

KIC 003657758

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})
003657758-01	OBS	2034.01	3.609290	133.795029	1339.0	1.844	38.4	44.2	0.87	5668	3.56	336.56
003657758-02	OBS	2034.02	2.370288	133.683610	253.3	1.836	9.1	10.4	0.87	5668	1.50	589.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003657758-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003657758-02	OBS	PC	1.00	0	0	0	0	CENT_FEW_MEAS

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

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

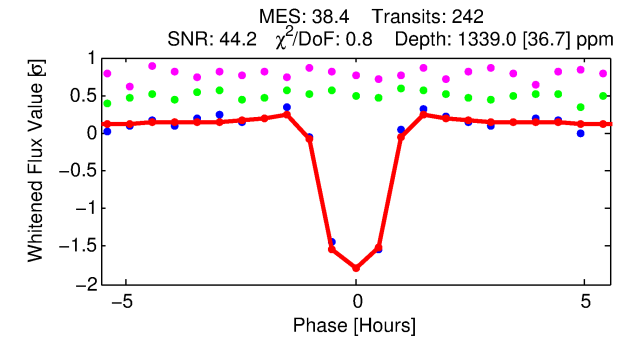
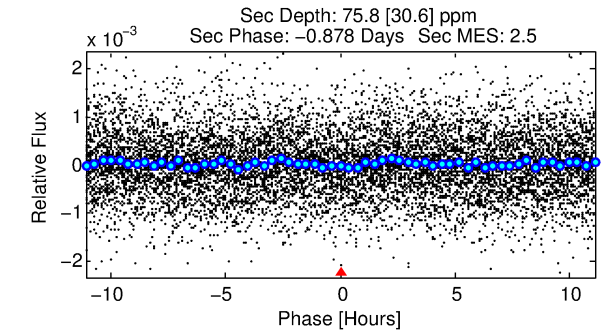
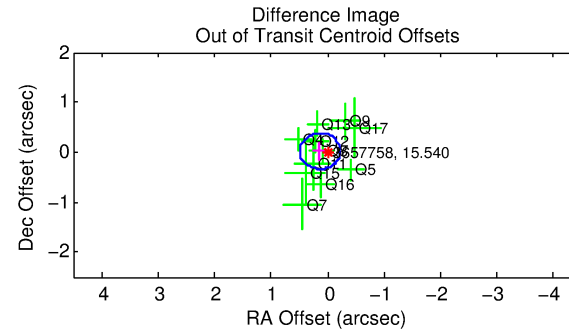
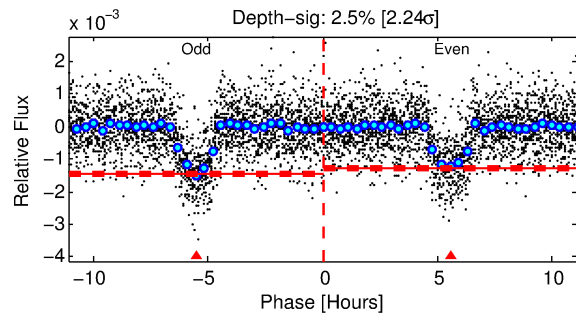
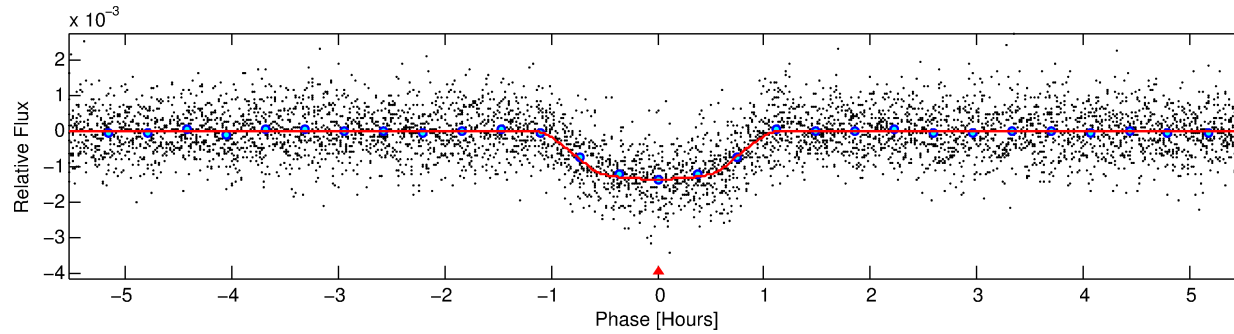
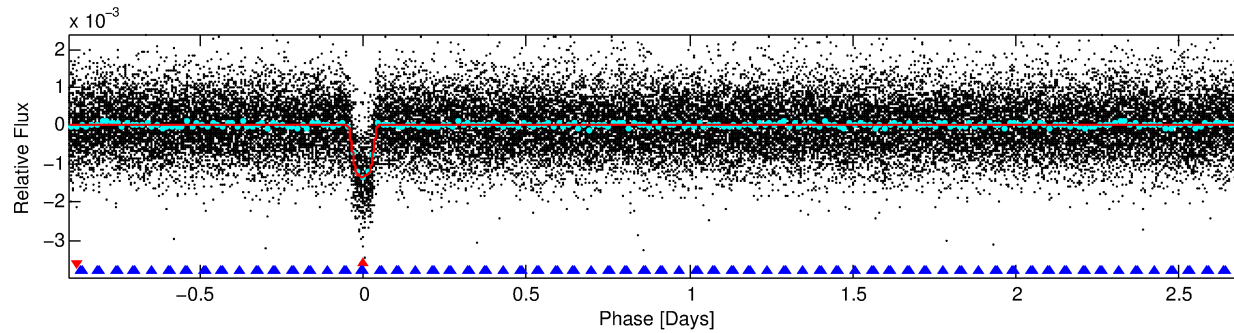
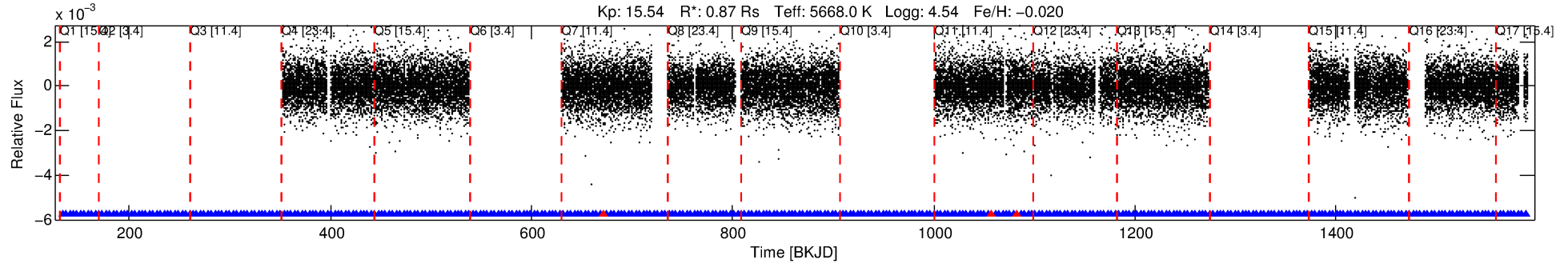
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003657758-01

No Significant Match Found

DV One-Page Summary

KIC: 3657758 Candidate: 1 of 2 Period: 3.609 d
KOI: K02034.01 Corr: 0.968



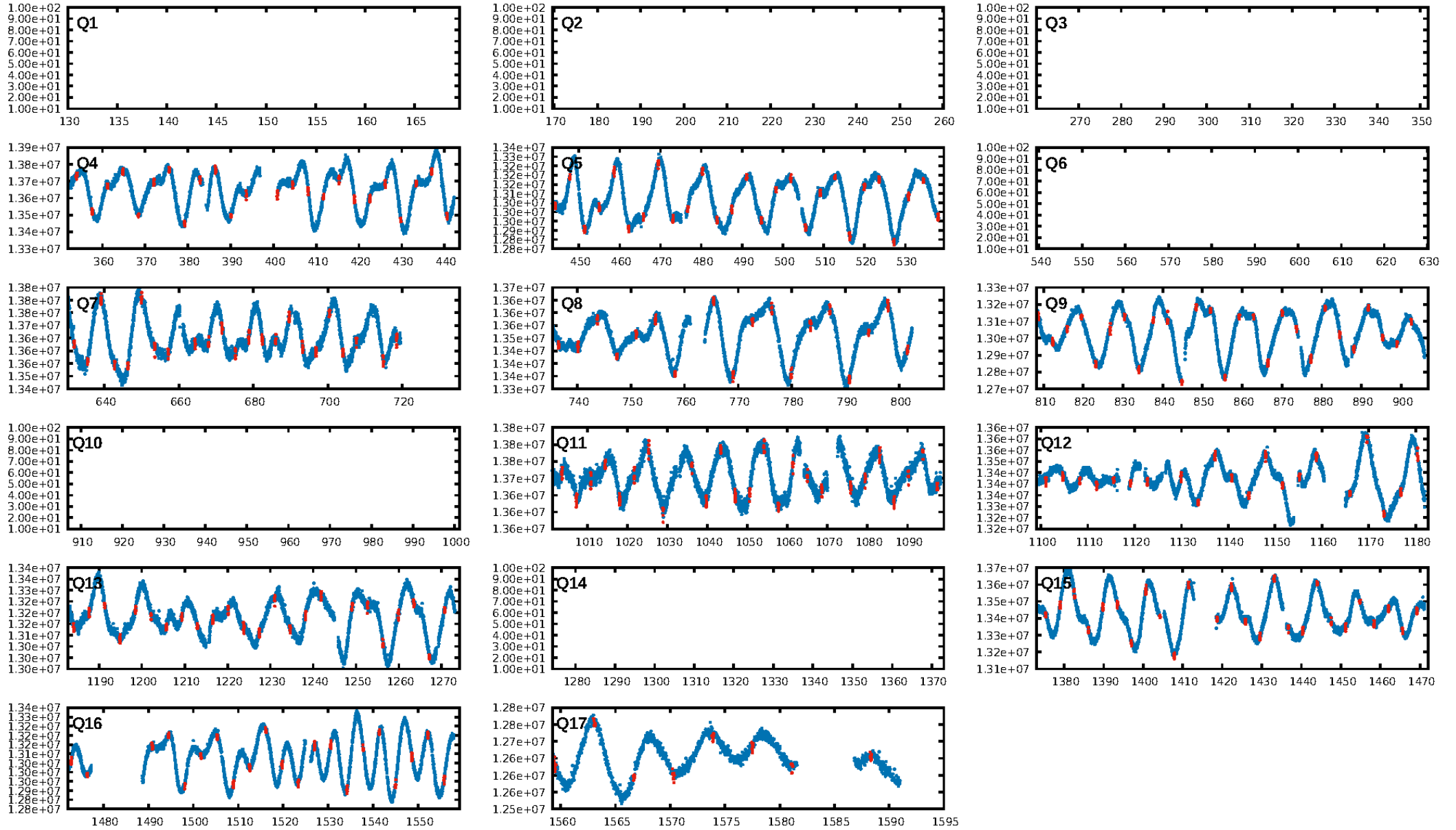
DV Fit Results:

Period = 3.60929 [0.00000] d
Epoch = 133.7950 [0.0007] BKJD
Rp/R* = 0.0375 [0.0054]
a/R* = 9.77 [5.92]
b = 0.81 [0.27]
Seff = 336.56 [125.84]
Teff = 1092 [102] K
Rp = 3.56 [1.13] Re
a = 0.0455 [0.0109] AU
Ag = 6.83 [4.15] [1.40 σ]
Teffp = 2729 [351] K [4.48 σ]

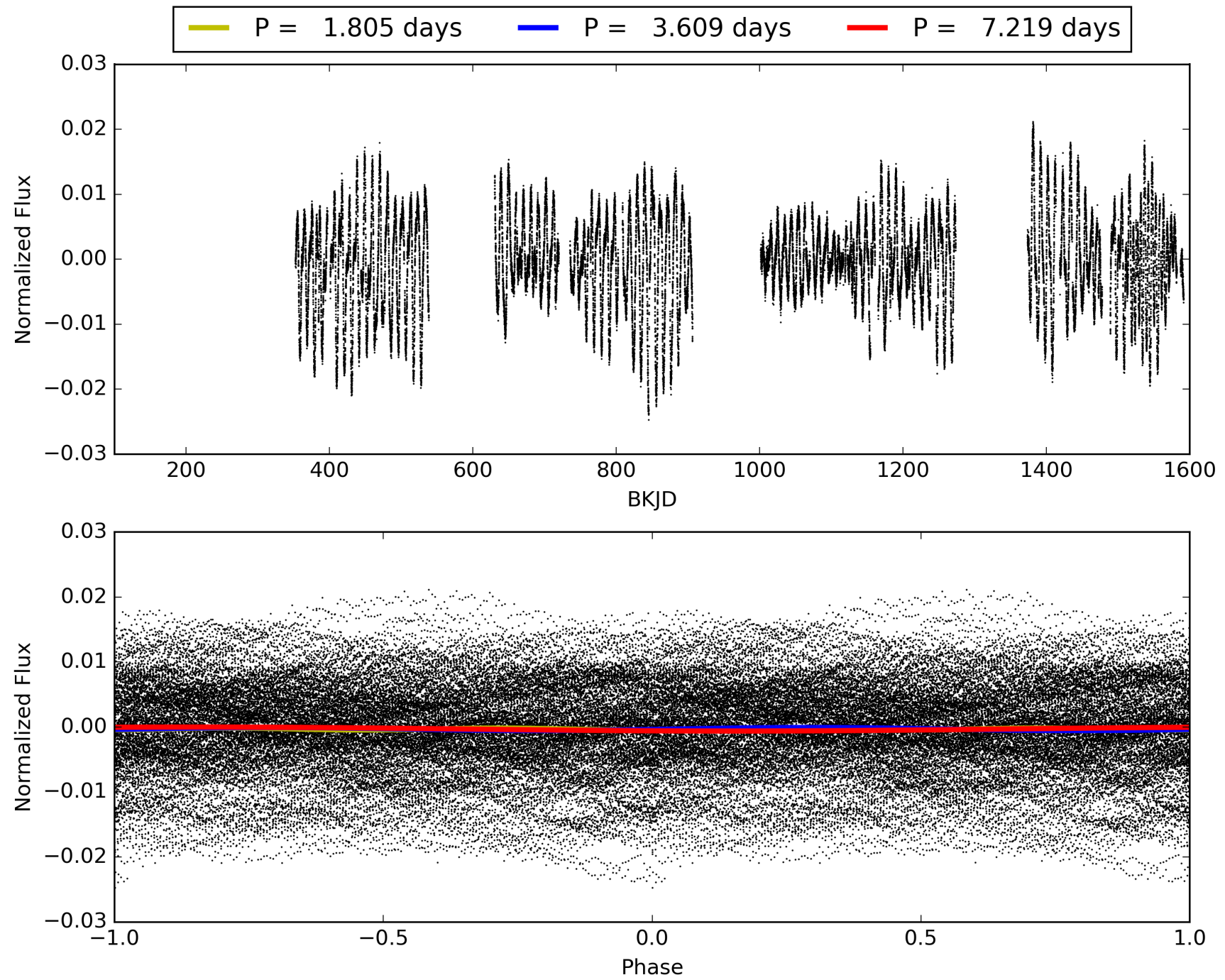
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.43 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.12e-296
RollingBand-fgt: 0.99 [231/234]
GhostDiagnostic-chr: 2.611
Centroid-sig: 0.0%
Centroid-so: 0.614 arcsec [2.36 σ]
OotOffset-rm: 0.135 arcsec [1.14 σ]
KicOffset-rm: 0.181 arcsec [1.27 σ]
OotOffset-st: 0/3/4/4 [11]
KicOffset-st: 0/3/4/4 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [11/11]

