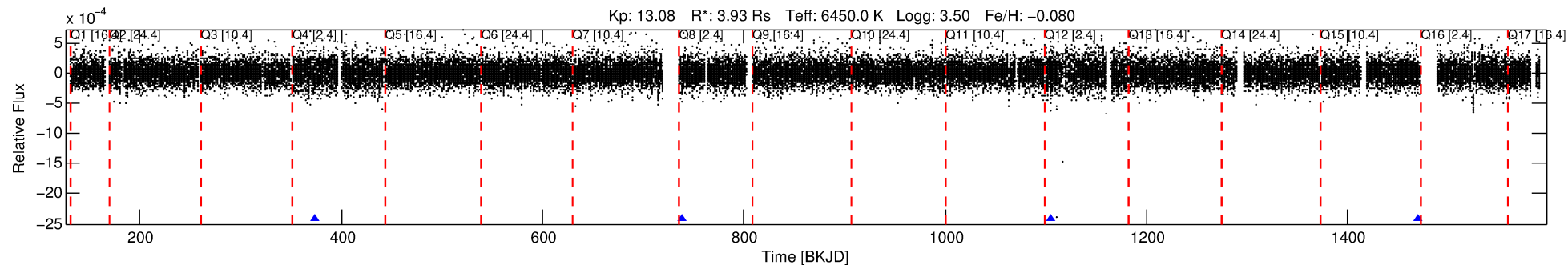
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012353720-03

No Significant Match Found

DV One-Page Summary

KIC: 12353720 Candidate: 3 of 3 Period: 365.543 d
KOI: K07524 Corr: No Ephemeris Match



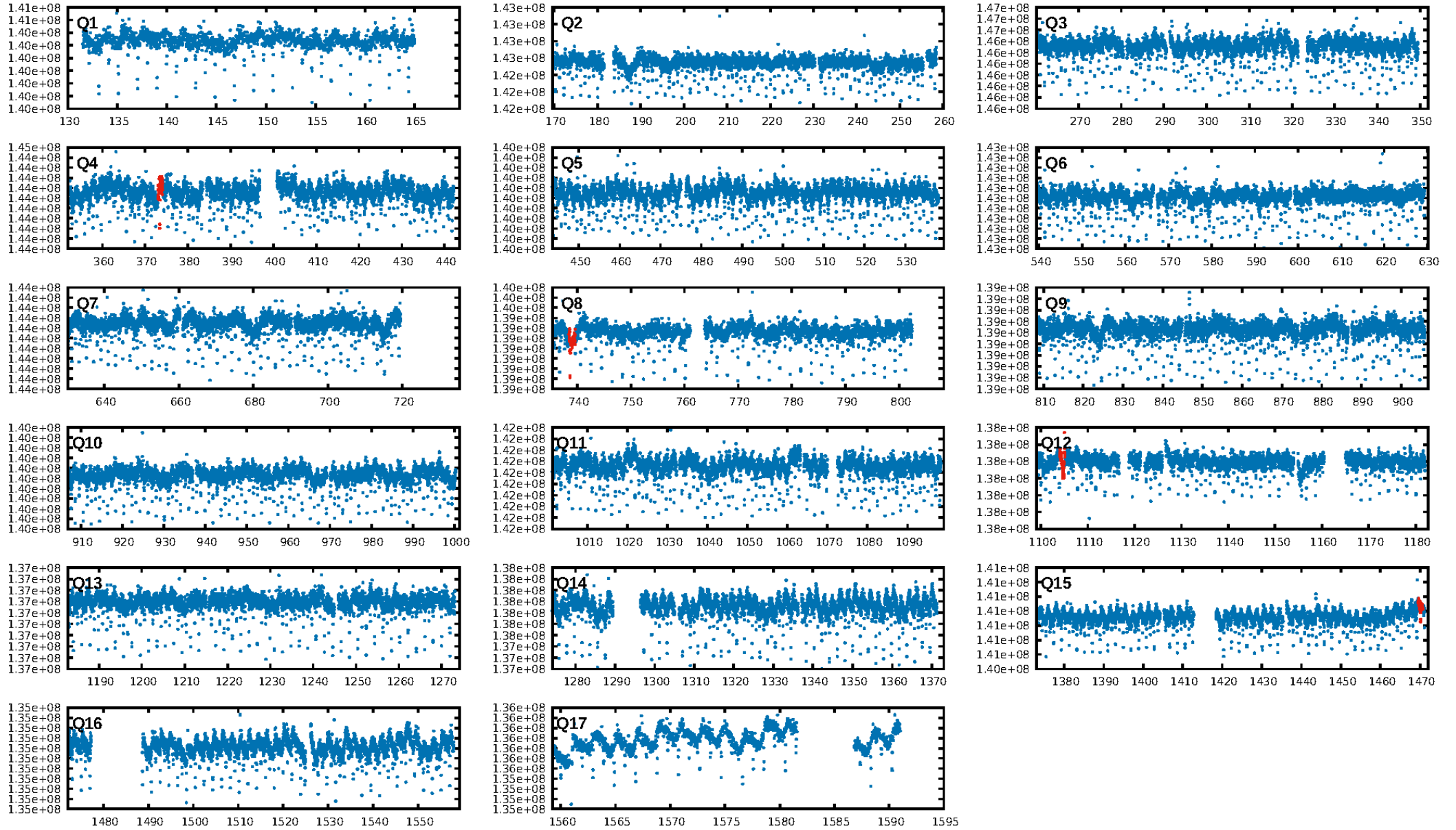
DV Fit Results:

Period = 365.54341 [0.00908] d
Epoch = 373.5107 [0.0169] BKJD
Rp/R* = 0.0135 [0.0070]
a/R* = 147.21 [405.32]
b = 0.72 [1.86]
Seff = 16.24 [10.05]
Teq = 512 [79] K
Rp = 5.79 [3.72] Re
a = 1.2137 [0.4570] AU
Ag = 1357.33 [1815.38] [0.75σ]
Teffp = 4804 [1436] K [2.98σ]

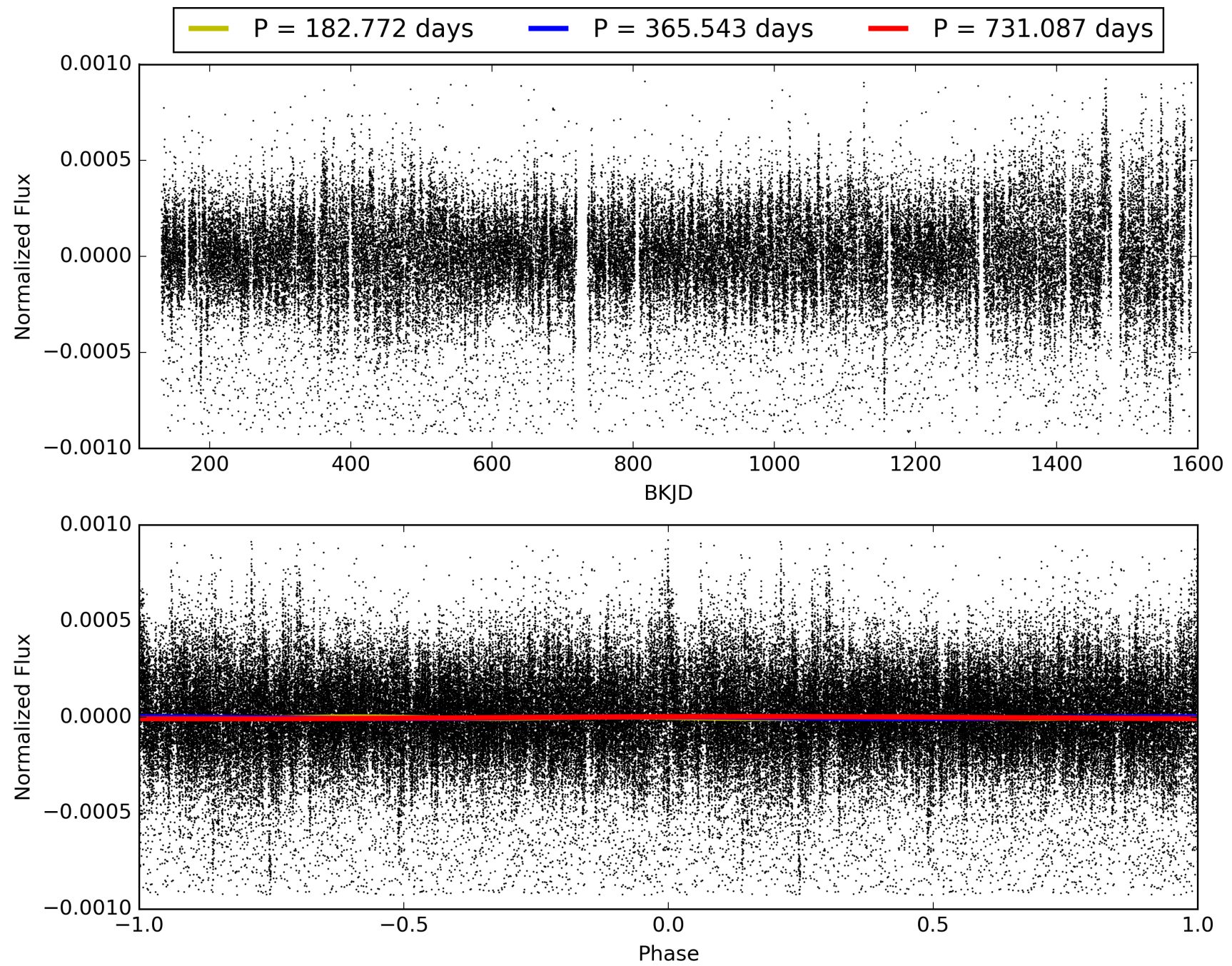
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [641.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.43e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.451
Centroid-sig: N/A
Centroid-so: 0.846 arcsec [0.88σ]
OotOffset-rm: 2.422 arcsec [3.50σ]
KicOffset-rm: 2.390 arcsec [3.47σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

