

KIC 003858879

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})
003858879-01	OBS	3276.01	25.951968	154.881981	2843.6	14.342	93.8	93.9	1.05	5889	10.40	36.46
003858879-02	OBS	No	25.951988	148.923879	2255.9	20.018	88.1	100.3	1.05	5889	9.34	36.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858879-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
003858879-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_KIC_POS—HALO_GHOST—EPHEM_MATCH

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.

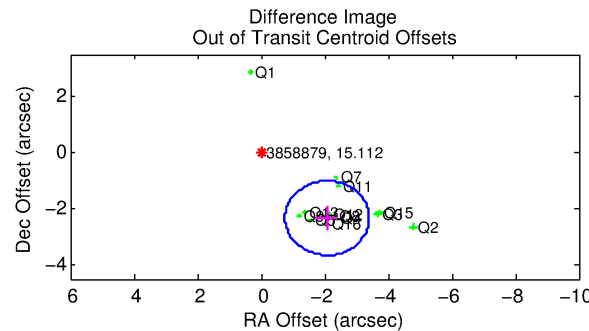
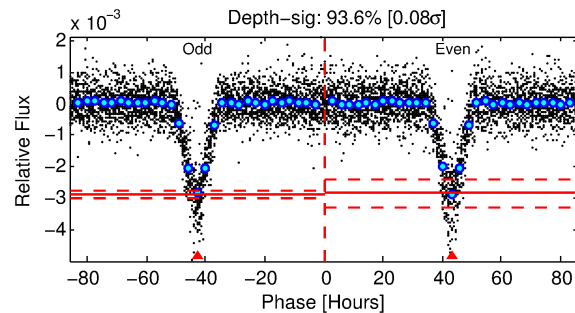
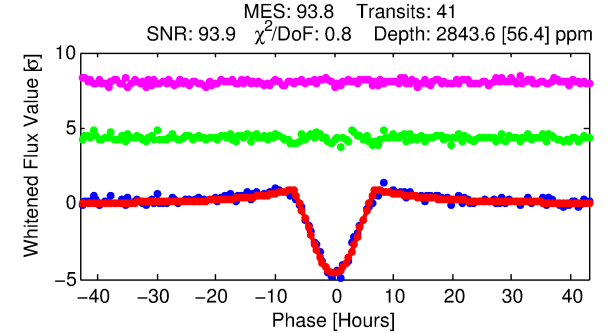
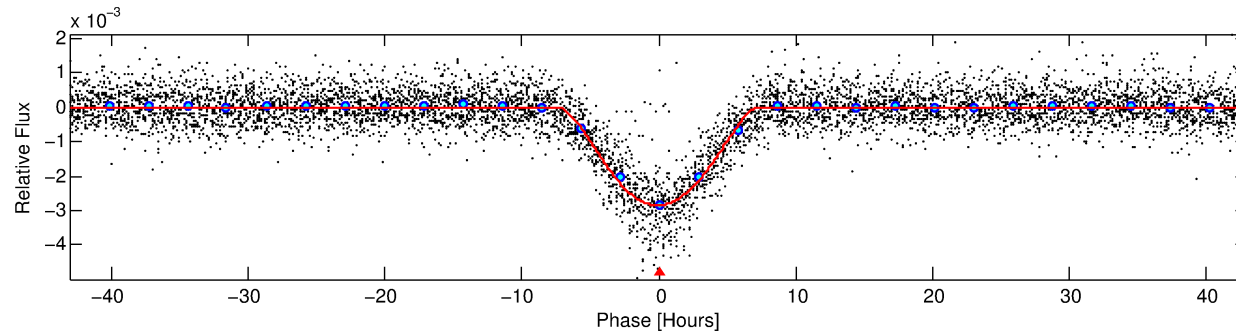
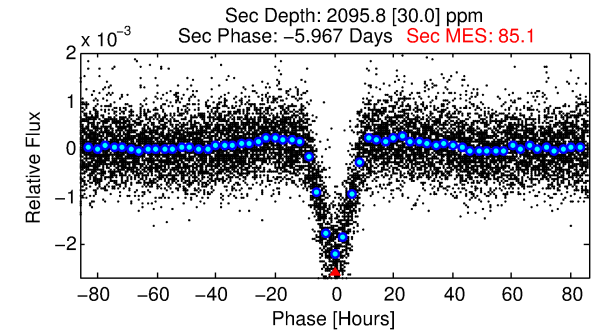
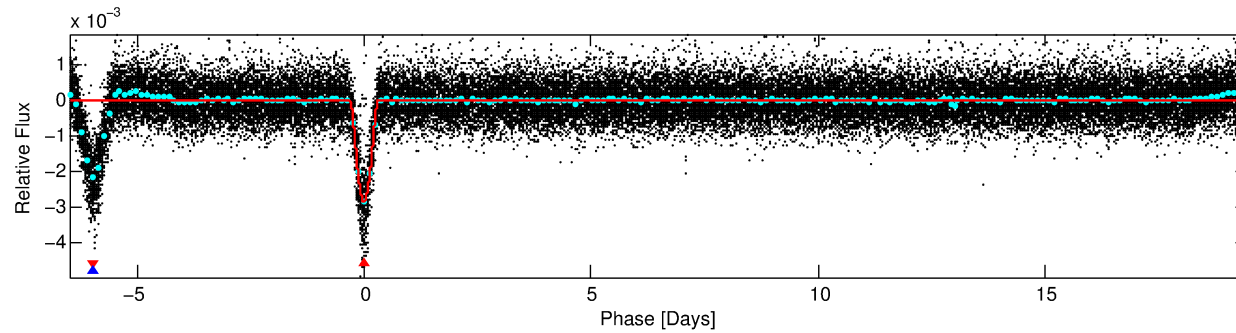
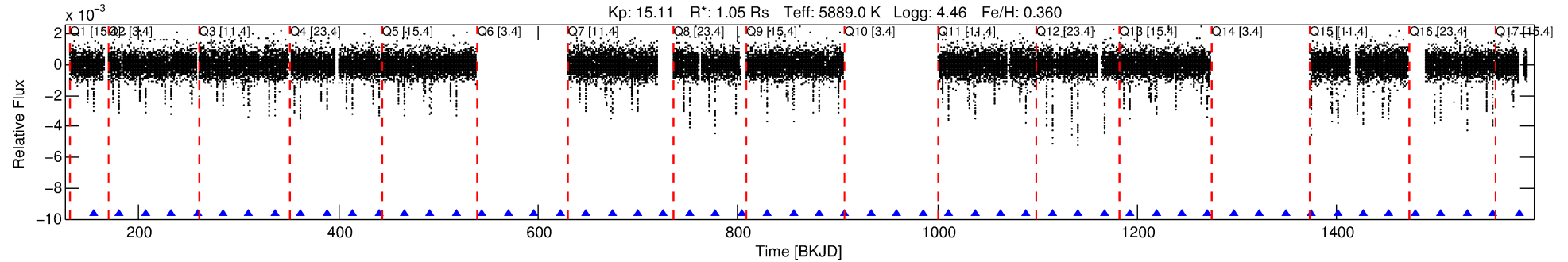
Ephemeris Match Information For 003858879-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (μ)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
003858879-01	3858879	003858884-01	3858884	1:1	46.4	11	6	9.28	15.12	140.14	Direct-PRF	0	0.39	0.19

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3858879 Candidate: 1 of 2 Period: 25.952 d
KOI: K03276 Corr: No Ephemeris Match



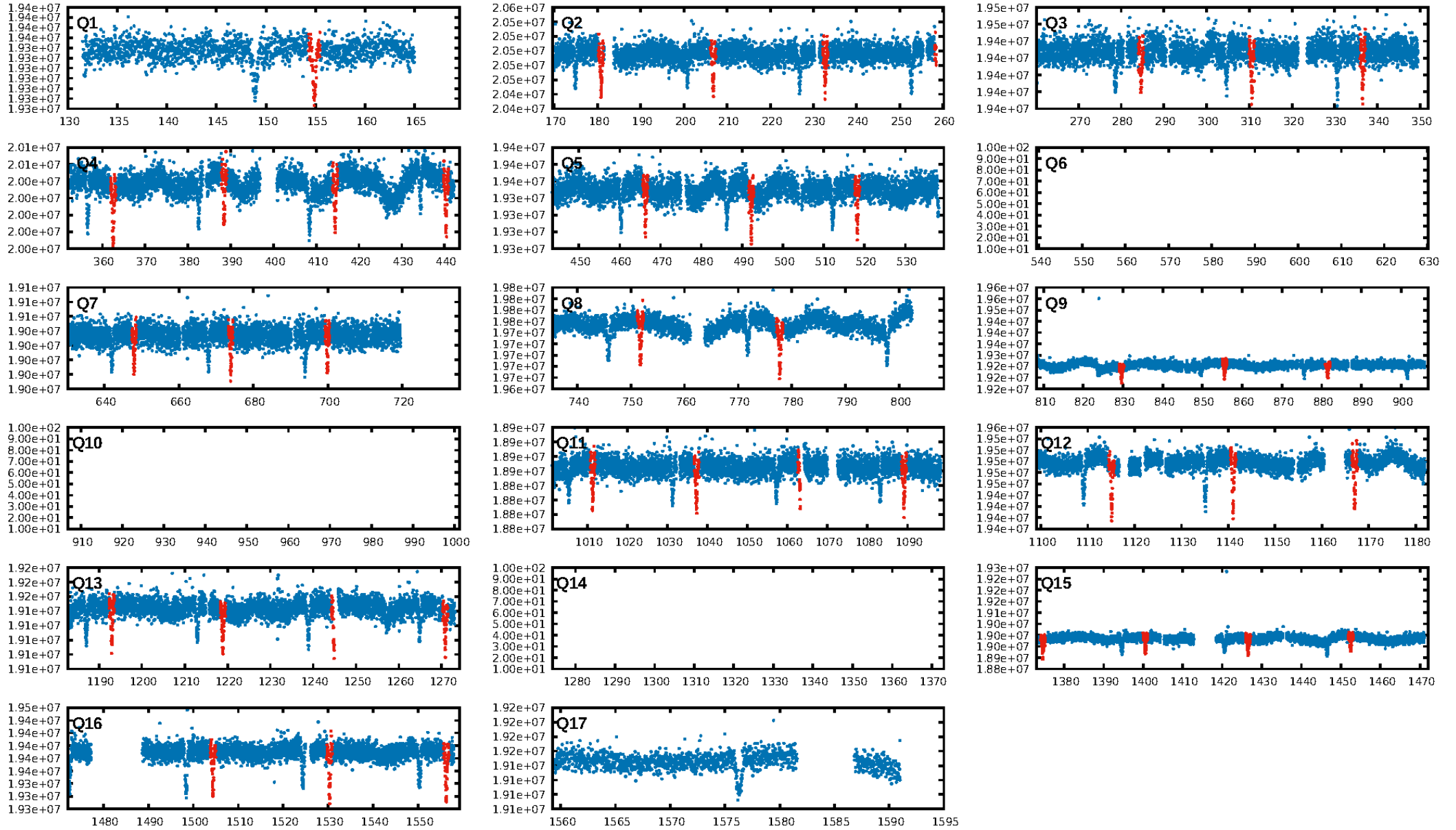
DV Fit Results:

Period = 25.95197 [0.00009] d
Epoch = 154.8820 [0.0028] BKJD
Rp/R* = 0.0912 [0.0314]
a/R* = 6.18 [0.42]
b = 1.00 [0.05]
Seff = 36.46 [13.07]
Teq = 627 [56] K
Rp = 10.40 [4.48] Re
a = 0.1798 [0.0400] AU
Ag = 344.37 [262.95] [1.31σ]
Teffp = 4173 [732] K [4.83σ]

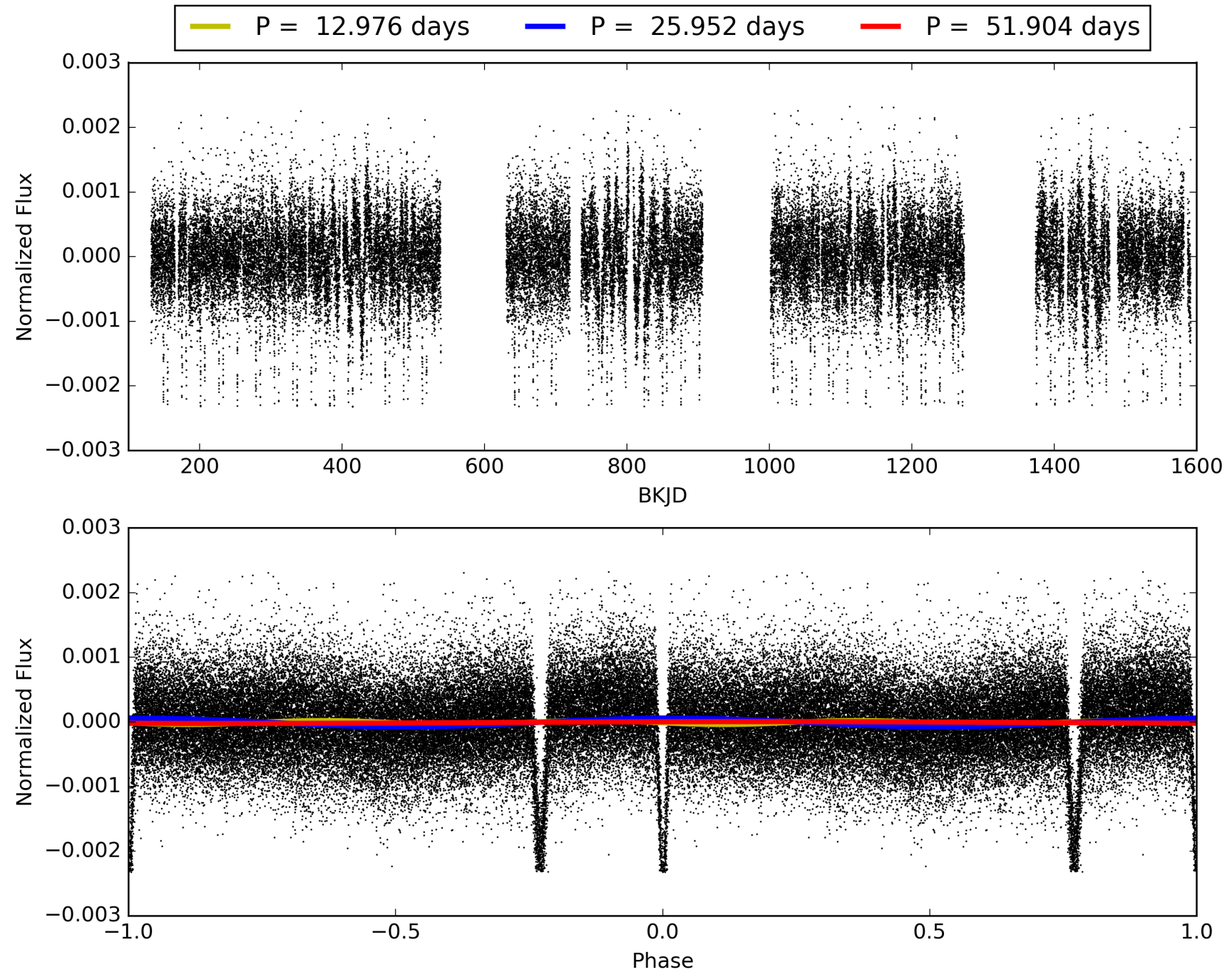
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [40/40]
GhostDiagnostic-chr: 0.03095
Centroid-sig: 0.0%
Centroid-so: 3.146 arcsec [18.21σ]
OotOffset-rm: 3.122 arcsec [7.07σ]
KicOffset-rm: 2.778 arcsec [6.14σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 003858879-01, PDC Light Curves