TCE 003657758-01, PDC Light Curves

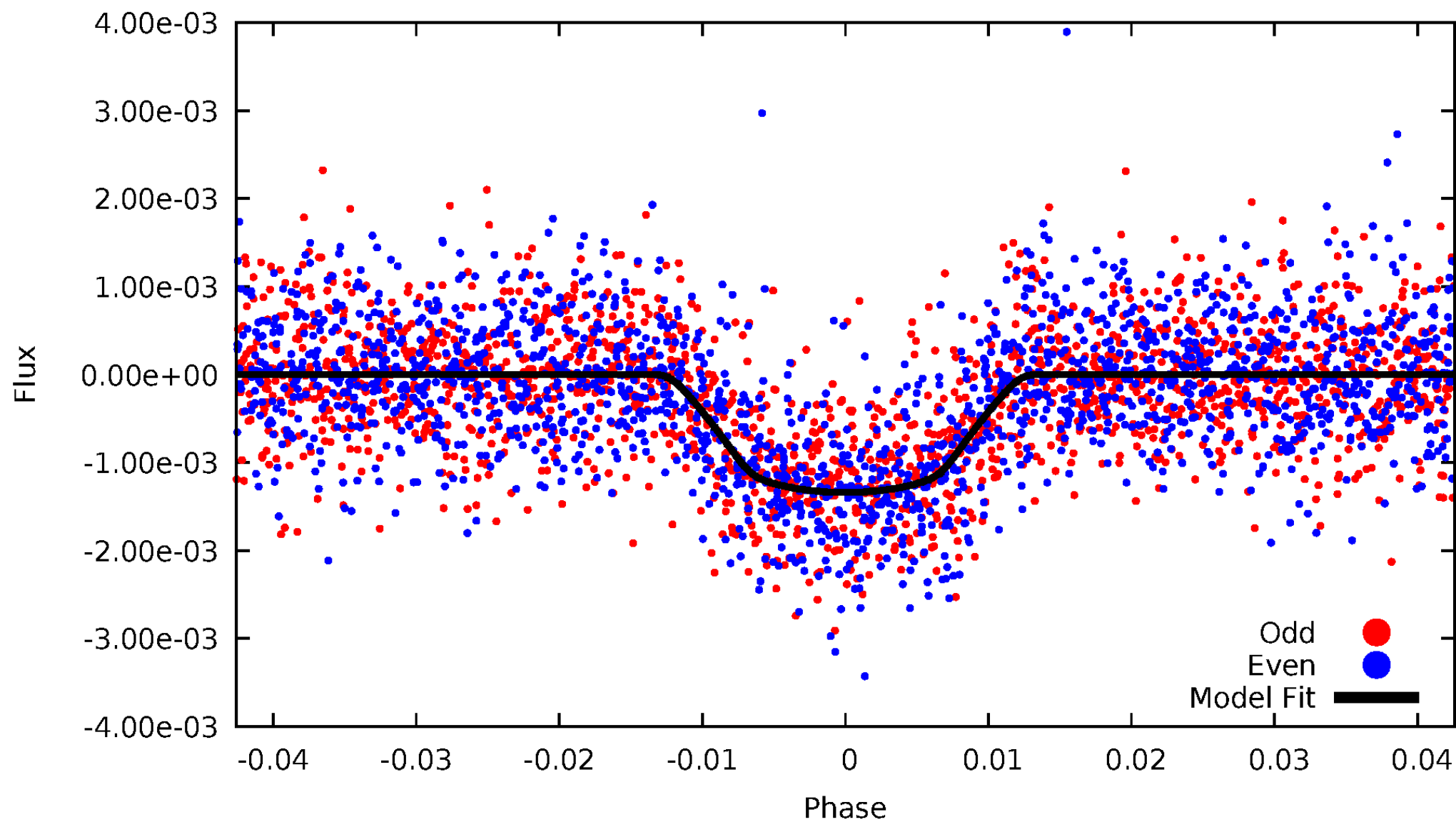


TCE 003657758-01



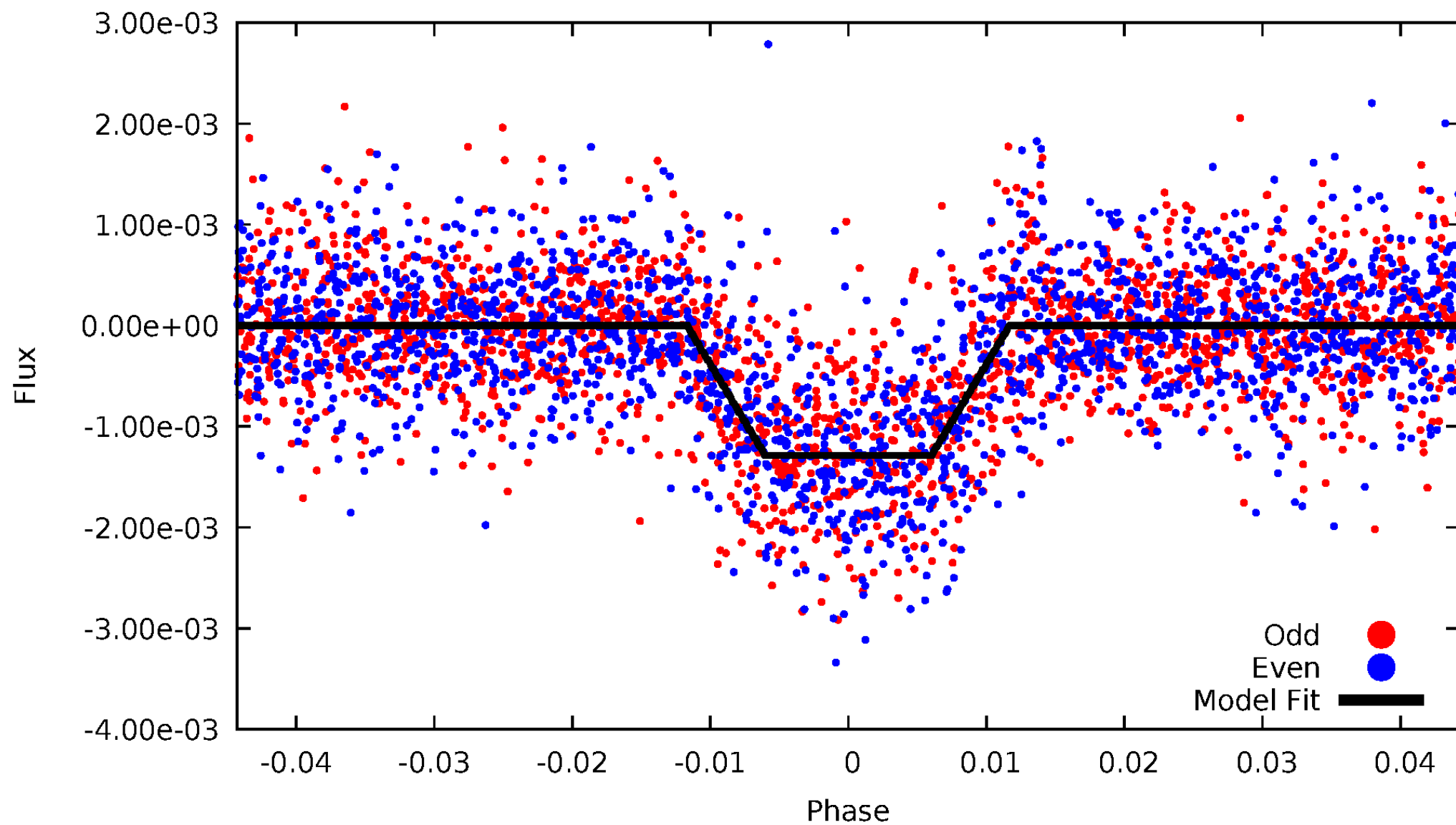
DV Odd/Even

TCE 003657758-01

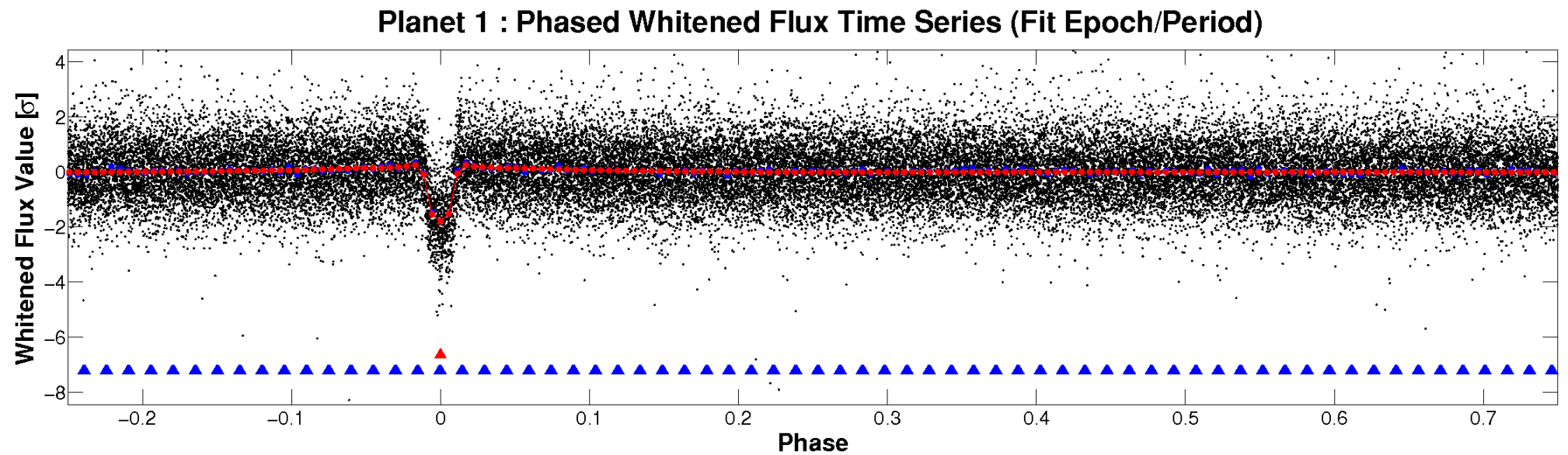
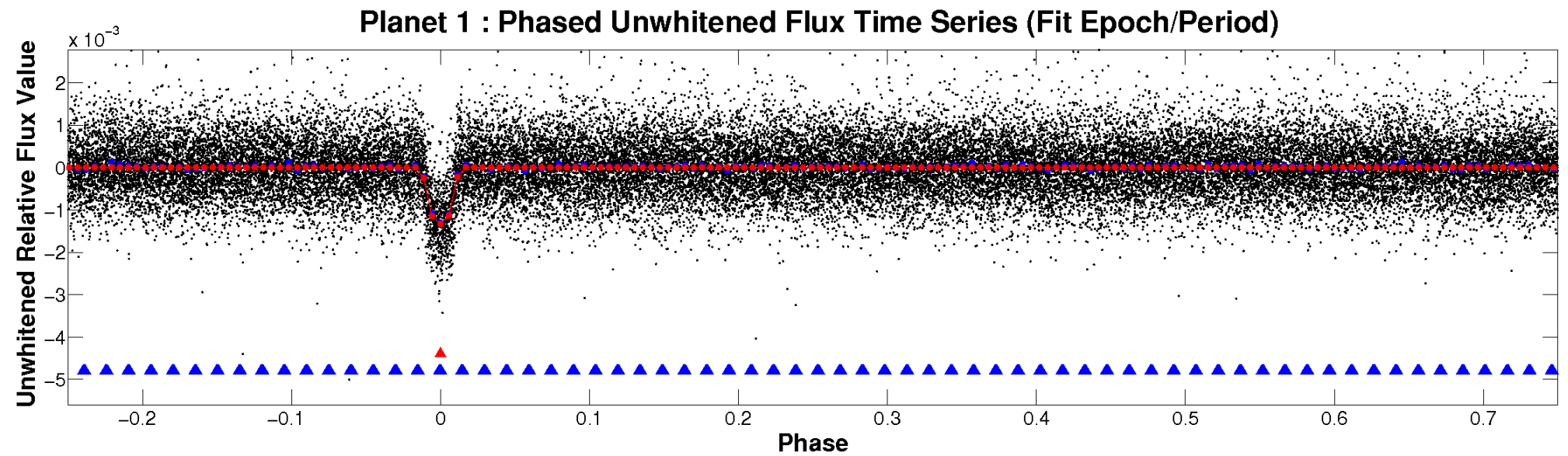


ALT Odd/Even

TCE 003657758-01

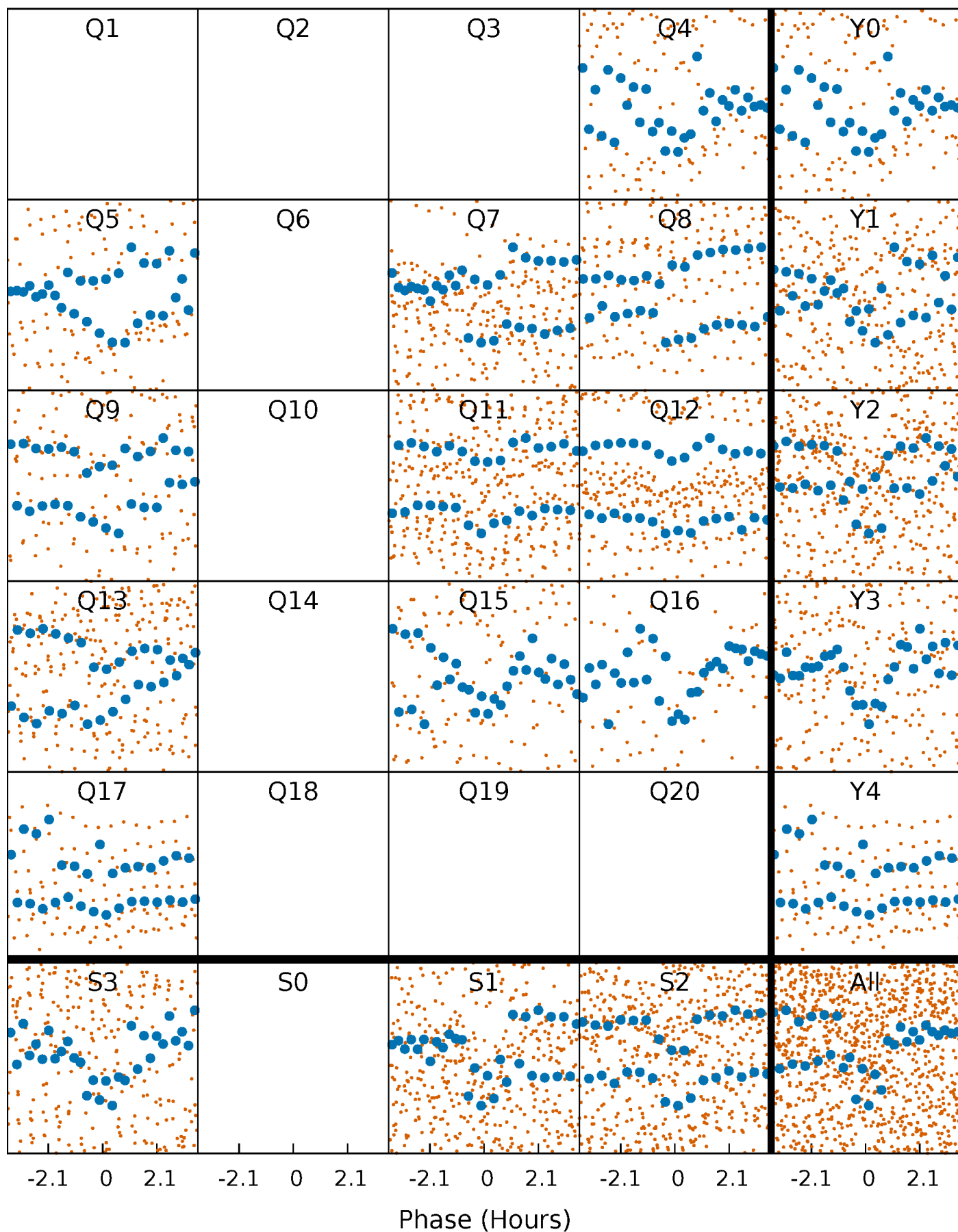


Non-Whitened Vs. Whitened Light Curve



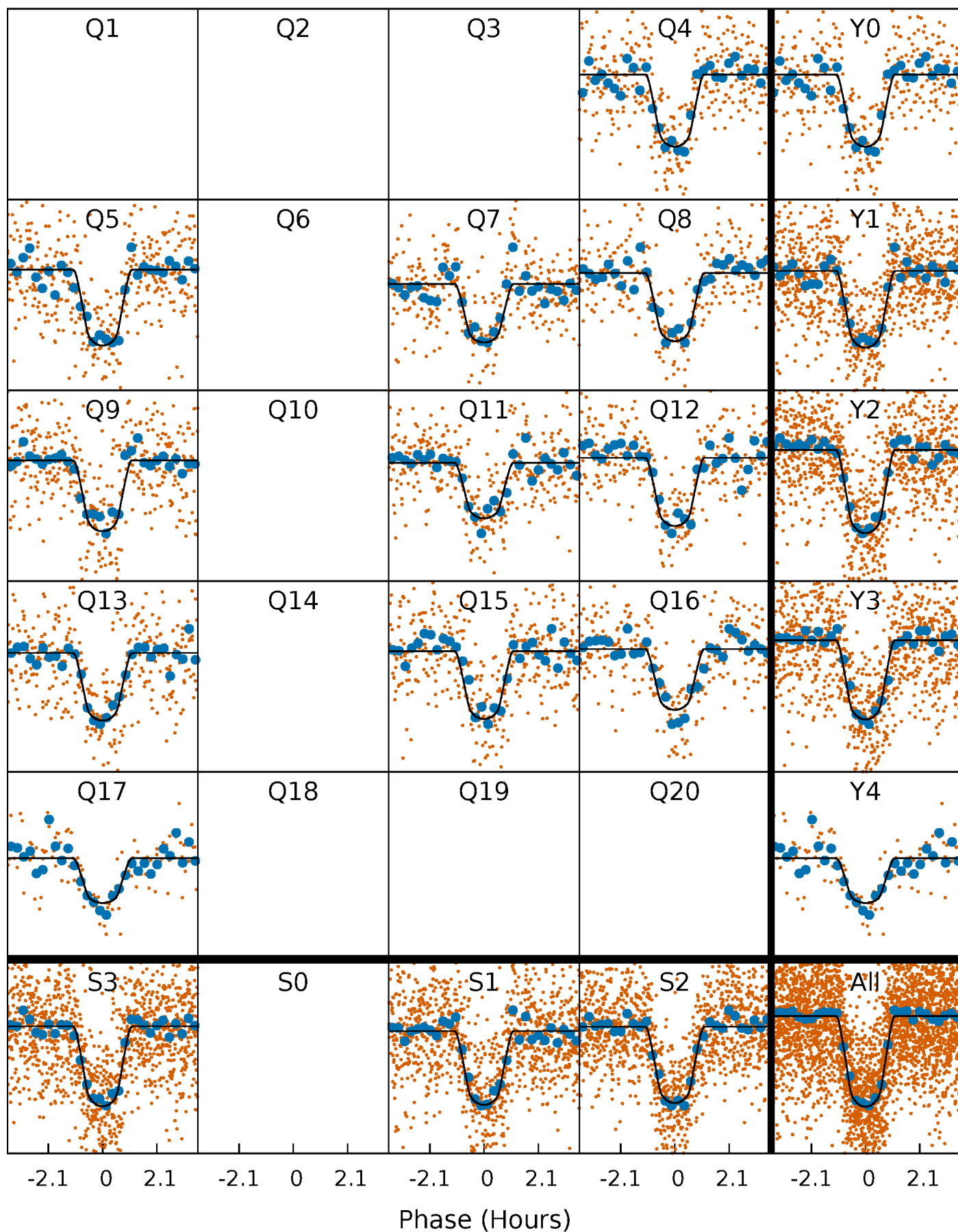
PDC Quarter-Phased Transit Curves

TCE 003657758-01 P= 3.609290 Days $T_0=133.795029$ (BKJD)



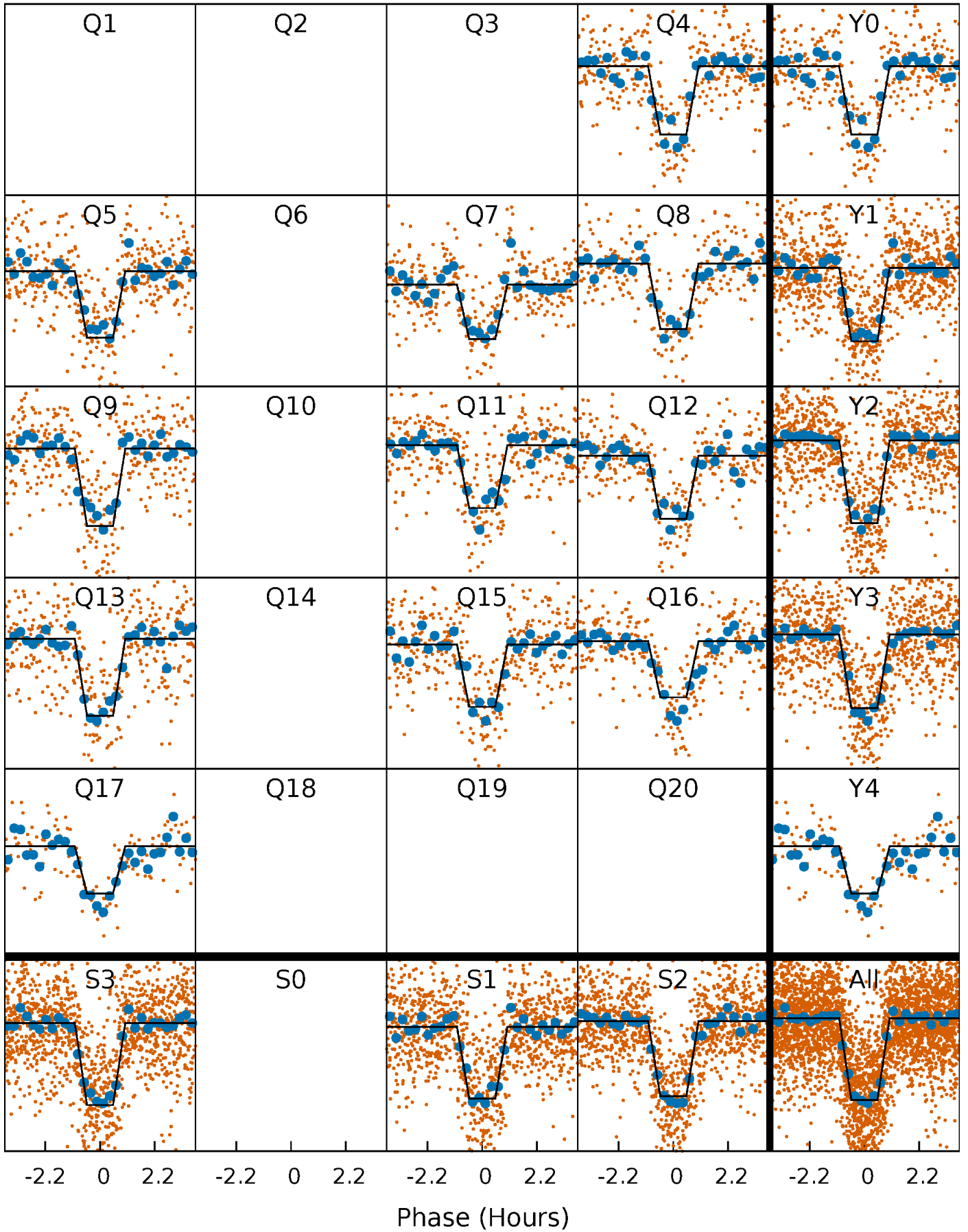
DV Quarter-Phased Transit Curves

TCE 003657758-01 P= 3.609290 Days $T_0=133.795029$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

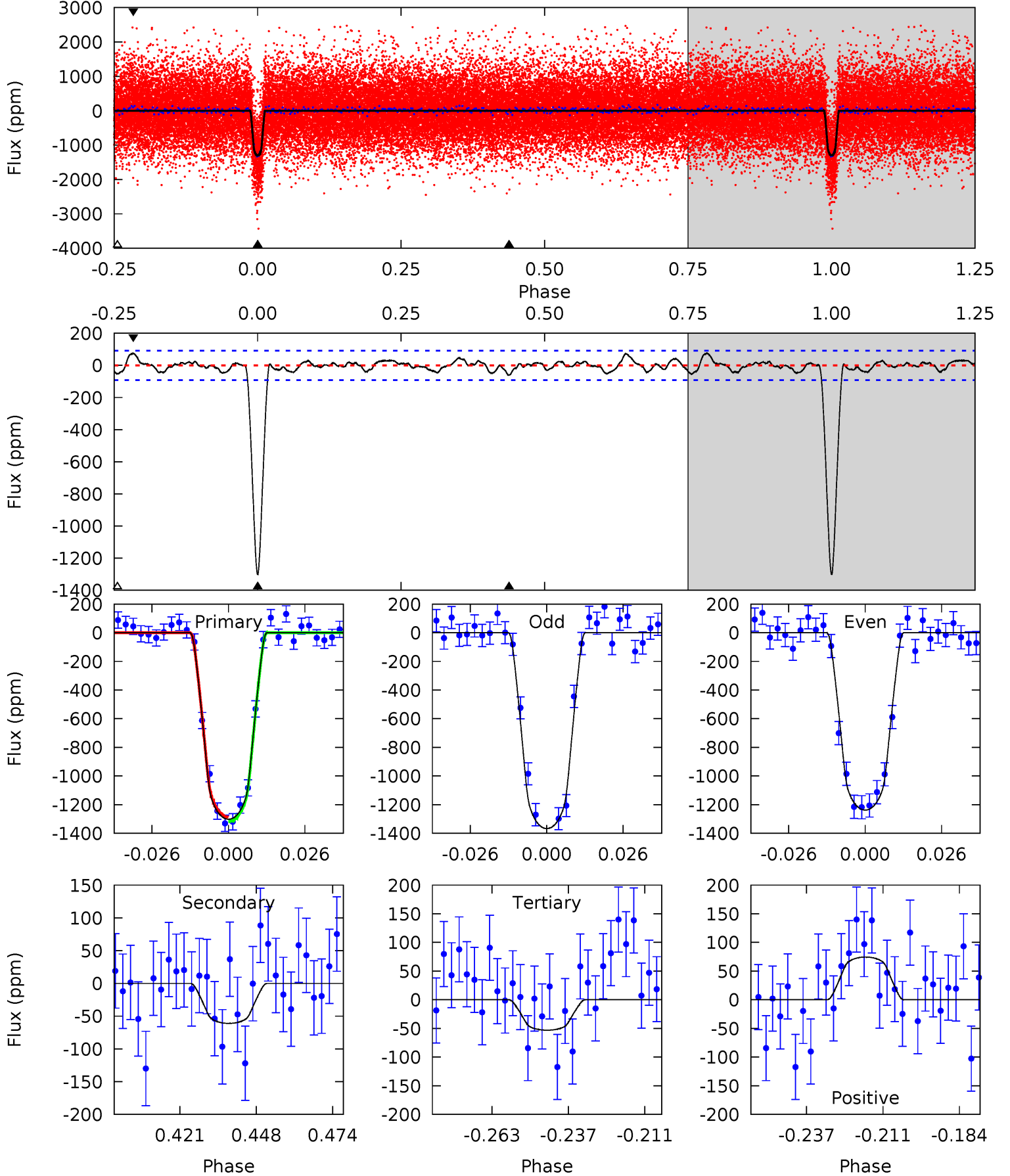
TCE 003657758-01 P= 3.609285 Days $T_0=133.796422$ (BKJD)