TCE 012353720-03, PDC Light Curves

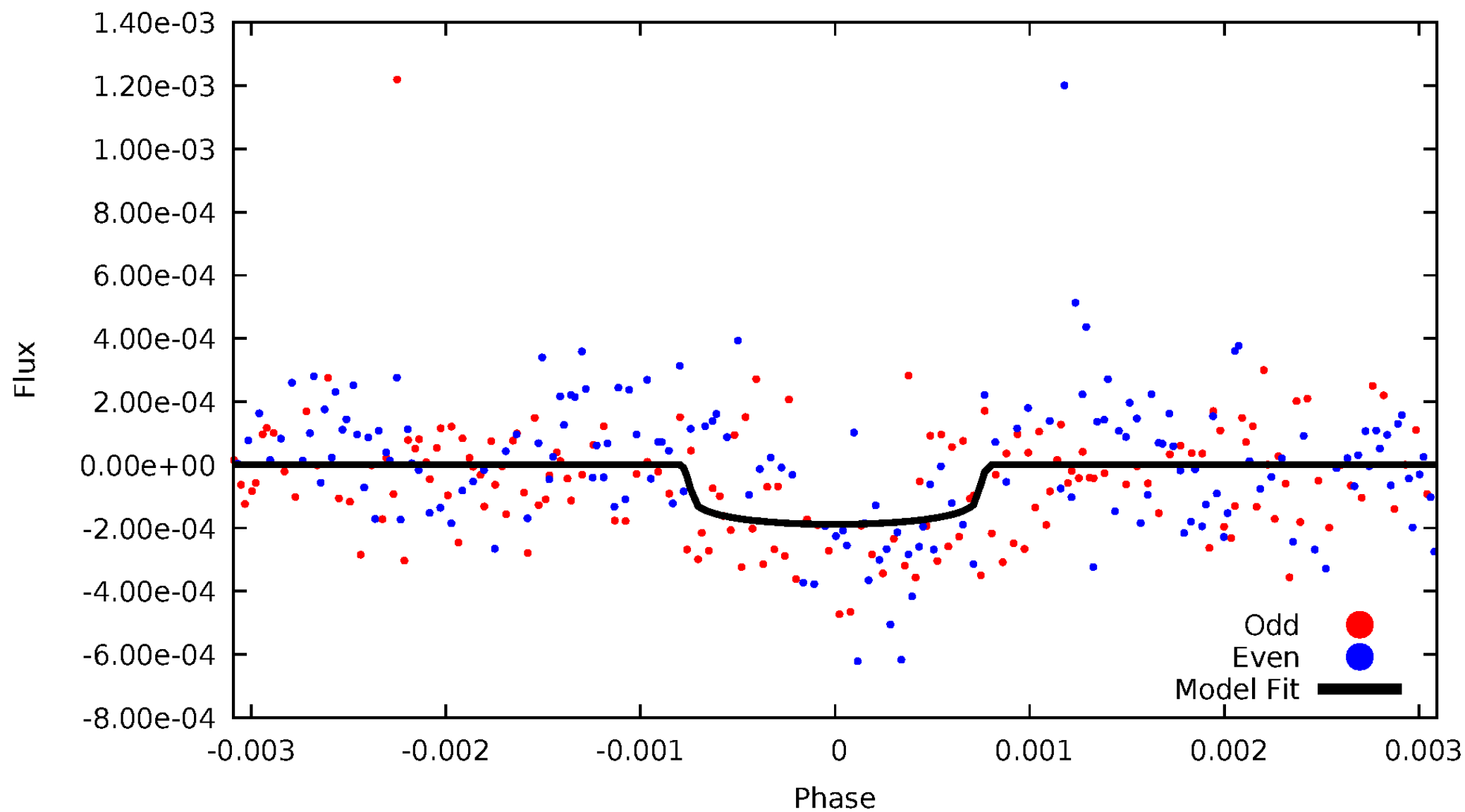


TCE 012353720-03



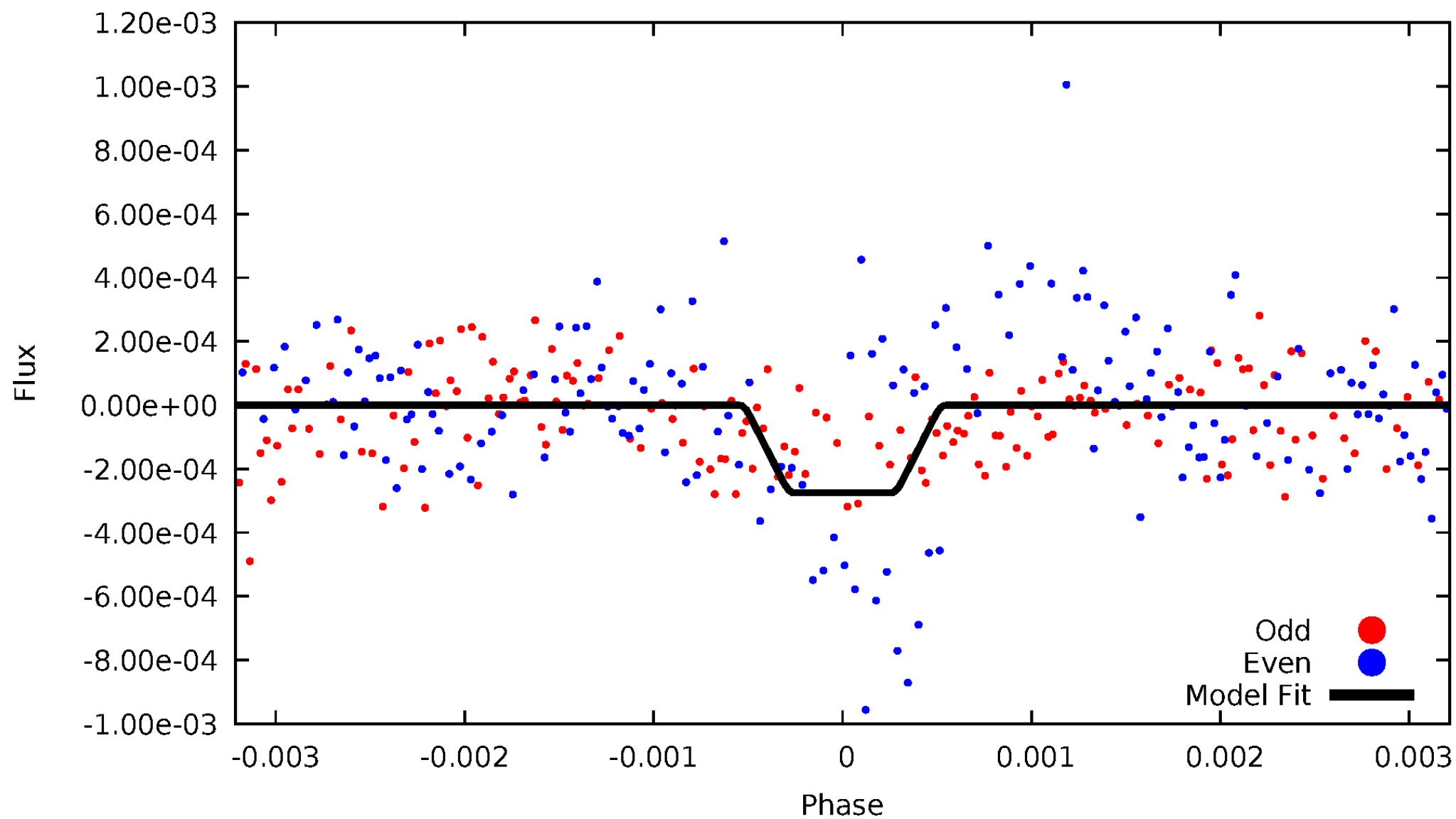
DV Odd/Even

TCE 012353720-03



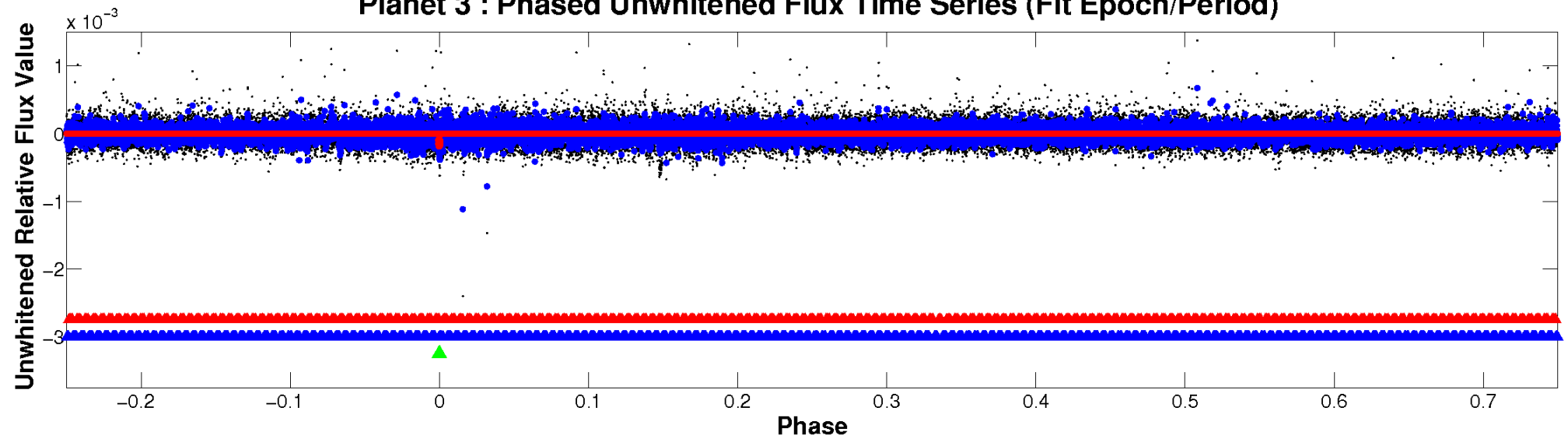
ALT Odd/Even

TCE 012353720-03

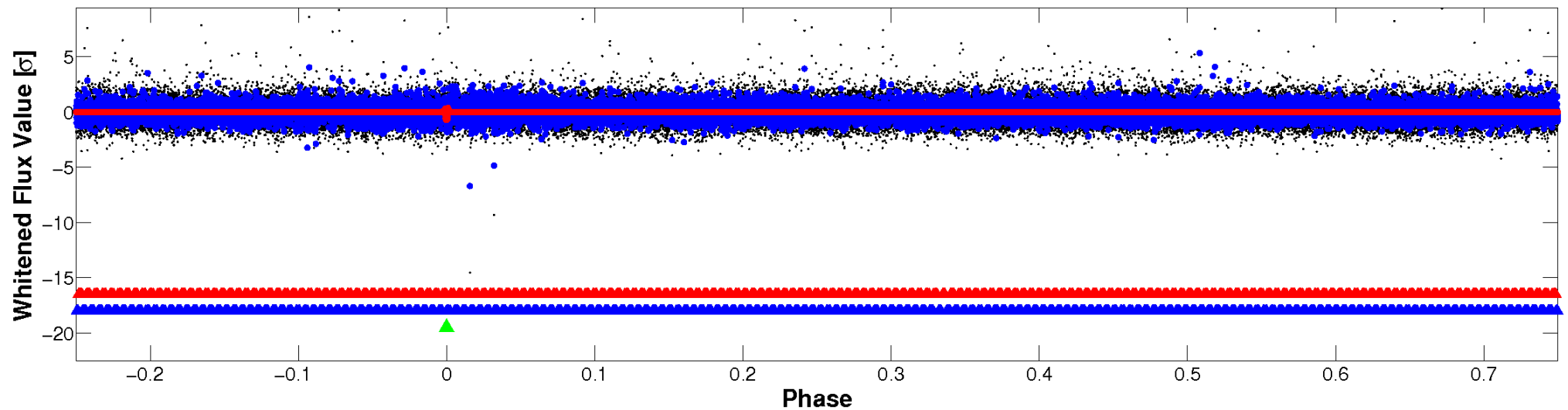