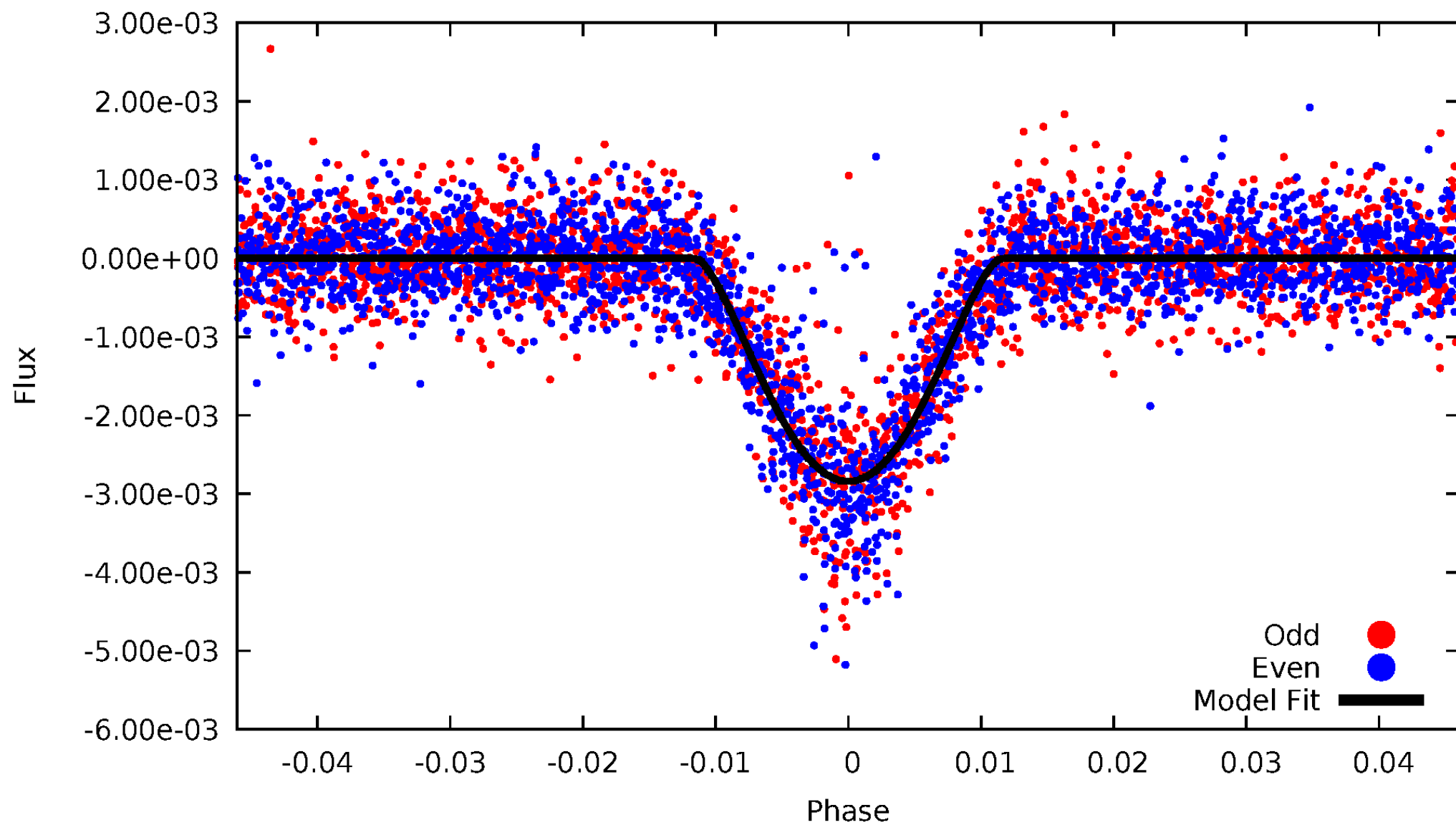


TCE 003858879-01



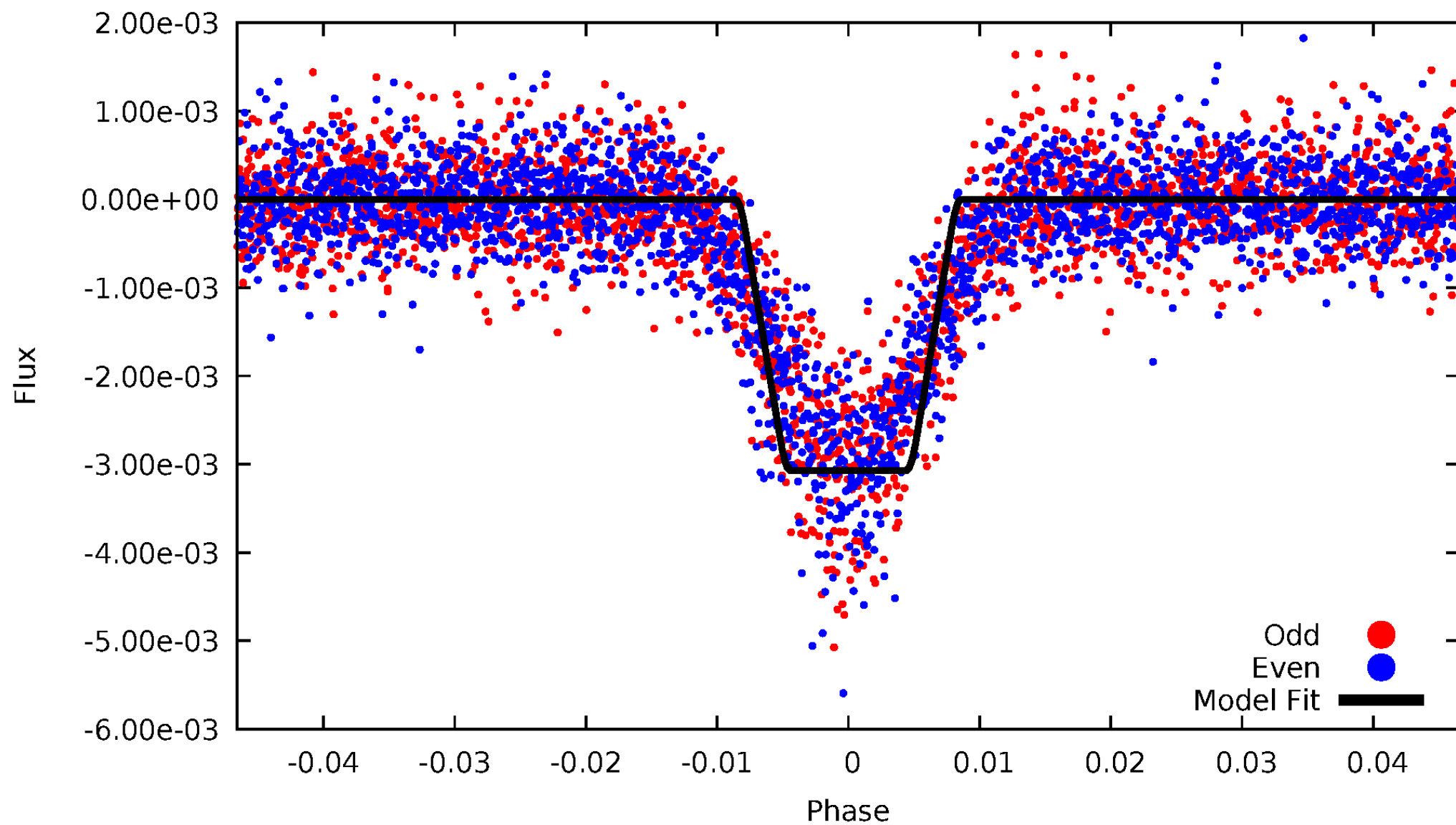
DV Odd/Even

TCE 003858879-01



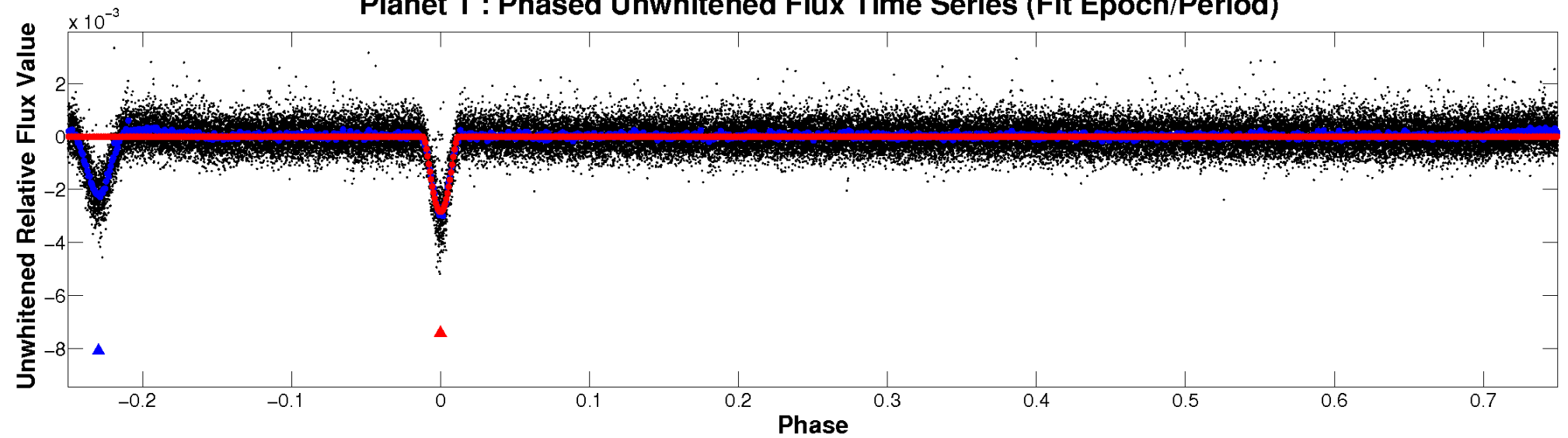
ALT Odd/Even

TCE 003858879-01

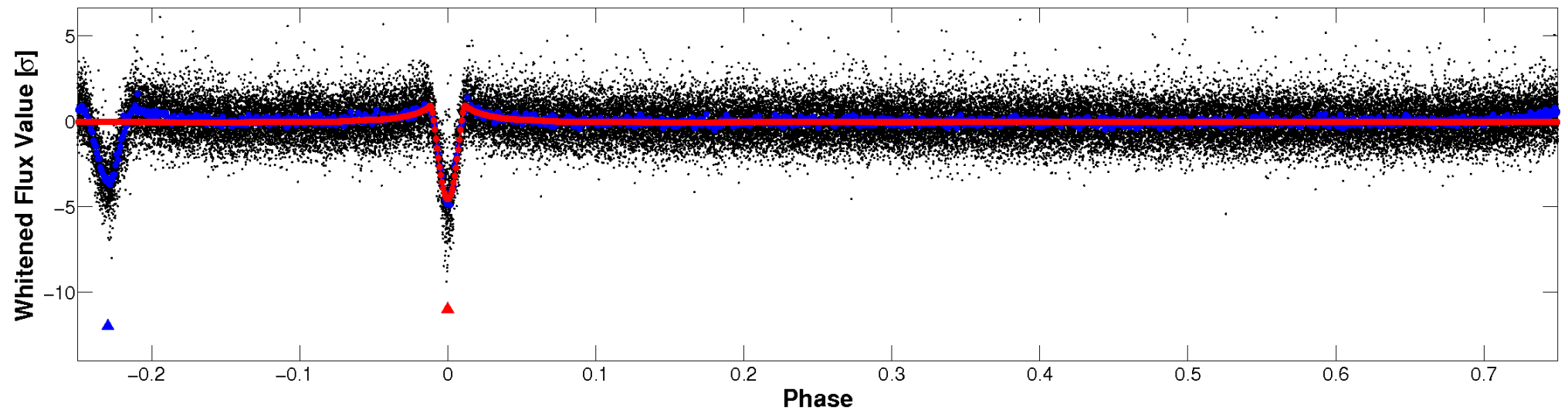


Non-Whitened Vs. Whitened Light Curve

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

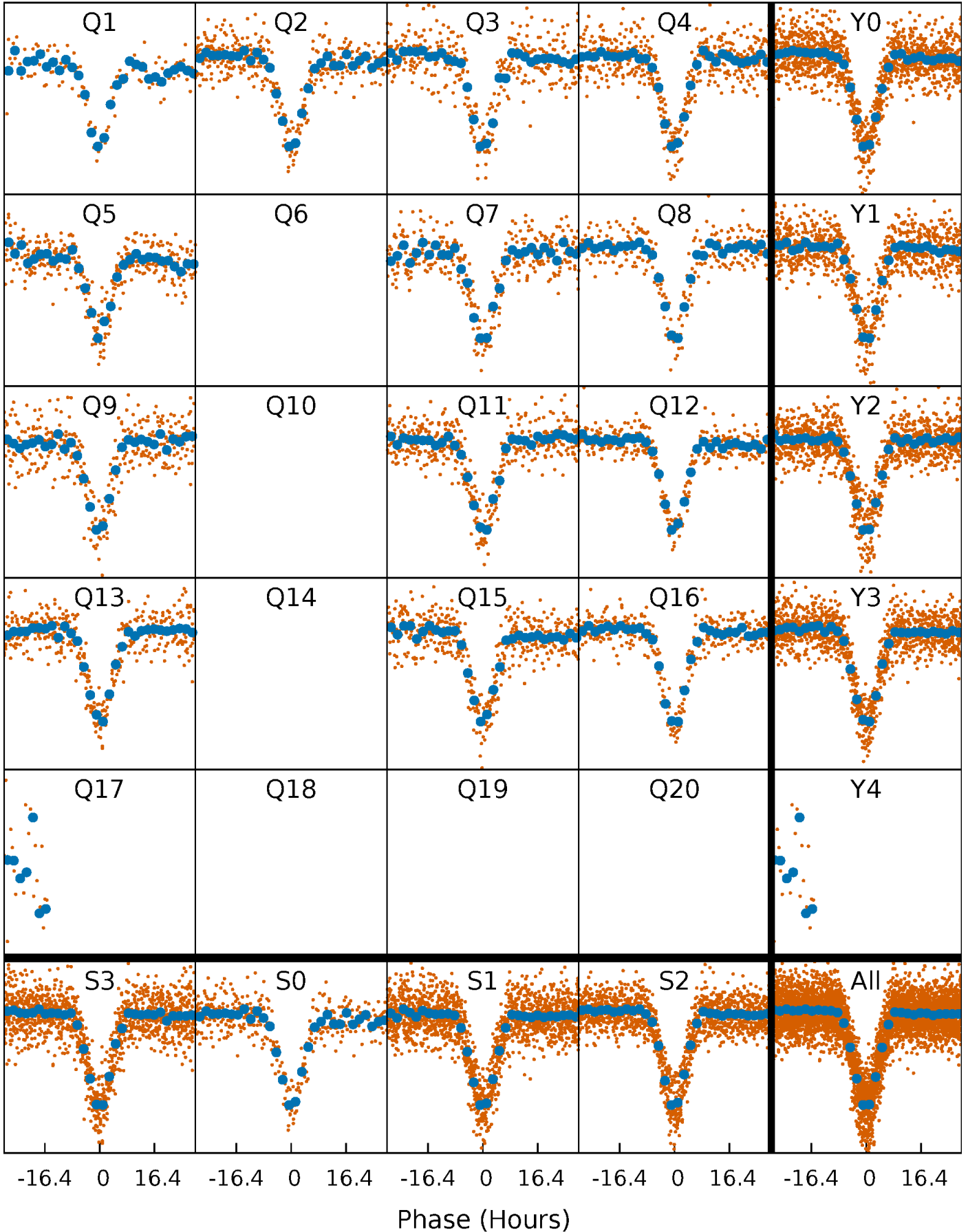


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



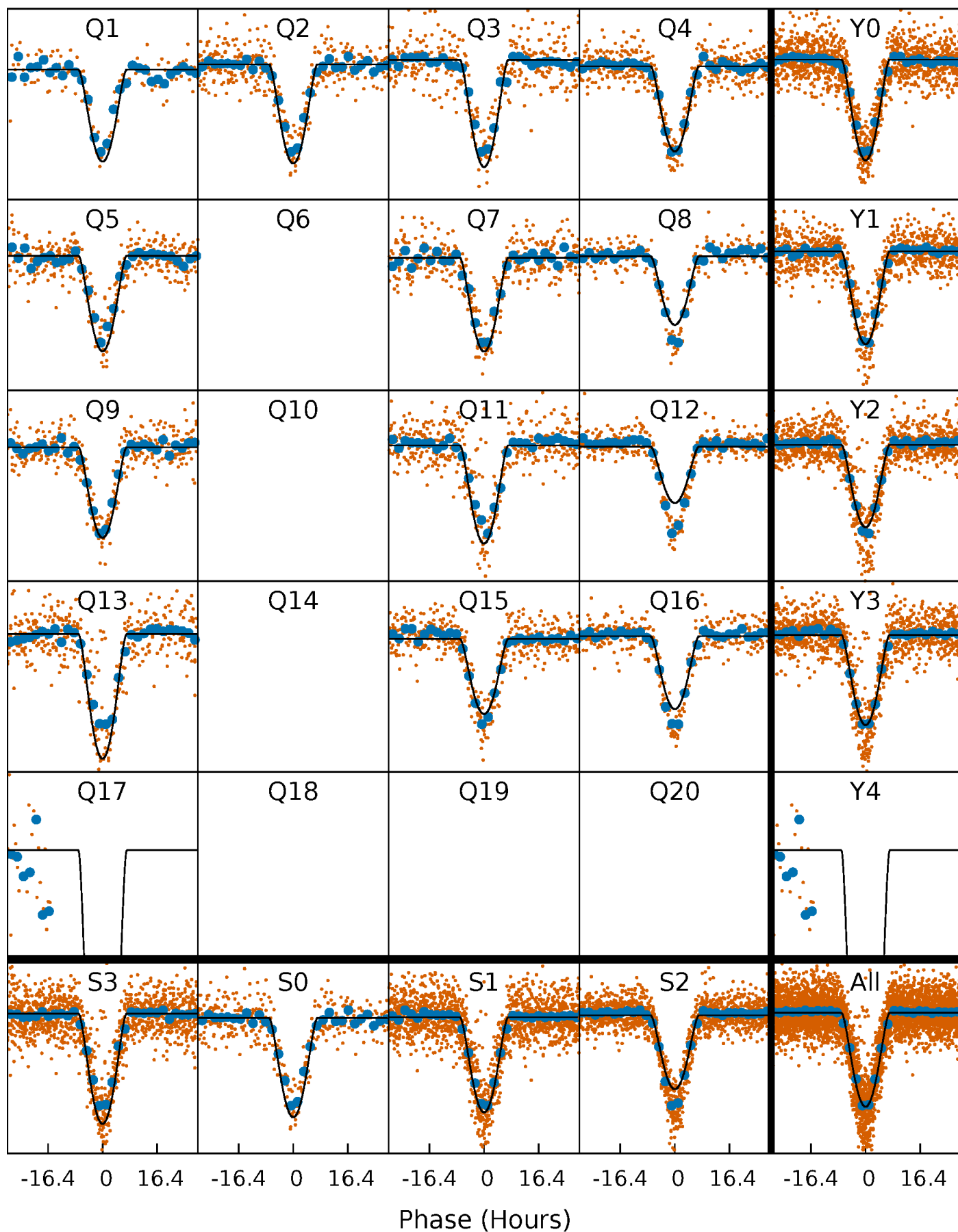
PDC Quarter-Phased Transit Curves

TCE 003858879-01 P= 25.951968 Days $T_0=154.881981$ (BKJD)



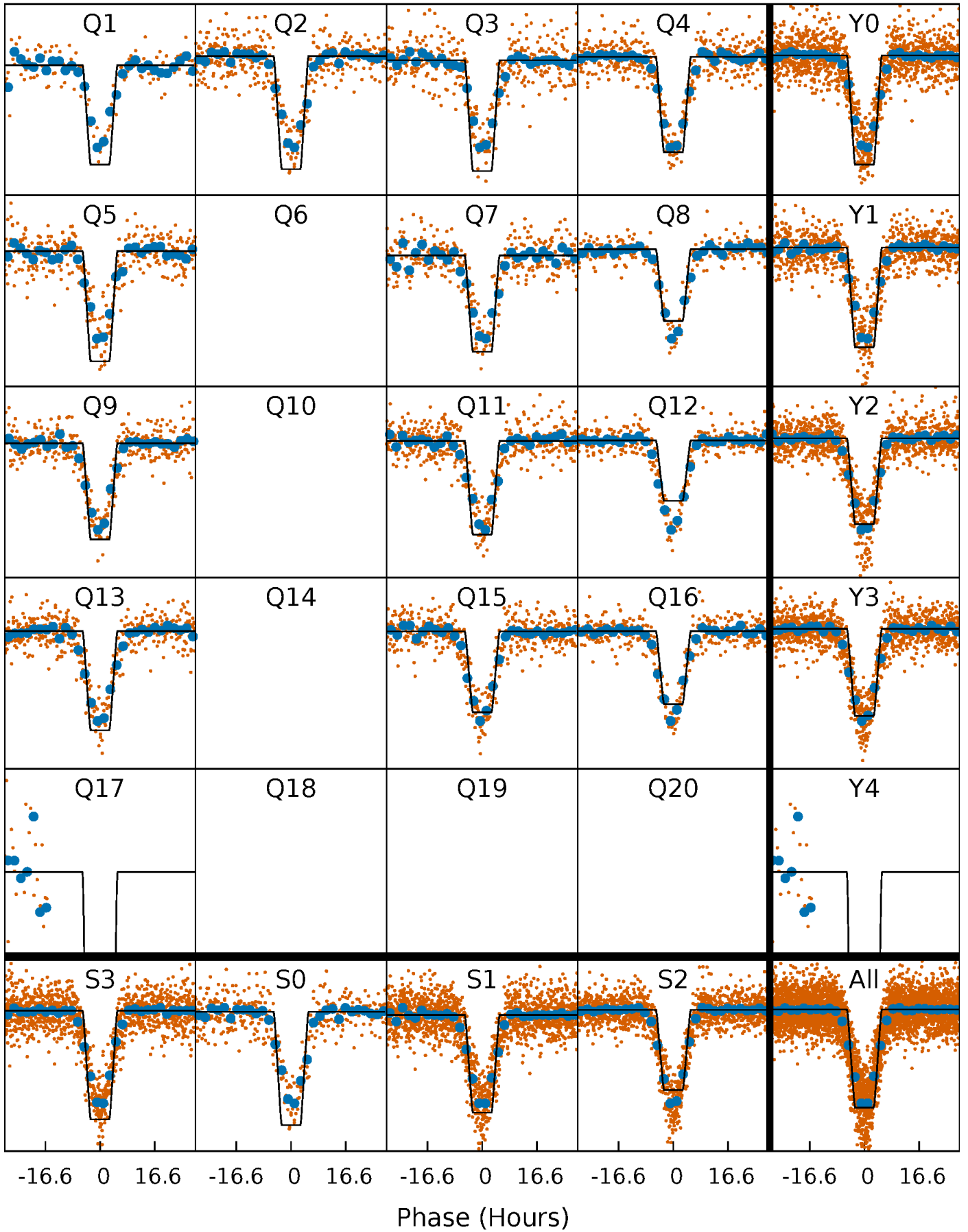
DV Quarter-Phased Transit Curves

TCE 003858879-01 P= 25.951968 Days $T_0=154.881981$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

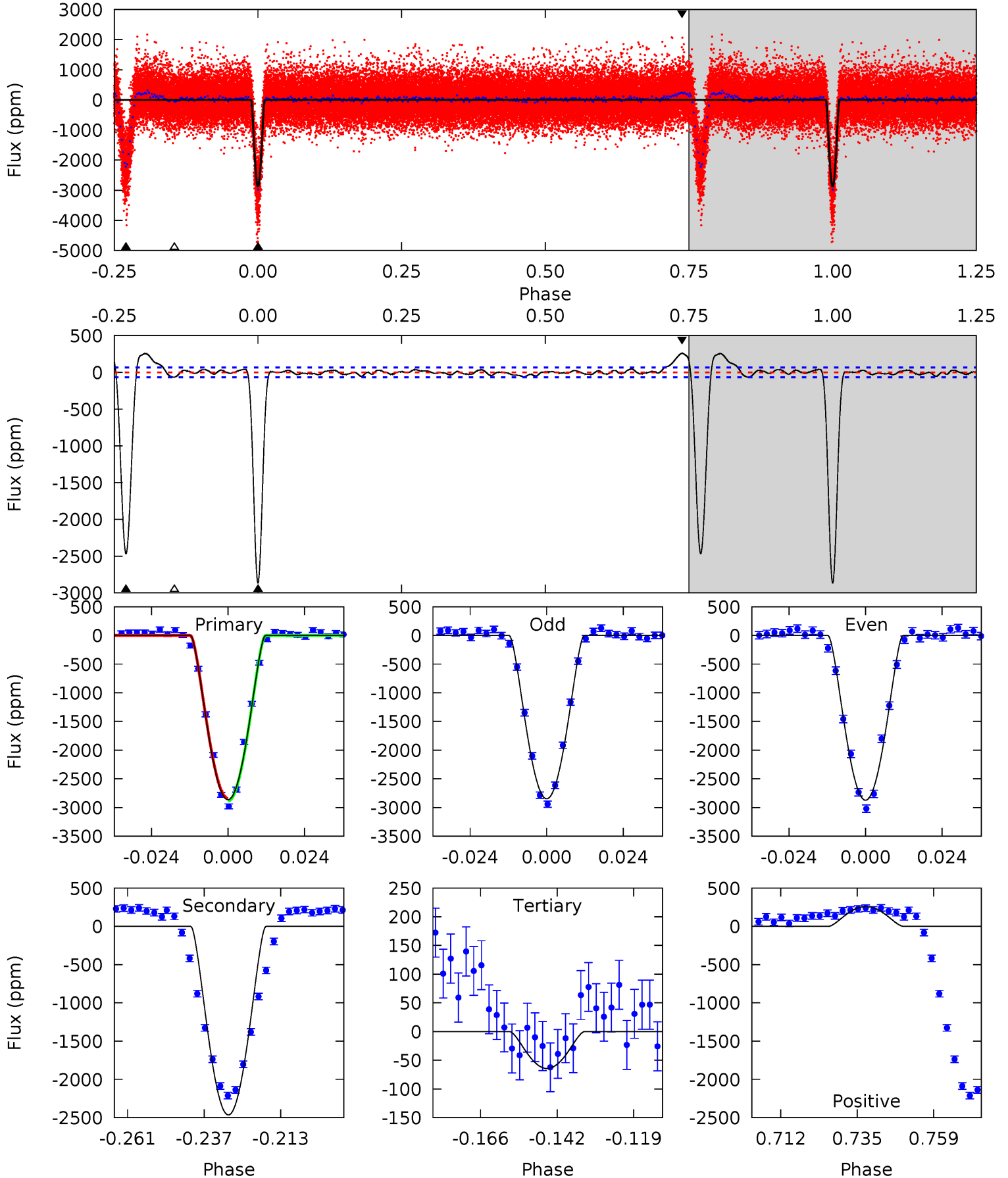
TCE 003858879-01 P= 25.952485 Days $T_0=154.866806$ (BKJD)