DV Model-Shift Uniqueness Test

003657758-01, P = 3.609290 Days, E = 133.795029 Days

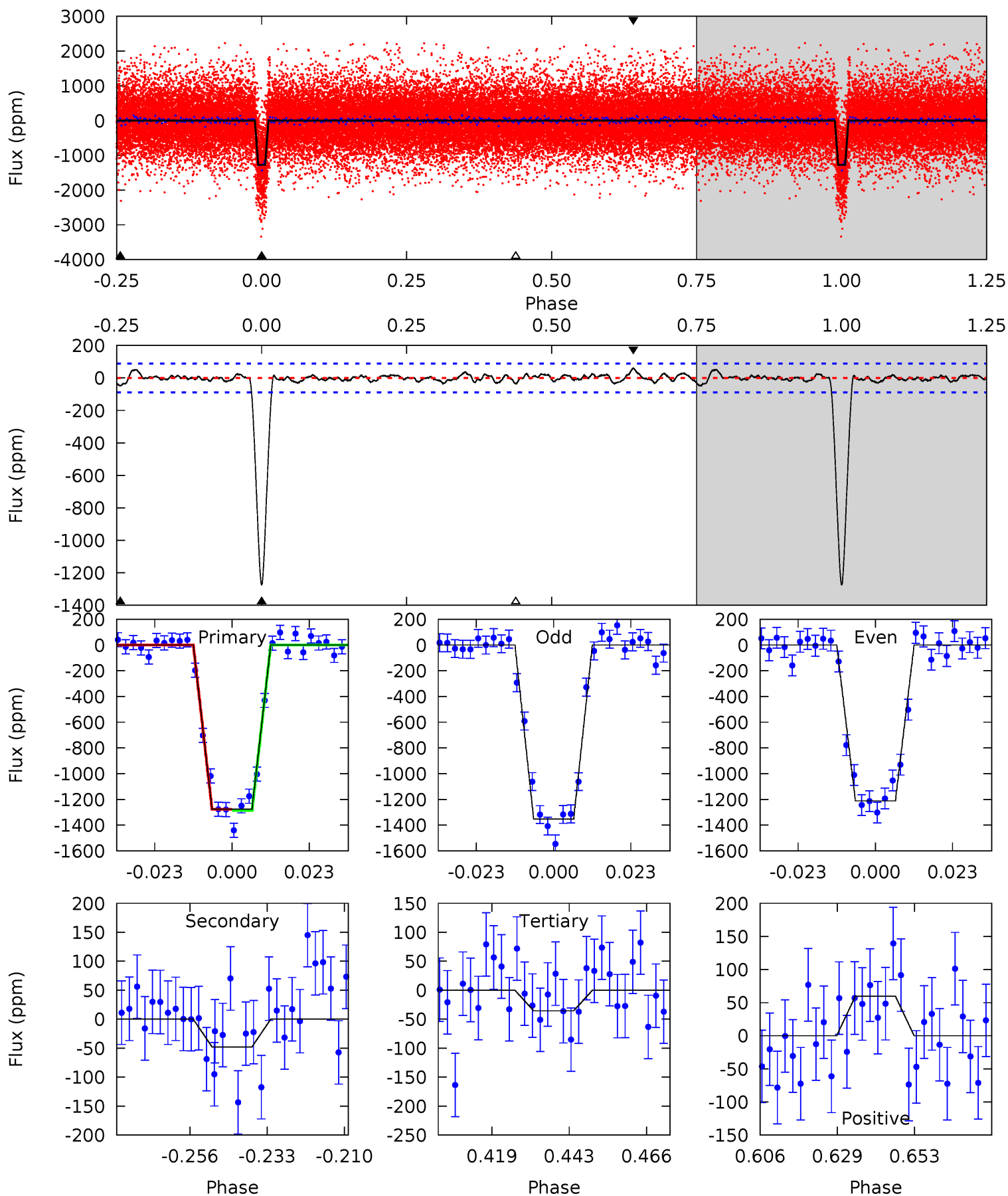
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
68.7	3.22	2.80	3.93	4.84	2.22	1.32	65.9	64.7	0.42	-0.71	3.42	0.96	0.05	0.78



Alt Model-Shift Uniqueness Test

003657758-01, P = 3.609285 Days, E = 133.796422 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.7	2.62	1.95	3.27	4.86	2.27	0.88	67.8	66.5	0.67	-0.66	3.90	0.98	0.04	0.28



Stellar Parameters For KIC 003657758

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5668^{+169}_{-186}	$4.545^{+0.036}_{-0.192}$	$-0.020^{+0.250}_{-0.300}$	$0.868^{+0.246}_{-0.082}$	$0.963^{+0.104}_{-0.115}$	$2.073^{+0.404}_{-1.064}$
	+3%/-3%	+1%/-4%	+1250%/-1500%	+28%/-9%	+11%/-12%	+19%/-51%
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 003657758-01 / KOI 2034.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-61 ± 19	$3.68^{+0.82}_{-0.63}$	1559^{+102}_{-69}	3151^{+221}_{-236}	$4.901^{+2.772}_{-1.958}$
Alt.	-48 ± 18	$3.58^{+0.76}_{-0.62}$	1566^{+105}_{-73}	3060^{+232}_{-267}	$4.043^{+2.558}_{-1.934}$

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

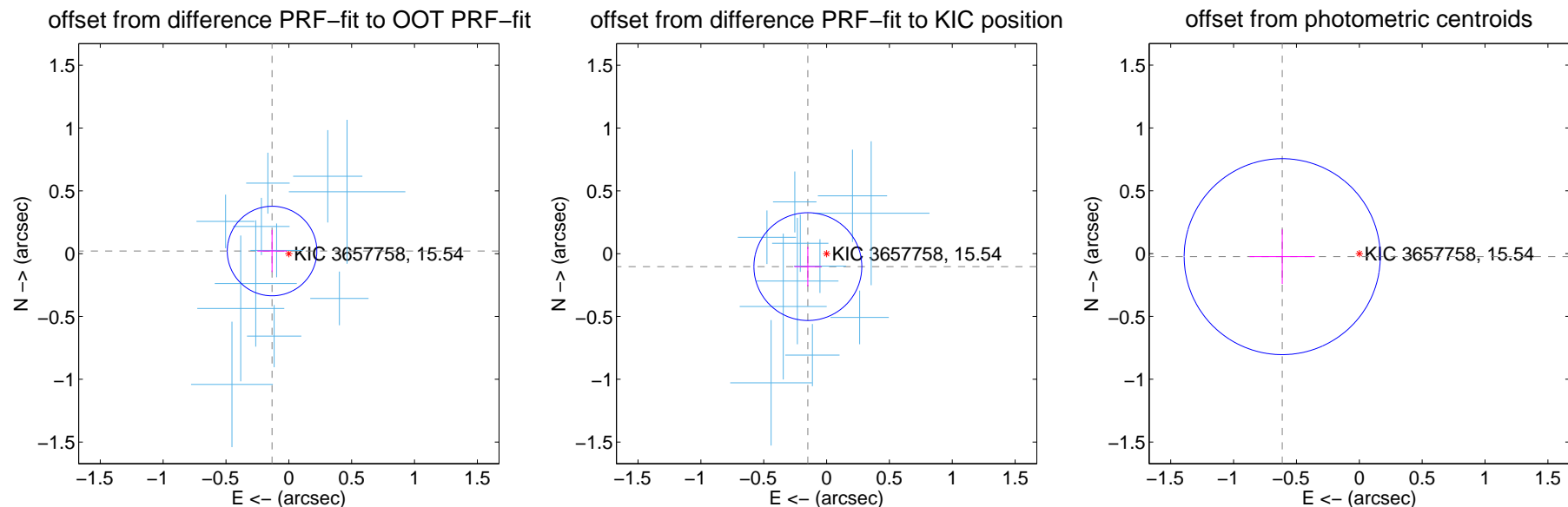
DV Centroid Data

Supplemental centroid analysis for 003657758-01. Kepler magnitude: 15.54. Transit SNR 44.20

There are 11 quarters with good PRF difference image offsets

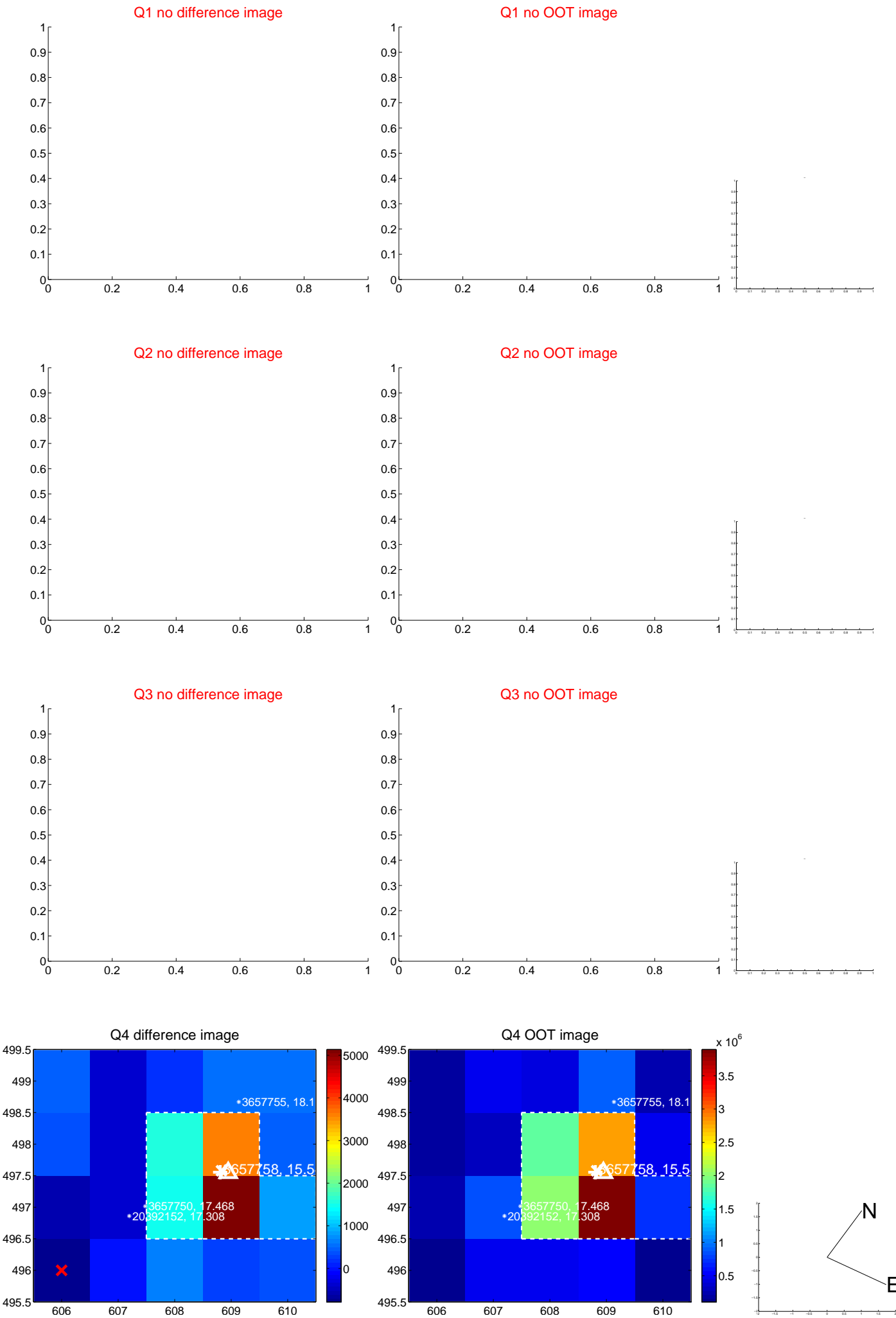
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.135 ± 0.119	1.14	0.133 ± 0.117	0.021 ± 0.168
PRF-fit source offset from KIC position	0.181 ± 0.143	1.27	0.149 ± 0.107	-0.103 ± 0.157
photometric centroid source offset	0.61 ± 0.26	2.36	0.61 ± 0.26	-0.02 ± 0.22

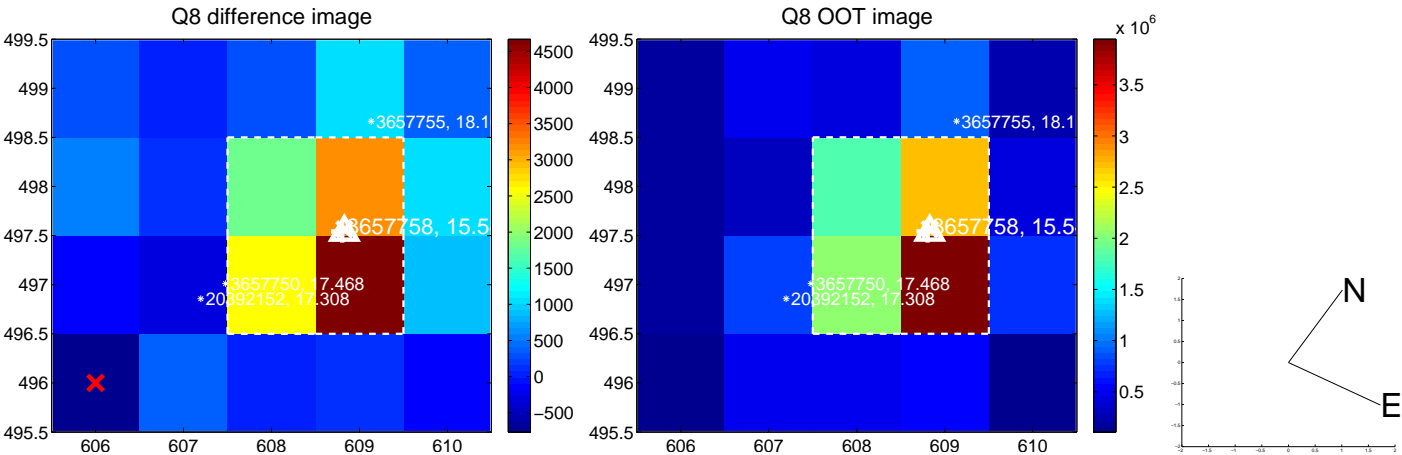
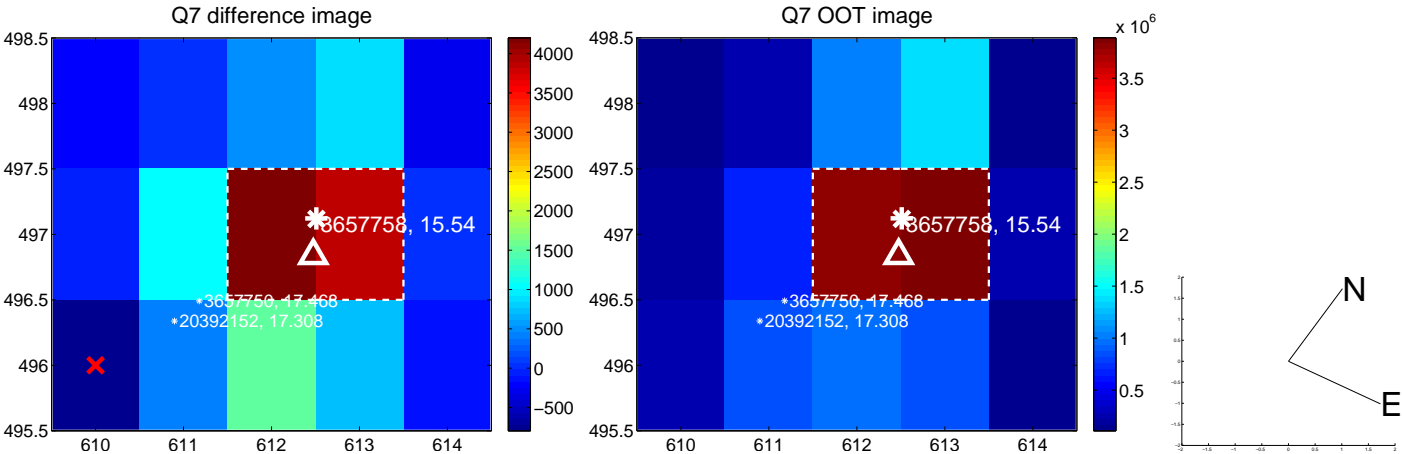
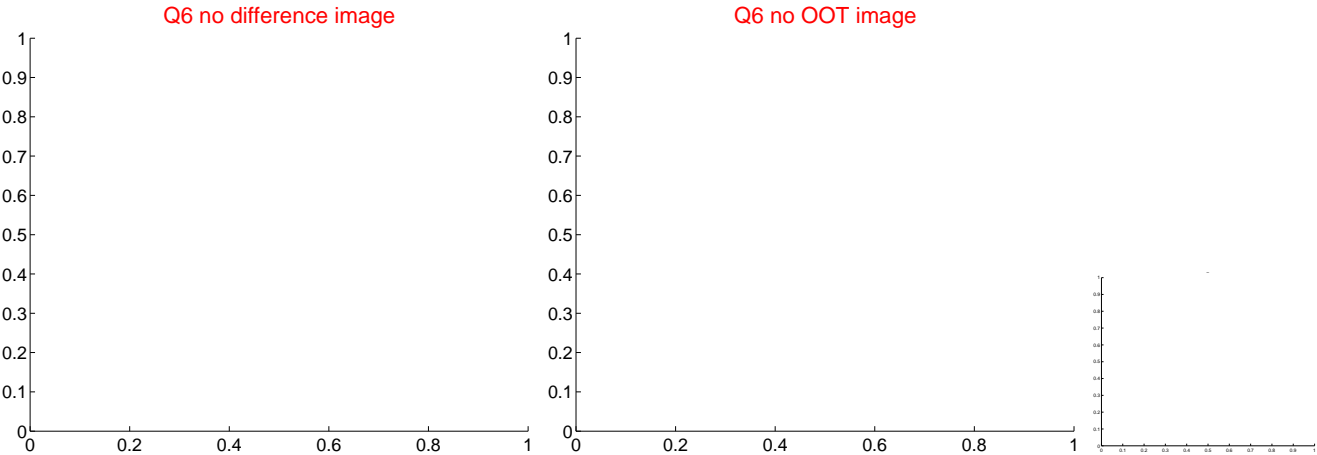
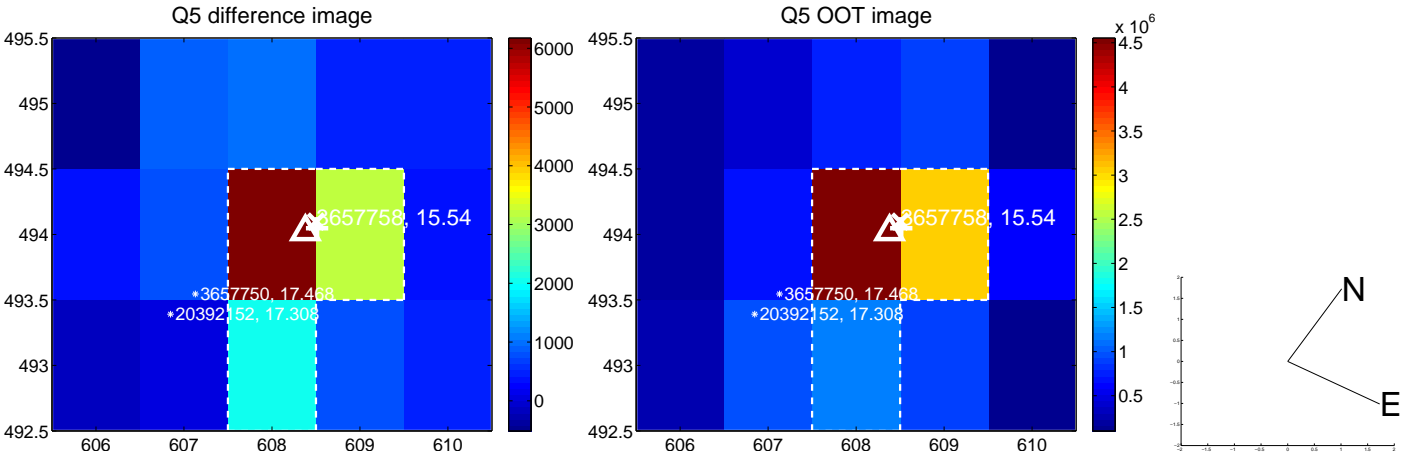