Non-Whitened Vs. Whitened Light Curve

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

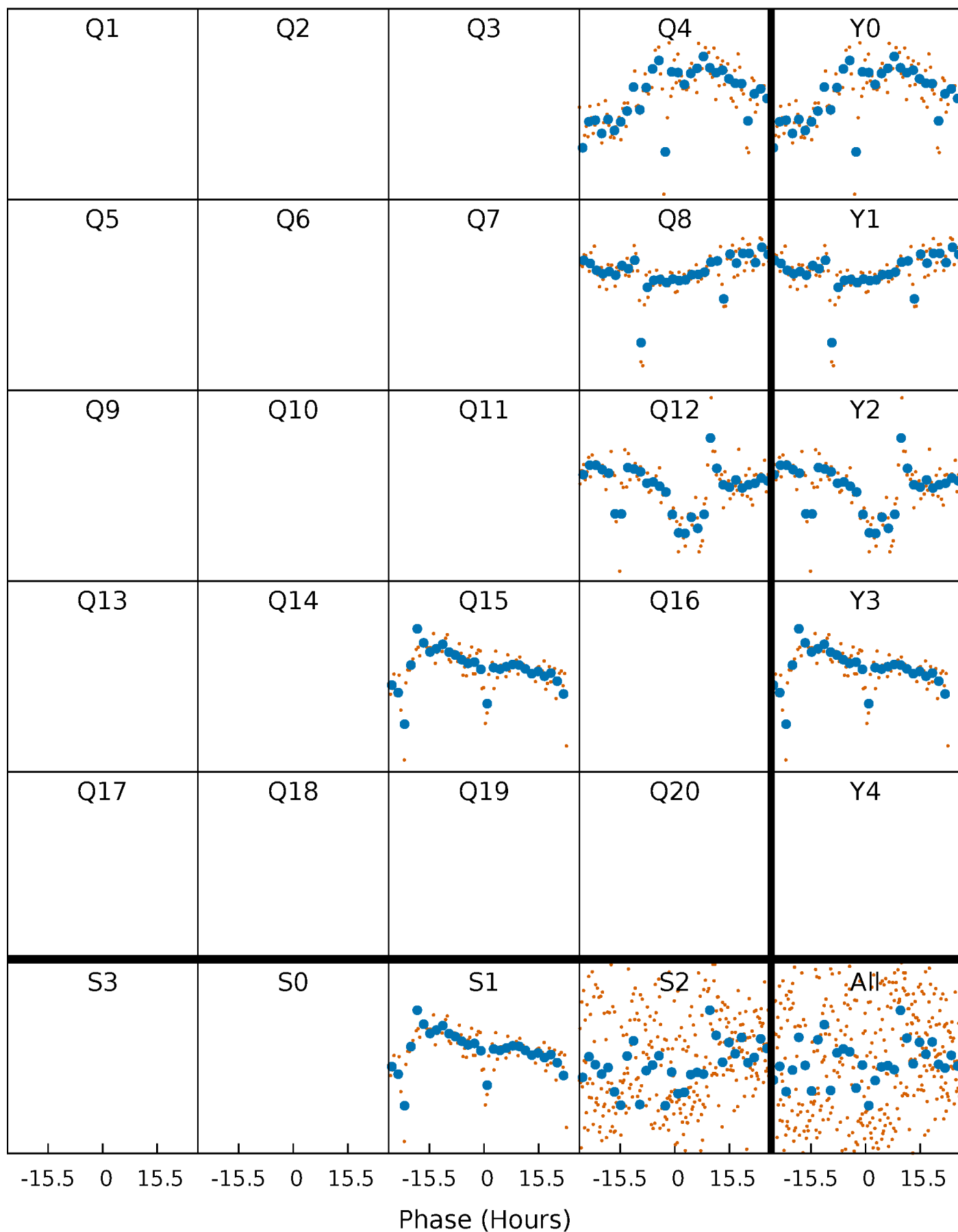


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



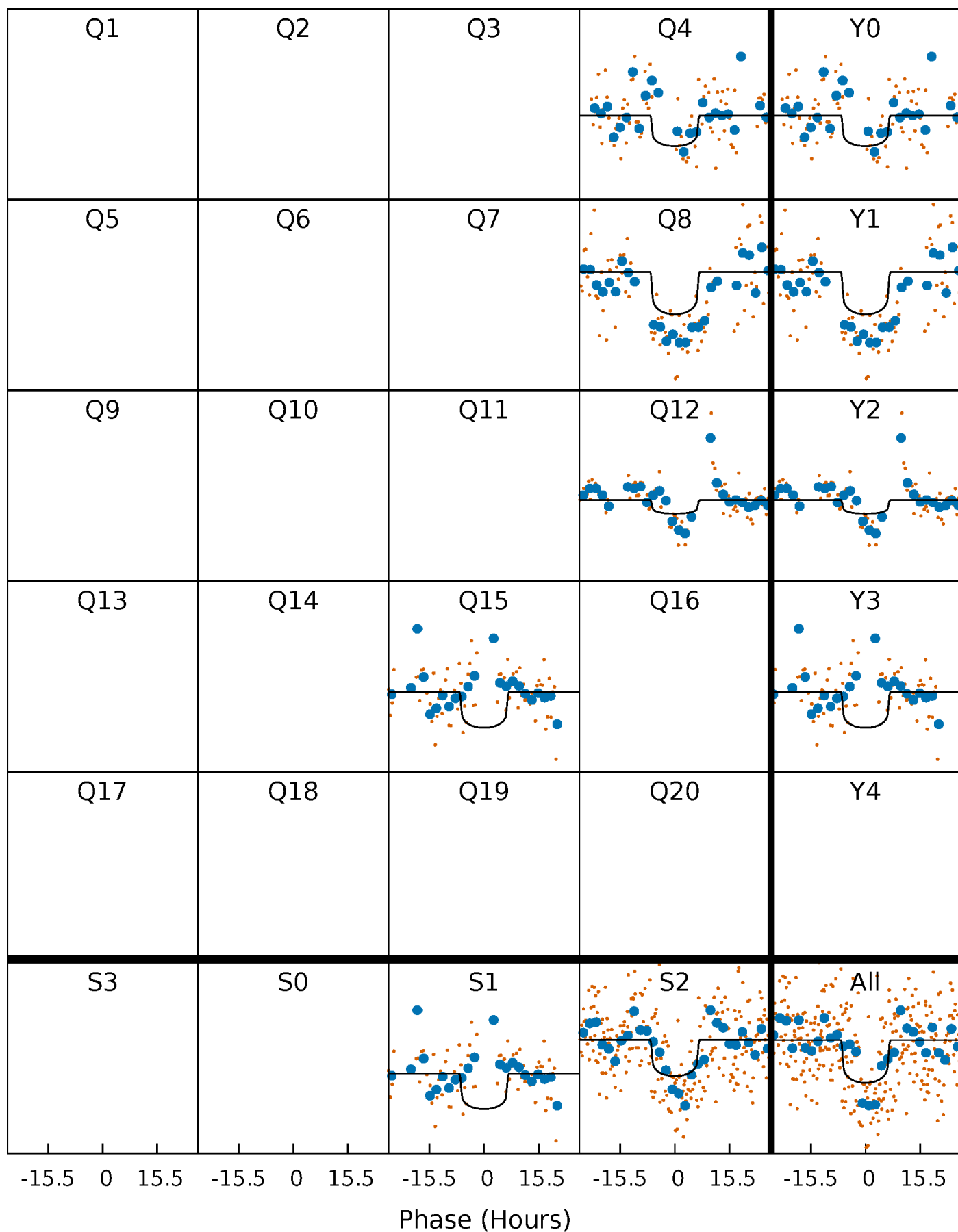