DV Model-Shift Uniqueness Test

003858879-01, P = 25.951968 Days, E = 128.930013 Days

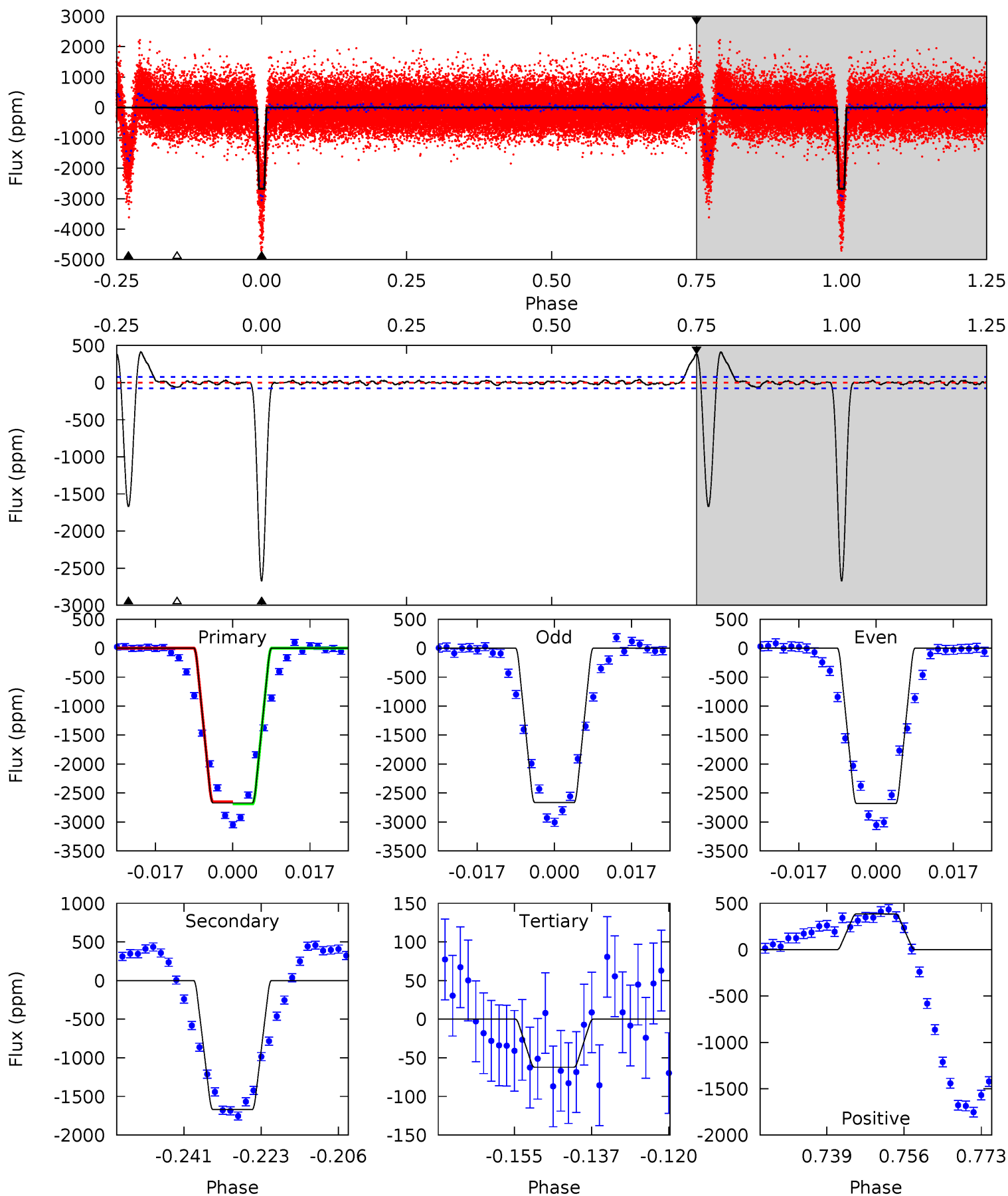
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
210.2	180.9	4.72	19.0	4.86	2.26	4.41	205.5	191.2	176.2	161.9	0.91	1.03	0.08	1.27



Alt Model-Shift Uniqueness Test

003858879-01, P = 25.952485 Days, E = 128.914321 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
168.9	105.6	3.93	24.3	4.92	2.38	4.35	165.0	144.6	101.7	81.3	0.52	1.06	0.13	0.99



Stellar Parameters For KIC 003858879

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5889^{+162}_{-203}	$4.460^{+0.046}_{-0.184}$	$0.360^{+0.100}_{-0.250}$	$1.046^{+0.270}_{-0.096}$	$1.152^{+0.100}_{-0.137}$	$1.418^{+0.348}_{-0.685}$
	+3%/-3%	+1%/-4%	+28%/-69%	+26%/-9%	+9%/-12%	+25%/-48%
Source	PHO1	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 003858879-01 / KOI 3276.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2464 ± 14	$11.10^{+3.99}_{-3.99}$	890^{+56}_{-39}	4501^{+908}_{-494}	353^{+475}_{-161}
Alt.	-1670 ± 16	$6.73^{+3.42}_{-3.48}$	892^{+55}_{-42}	5080^{+2116}_{-804}	651^{+2084}_{-371}

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 $A_{obs} \gg 1.0$

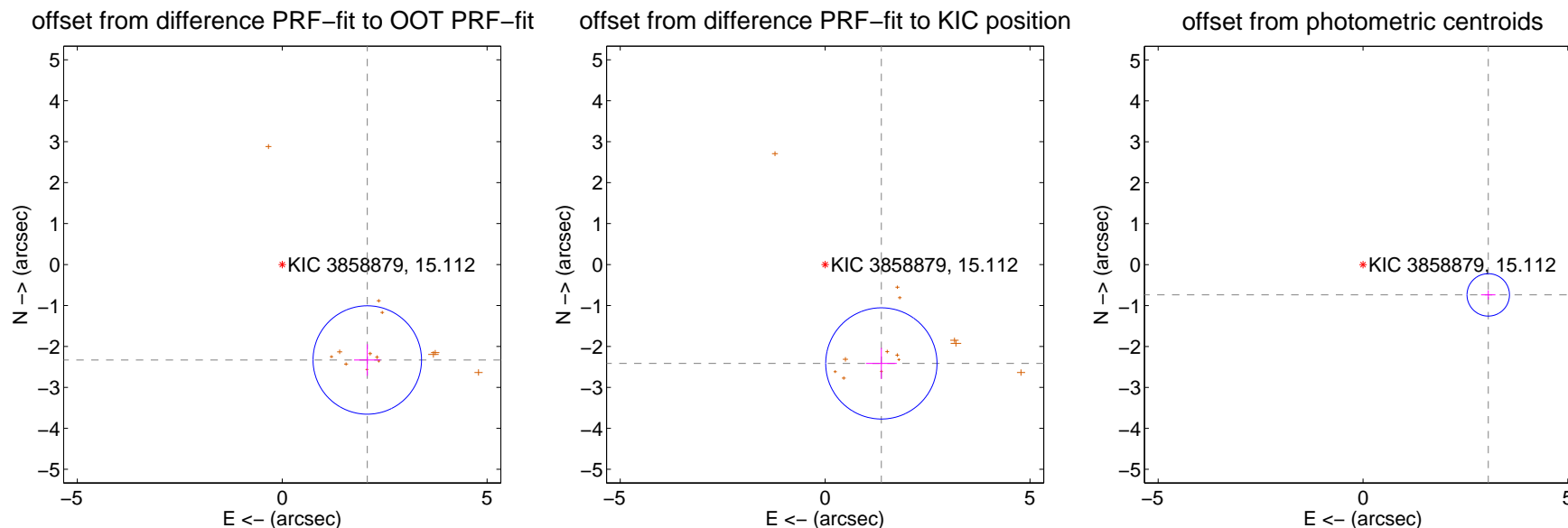
DV Centroid Data

Supplemental centroid analysis for 003858879-01. Kepler magnitude: 15.11. Transit SNR 93.92

There are 0 quarters with good PRF difference image offsets

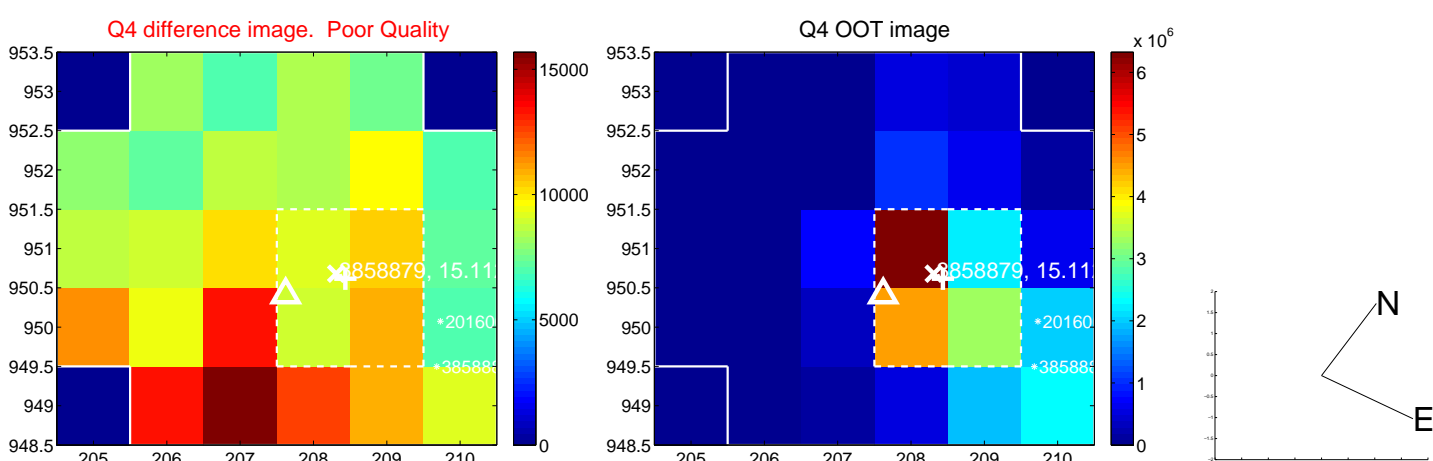
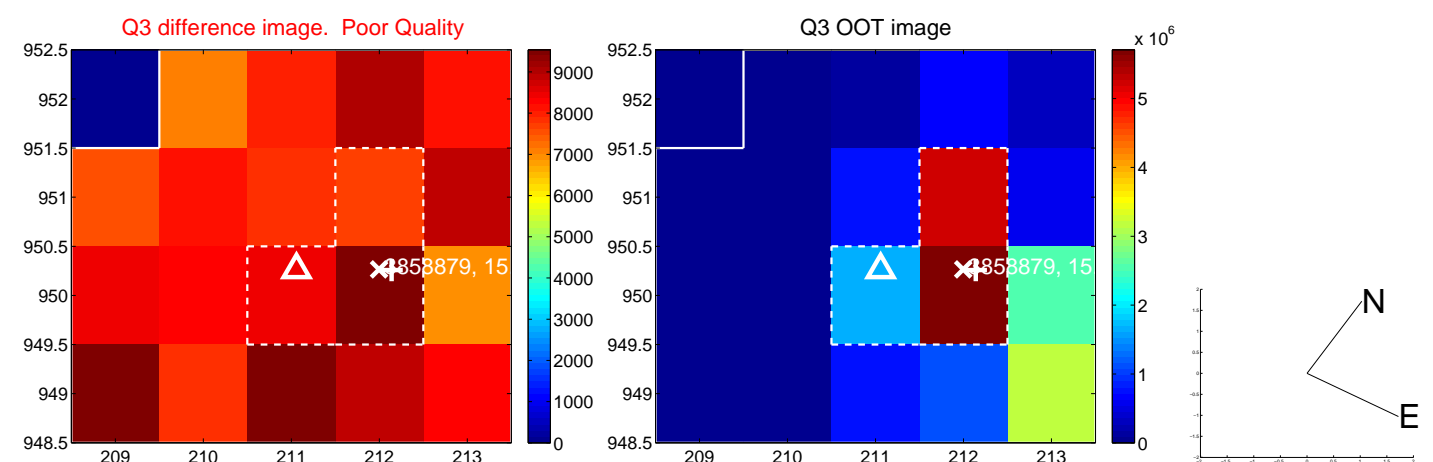
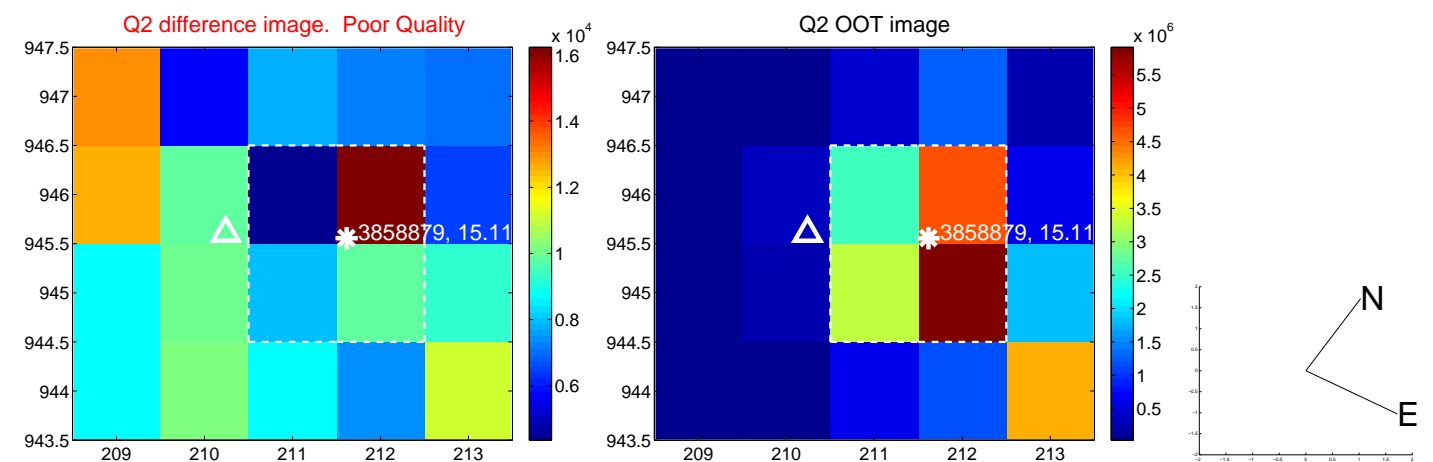
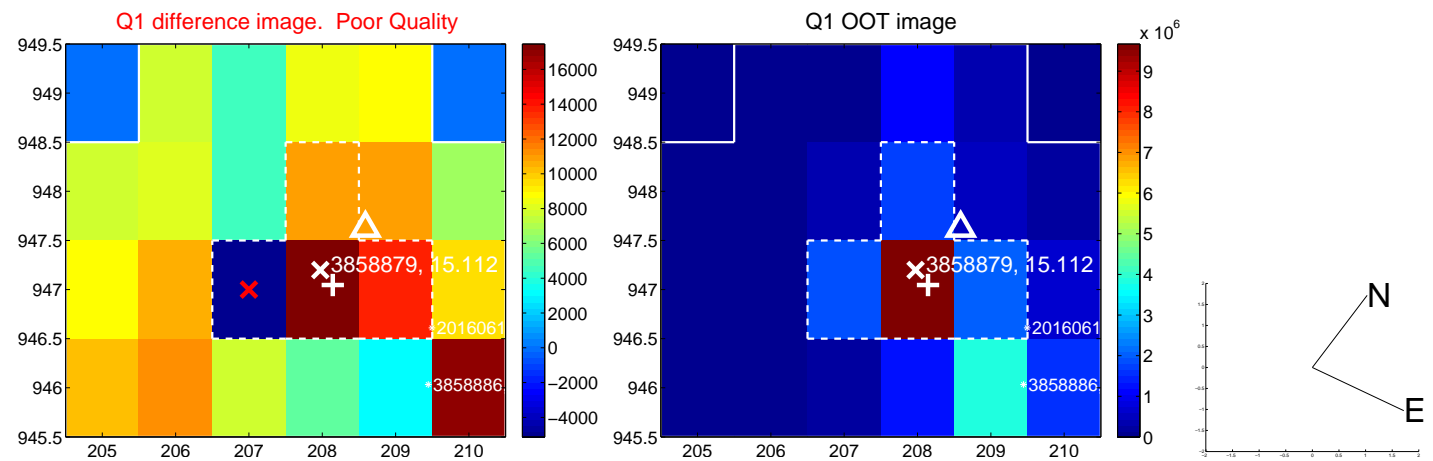
The direct PRF centroid is offset from the target star catalog position by about 0.70 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.122 ± 0.441	7.07	-2.077 ± 0.323	-2.331 ± 0.386
PRF-fit source offset from KIC position	2.778 ± 0.453	6.14	-1.373 ± 0.375	-2.415 ± 0.378
photometric centroid source offset	3.15 ± 0.17	18.21	-3.06 ± 0.18	-0.74 ± 0.11

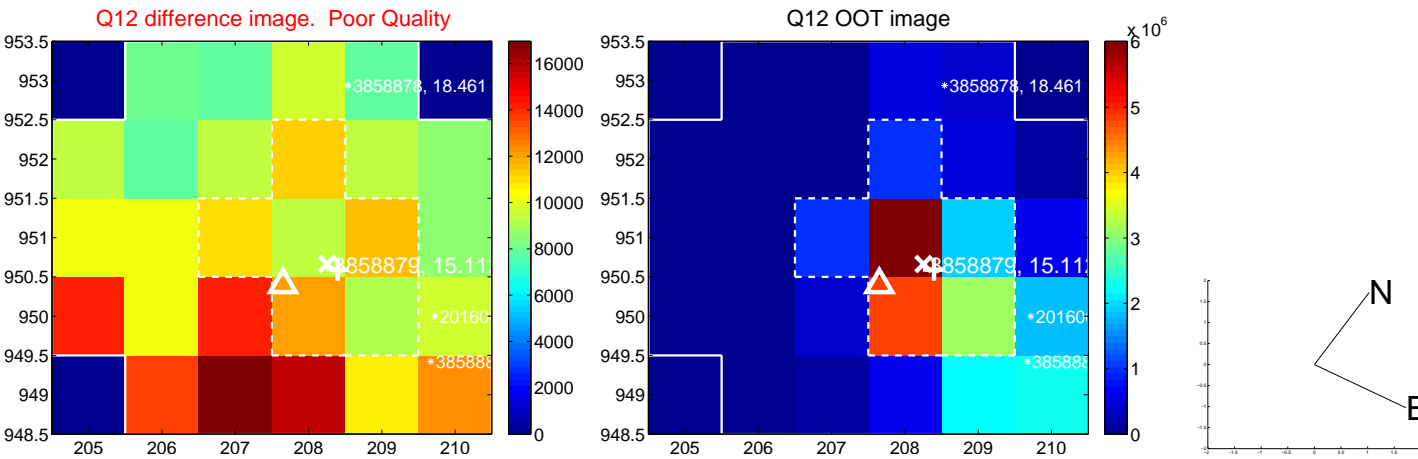
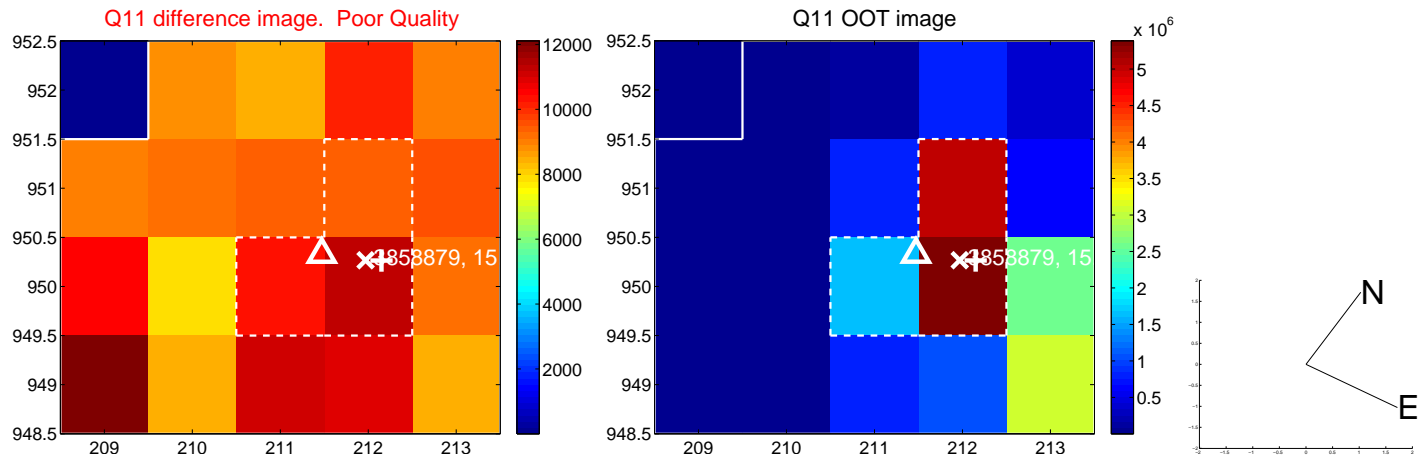
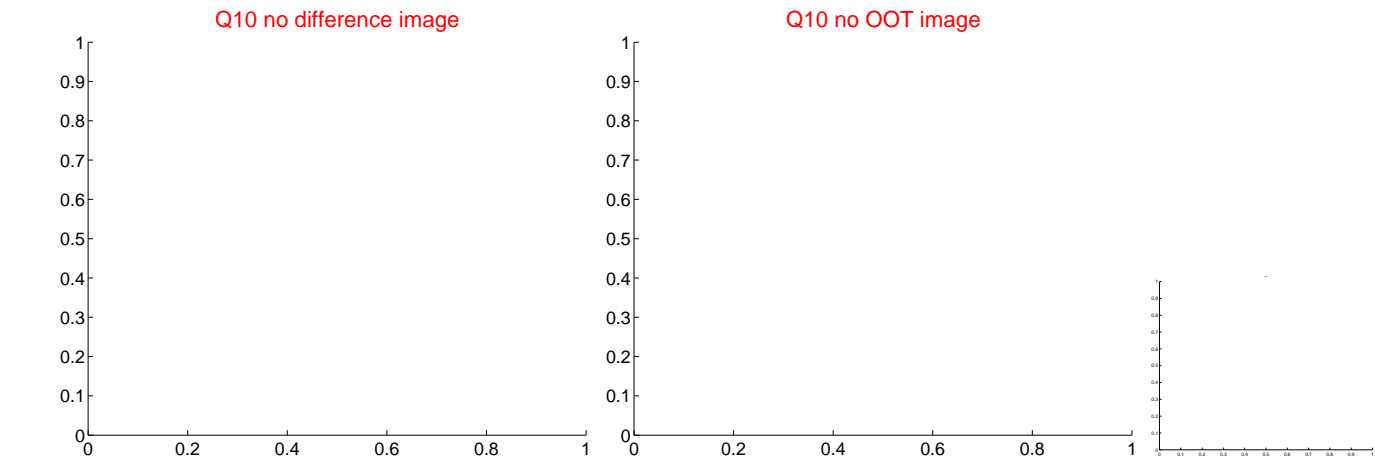
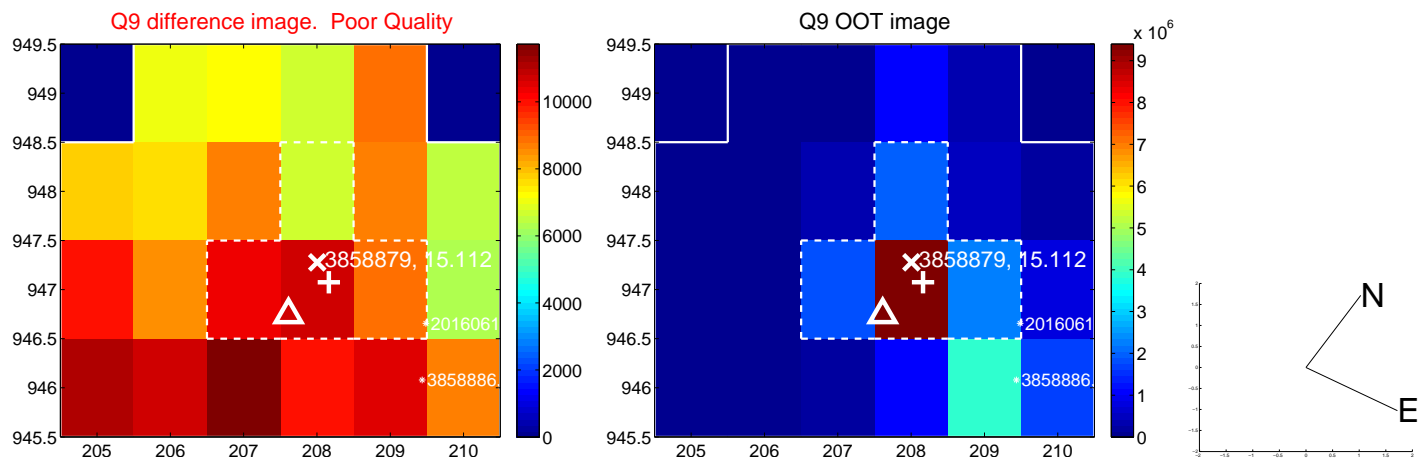