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

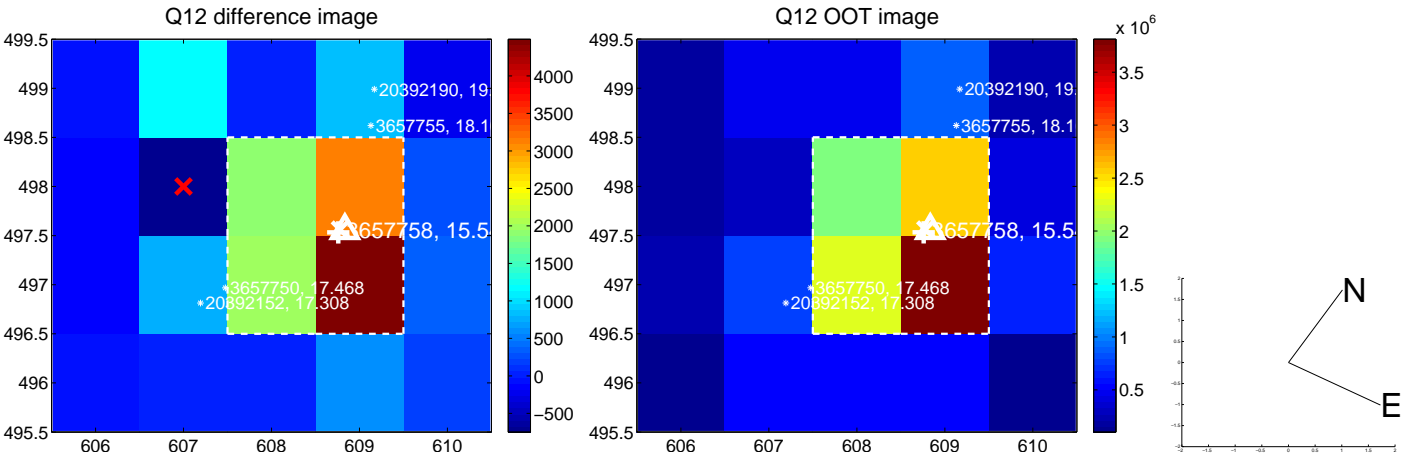
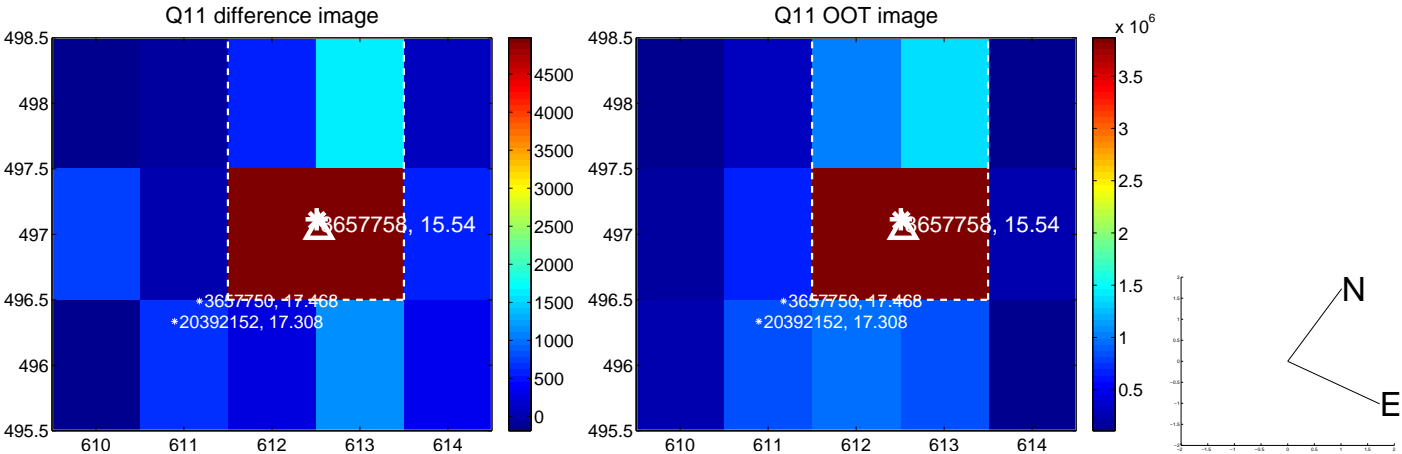
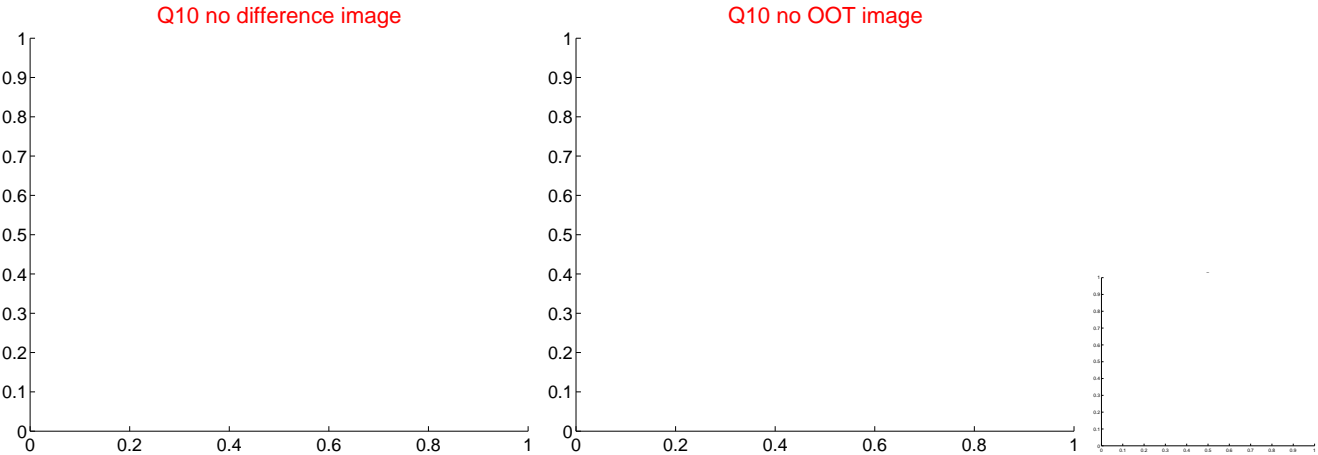
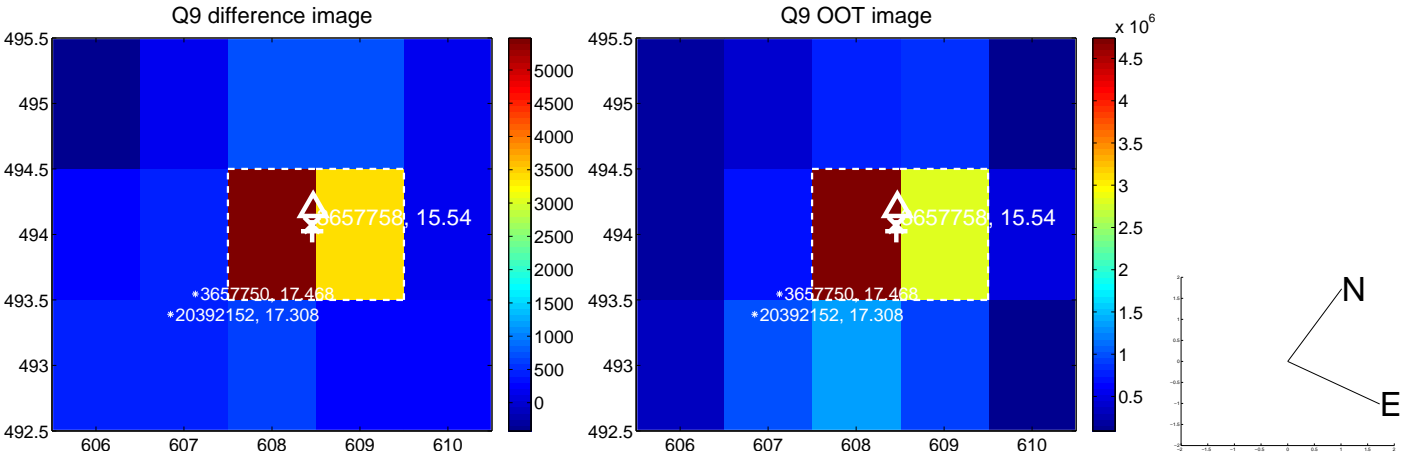
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



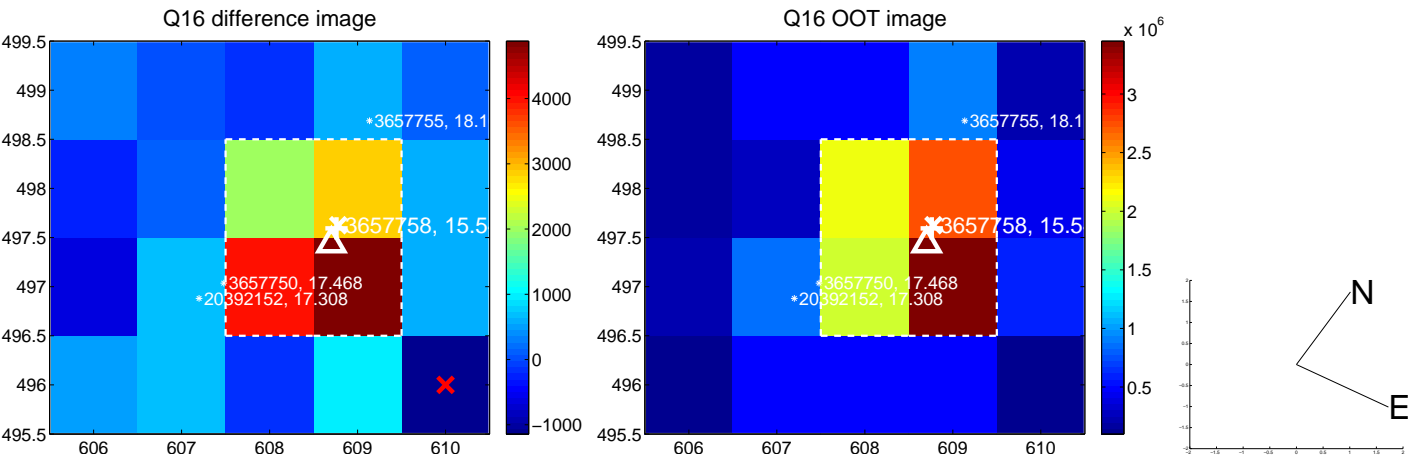
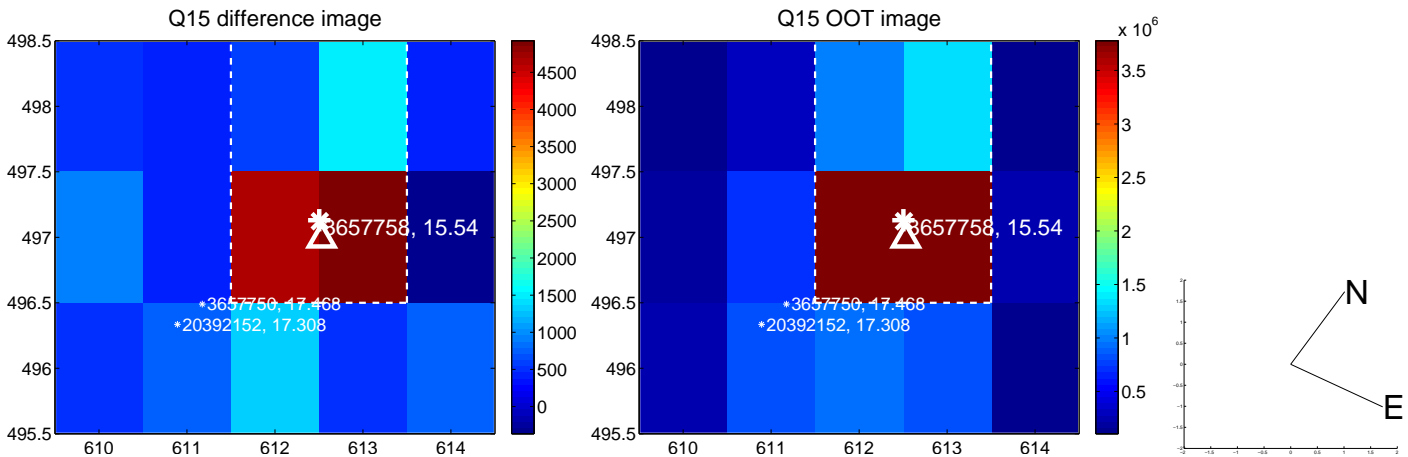
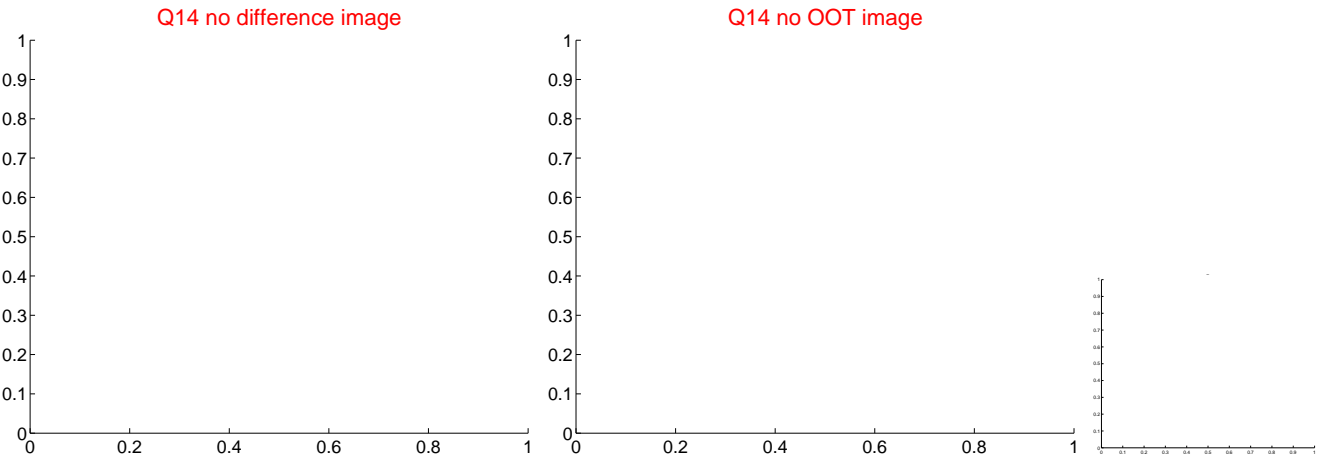
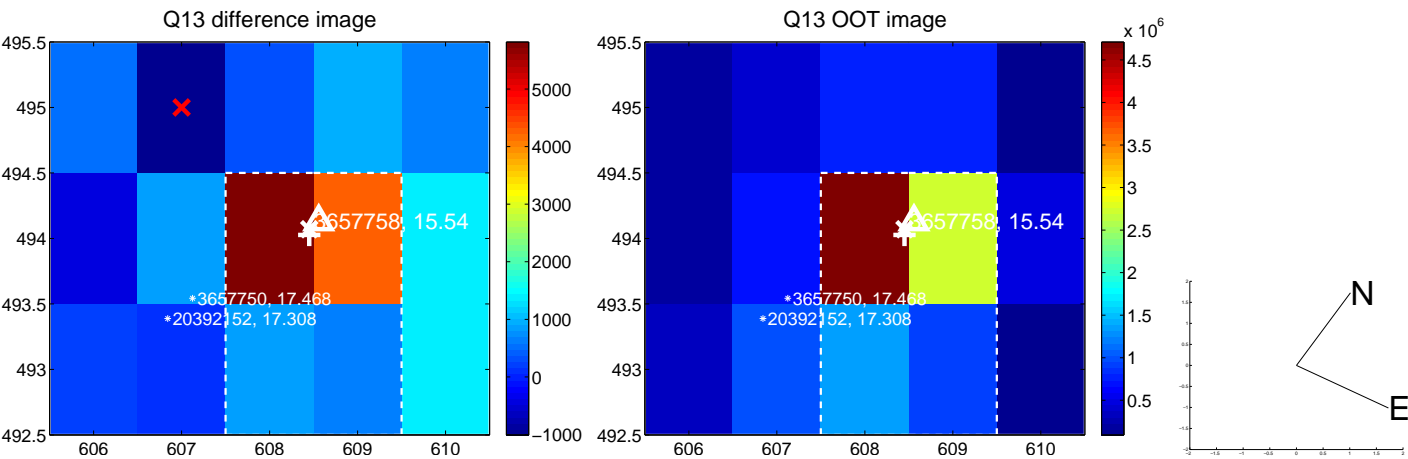
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

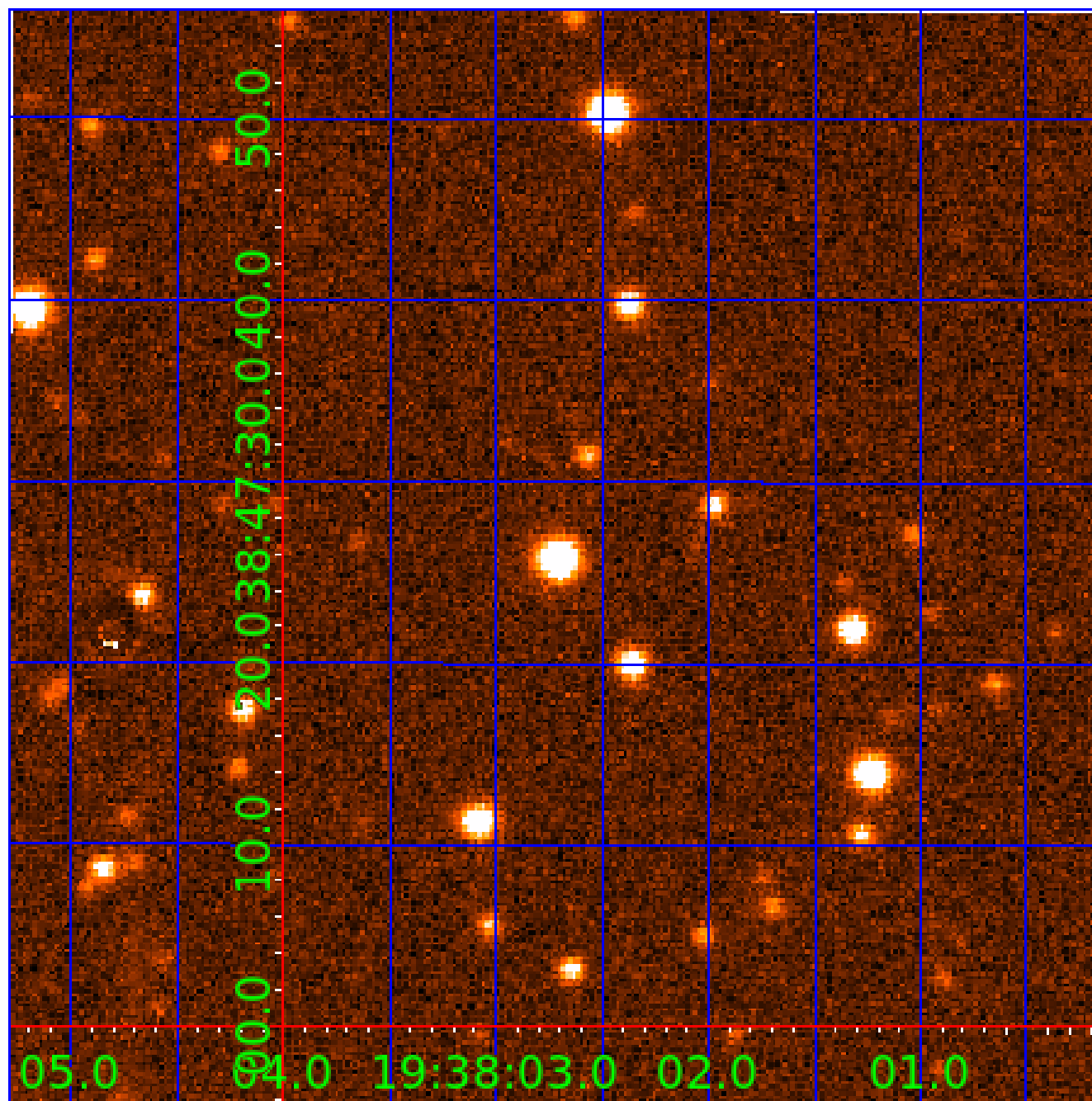


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003657758

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})
003657758-01	OBS	2034.01	3.609290	133.795029	1339.0	1.844	38.4	44.2	0.87	5668	3.56	336.56
003657758-02	OBS	2034.02	2.370288	133.683610	253.3	1.836	9.1	10.4	0.87	5668	1.50	589.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003657758-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003657758-02	OBS	PC	1.00	0	0	0	0	CENT_FEW_MEAS