PDC Quarter-Phased Transit Curves

TCE 012353720-03 $P=365.543414$ Days $T_0=373.510747$ (BKJD)



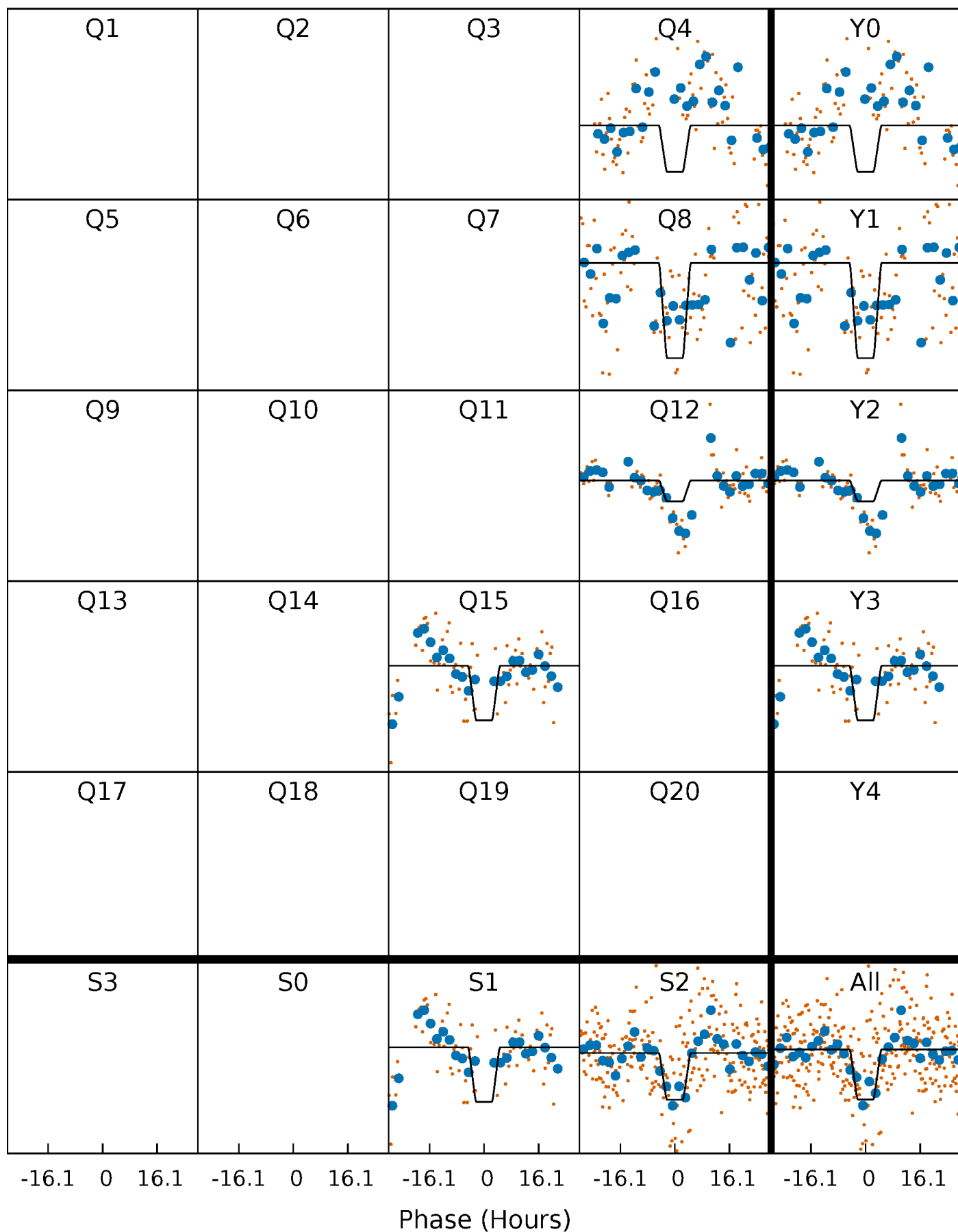
DV Quarter-Phased Transit Curves

TCE 012353720-03 $P=365.543414$ Days $T_0=373.510747$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