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

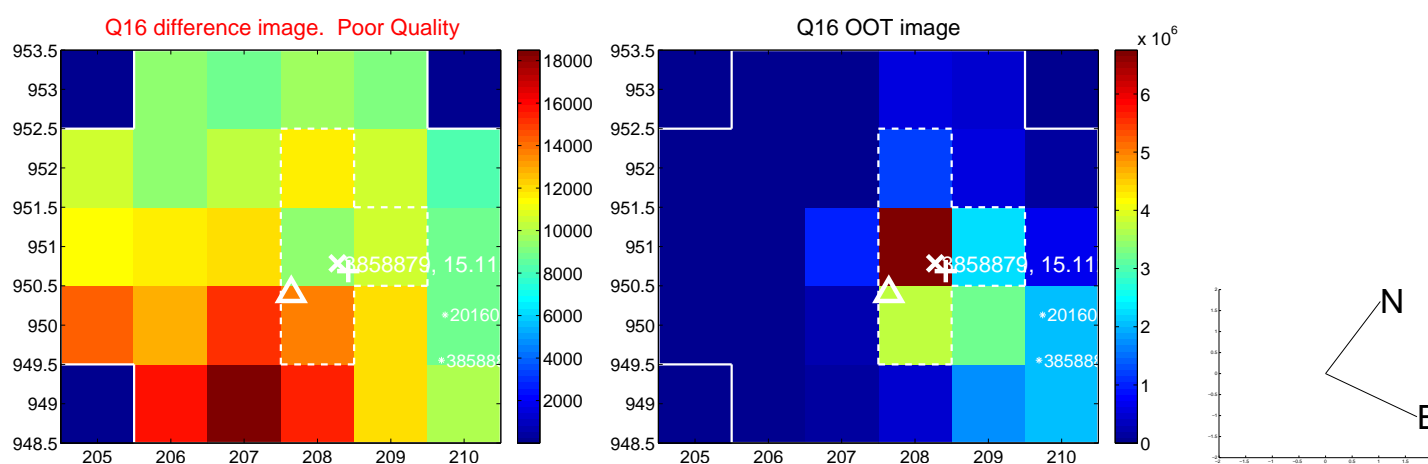
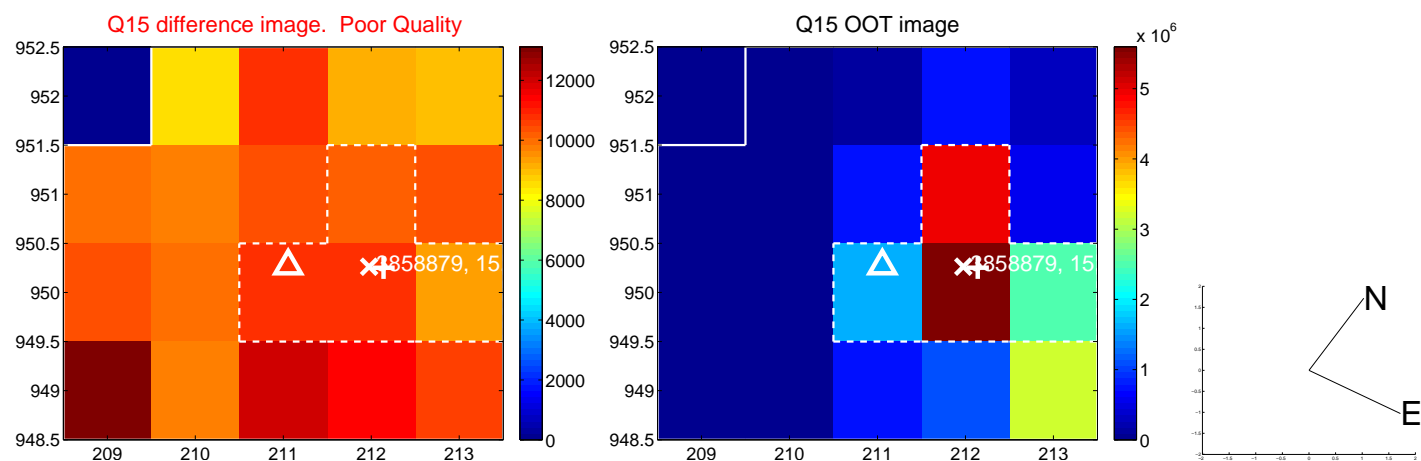
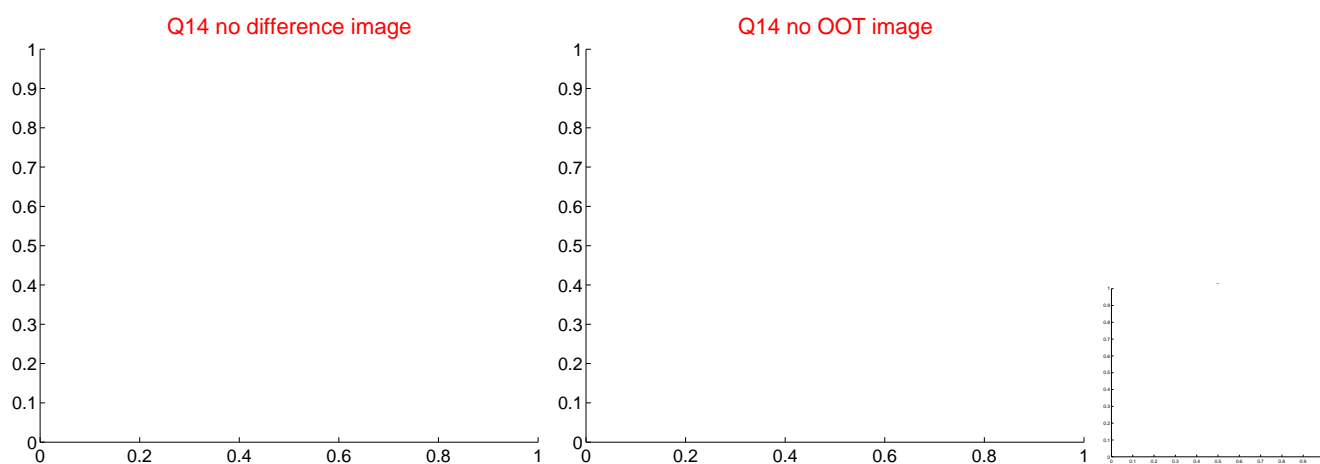
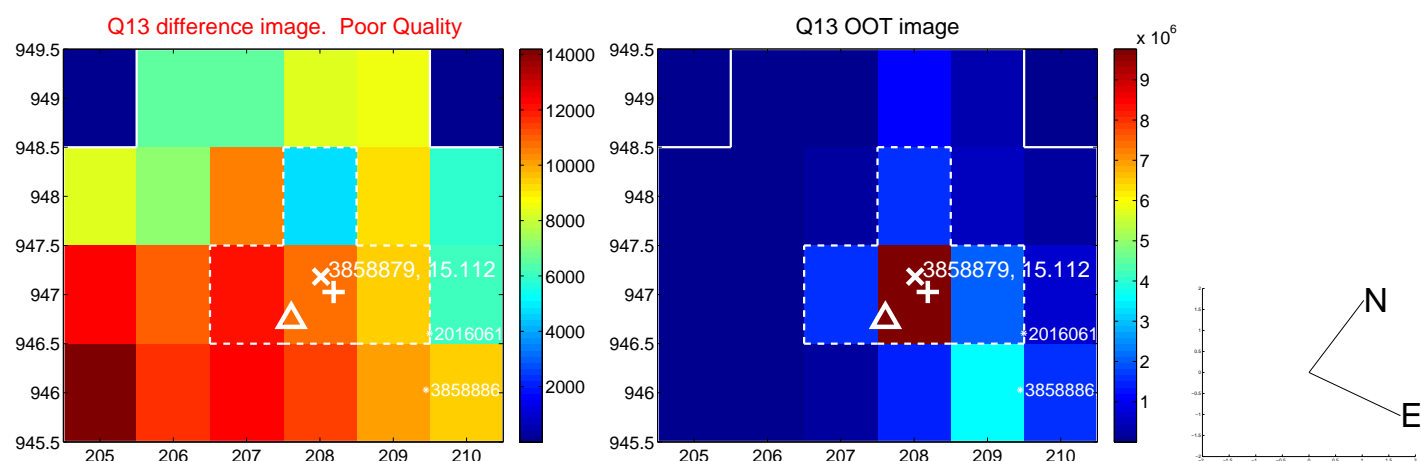
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



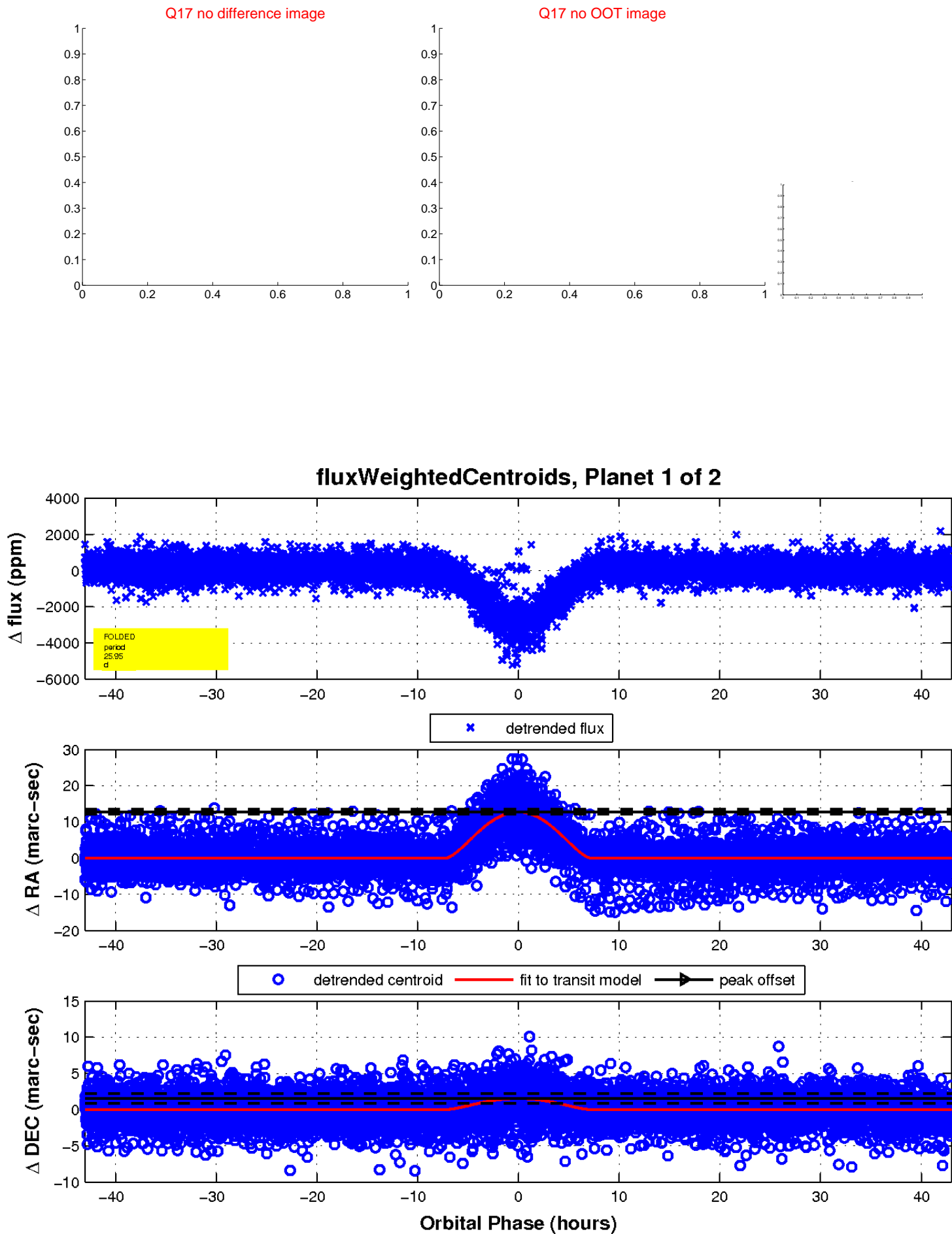
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

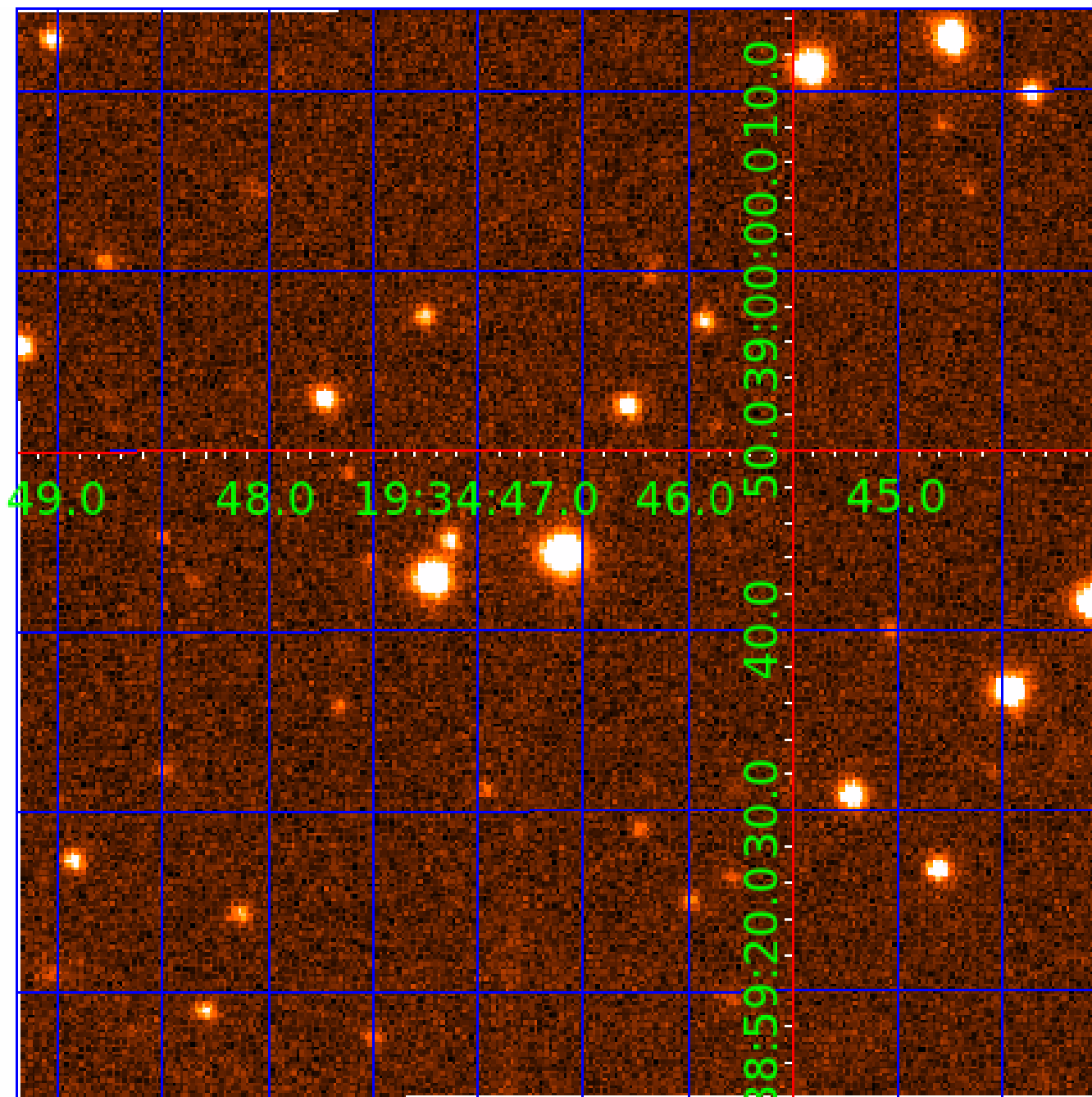


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003858879

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})
003858879-01	OBS	3276.01	25.951968	154.881981	2843.6	14.342	93.8	93.9	1.05	5889	10.40	36.46
003858879-02	OBS	No	25.951988	148.923879	2255.9	20.018	88.1	100.3	1.05	5889	9.34	36.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858879-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
003858879-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_KIC_POS—HALO_GHOST—EPHEM_MATCH

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 003858879-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (μ)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
003858879-02	3858879	003858884-02	3858884	1:1	46.4	11	6	9.28	15.12	149.44	Direct-PRF	0	0.34	0.15