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 003657758-02

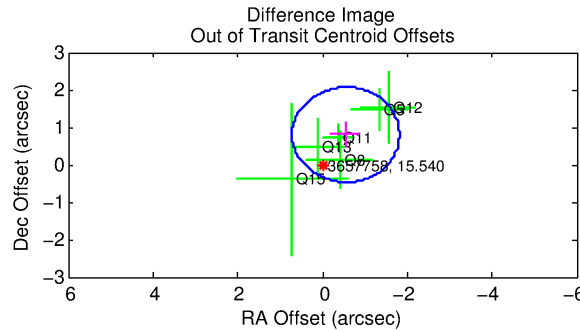
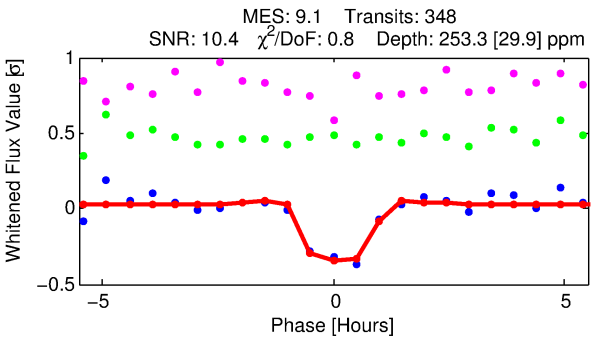
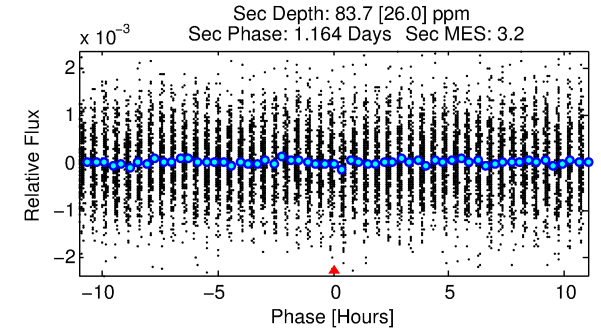
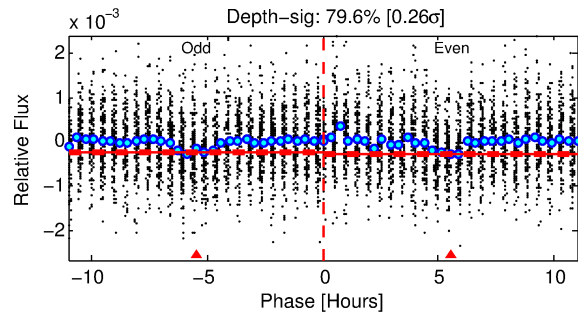
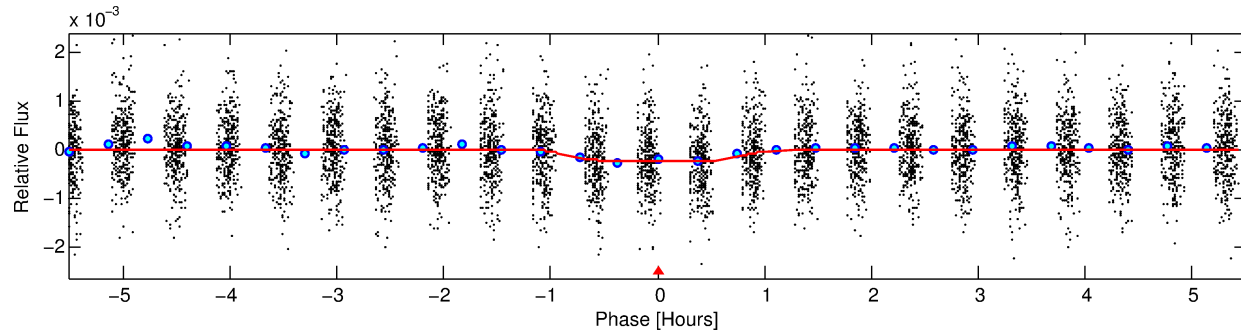
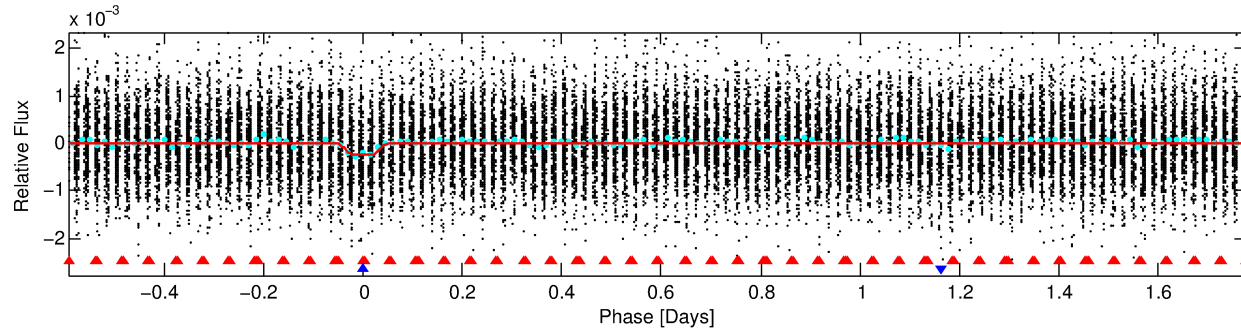
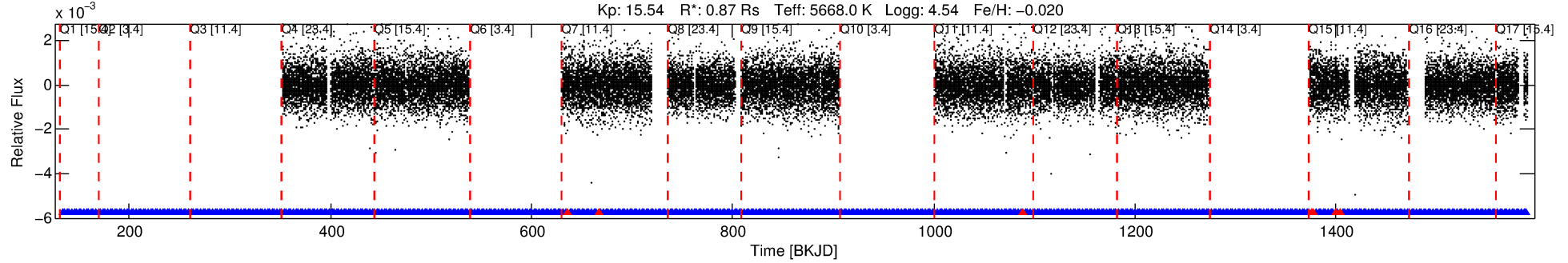
No Significant Match Found

DV One-Page Summary

KIC: 3657758 Candidate: 2 of 2 Period: 2.370 d

KOI: K02034.02 Corr: 0.952

Kp: 15.54 R*: 0.87 Rs Teff: 5668.0 K Logg: 4.54 Fe/H: -0.020



DV Fit Results:

Period = 2.37029 [0.00001] d
Epoch = 133.6836 [0.0027] BKJD
Rp/R* = 0.0158 [0.0152]
a/R* = 6.91 [27.96]
b = 0.74 [2.57]
Seff = 589.60 [220.45]
Teff = 1257 [117] K
Rp = 1.50 [1.50] Re
a = 0.0344 [0.0082] AU
Ag = 24.22 [48.01] [0.48σ]
Teffp = 4310 [2107] K [1.45σ]

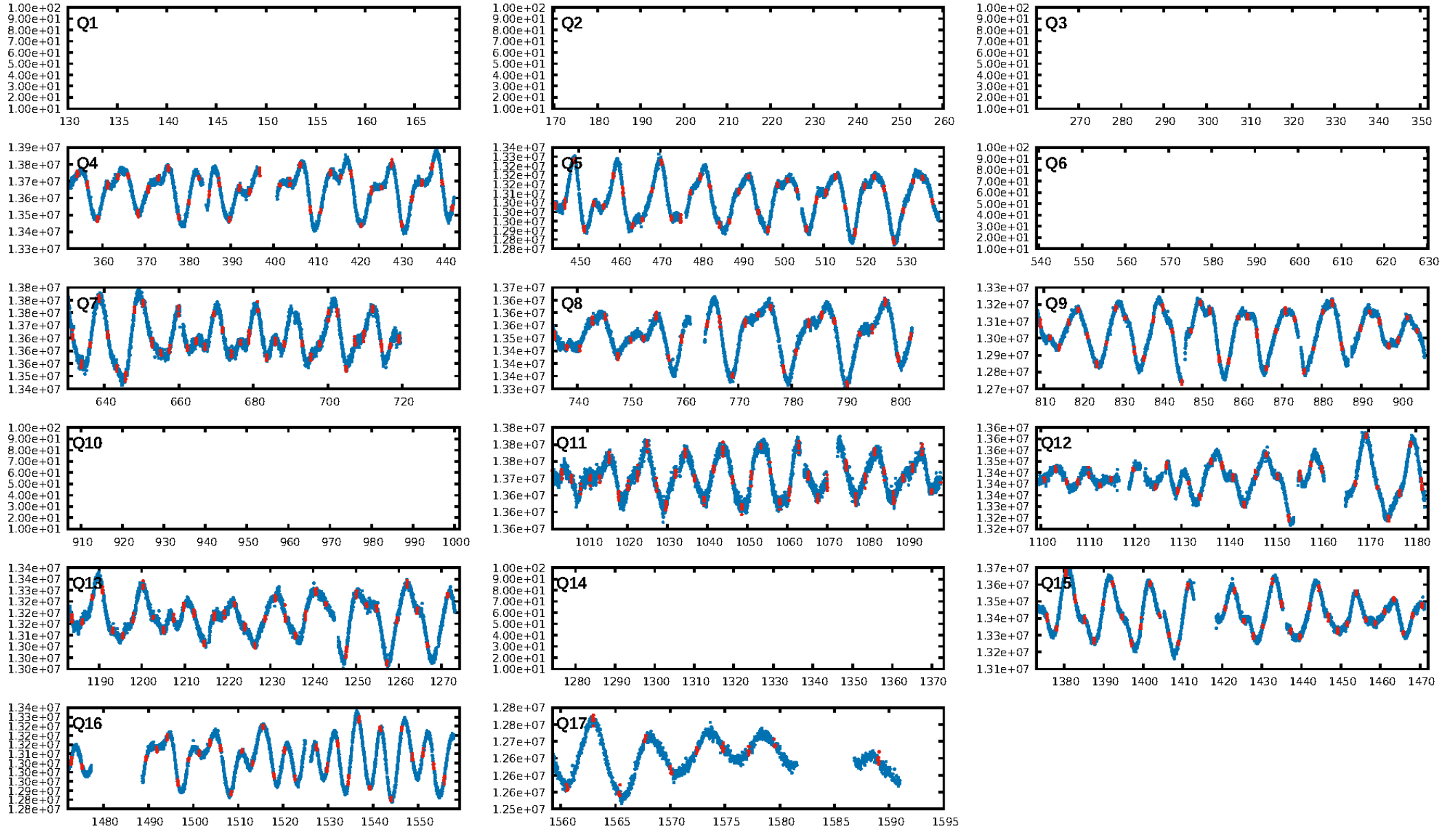
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [11.43σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.63e-18
RollingBand-fgt: 0.98 [331/338]
GhostDiagnostic-chr: 1.768
Centroid-sig: 0.0%
Centroid-so: 2.787 arcsec [2.86σ]
OotOffset-rm: 0.969 arcsec [2.29σ]
KicOffset-rm: 0.922 arcsec [2.31σ]
OotOffset-st: 0/2/2/2 [6]
KicOffset-st: 0/2/2/2 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 1.00 [11/11]

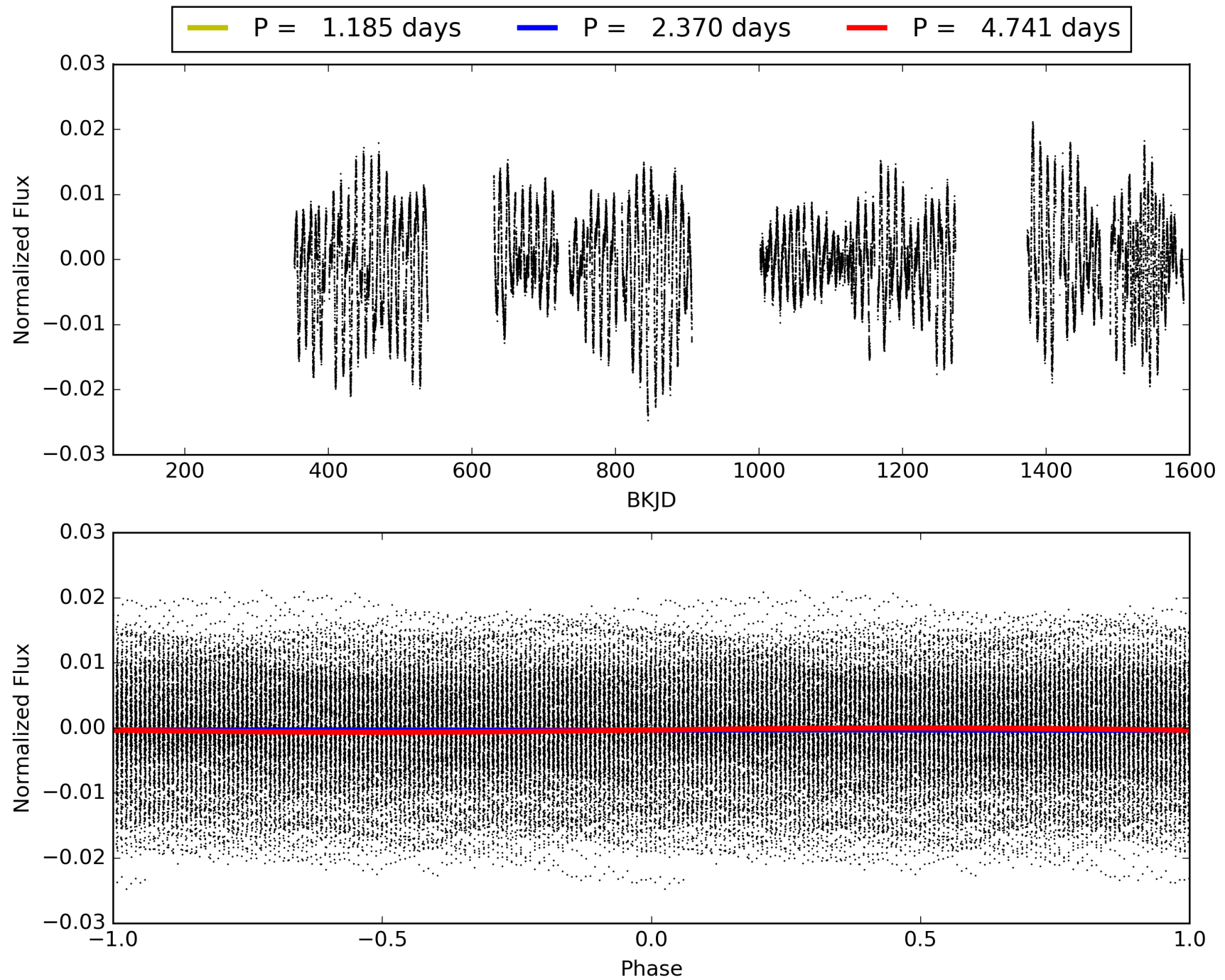
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:43:06 Z