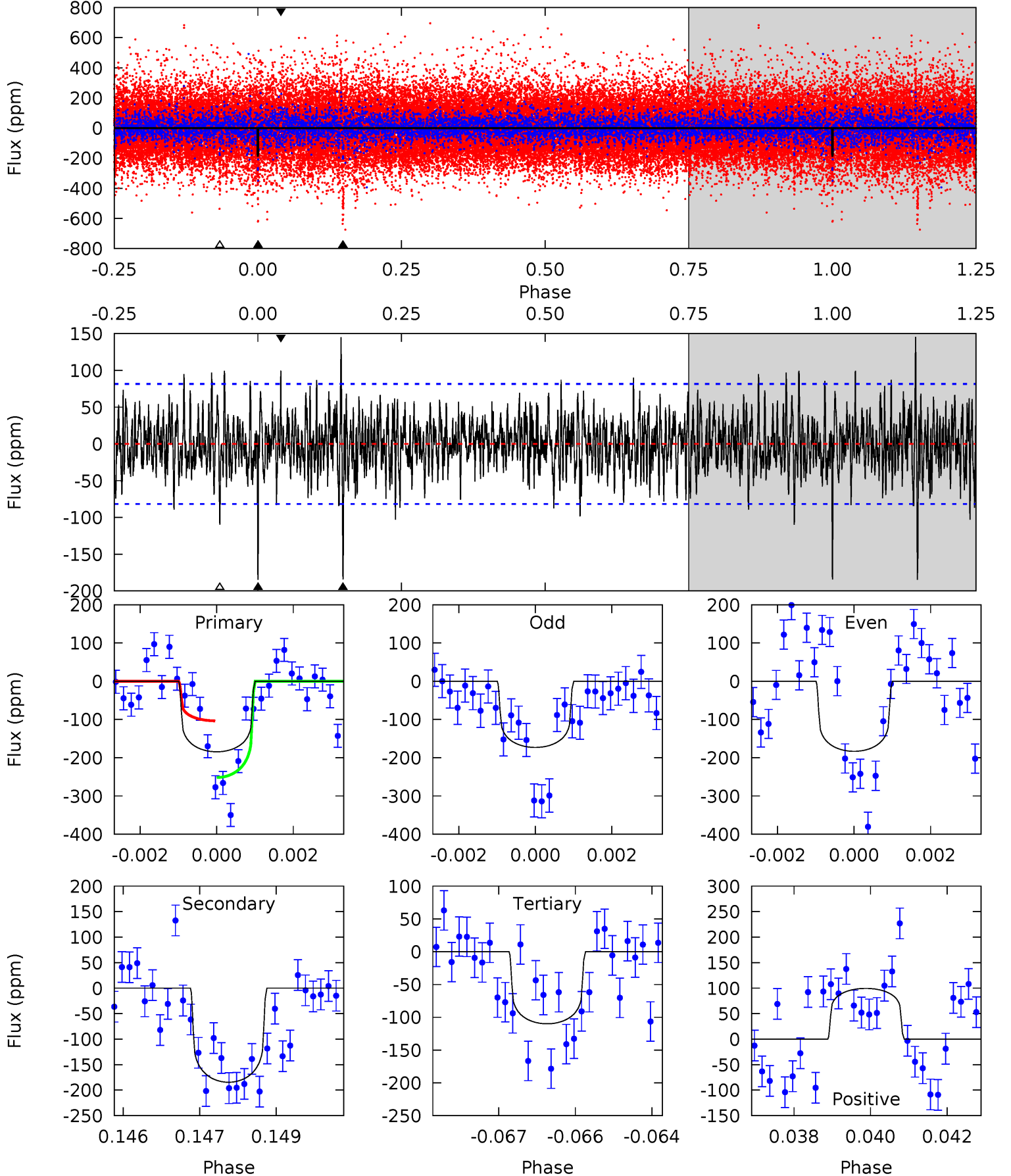
TCE 012353720-03 $P=365.542766$ Days $T_0=373.509754$ (BKJD)



DV Model-Shift Uniqueness Test

012353720-03, P = 365.543414 Days, E = 7.967333 Days

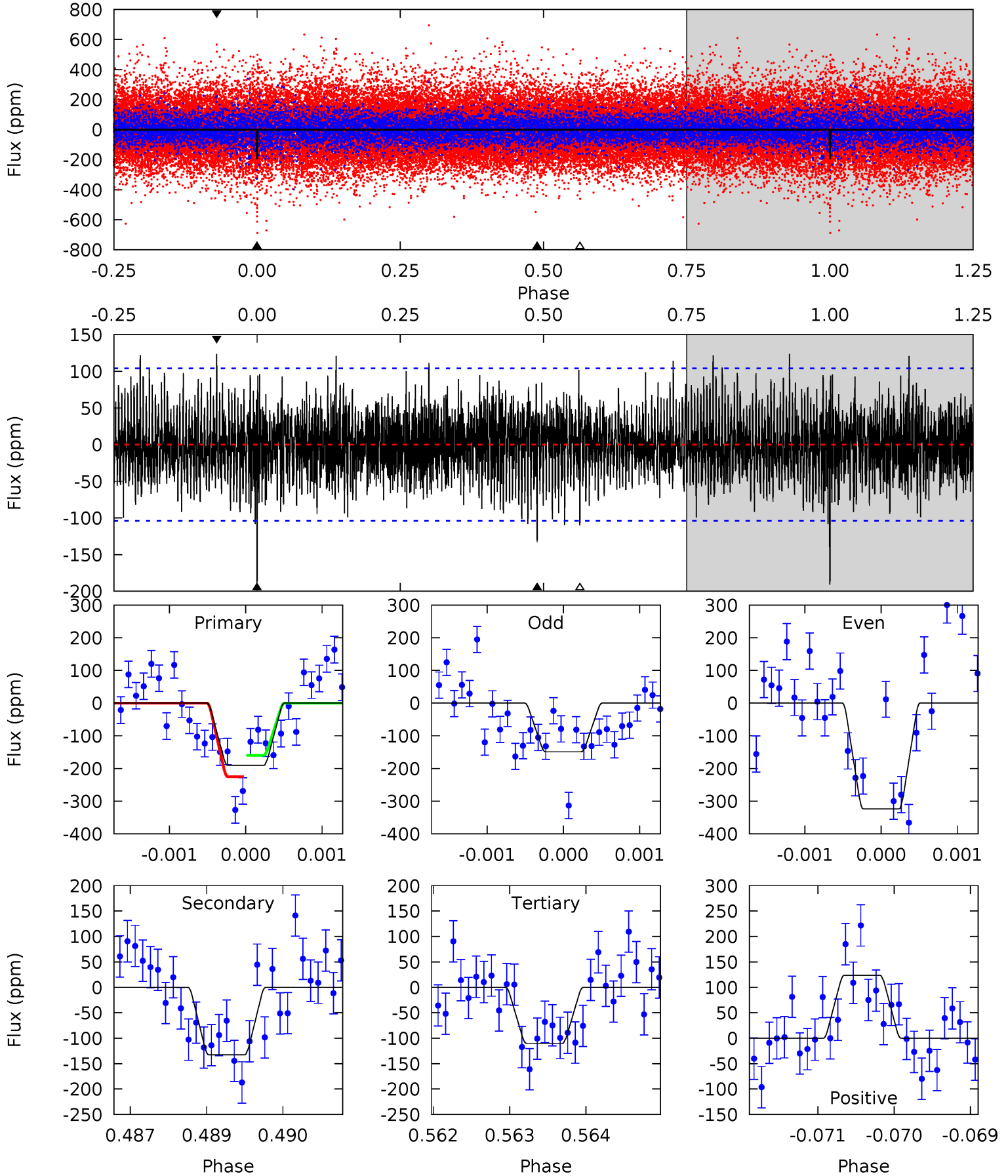
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	12.1	7.23	6.54	5.37	3.16	2.02	4.90	5.59	4.91	5.59	0.34	0.85	0.44	4.86