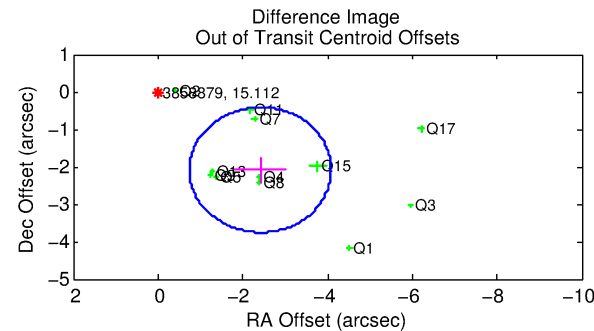
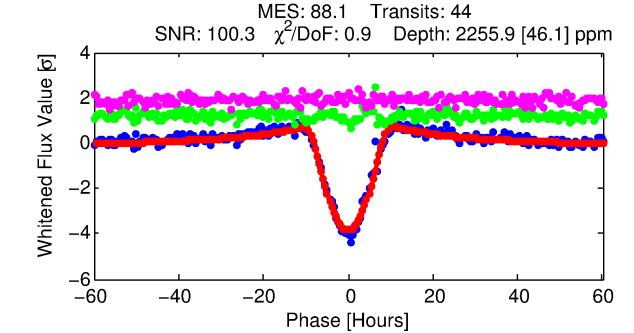
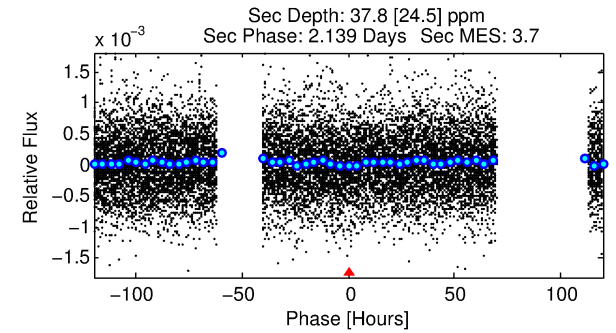
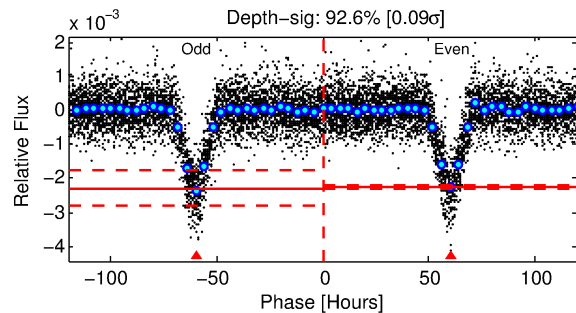
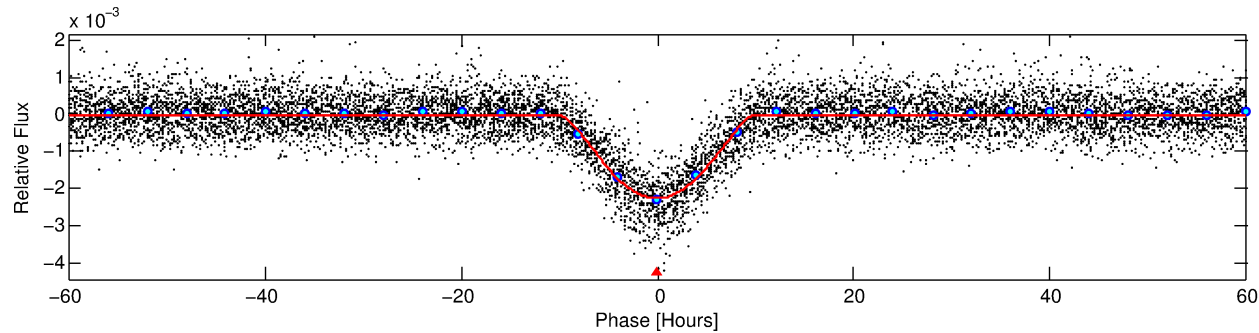
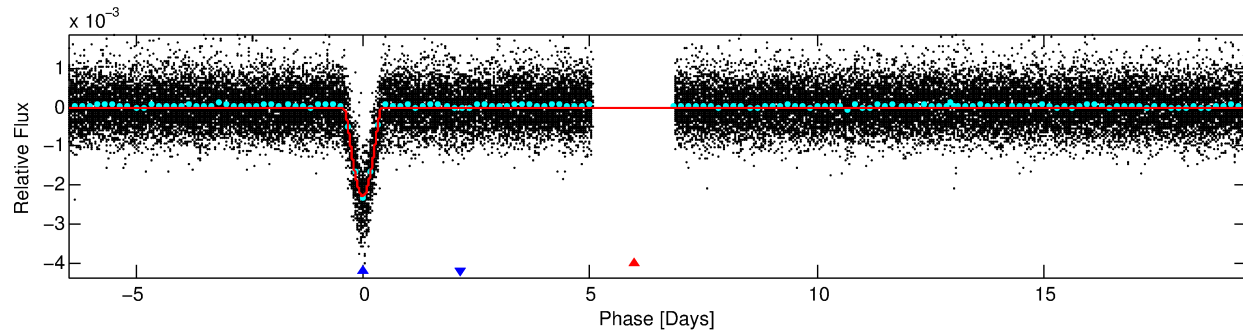
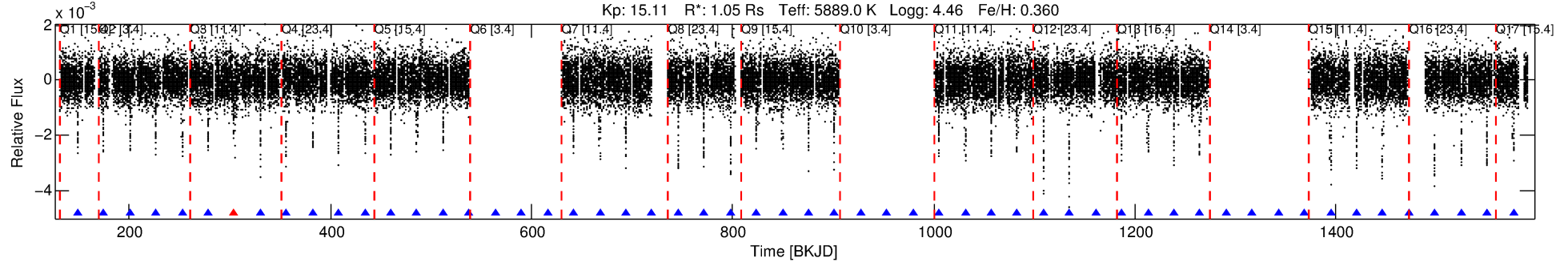
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3858879 Candidate: 2 of 2 Period: 25.952 d

KOI: K03276.01 Corr: 0.983

Kp: 15.11 R*: 1.05 Rs Teff: 5889.0 K Logg: 4.46 Fe/H: 0.360



DV Fit Results:

Period = 25.95199 [0.00013] d
Epoch = 148.9239 [0.0038] BKJD
Rp/R* = 0.0818 [0.0281]
a/R* = 4.25 [0.29]
b = 1.00 [0.04]
Seff = 36.46 [13.07]
Teq = 627 [56] K
Rp = 9.34 [4.01] Re
a = 0.1798 [0.0400] AU
Ag = 7.70 [7.71] [0.87σ]
Teffp = 1614 [385] K [2.54σ]

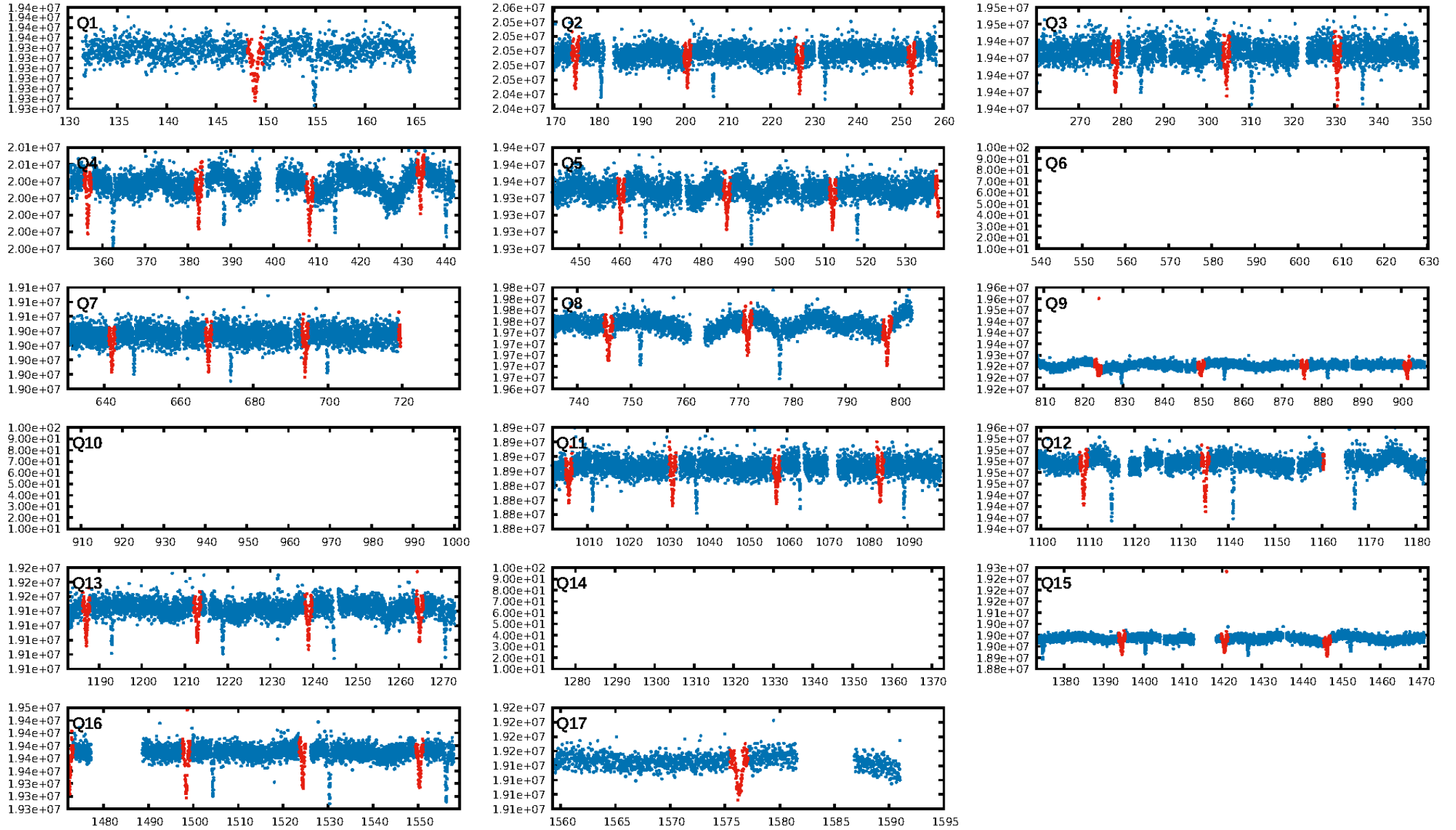
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [41/42]
GhostDiagnostic-chr: 0.0526
Centroid-sig: 0.0%
Centroid-so: 3.033 arcsec [14.15σ]
OotOffset-rm: 3.191 arcsec [5.73σ]
KicOffset-rm: 2.859 arcsec [6.10σ]
OotOffset-st: 1/4/2/5 [12]
KicOffset-st: 1/4/2/5 [12]
DiffImageQuality-fgm: 0.00 [0/12]
DiffImageOverlap-fno: 1.00 [12/12]

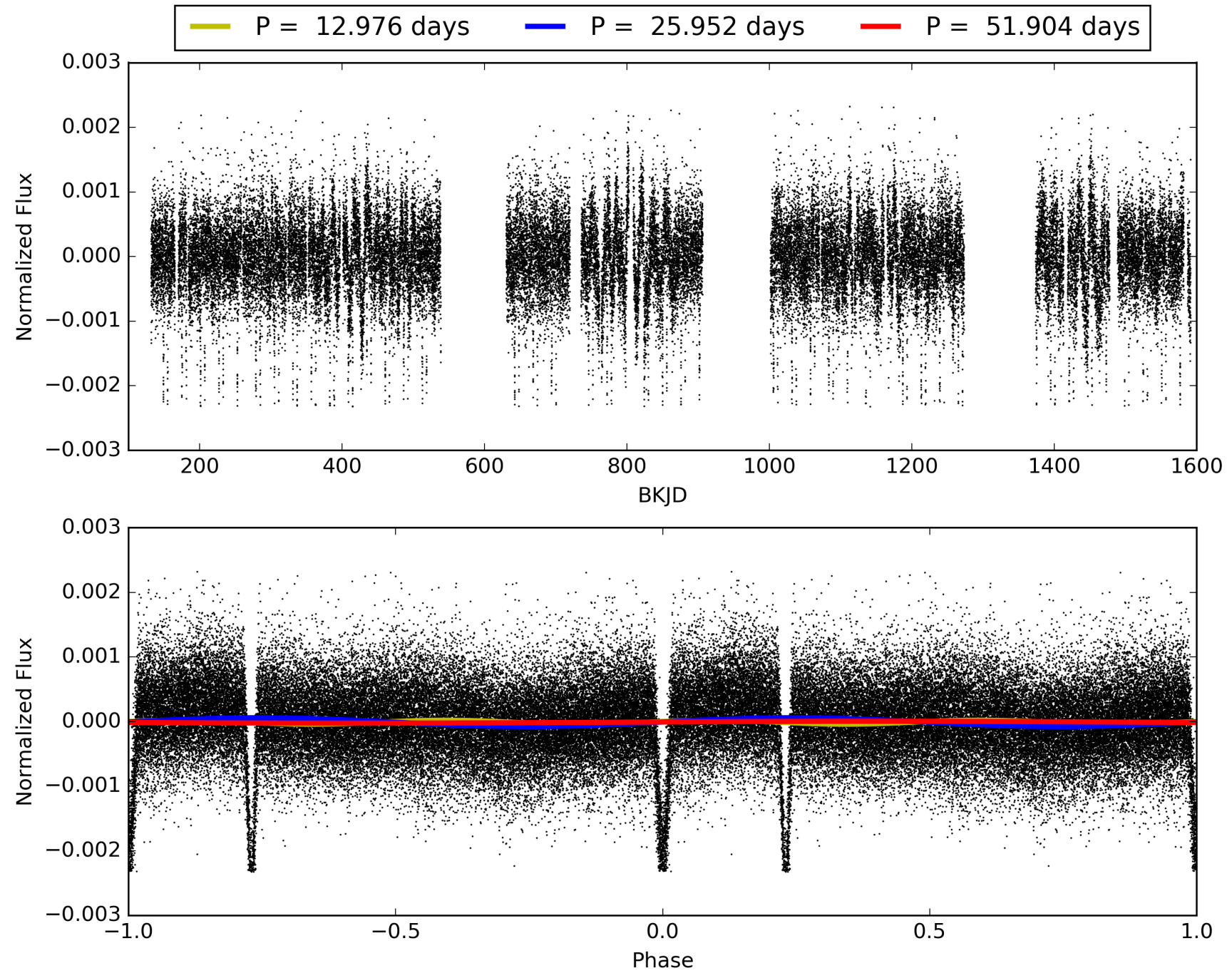
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:24:51 Z