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

TCE 003657758-02, PDC Light Curves

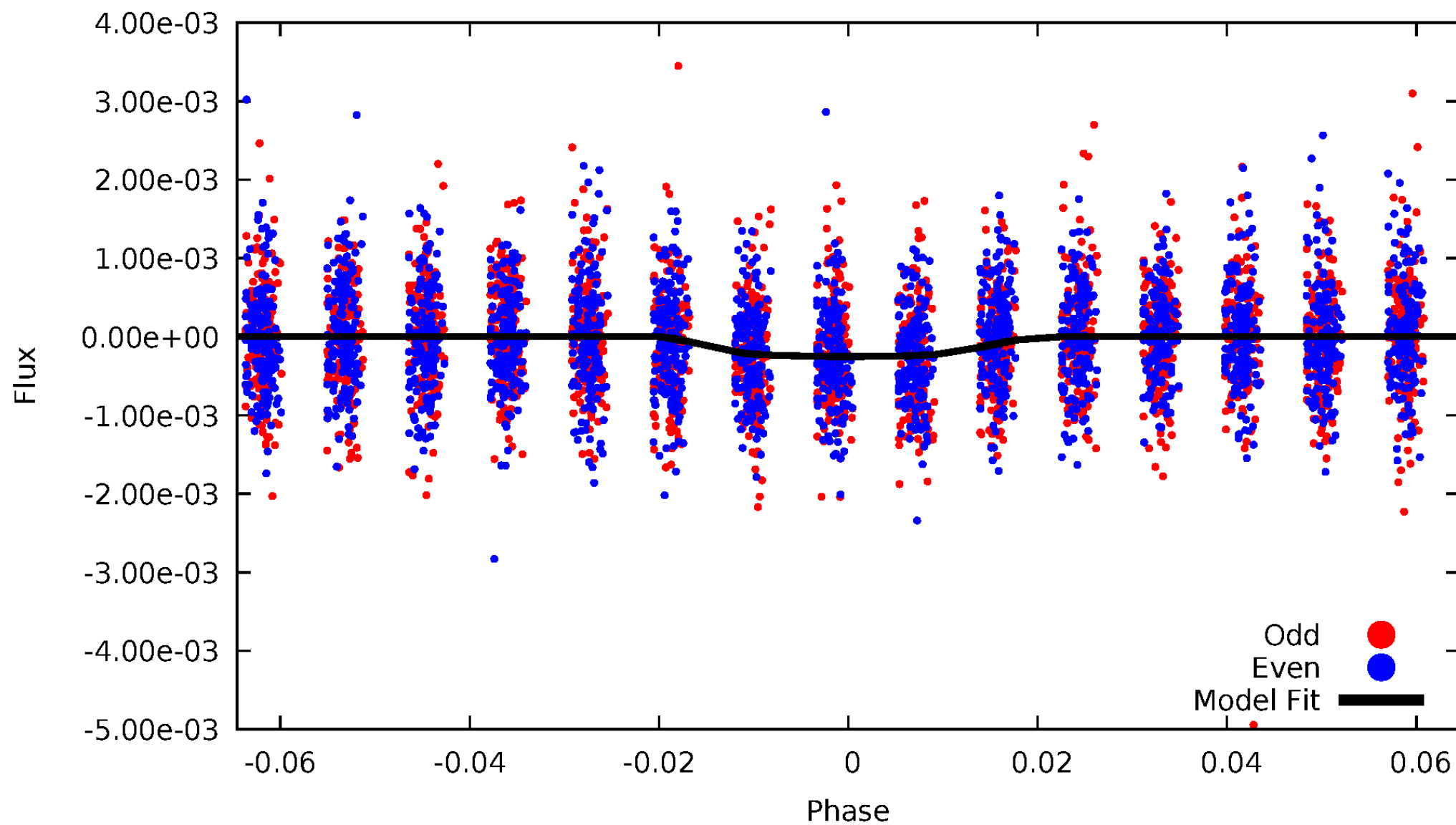


TCE 003657758-02



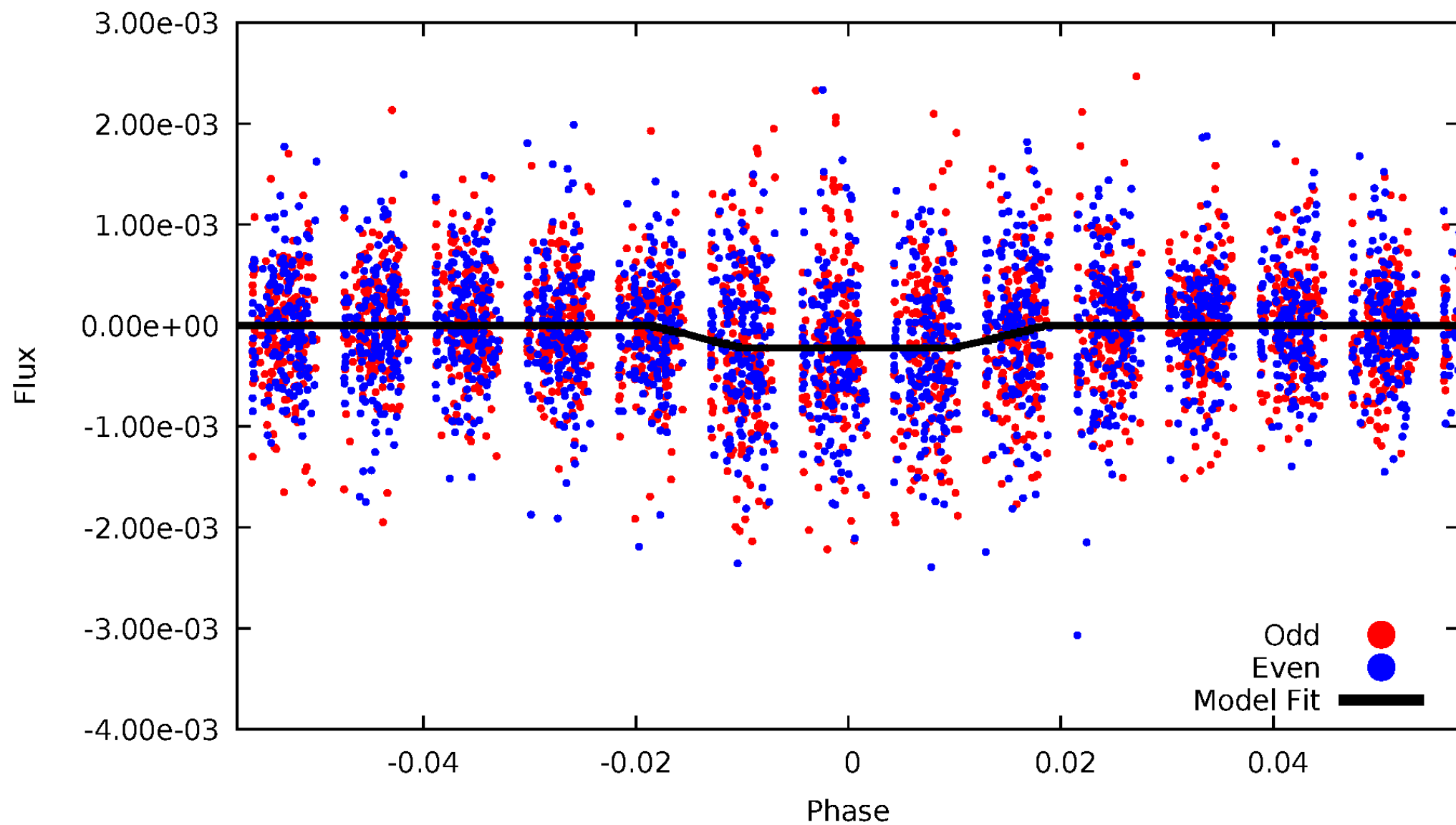
DV Odd/Even

TCE 003657758-02



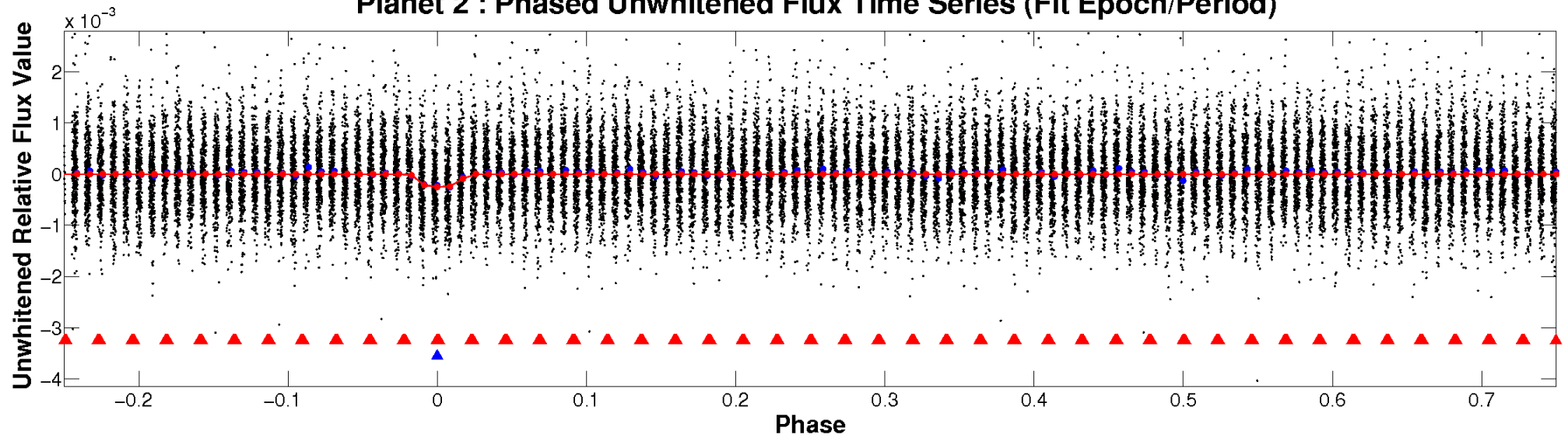
ALT Odd/Even

TCE 003657758-02

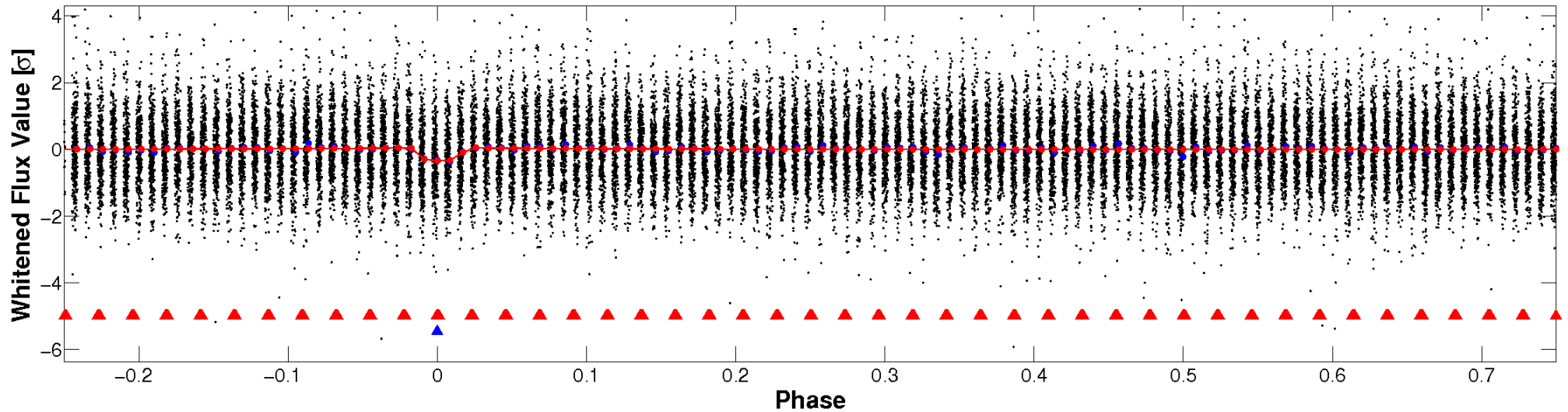


Non-Whitened Vs. Whitened Light Curve

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

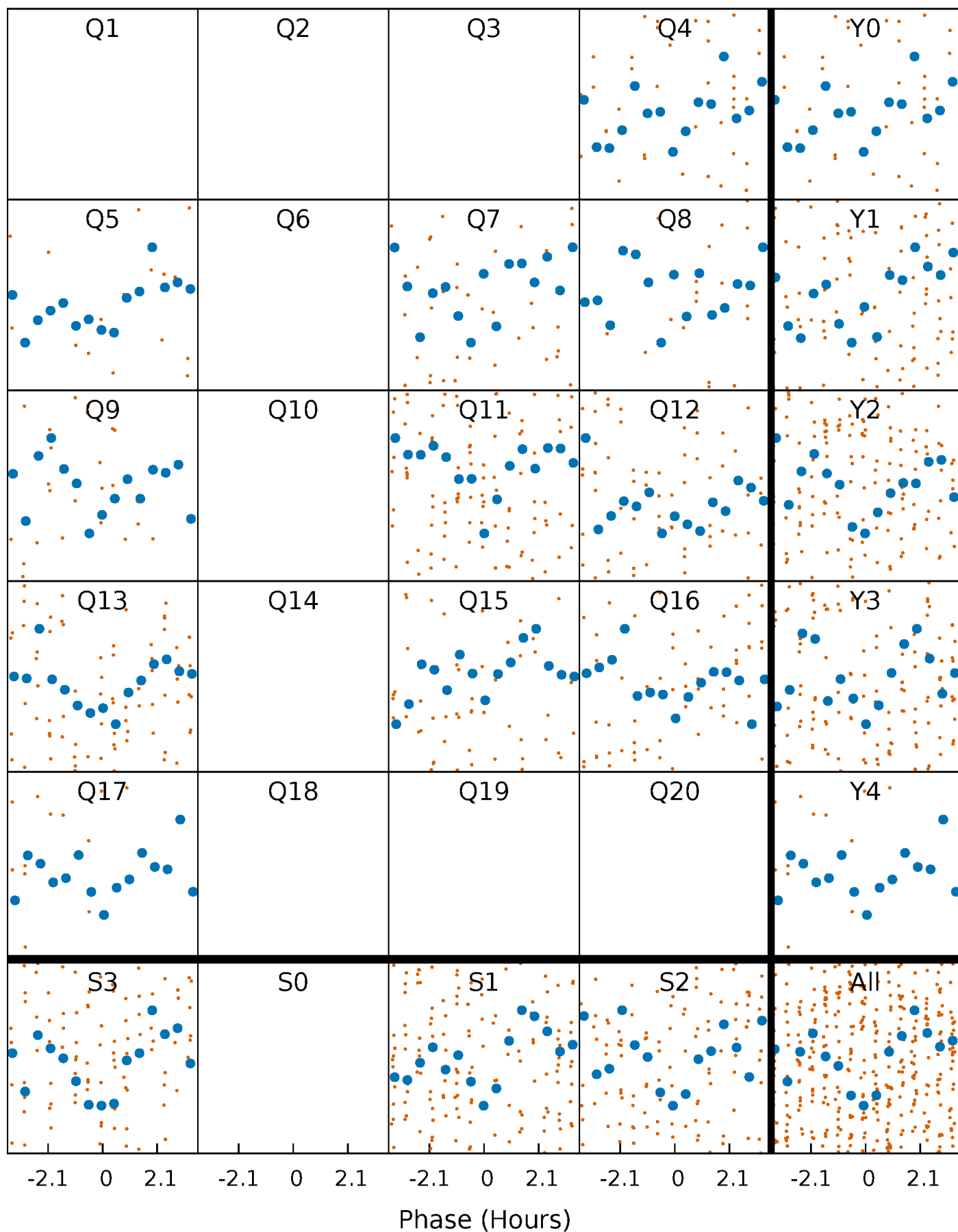


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



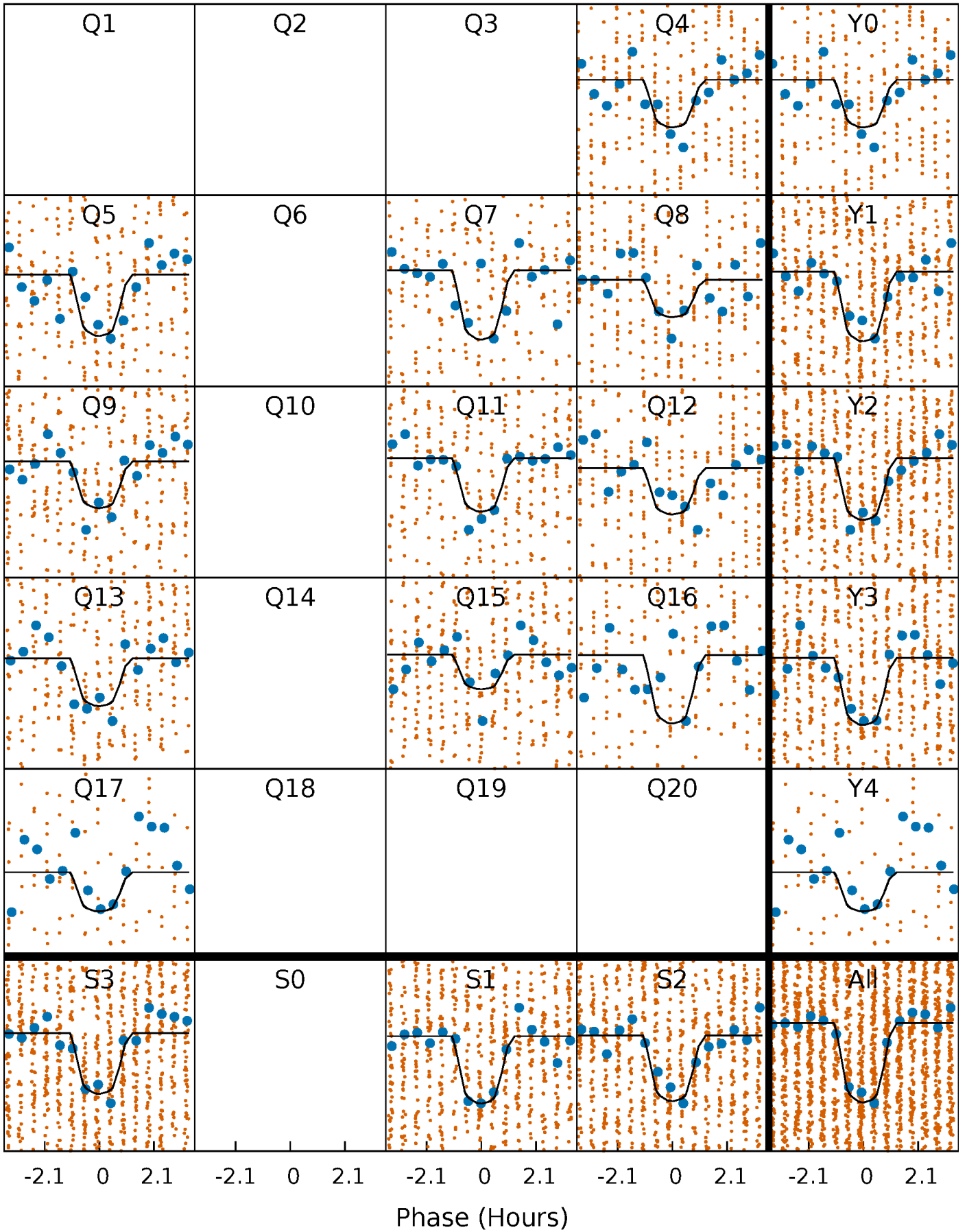
PDC Quarter-Phased Transit Curves

TCE 003657758-02 P= 2.370288 Days $T_0=133.683610$ (BKJD)



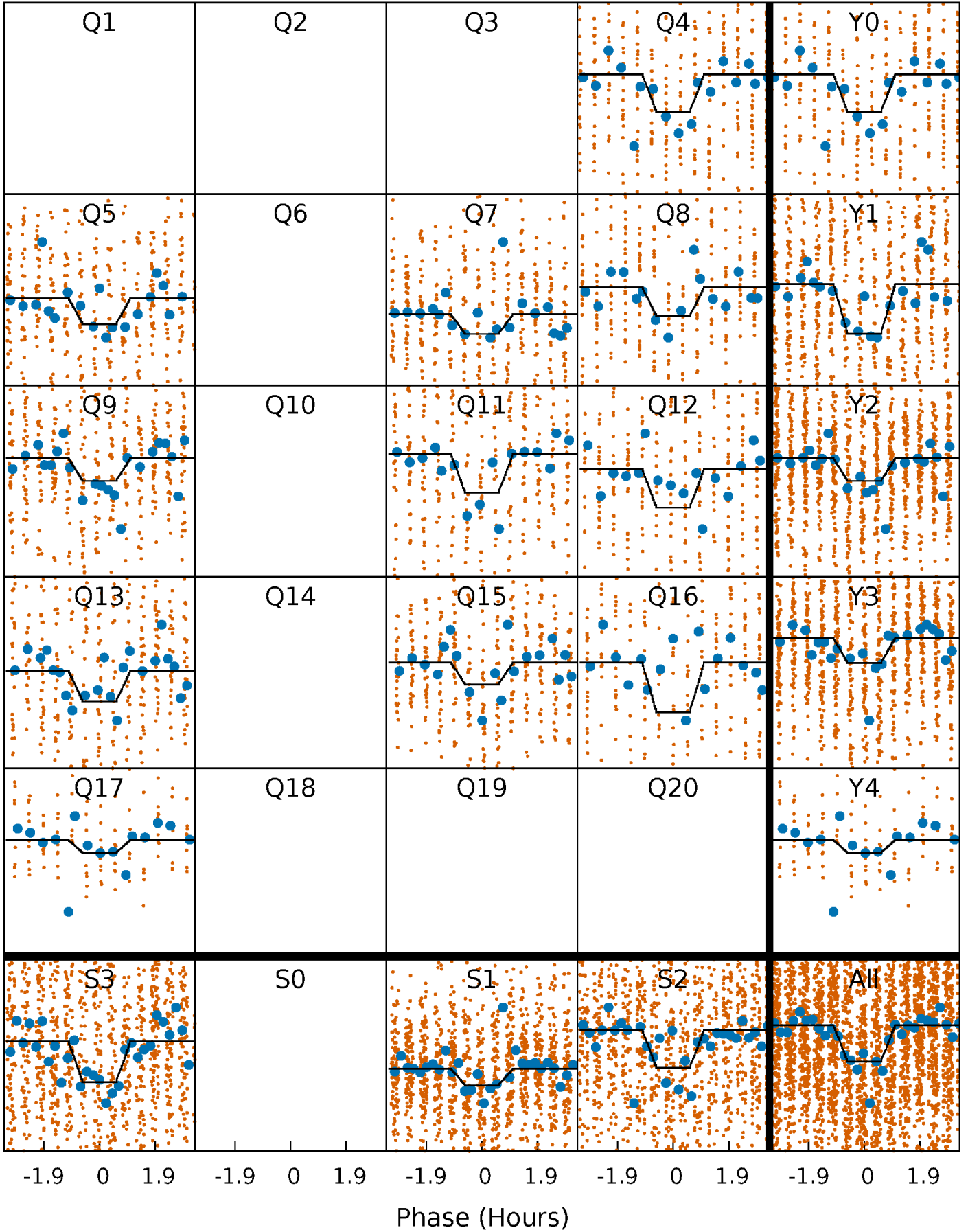
DV Quarter-Phased Transit Curves

TCE 003657758-02 P= 2.370288 Days $T_0=133.683610$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

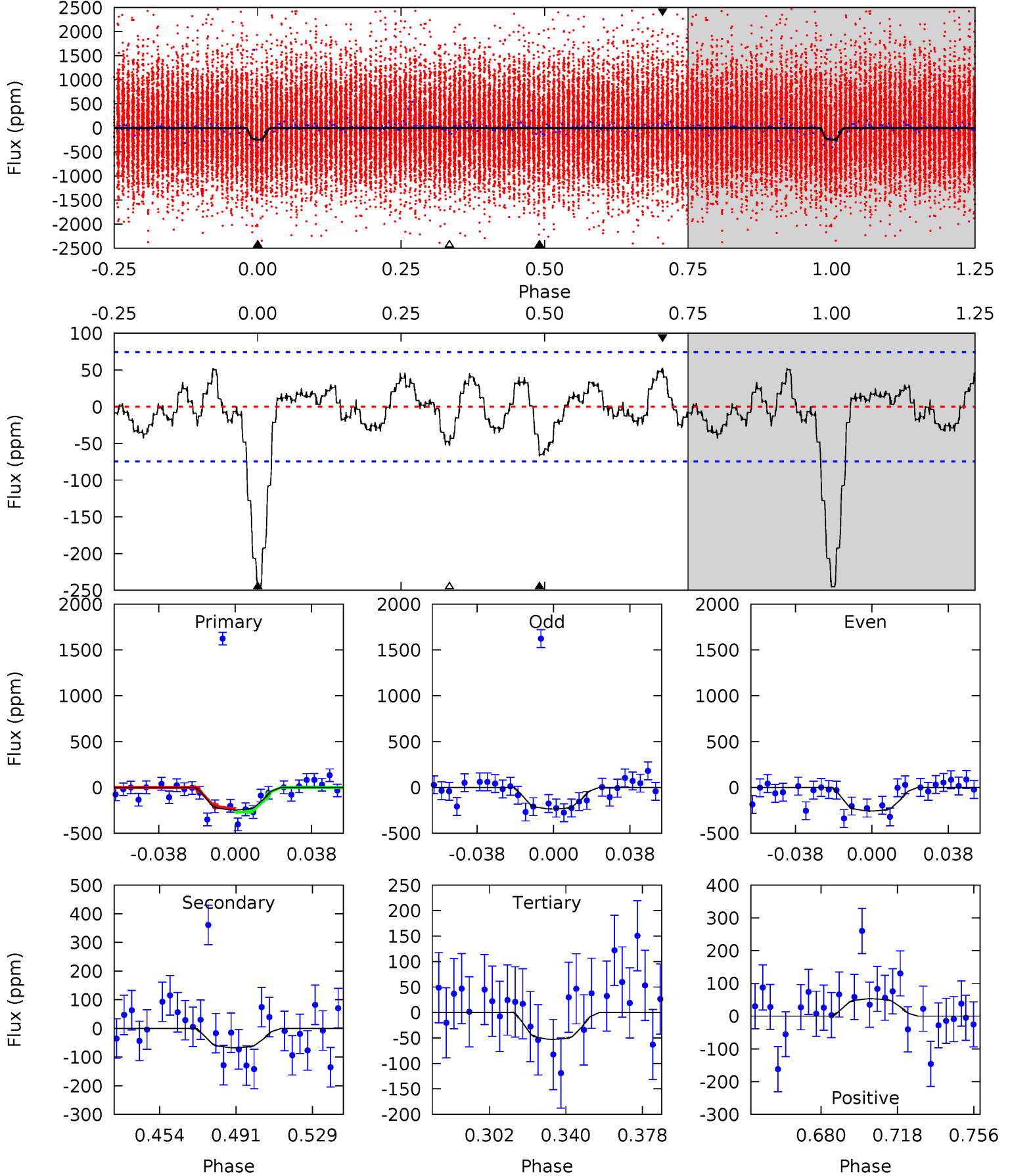
TCE 003657758-02 P= 2.370276 Days $T_0=133.687374$ (BKJD)