Alt Model-Shift Uniqueness Test

012353720-03, P = 365.542766 Days, E = 7.966988 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.97	6.94	5.76	6.46	5.44	3.27	1.88	4.21	3.51	1.18	0.48	4.70	1.23	0.39	1.71



Stellar Parameters For KIC 012353720

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6450^{+176}_{-176}	$3.501^{+0.360}_{-0.090}$	$-0.080^{+0.350}_{-0.250}$	$3.928^{+0.402}_{-1.507}$	$1.782^{+0.163}_{-0.381}$	$0.041^{+0.105}_{-0.012}$
	+3%/-3%	+10%/-3%	+438%/-312%	+10%/-38%	+9%/-21%	+254%/-29%
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 012353720-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-185 ± 15	$5.45^{+2.88}_{-2.66}$	708^{+36}_{-67}	6449^{+2925}_{-1152}	4946^{+13180}_{-2849}
Alt.	-133 ± 19	$6.57^{+3.11}_{-2.98}$	704^{+38}_{-73}	5395^{+1696}_{-774}	2487^{+5790}_{-1388}

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

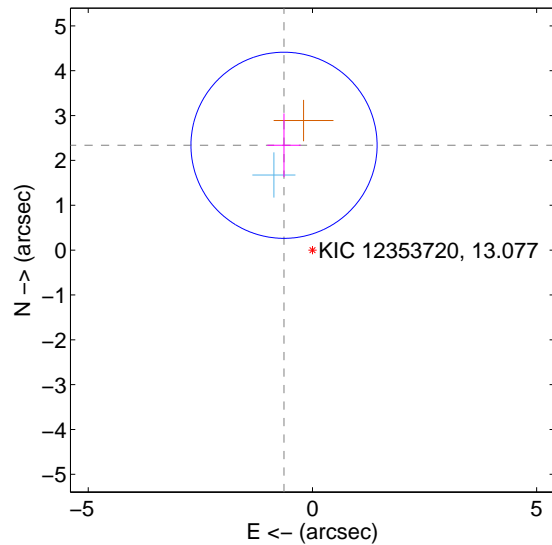
Supplemental centroid analysis for 012353720-03. Kepler magnitude: 13.08. Transit SNR 5.88

There are 1 quarters with good PRF difference image offsets

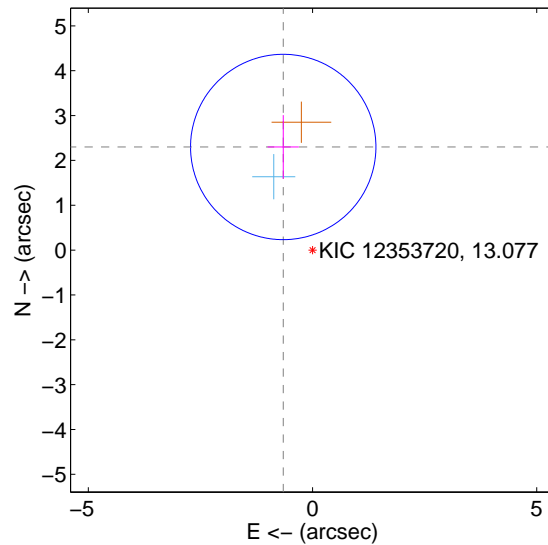
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.422 ± 0.692	3.50	0.634 ± 0.373	2.337 ± 0.710
PRF-fit source offset from KIC position	2.390 ± 0.689	3.47	0.653 ± 0.348	2.299 ± 0.709
photometric centroid source offset	0.85 ± 0.96	0.88	-0.84 ± 0.96	0.12 ± 1.10

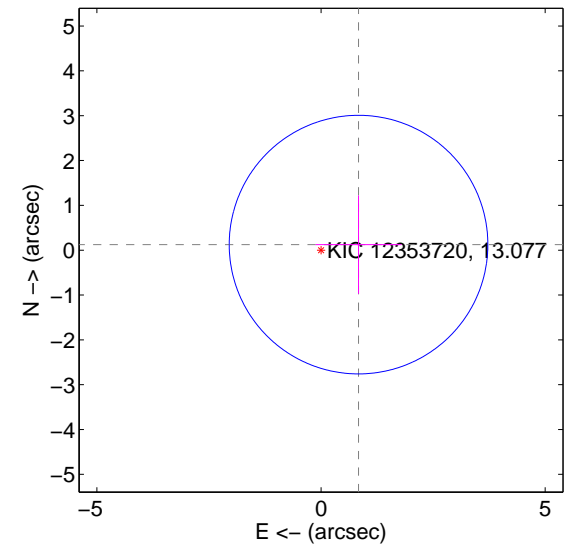
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