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

TCE 003858879-02, PDC Light Curves

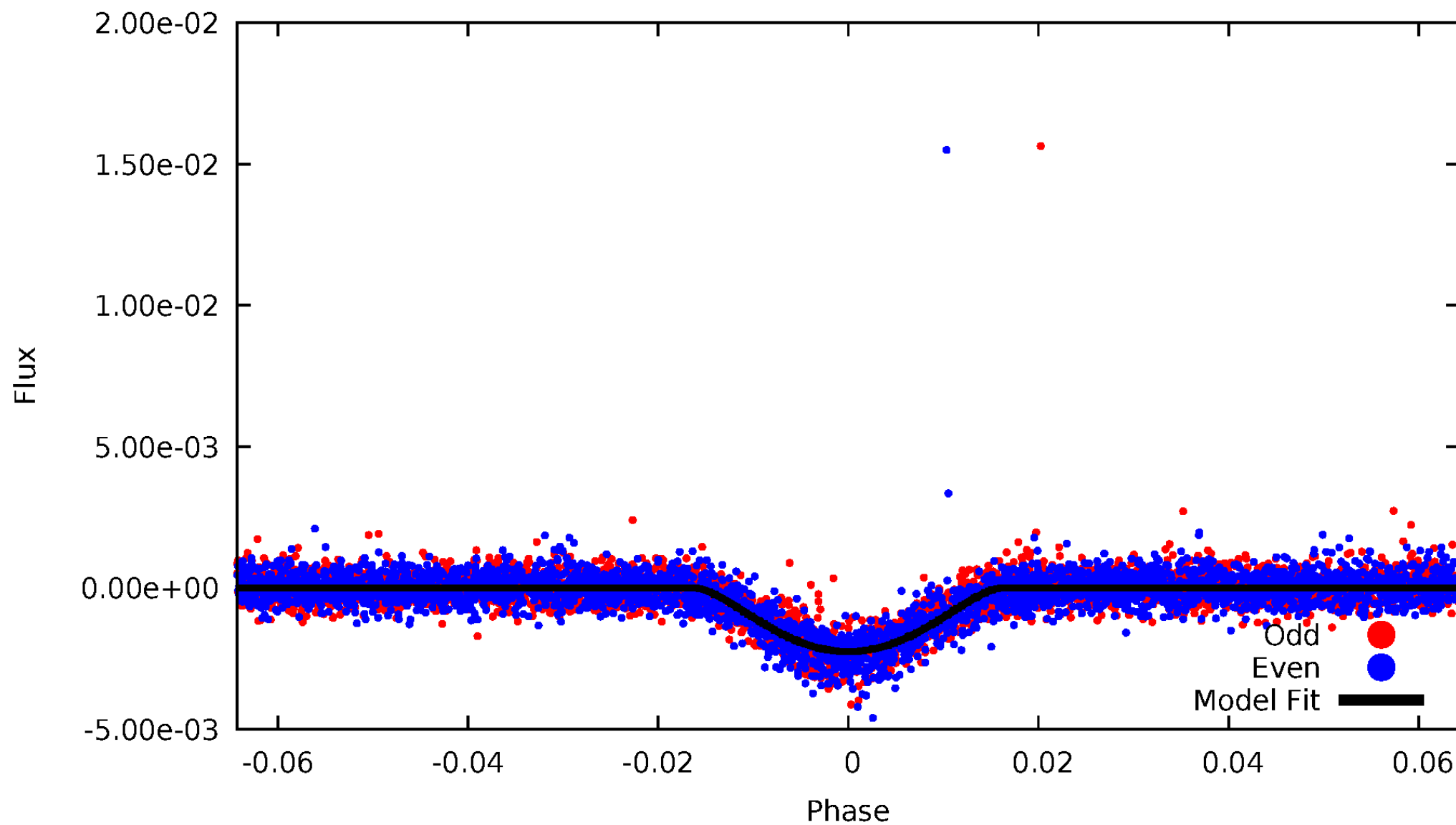


TCE 003858879-02



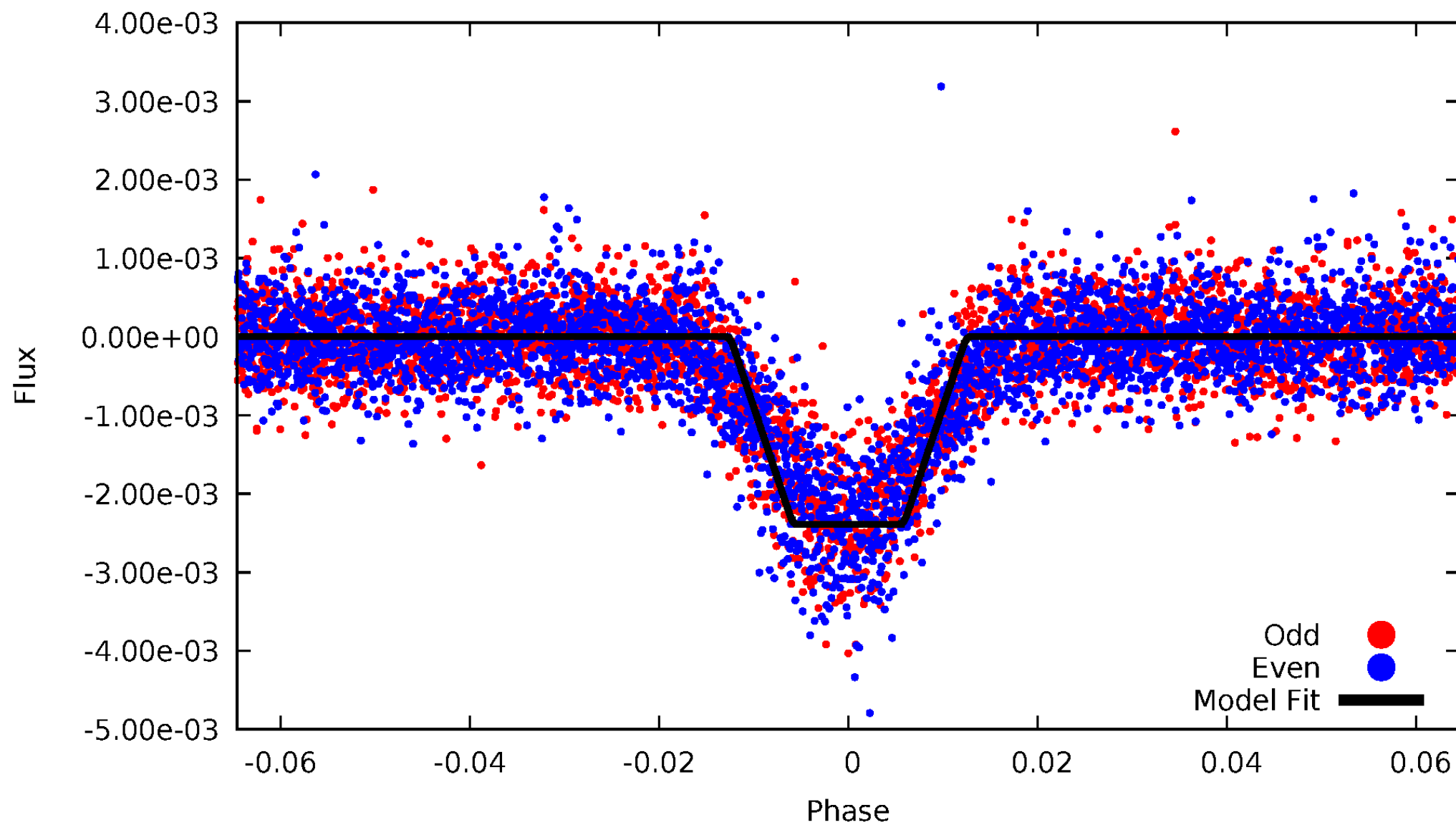
DV Odd/Even

TCE 003858879-02



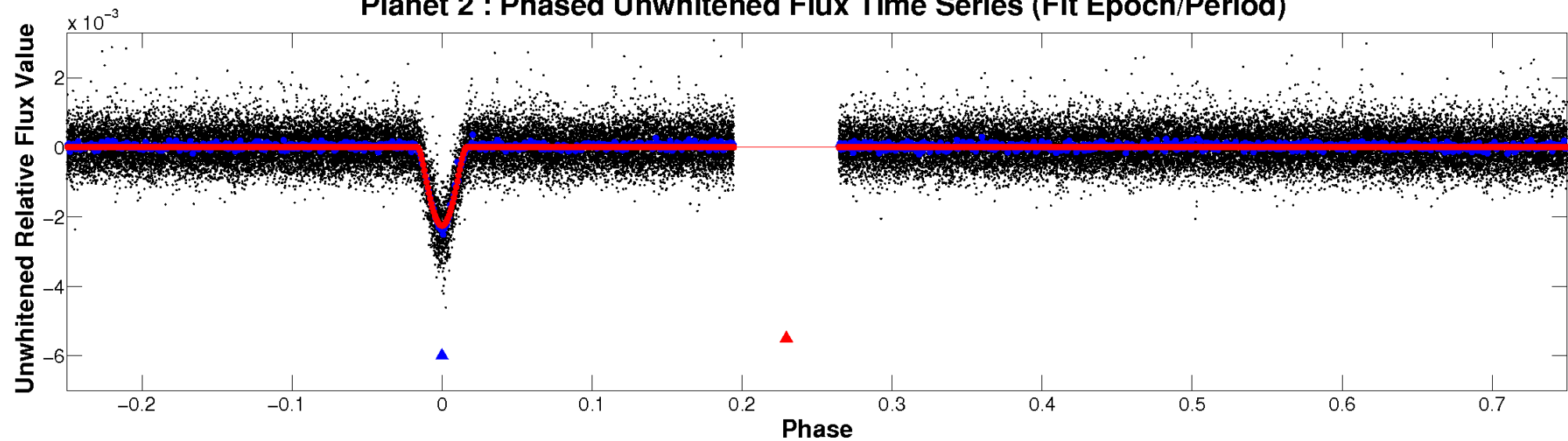
ALT Odd/Even

TCE 003858879-02

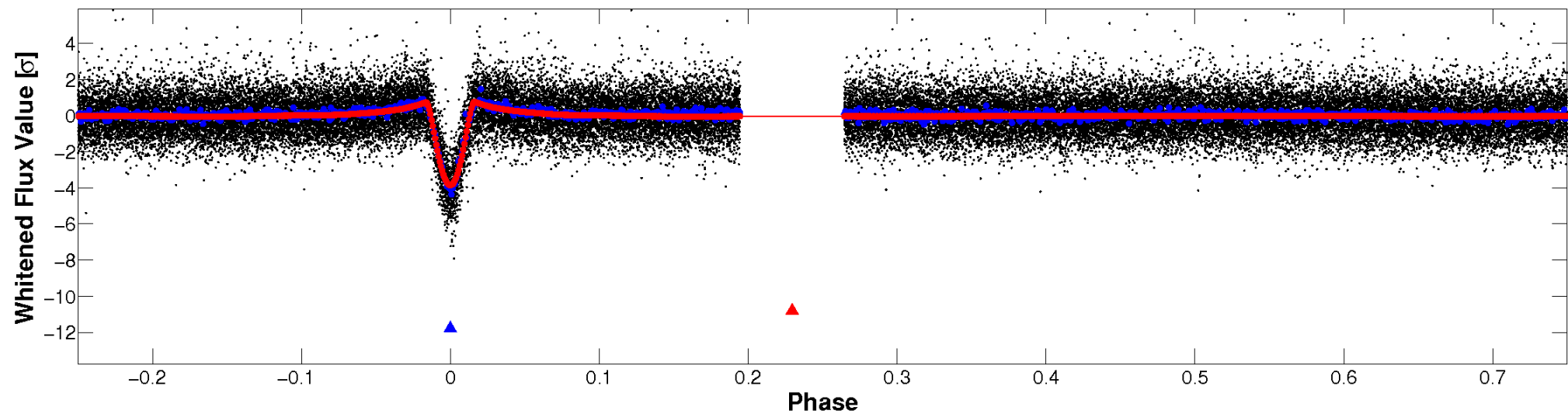


Non-Whitened Vs. Whitened Light Curve

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

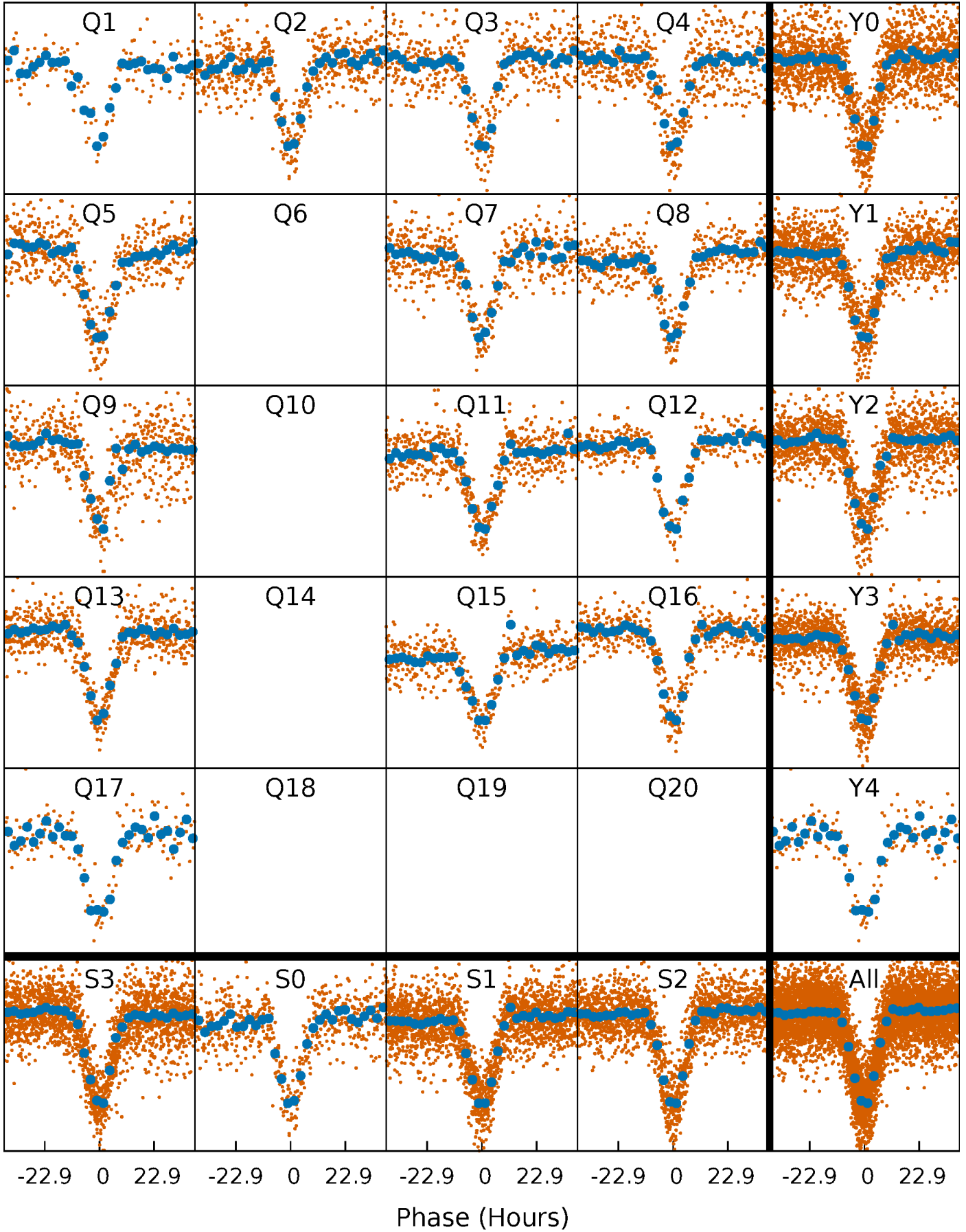


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



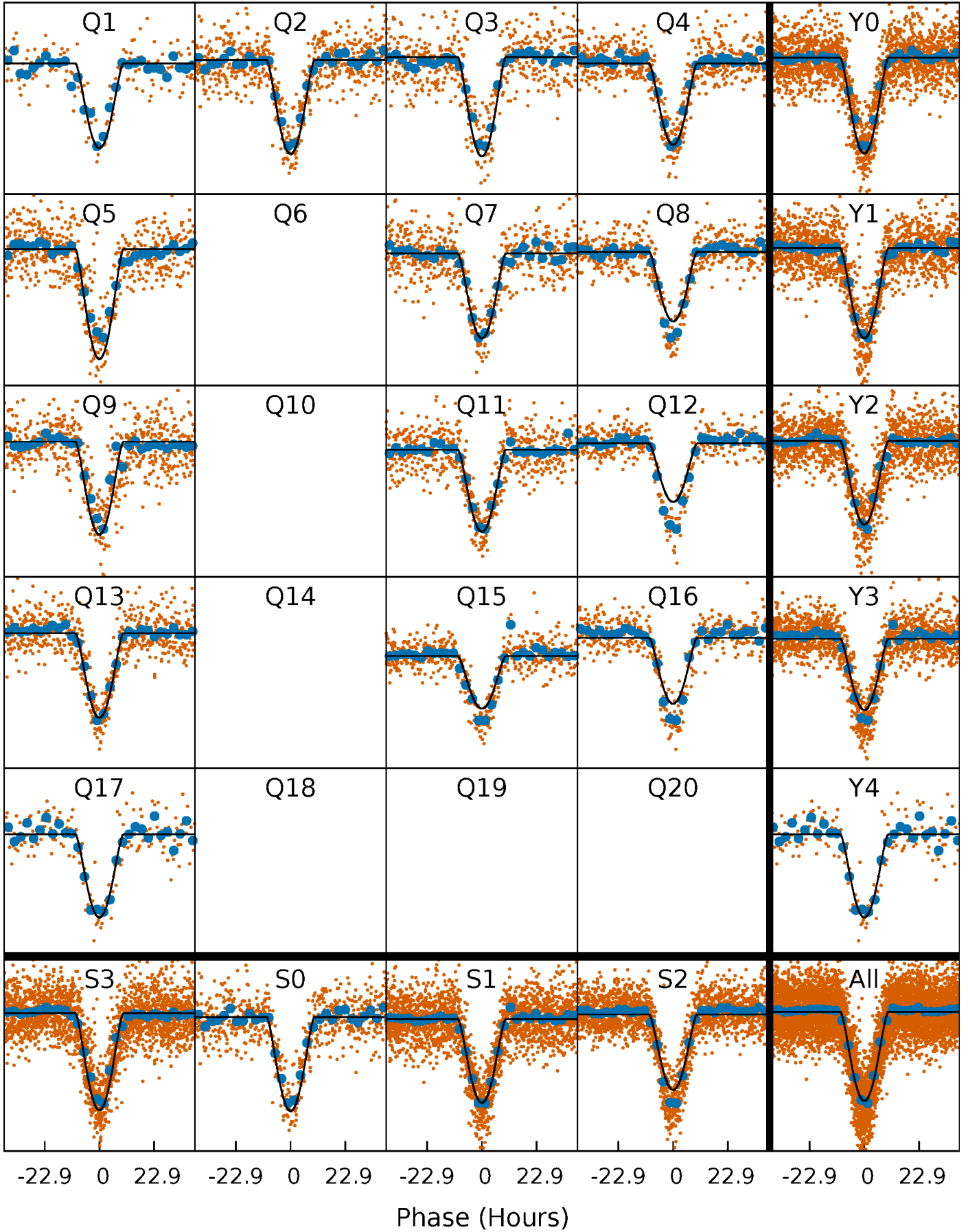
PDC Quarter-Phased Transit Curves

TCE 003858879-02 P= 25.951988 Days $T_0=148.923879$ (BKJD)



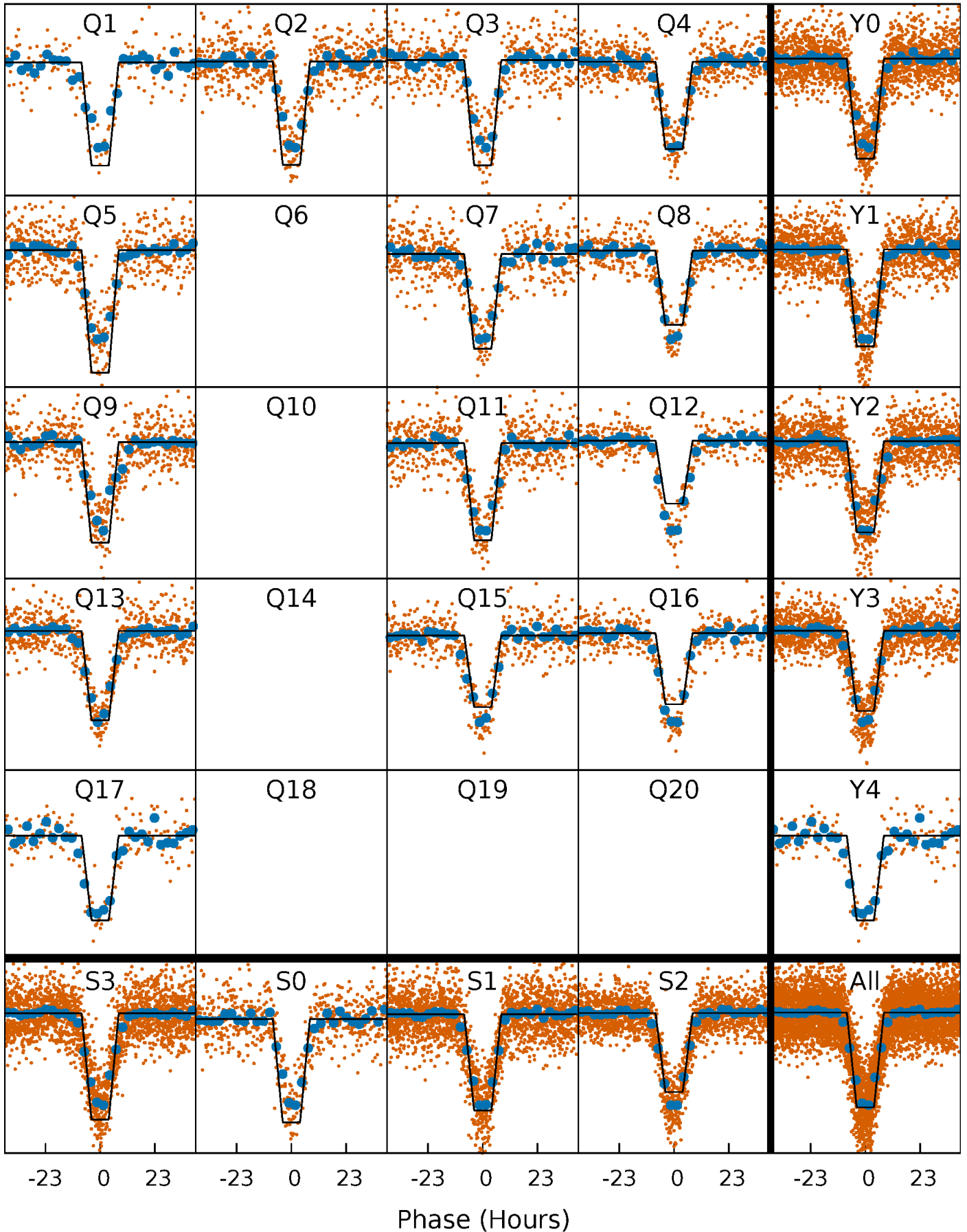
DV Quarter-Phased Transit Curves

TCE 003858879-02 $P = 25.951988$ Days $T_0 = 148.923879$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

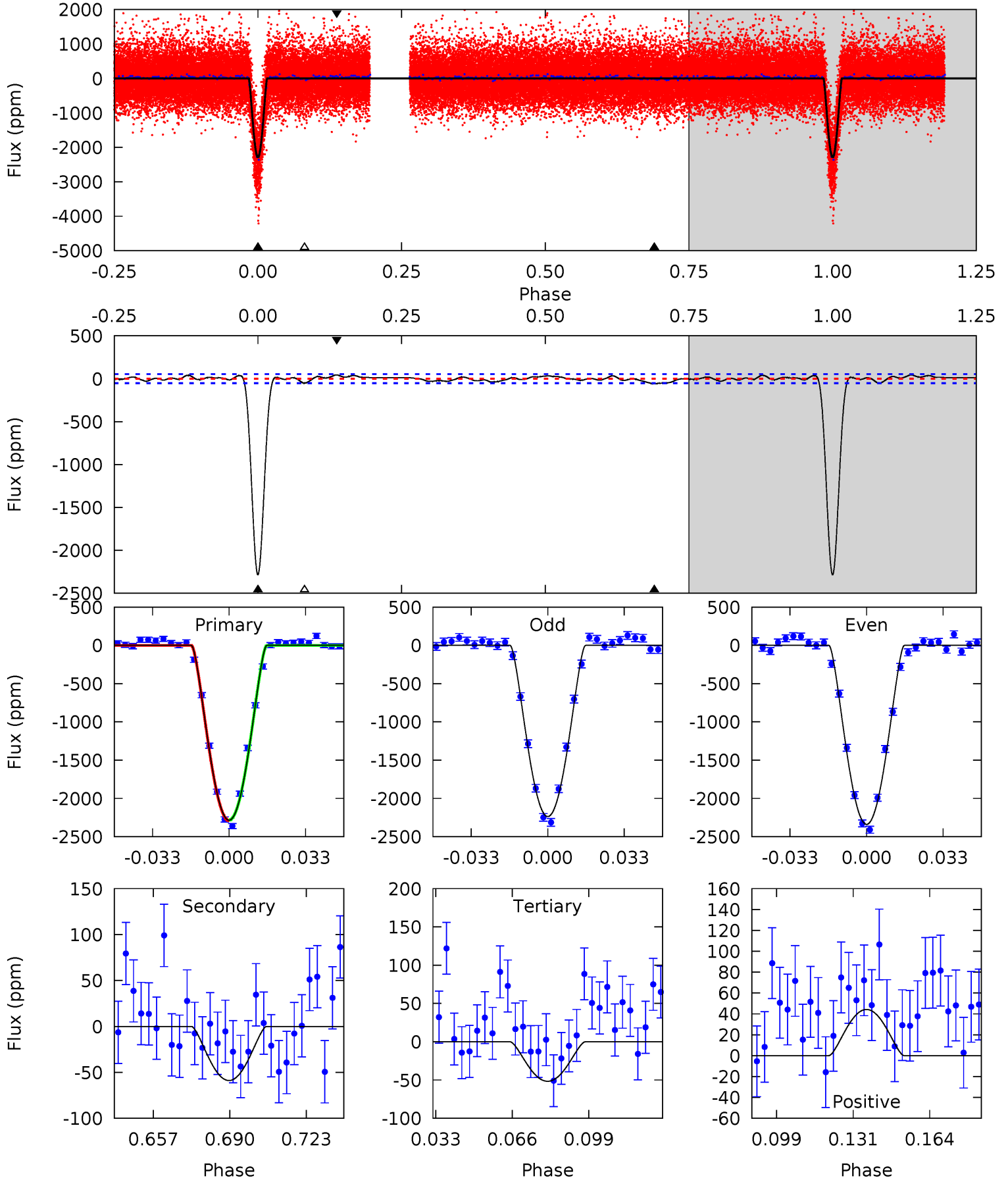
TCE 003858879-02 P= 25.952751 Days $T_0=148.903093$ (BKJD)



DV Model-Shift Uniqueness Test

003858879-02, P = 25.951988 Days, E = 122.971891 Days

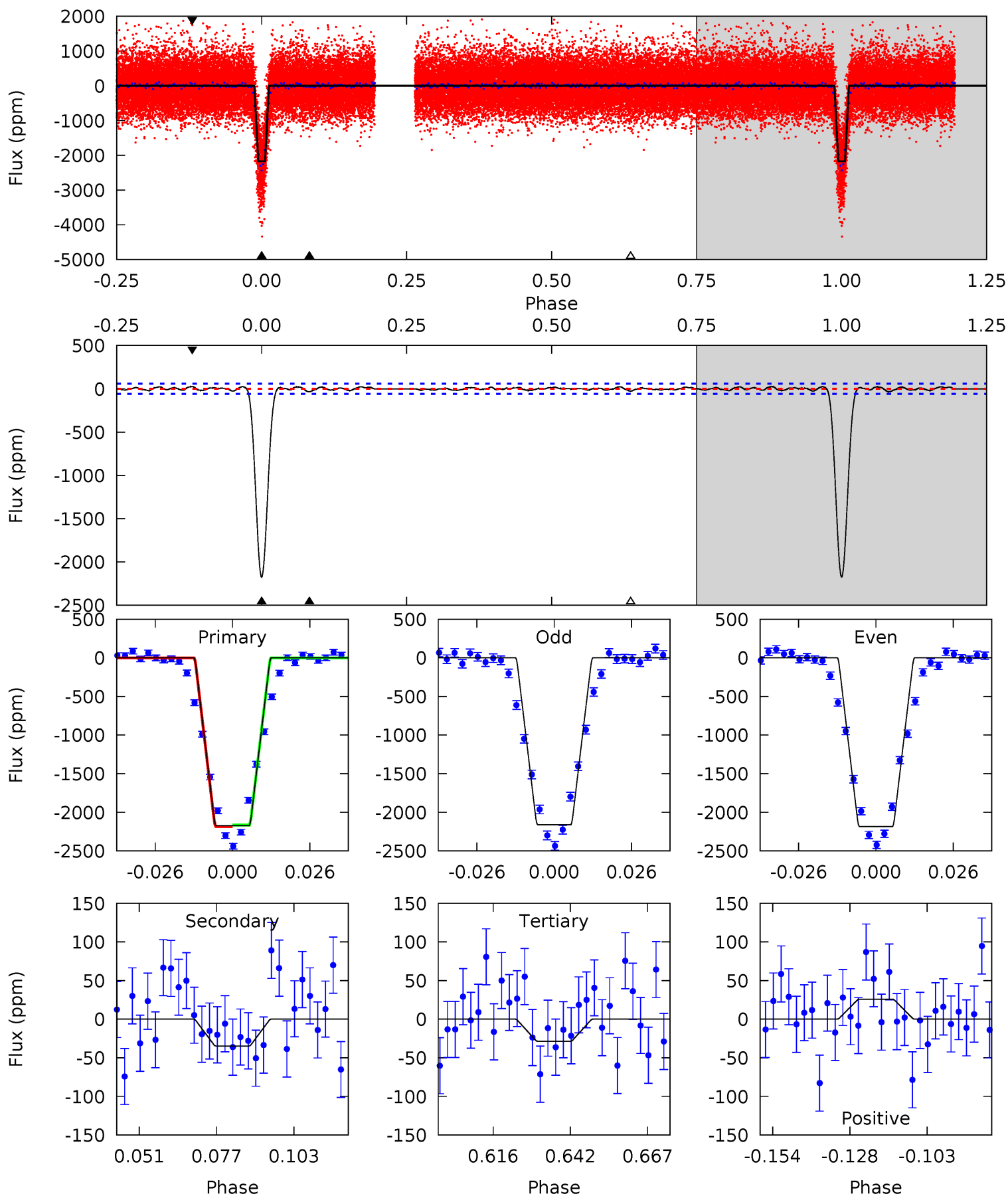
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
206.0	5.31	4.66	3.99	4.79	2.13	1.72	201.4	202.0	0.65	1.32	4.63	1.01	0.02	0.37