DV Model-Shift Uniqueness Test

003657758-02, P = 2.370288 Days, E = 133.683610 Days

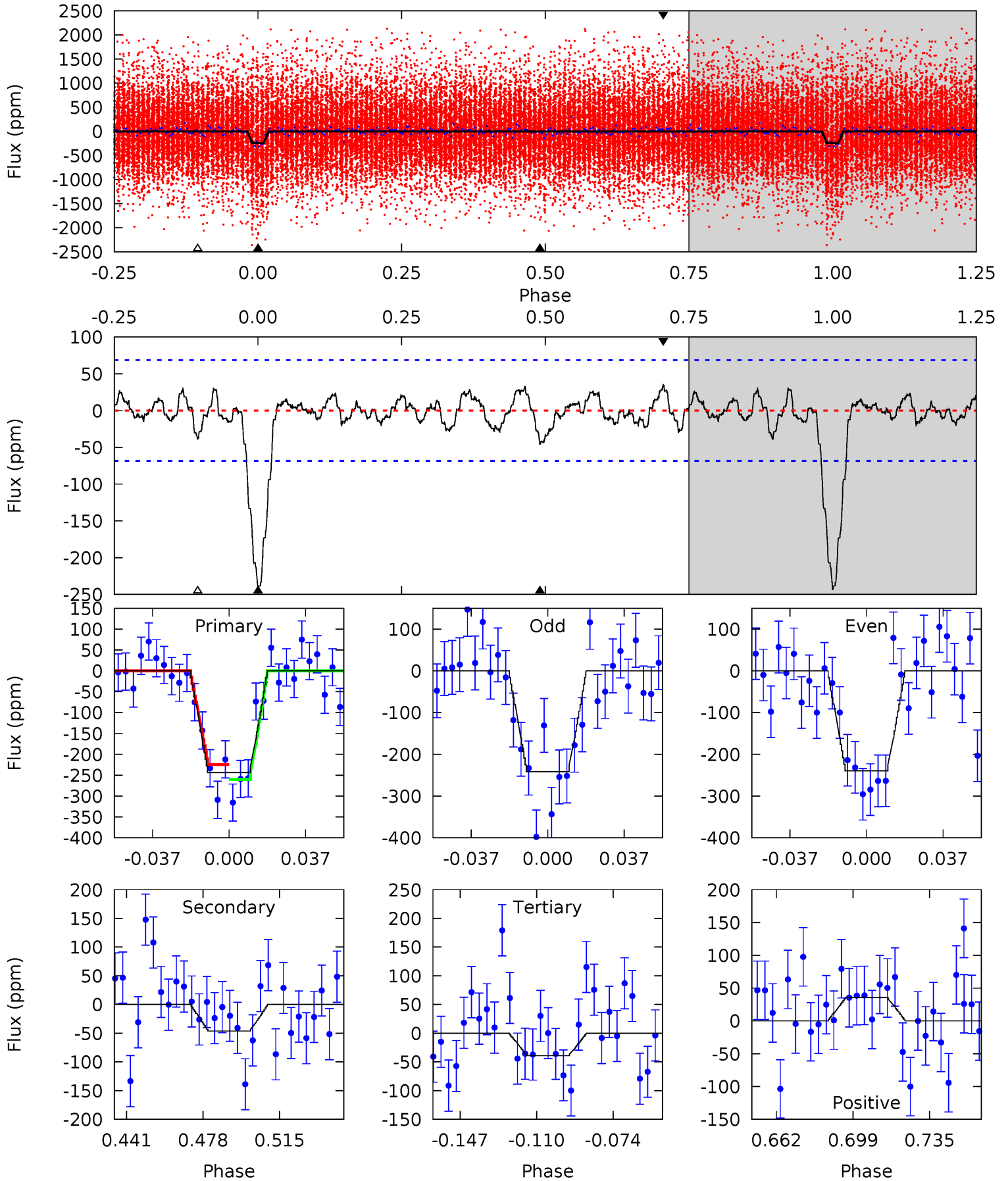
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	4.32	3.38	3.39	4.76	2.08	1.42	12.4	12.4	0.94	0.93	0.70	0.90	0.18	1.41



Alt Model-Shift Uniqueness Test

003657758-02, P = 2.370276 Days, E = 133.687374 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	3.21	2.74	2.47	4.77	2.09	0.97	14.2	14.5	0.48	0.74	0.05	0.87	0.13	1.25



Stellar Parameters For KIC 003657758

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5668^{+169}_{-186}	$4.545^{+0.036}_{-0.192}$	$-0.020^{+0.250}_{-0.300}$	$0.868^{+0.246}_{-0.082}$	$0.963^{+0.104}_{-0.115}$	$2.073^{+0.404}_{-1.064}$
	+3%/-3%	+1%/-4%	+1250%/-1500%	+28%/-9%	+11%/-12%	+19%/-51%
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 003657758-02 / KOI 2034.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-67 ± 16	$1.82^{+1.48}_{-1.10}$	1800^{+123}_{-88}	4023^{+2099}_{-739}	12^{+72}_{-9}
Alt.	-46 ± 14	$1.84^{+1.36}_{-1.17}$	1805^{+124}_{-93}	3760^{+1901}_{-659}	$8.496^{+54.576}_{-5.865}$

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

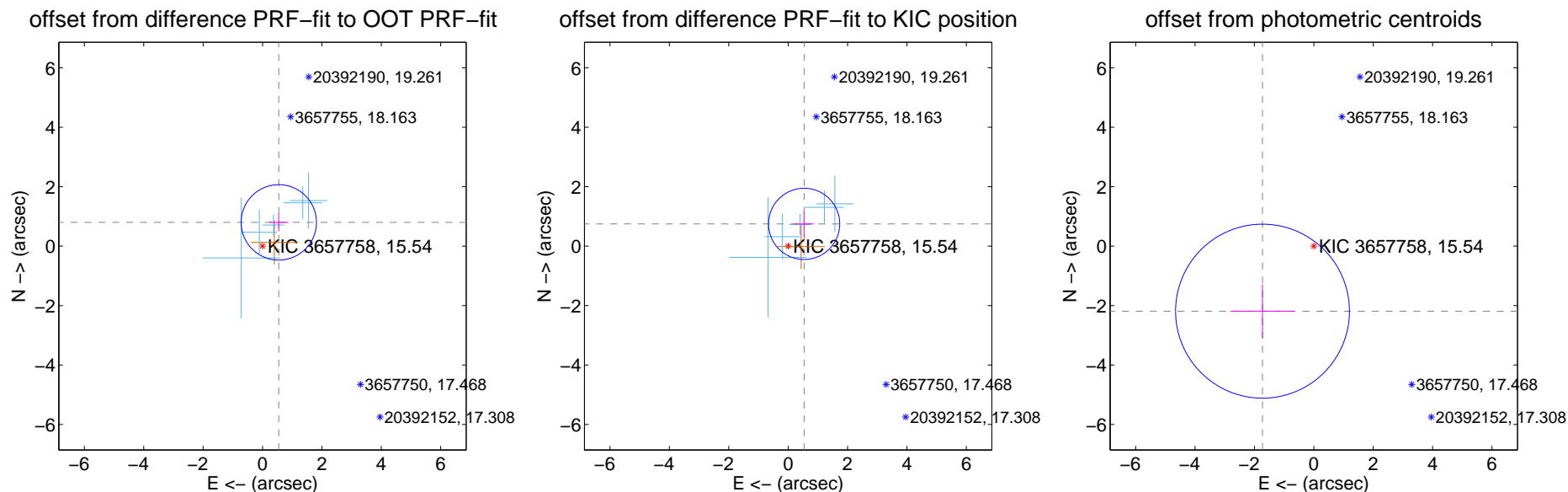
DV Centroid Data

Supplemental centroid analysis for 003657758-02. Kepler magnitude: 15.54. Transit SNR 10.36

There are 5 quarters with good PRF difference image offsets

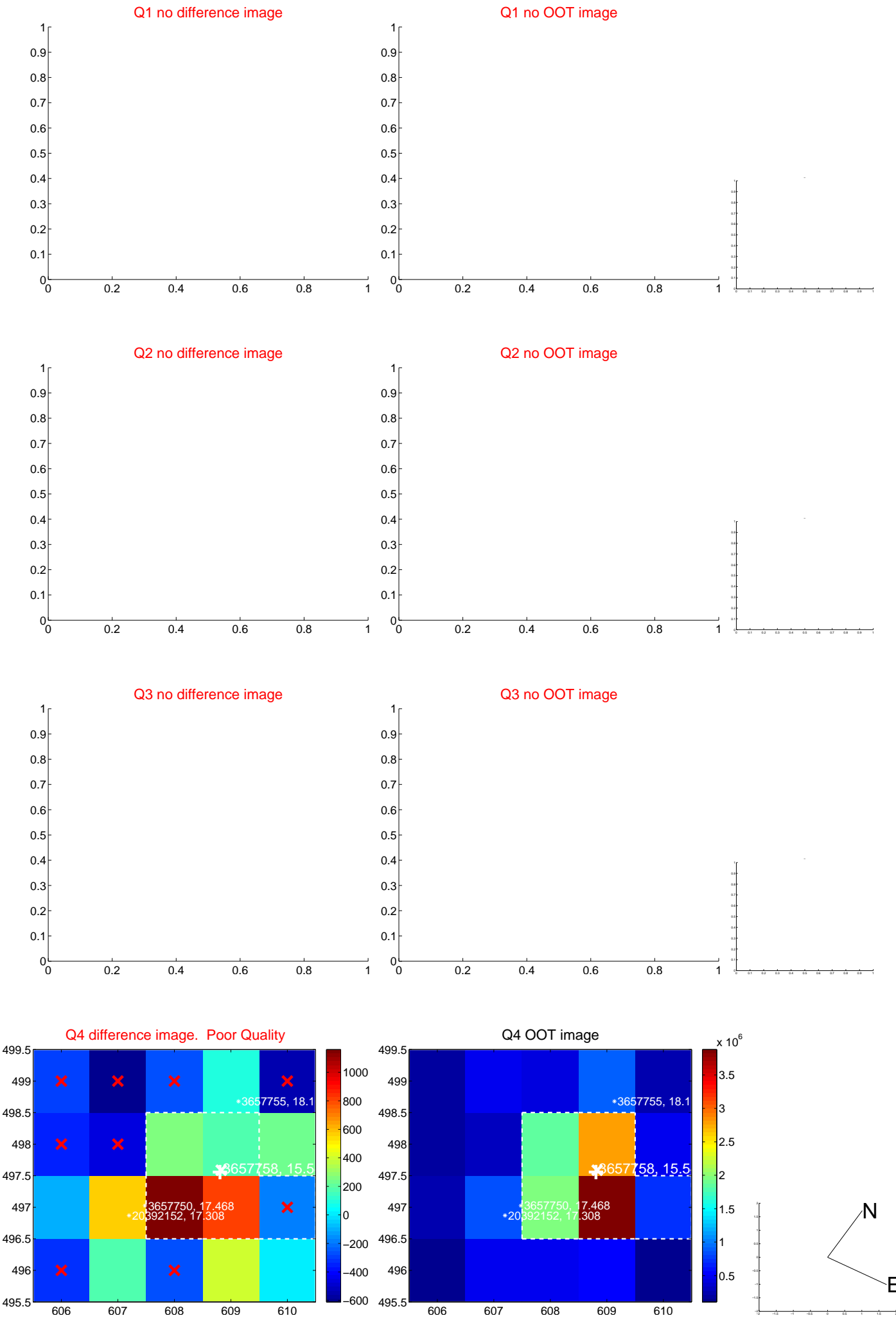
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.969 ± 0.423	2.29	-0.547 ± 0.328	0.800 ± 0.303
PRF-fit source offset from KIC position	0.922 ± 0.399	2.31	-0.537 ± 0.325	0.749 ± 0.433
photometric centroid source offset	2.79 ± 0.98	2.86	1.73 ± 1.08	-2.19 ± 0.90

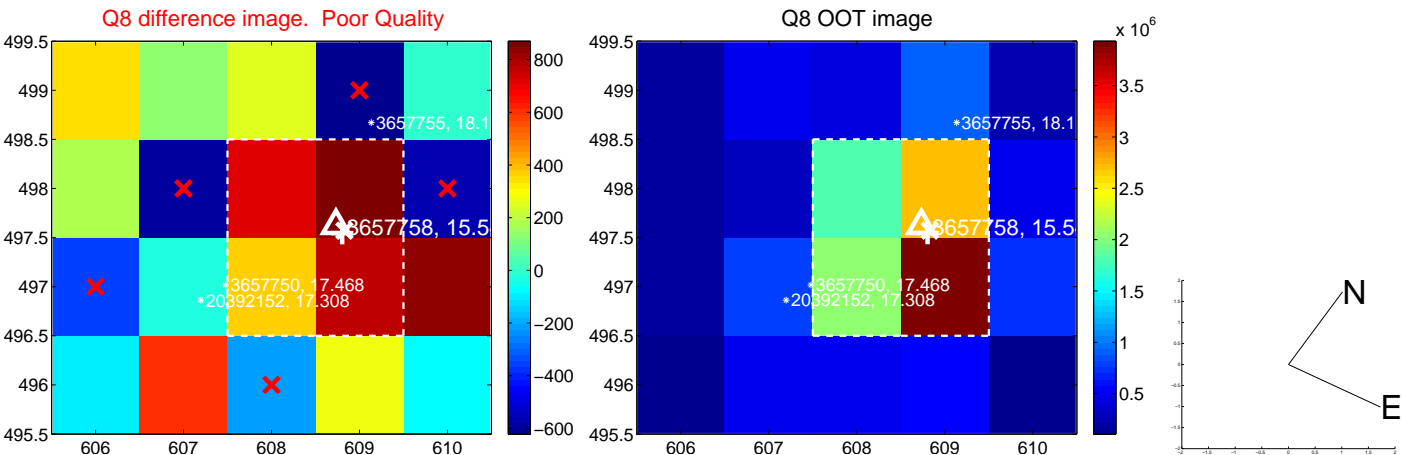
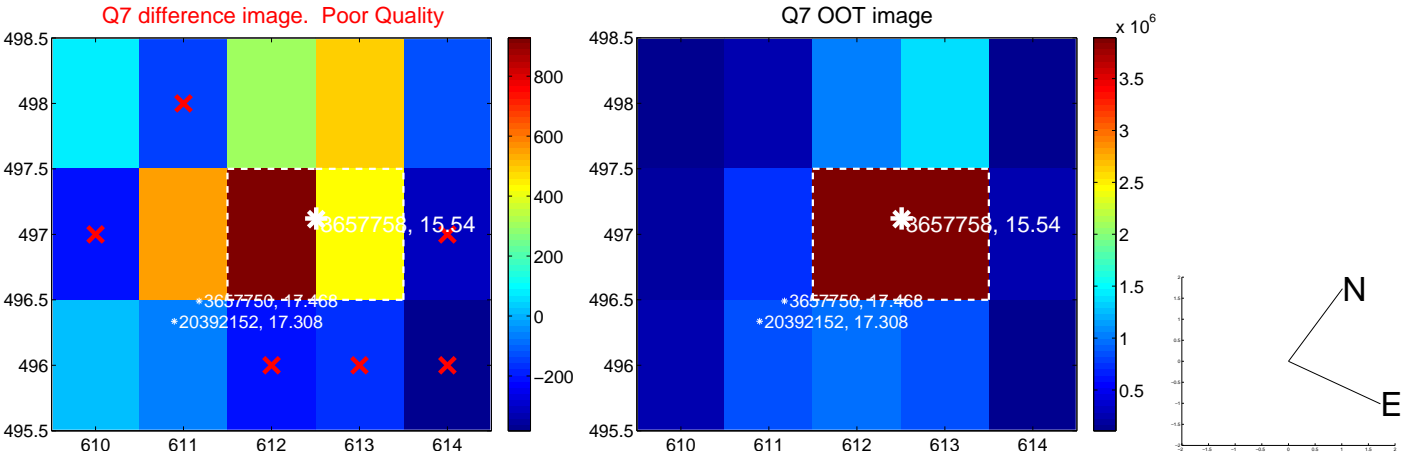
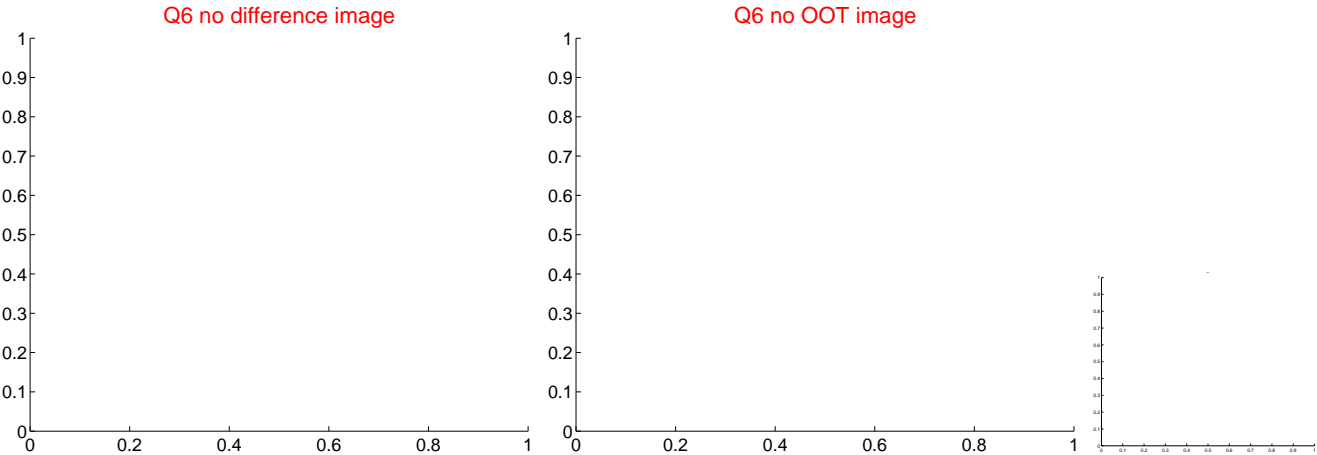
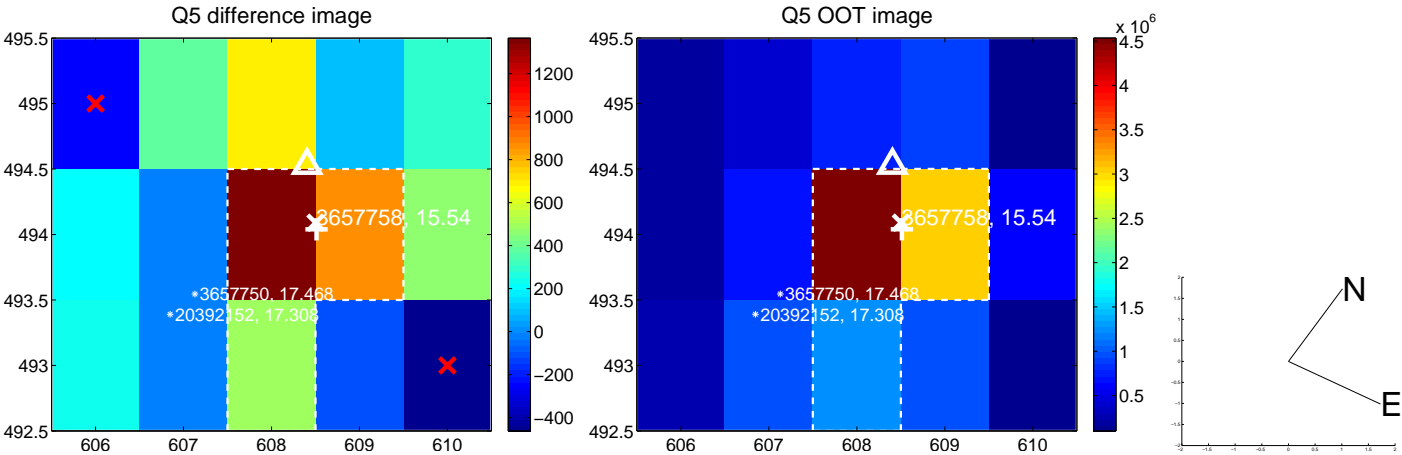