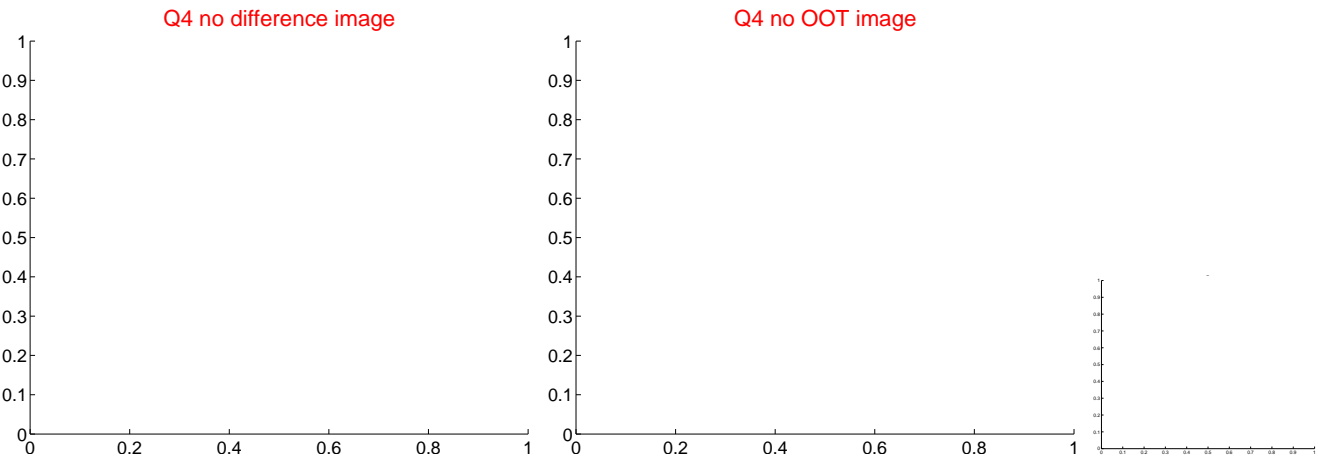


offset from photometric centroids

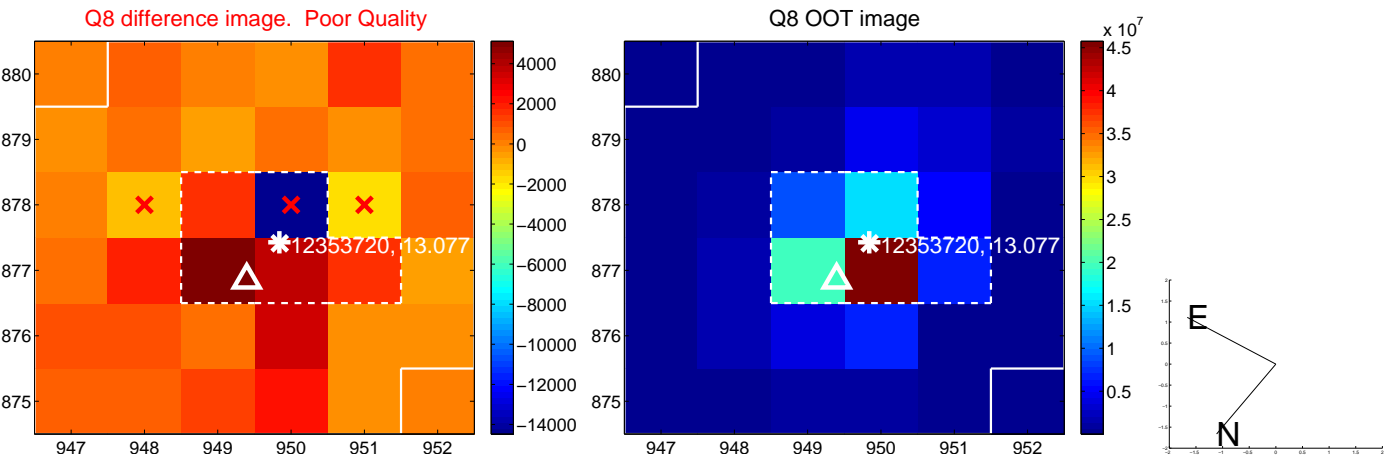


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

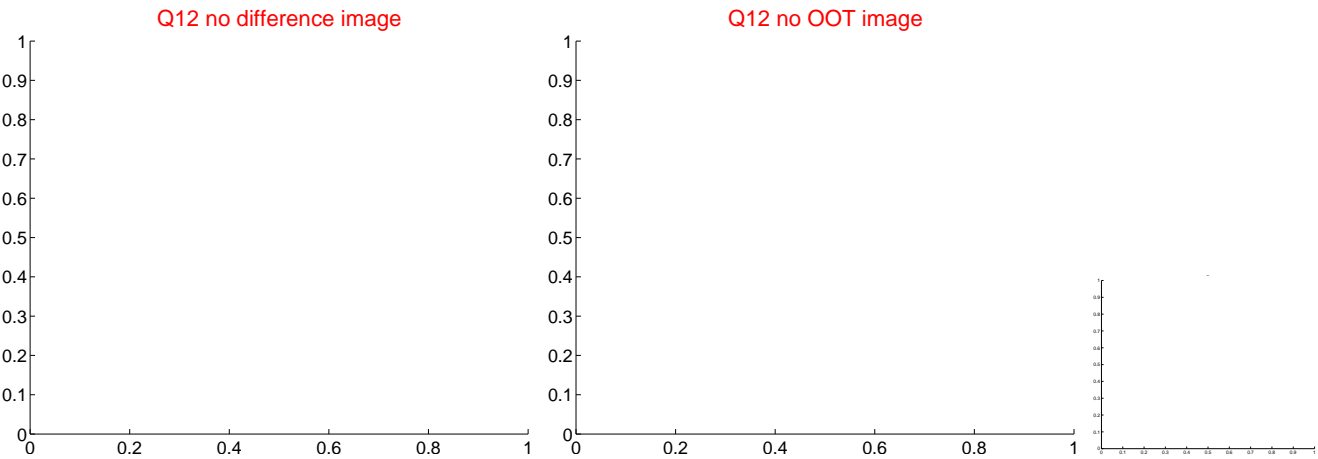
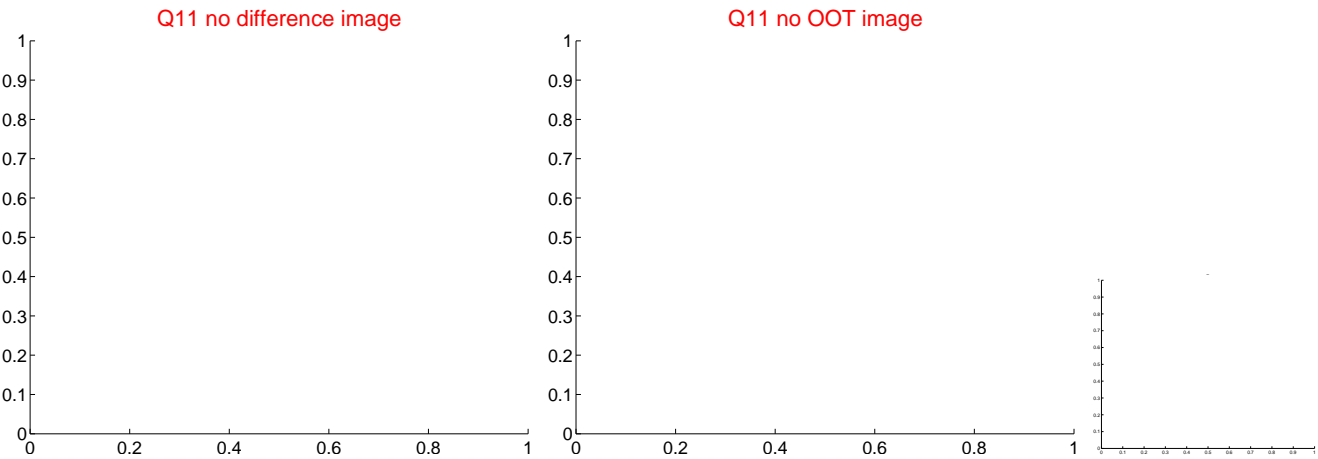
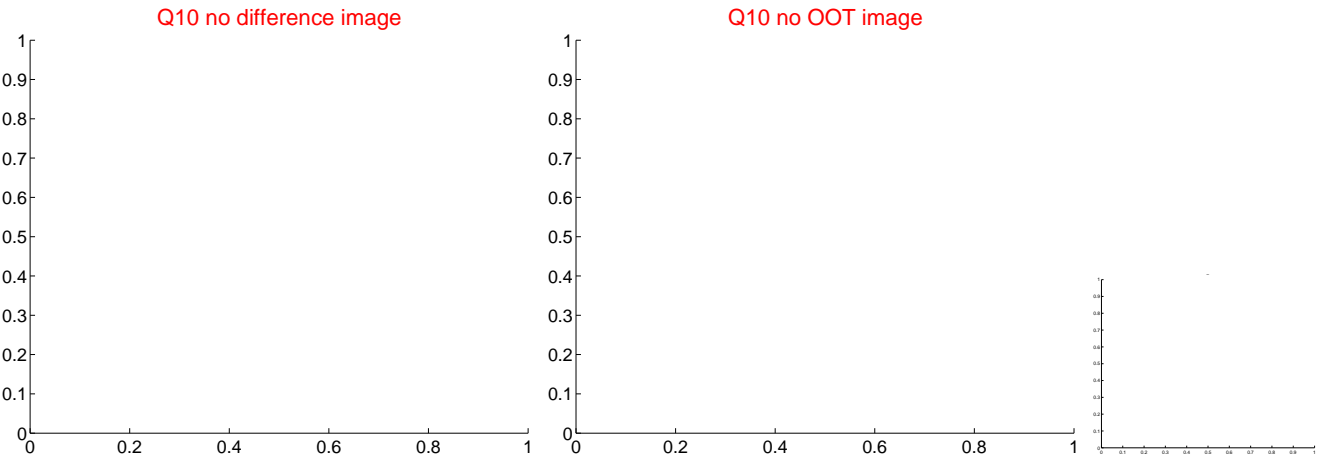
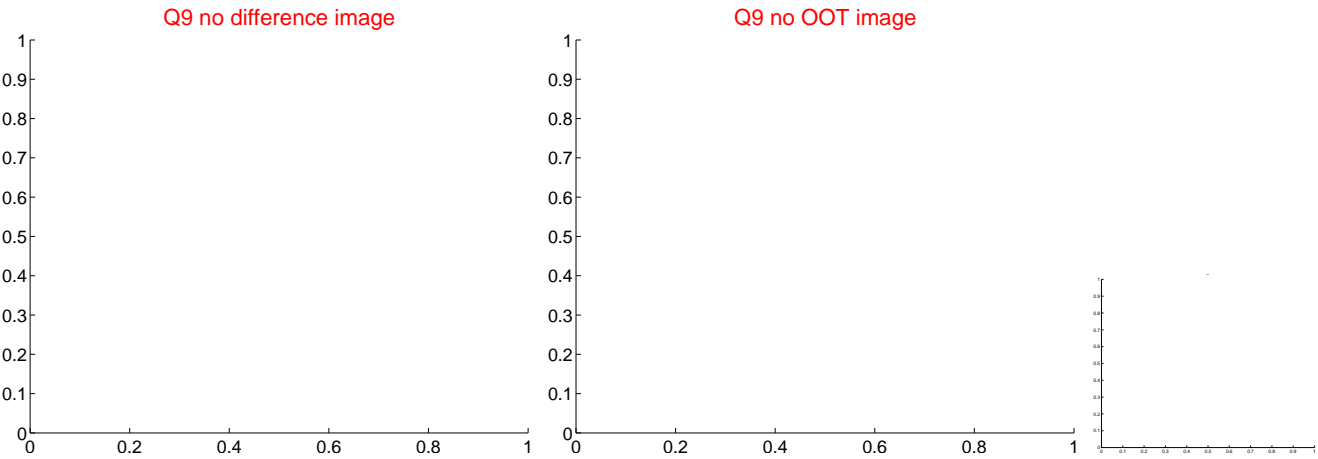
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