Alt Model-Shift Uniqueness Test

003858879-02, P = 25.952751 Days, E = 122.950342 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
176.5	2.82	2.32	2.11	4.84	2.23	0.92	174.2	174.4	0.50	0.71	0.94	1.05	0.01	0.84



Stellar Parameters For KIC 003858879

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5889^{+162}_{-203}	$4.460^{+0.046}_{-0.184}$	$0.360^{+0.100}_{-0.250}$	$1.046^{+0.270}_{-0.096}$	$1.152^{+0.100}_{-0.137}$	$1.418^{+0.348}_{-0.685}$
	+3%/-3%	+1%/-4%	+28%/-69%	+26%/-9%	+9%/-12%	+25%/-48%
Source	PHO1	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 003858879-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-59 ± 11	$9.77^{+3.76}_{-3.38}$	896^{+50}_{-45}	2598^{+329}_{-210}	11^{+14}_{-5}
Alt.	-35 ± 12	$5.95^{+3.59}_{-3.11}$	889^{+60}_{-41}	2766^{+646}_{-360}	17^{+66}_{-11}

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 $A_{obs} \gg 1.0$

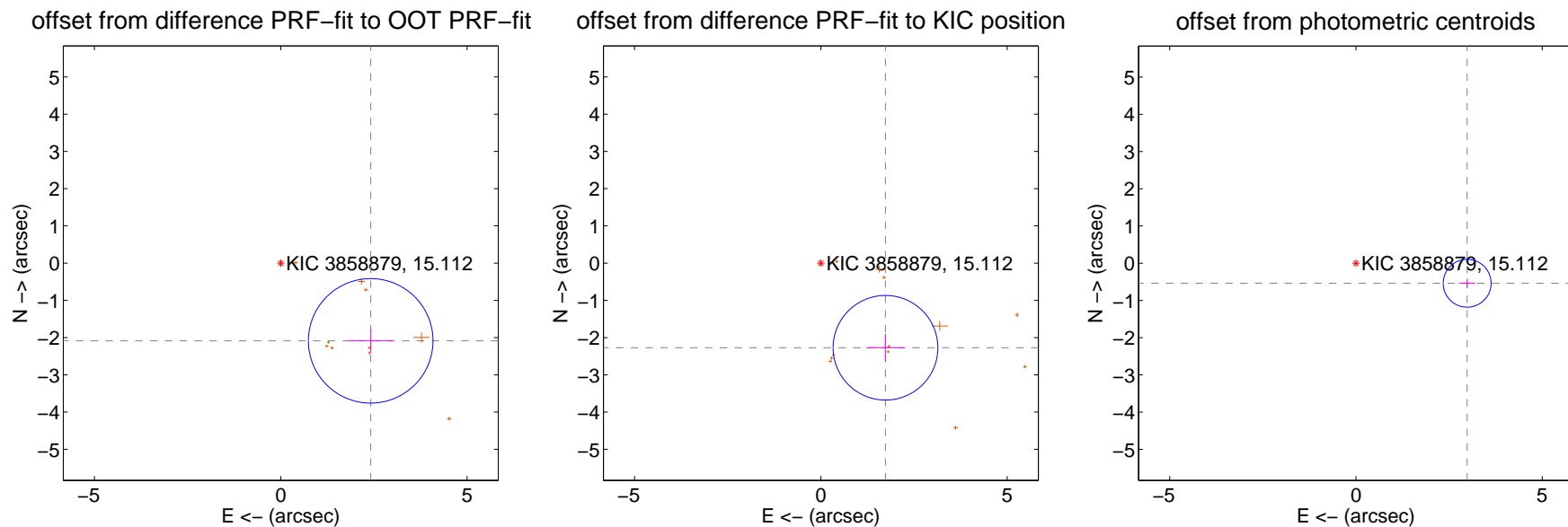
DV Centroid Data

Supplemental centroid analysis for 003858879-02. Kepler magnitude: 15.11. Transit SNR 100.32

There are 0 quarters with good PRF difference image offsets

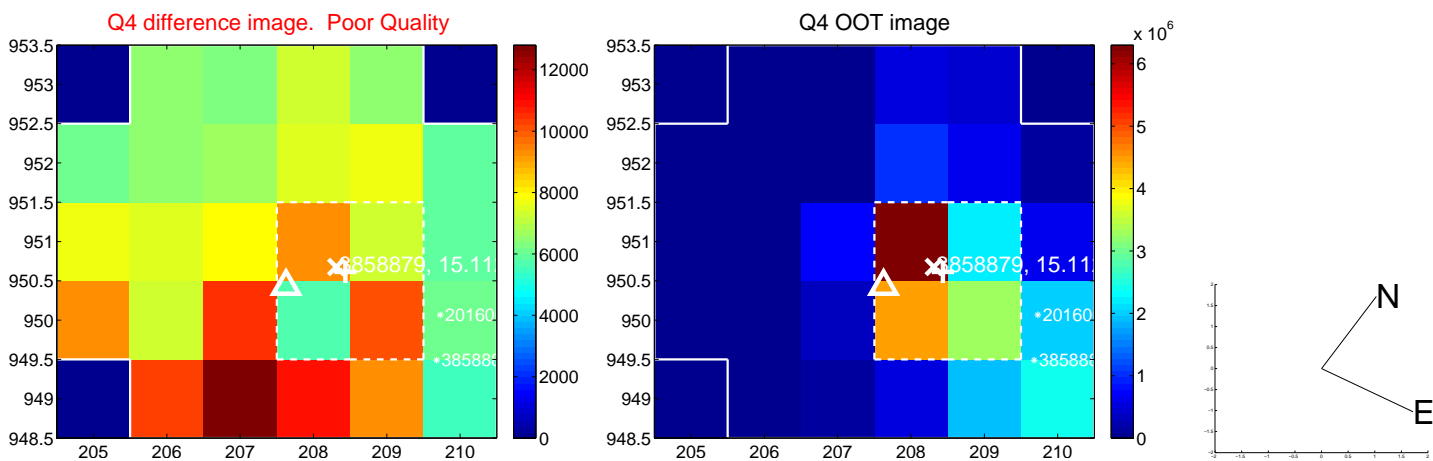
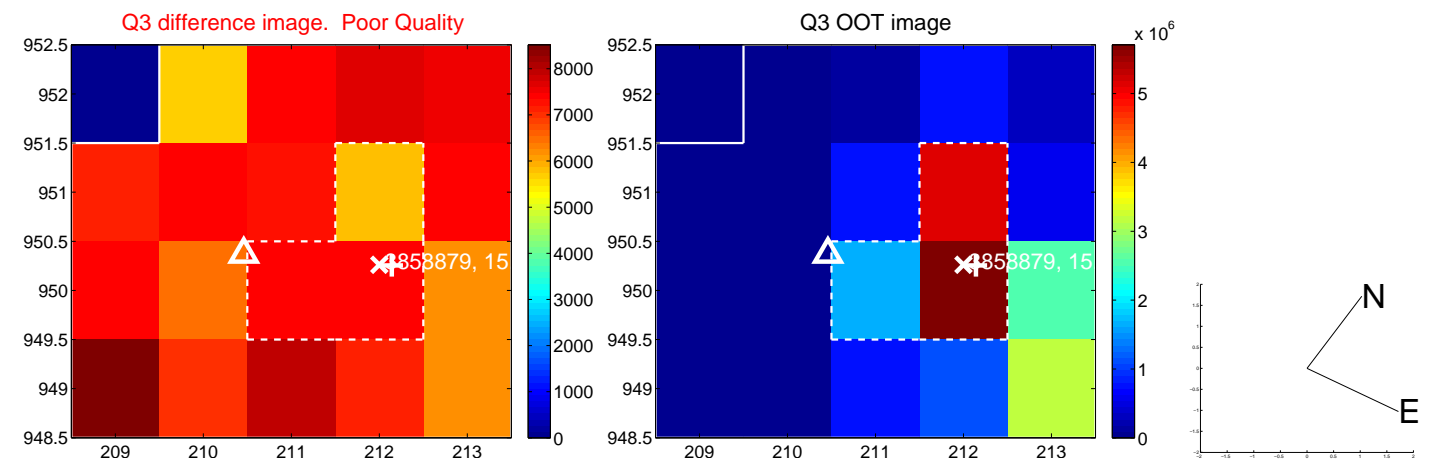
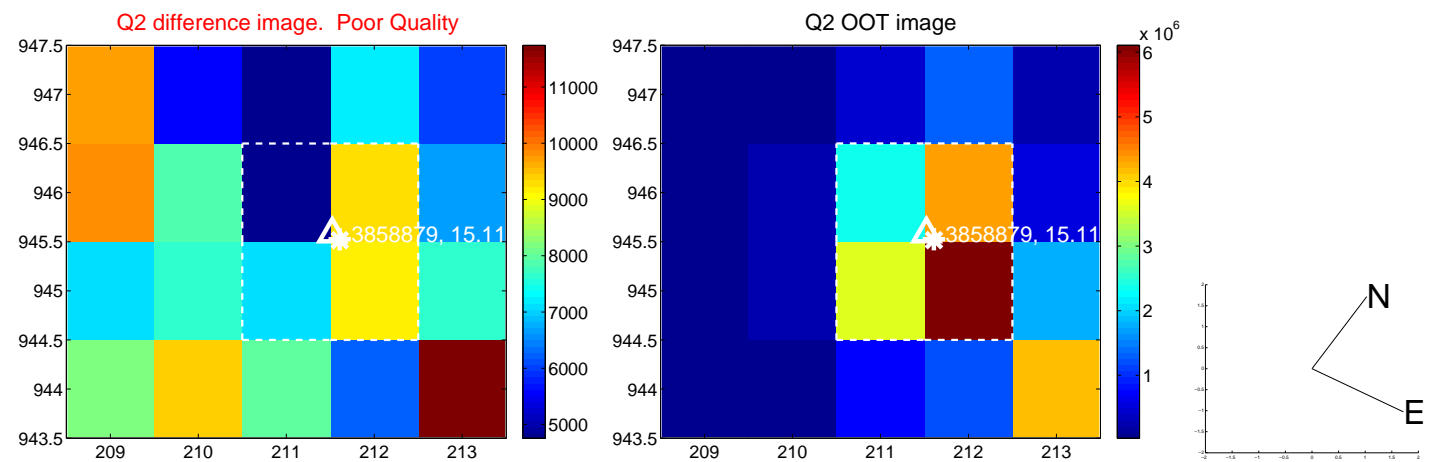
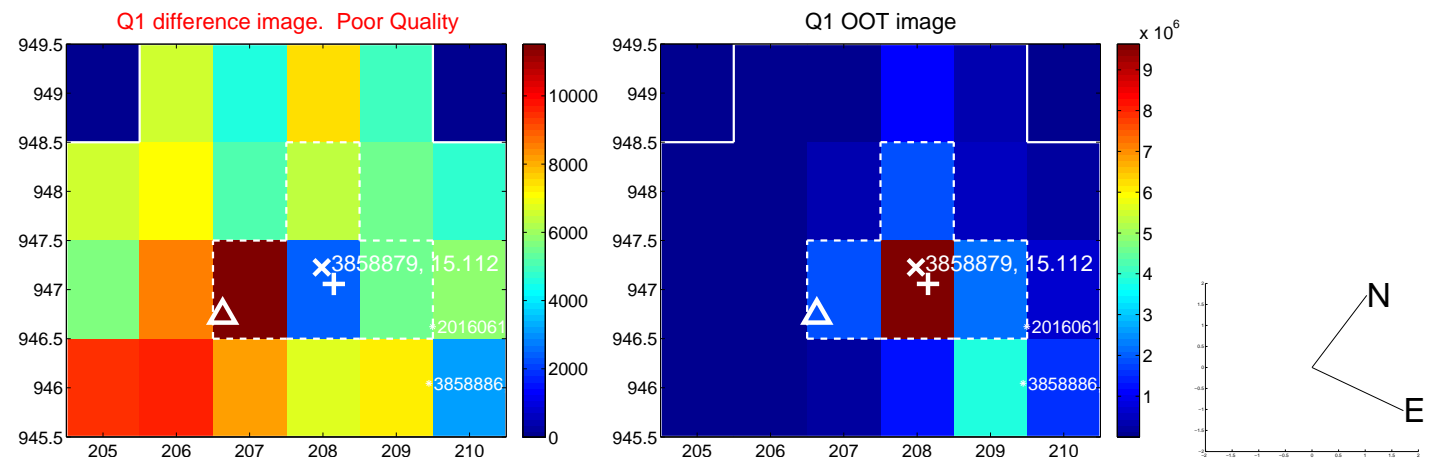
The direct PRF centroid is offset from the target star catalog position by about 1.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.191 ± 0.557	5.73	-2.414 ± 0.607	-2.087 ± 0.318
PRF-fit source offset from KIC position	2.859 ± 0.468	6.10	-1.734 ± 0.513	-2.273 ± 0.369
photometric centroid source offset	3.03 ± 0.21	14.15	-2.98 ± 0.22	-0.54 ± 0.12

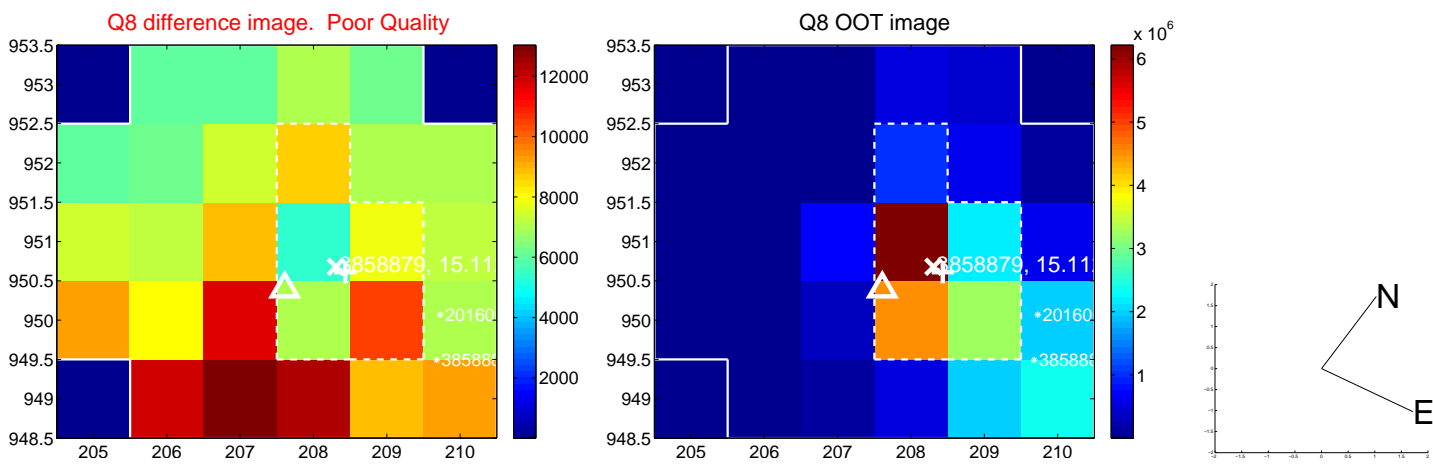
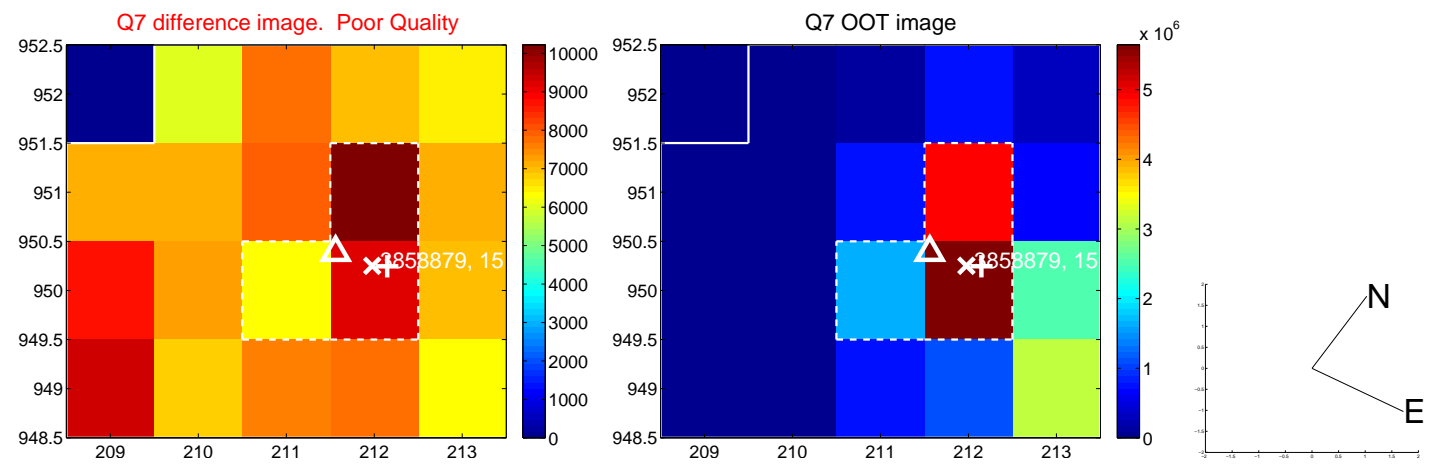
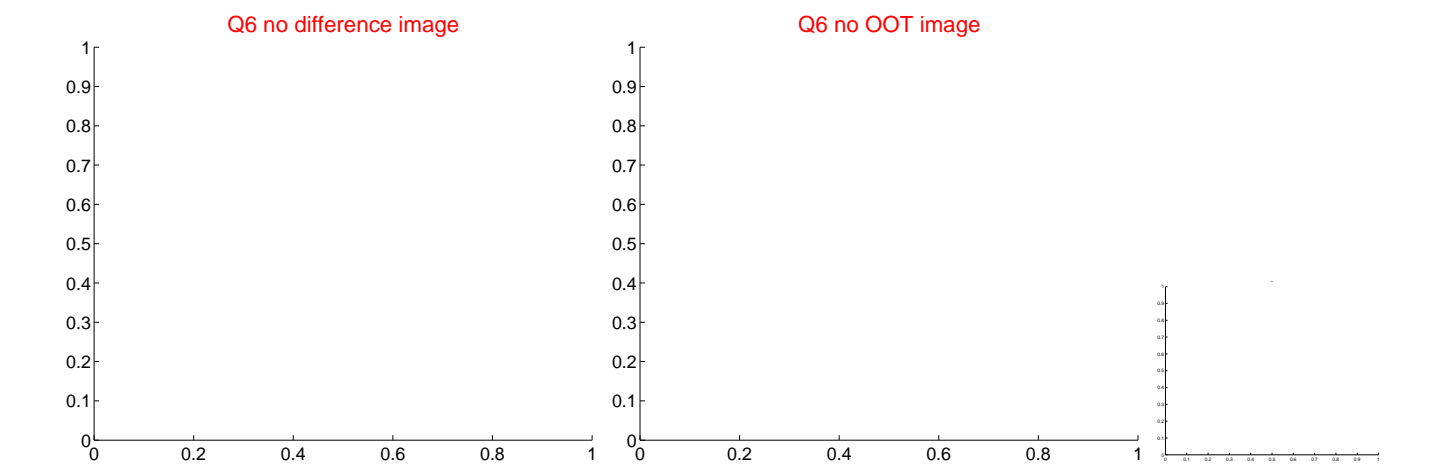
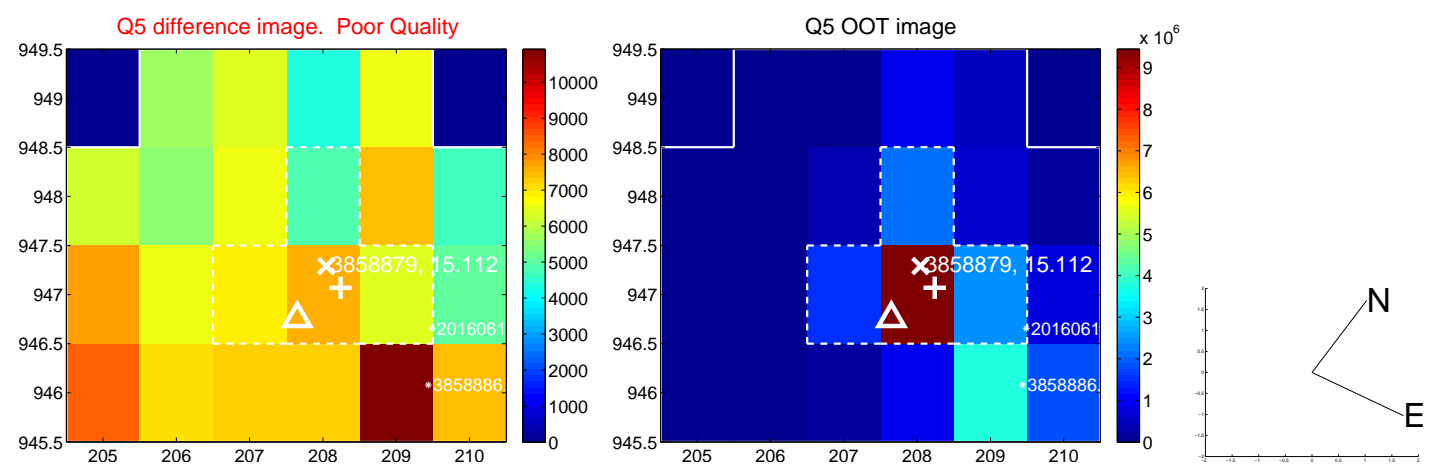