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

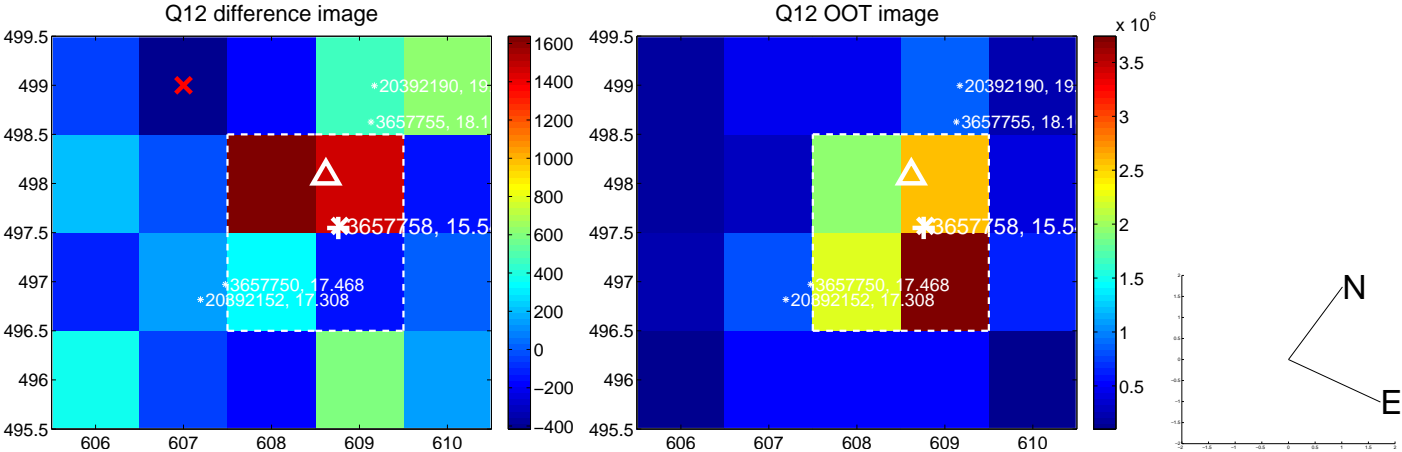
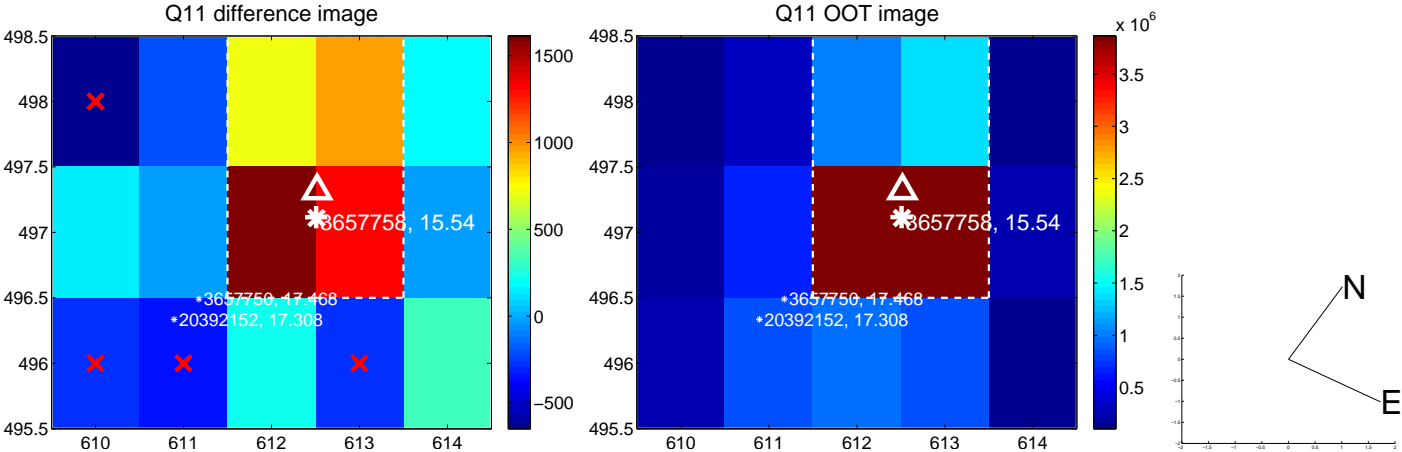
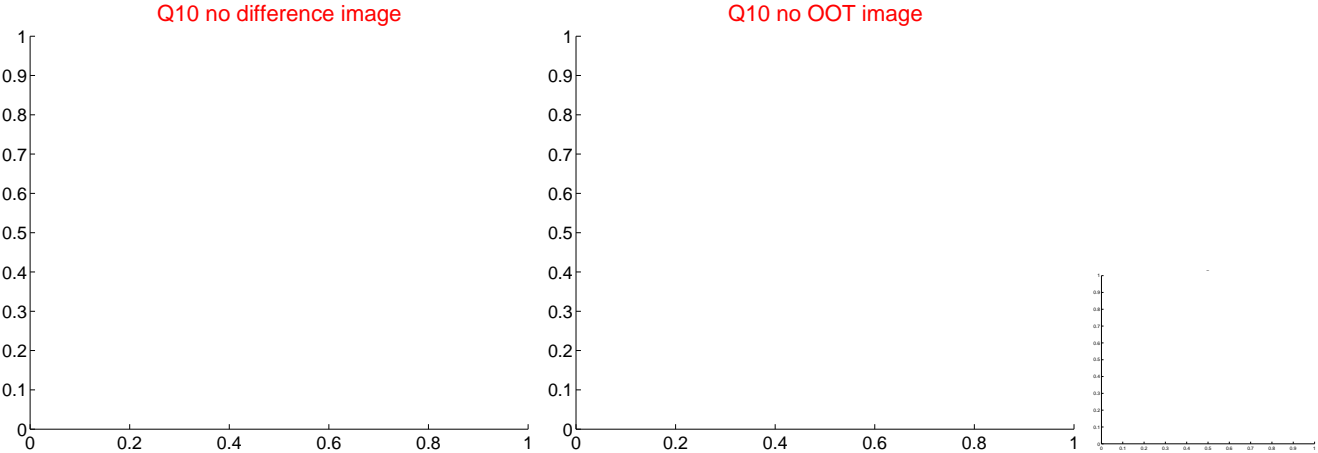
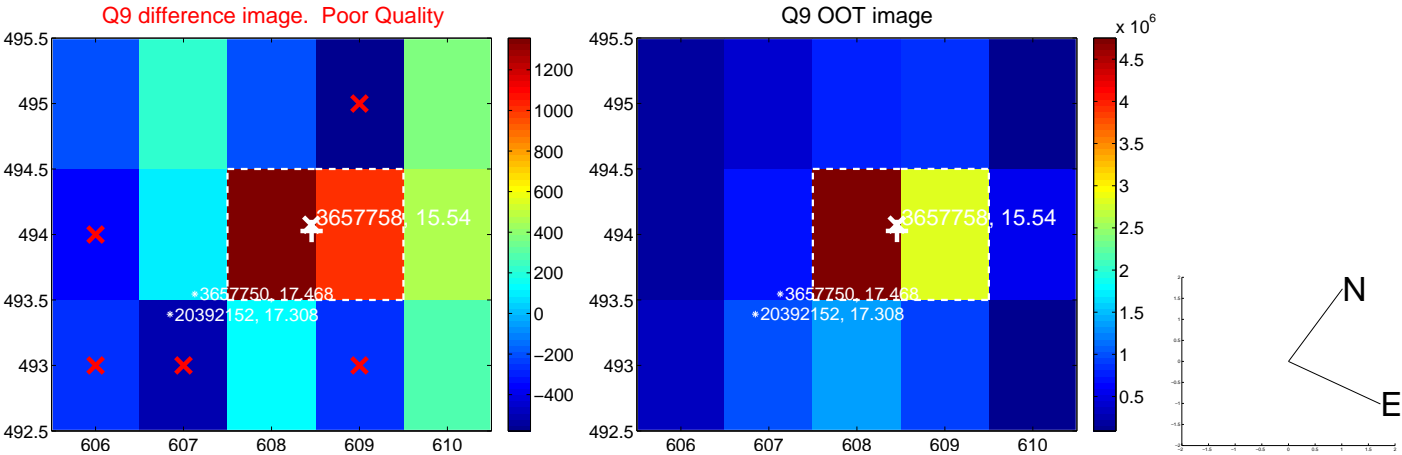
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



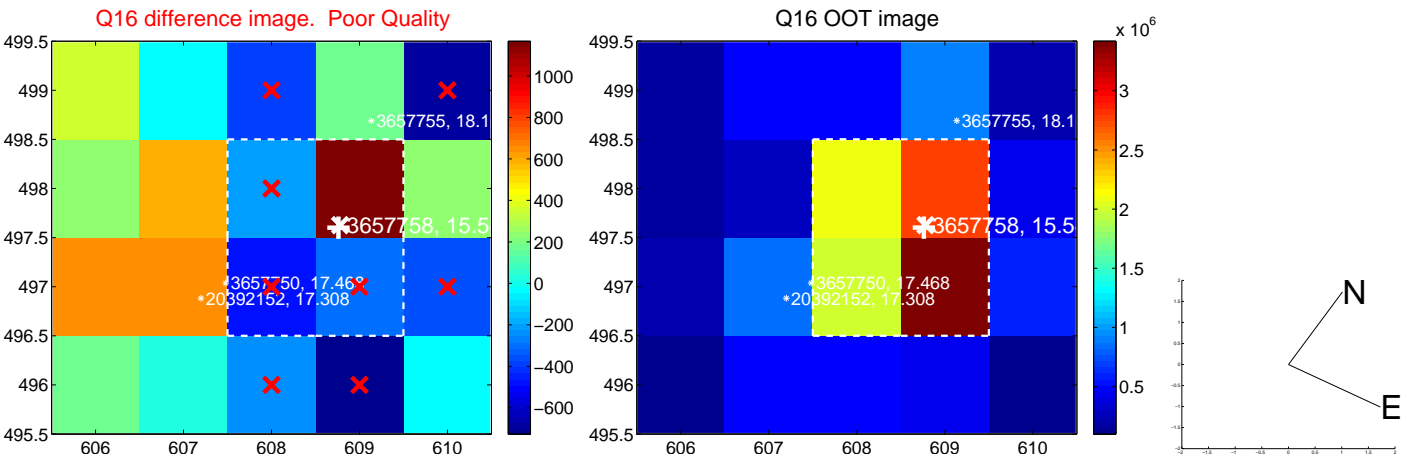
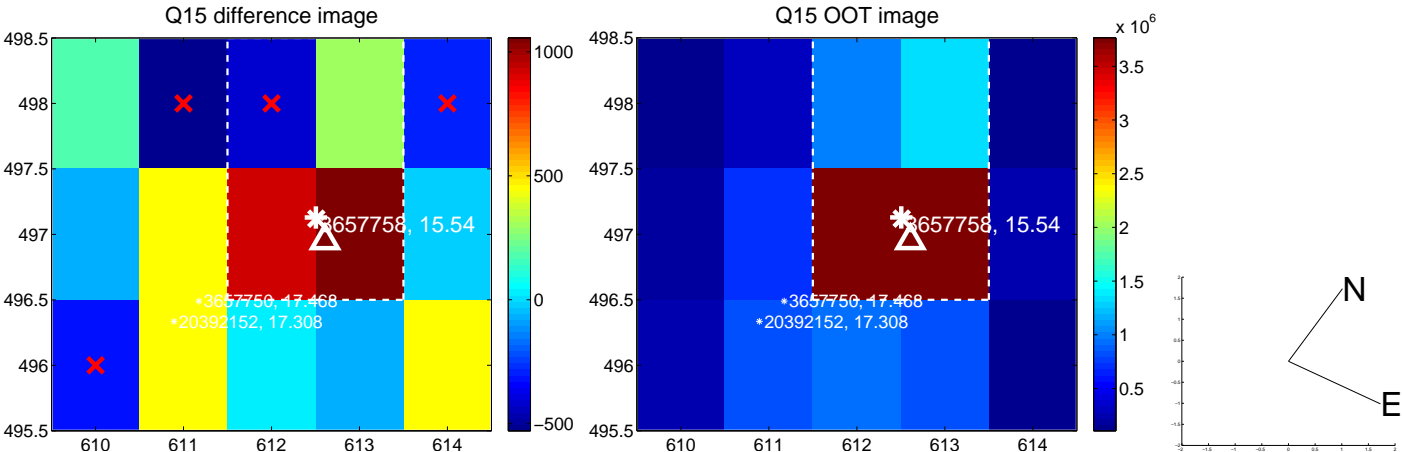
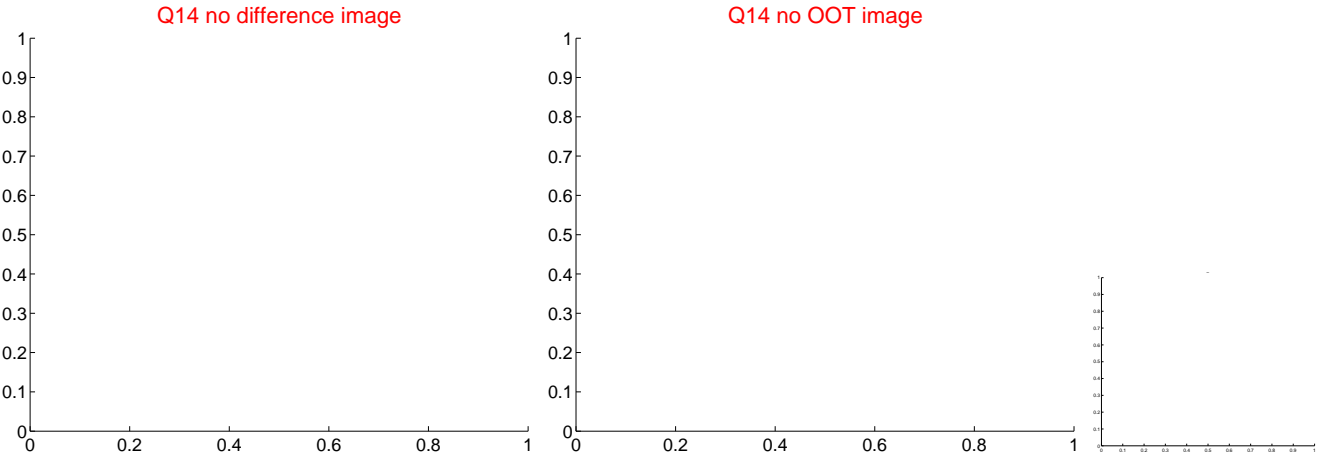
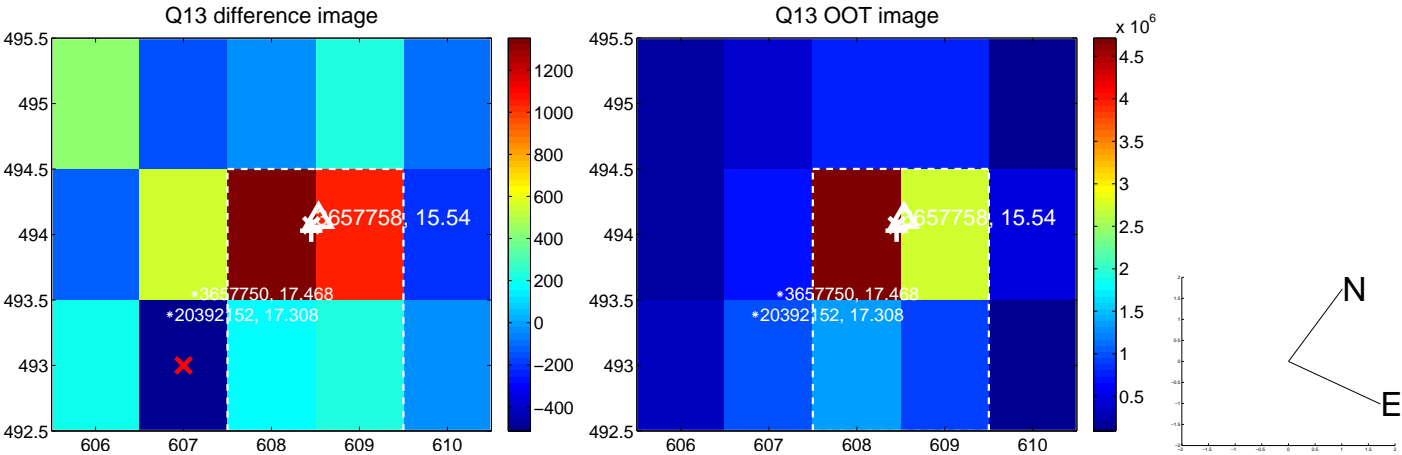
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



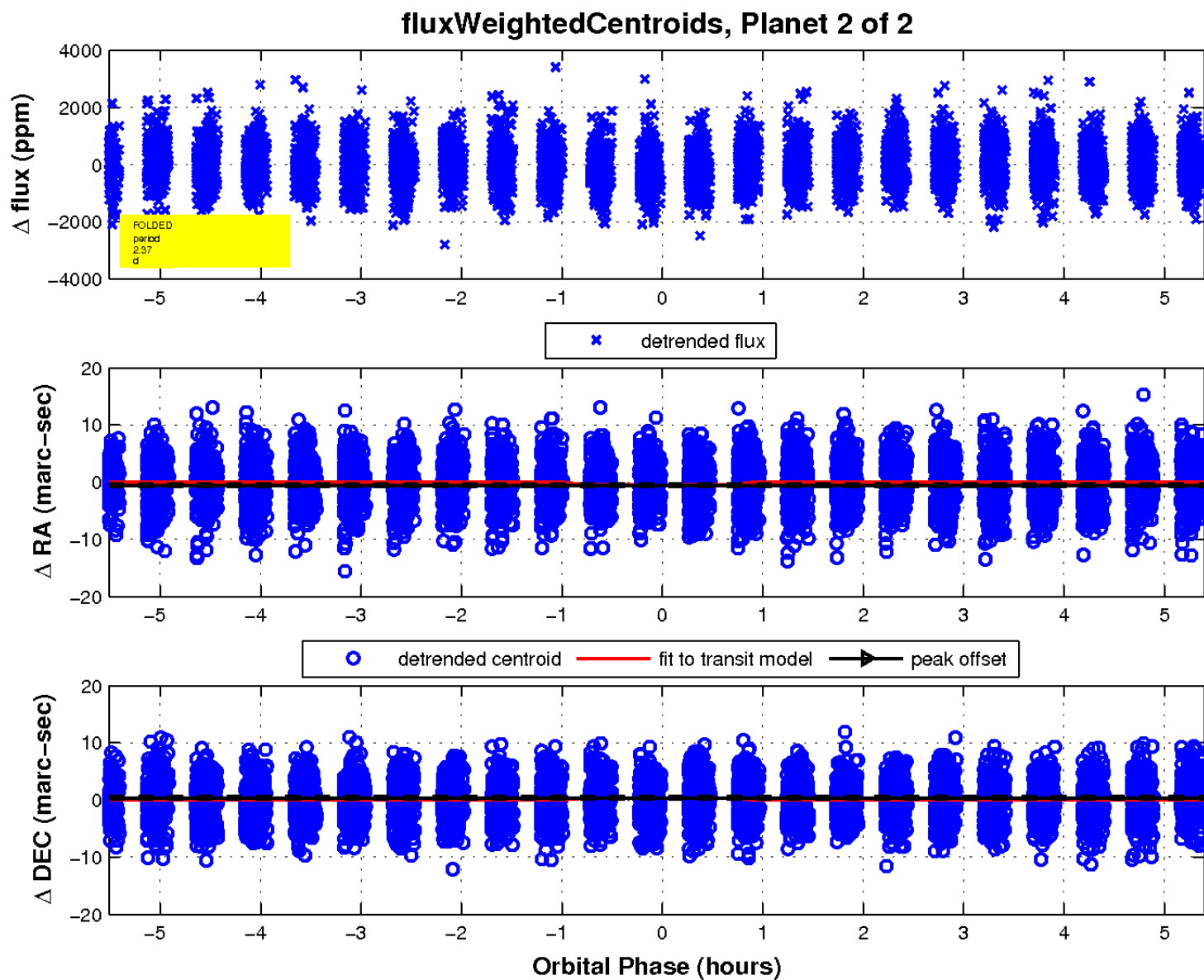
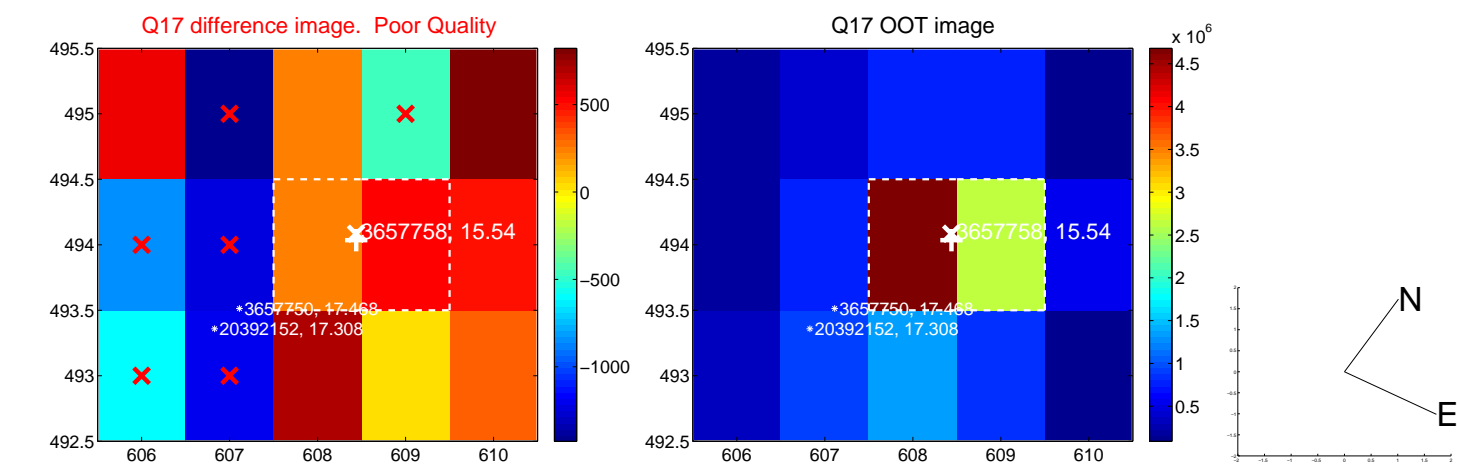
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