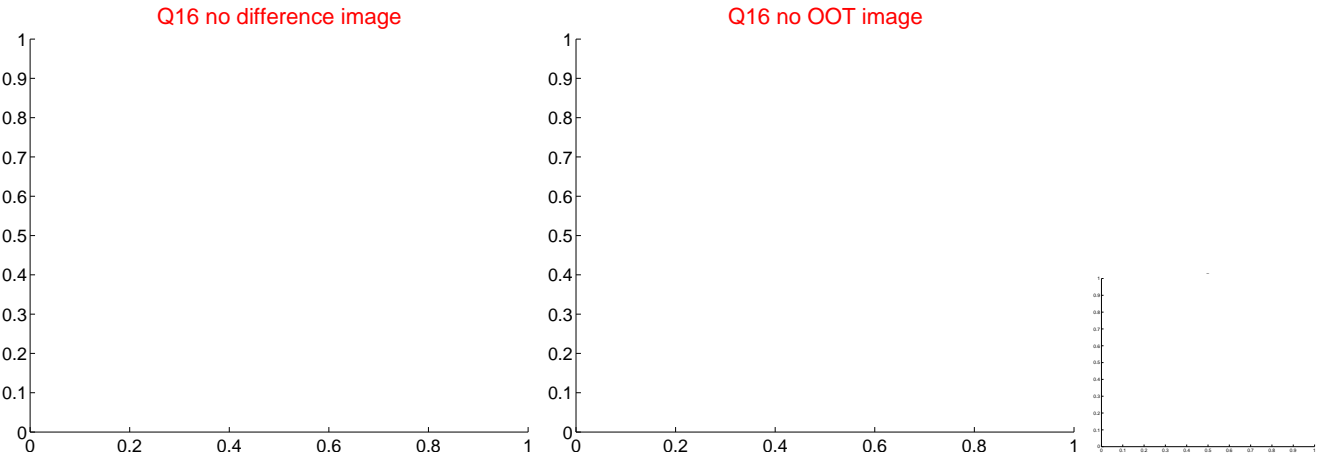
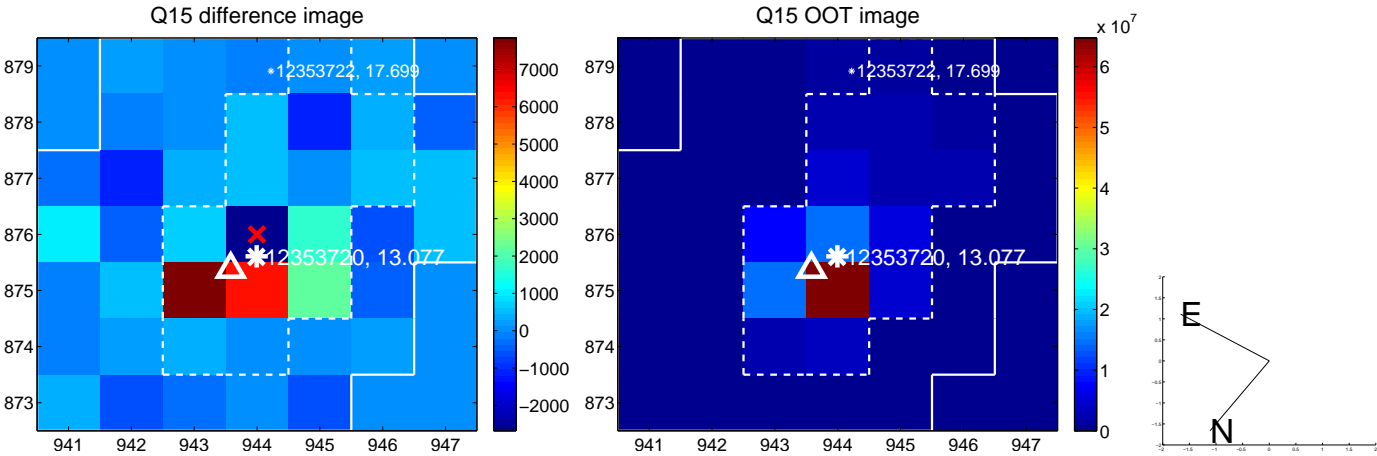
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



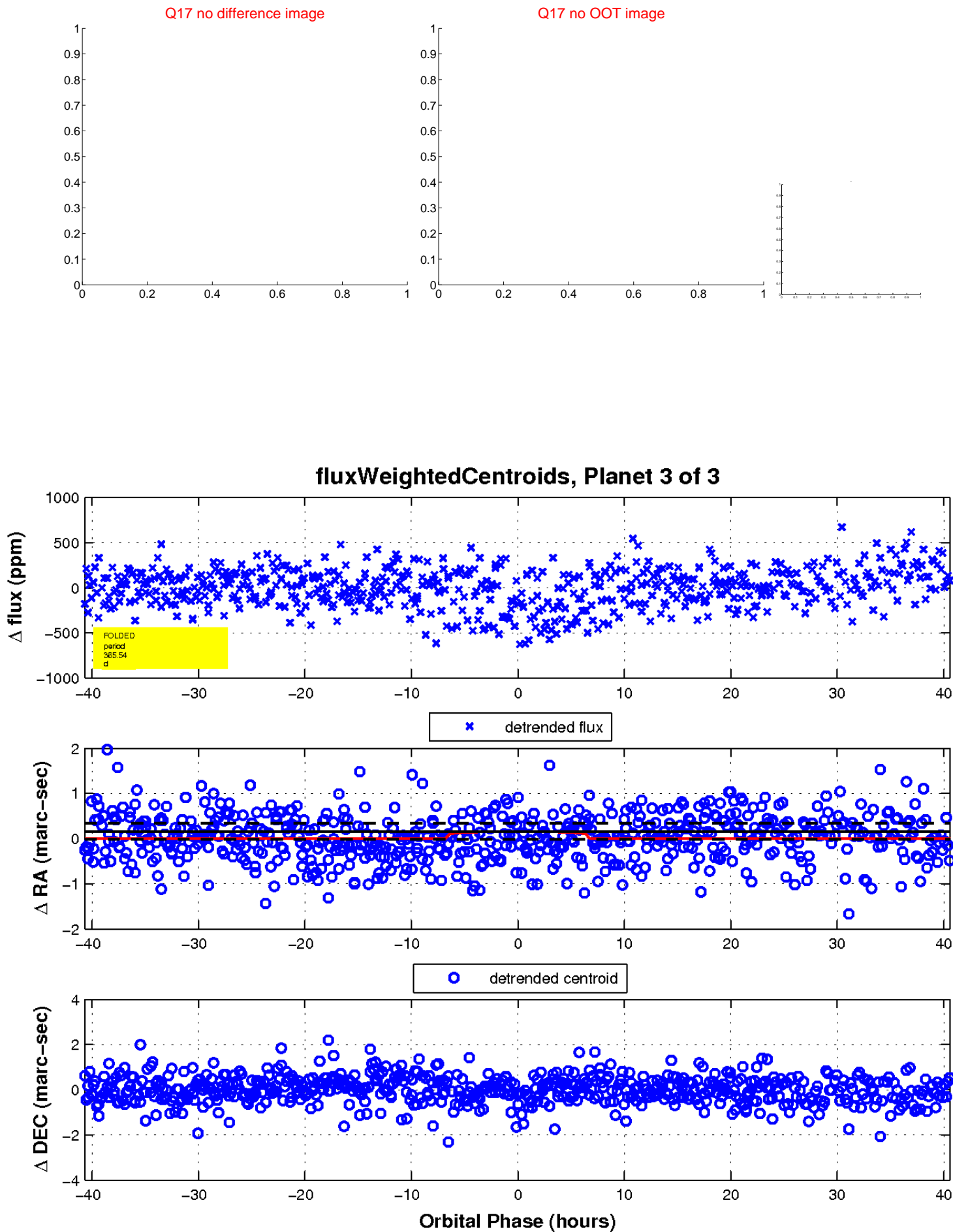
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