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

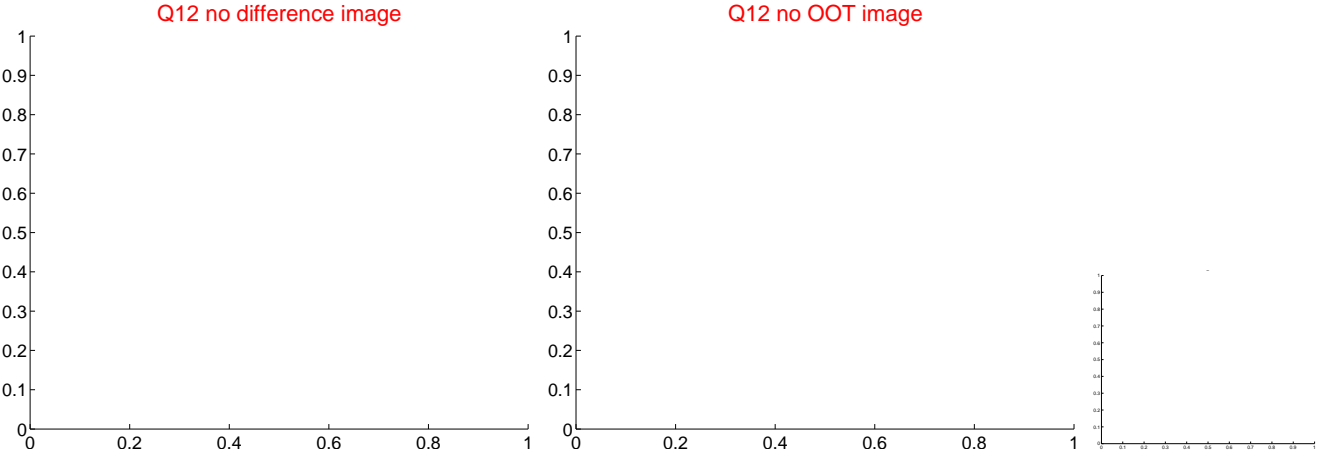
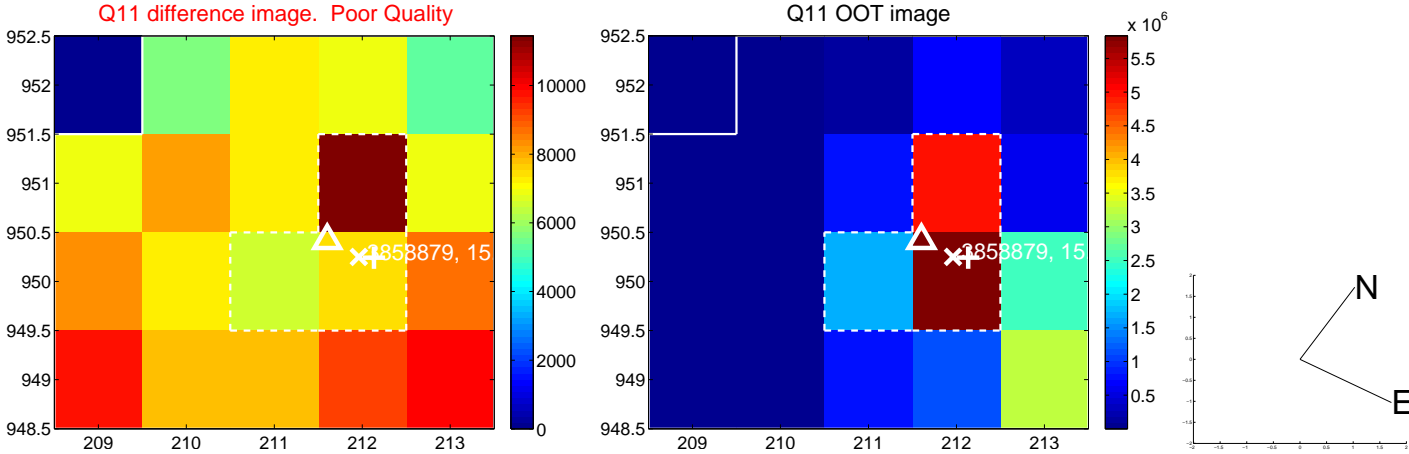
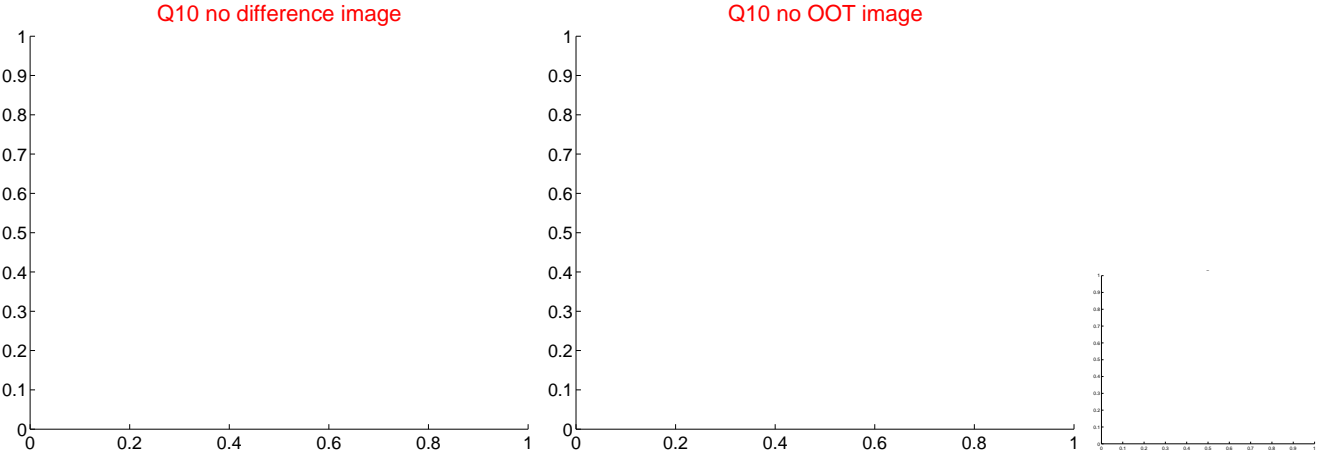
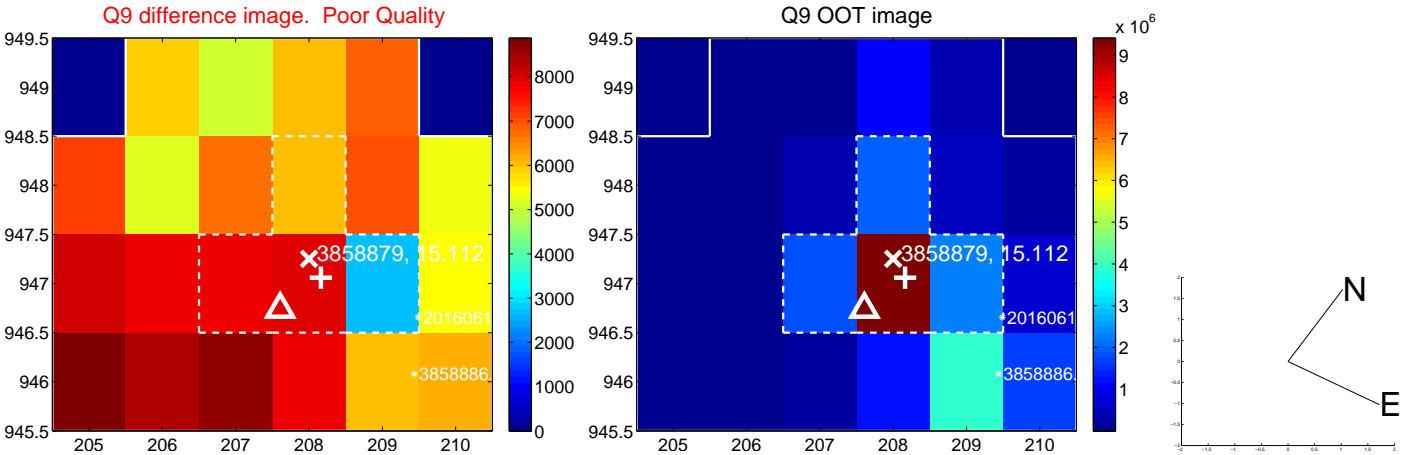
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



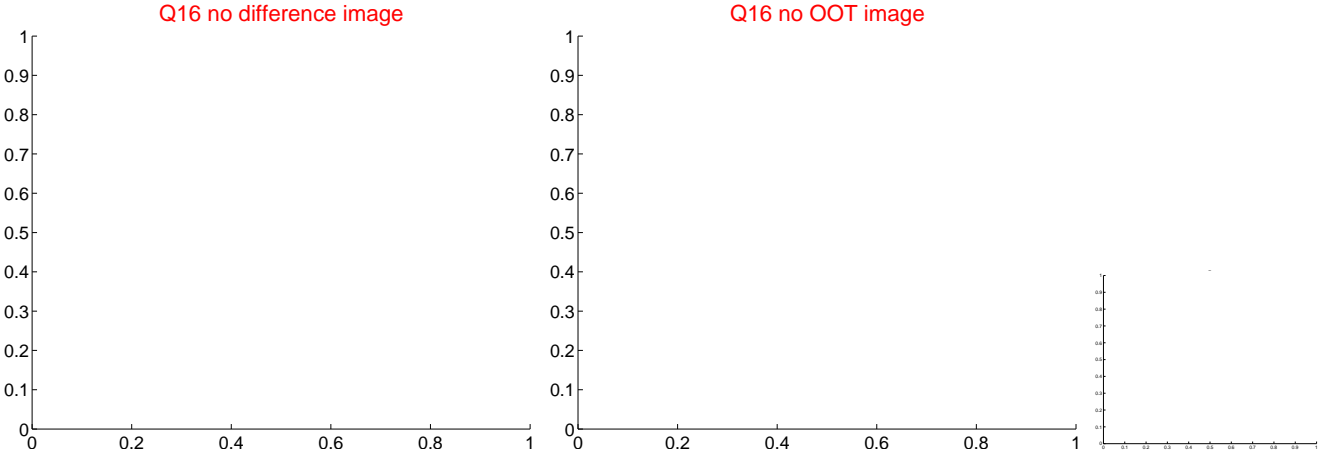
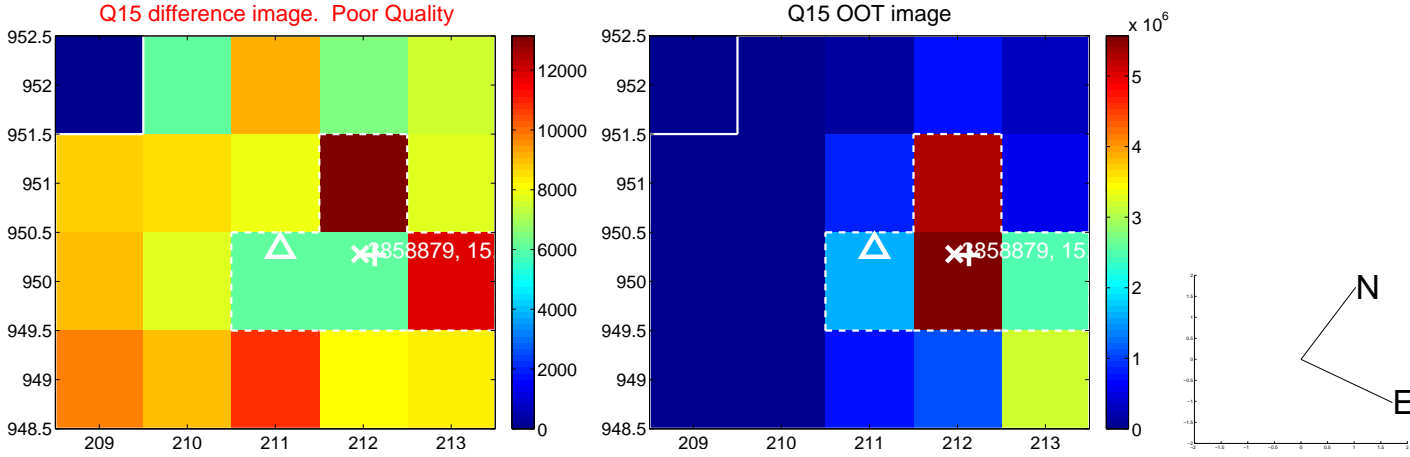
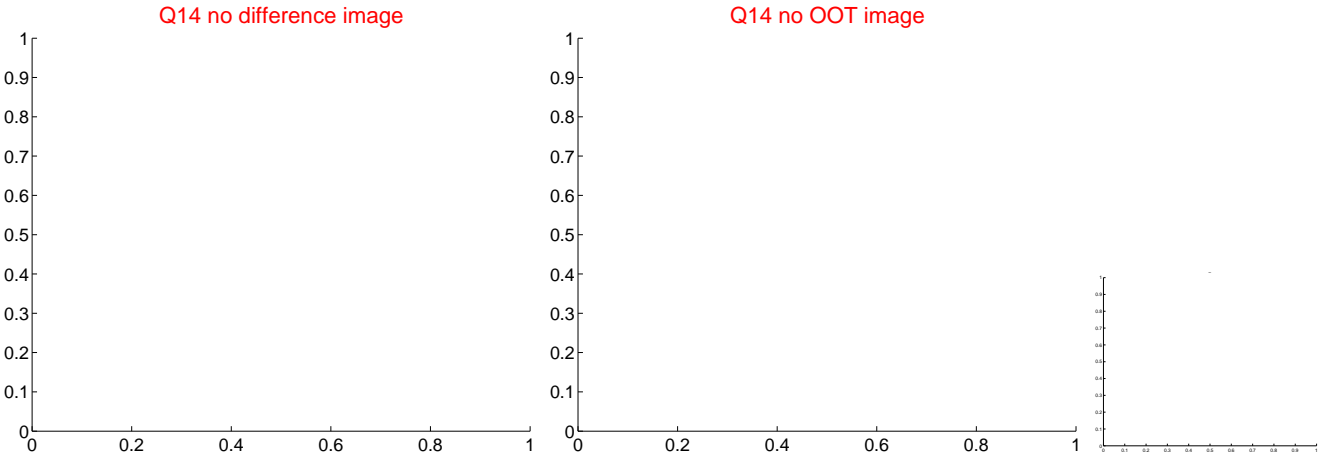
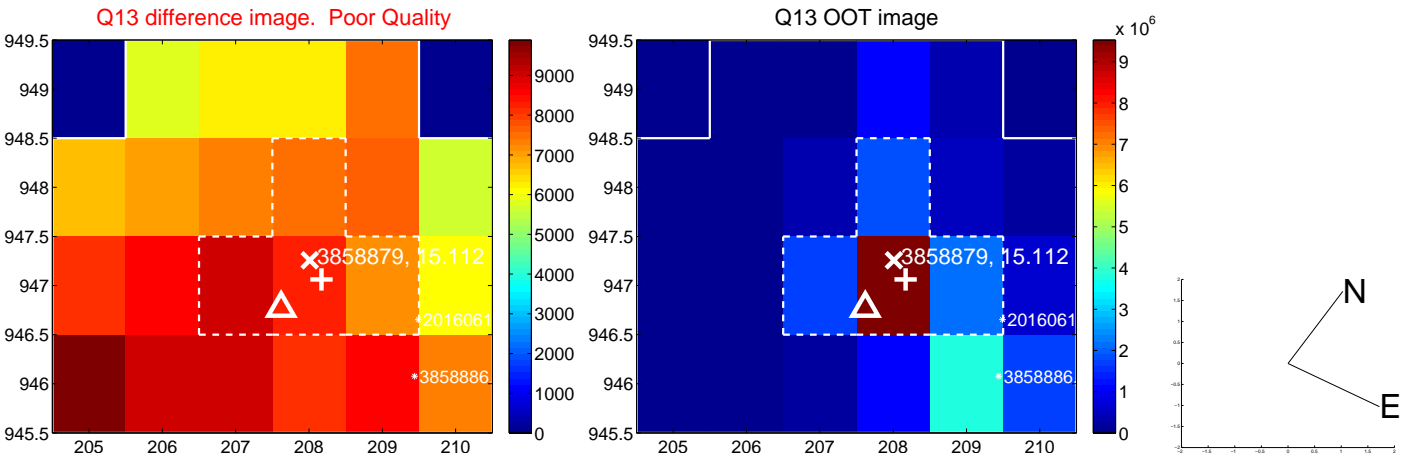
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



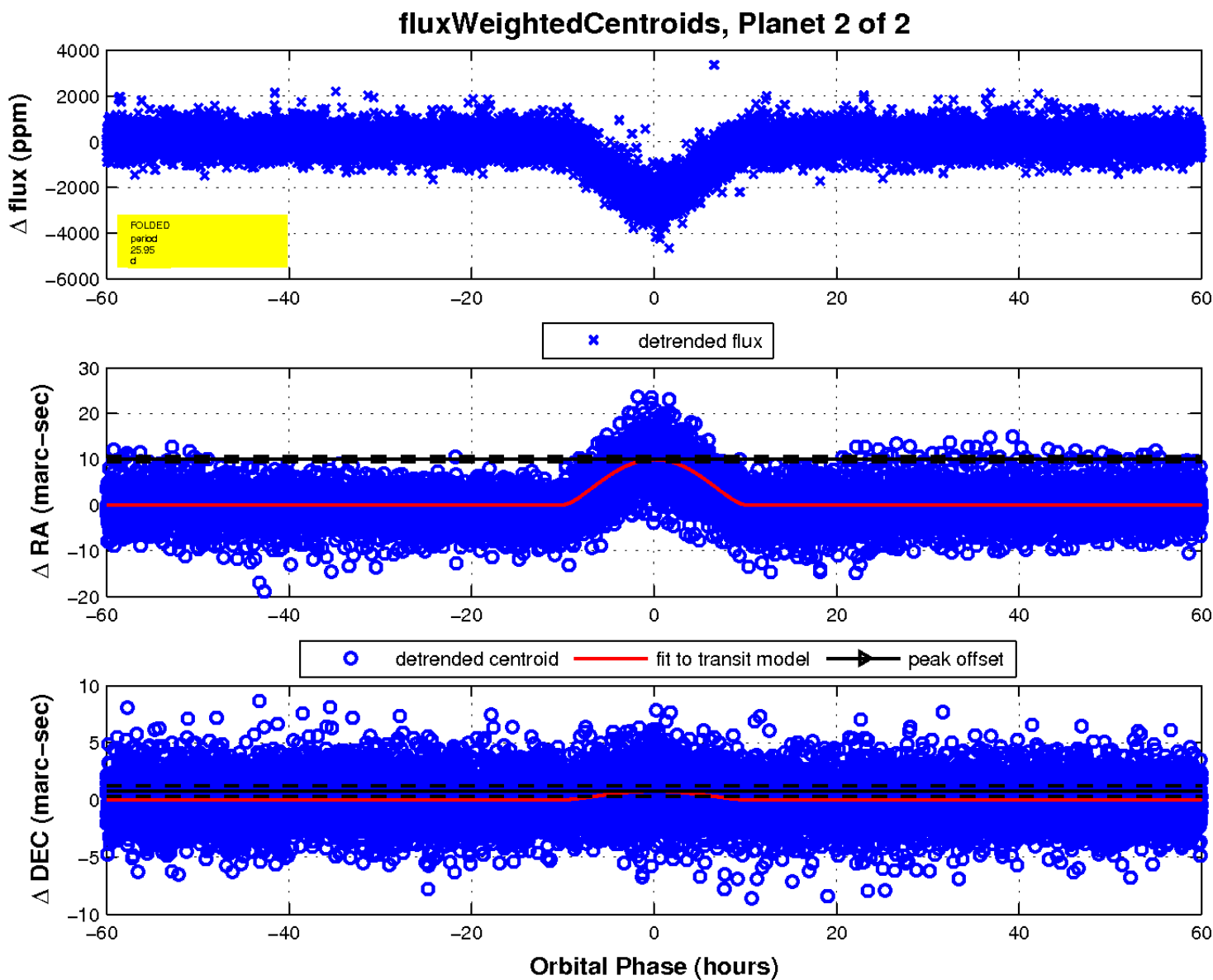
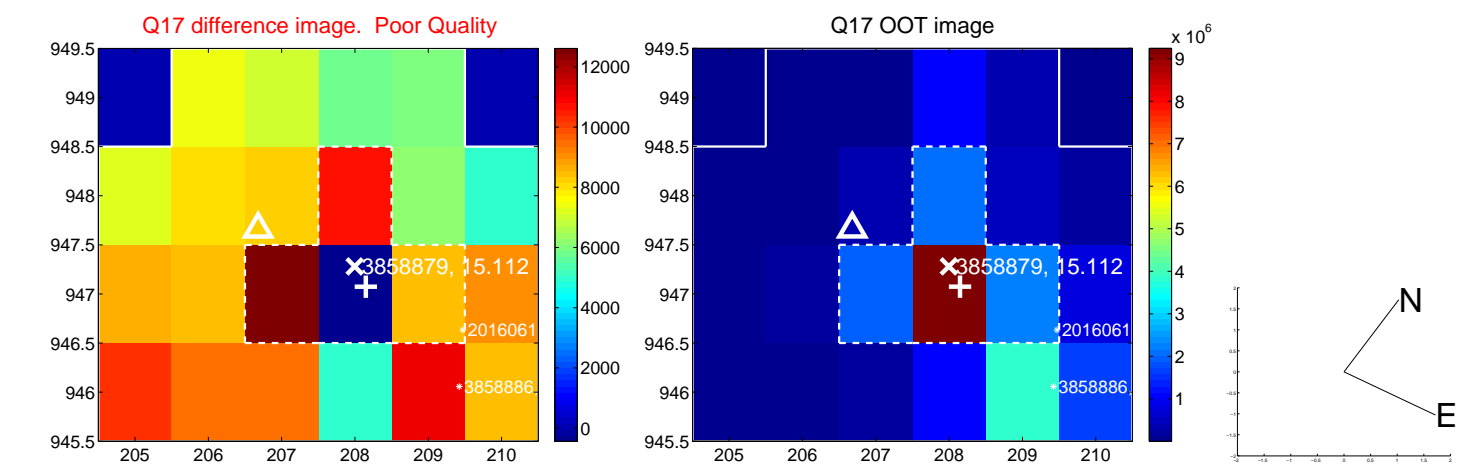
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

