

KIC 003098184

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})
003098184-01	OBS	1091.01	30.476520	156.238019	47087.6	18.444	1117.0	805.6	1.09	6384	27.29	44.38
003098184-02	OBS	No	30.476547	136.971903	55240.0	9.840	1101.9	759.8	1.09	6384	37.89	44.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003098184-01	OBS	FP	0.00	0	1	0	1	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_FEW_MEAS—EPHEM_MATCH
003098184-02	OBS	FP	0.00	1	1	0	1	IS_SEC_TCE—CENT_FEW_MEAS—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 003098184-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (")	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
003098184-01	3098184	003098194-01	3098194	1:1	8.8	-2	0	13.90	15.15	6.53	Direct-PRF	0	0.01	0.05

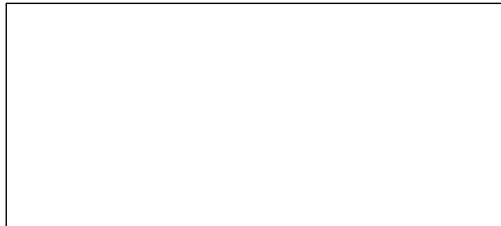
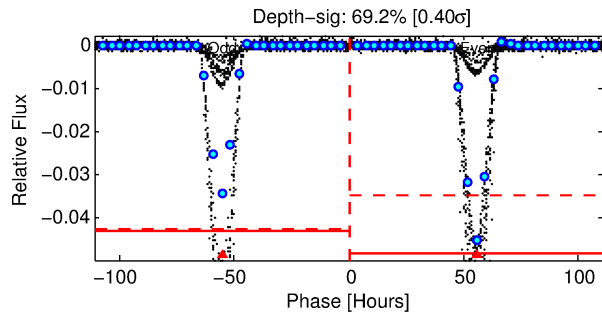
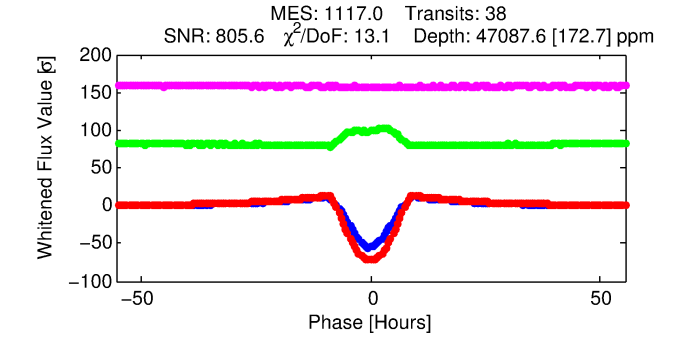
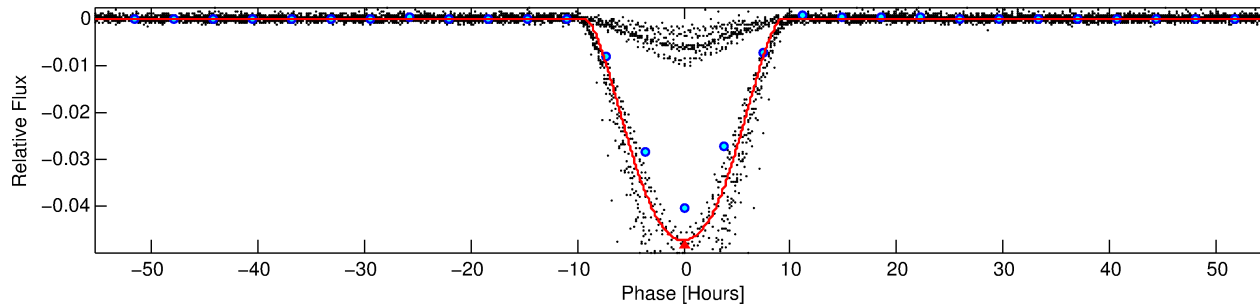
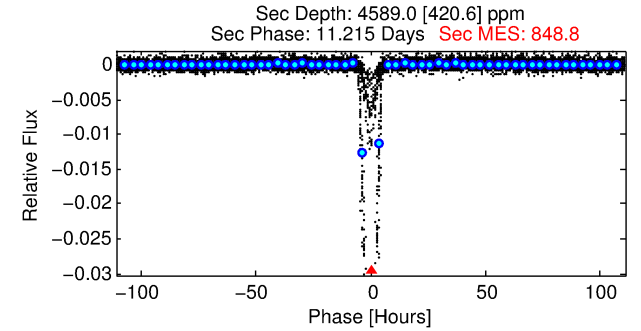
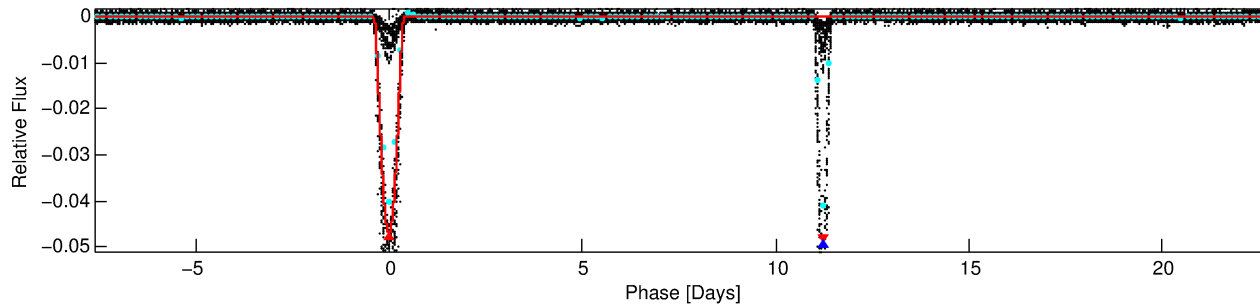
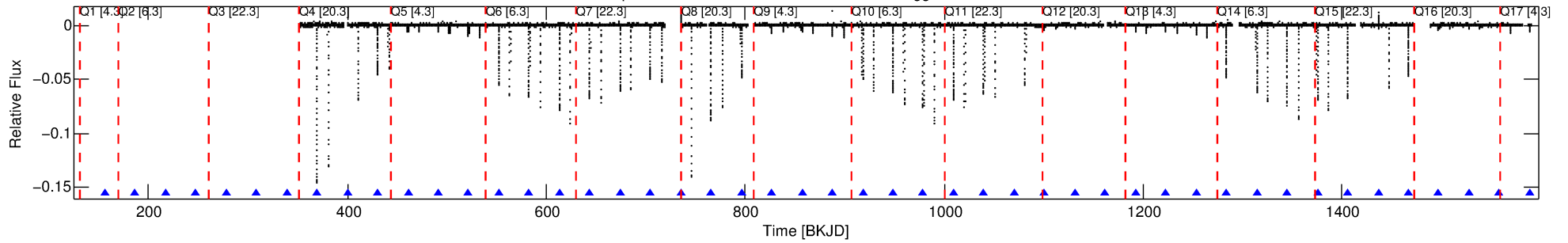
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 3098184 Candidate: 1 of 2 Period: 30.477 d

KOI: K01091 Corr: No Ephemeris Match

Kp: 15.15 R*: 1.09 Rs Teff: 6384.0 K Logg: 4.42 Fe/H: -0.160



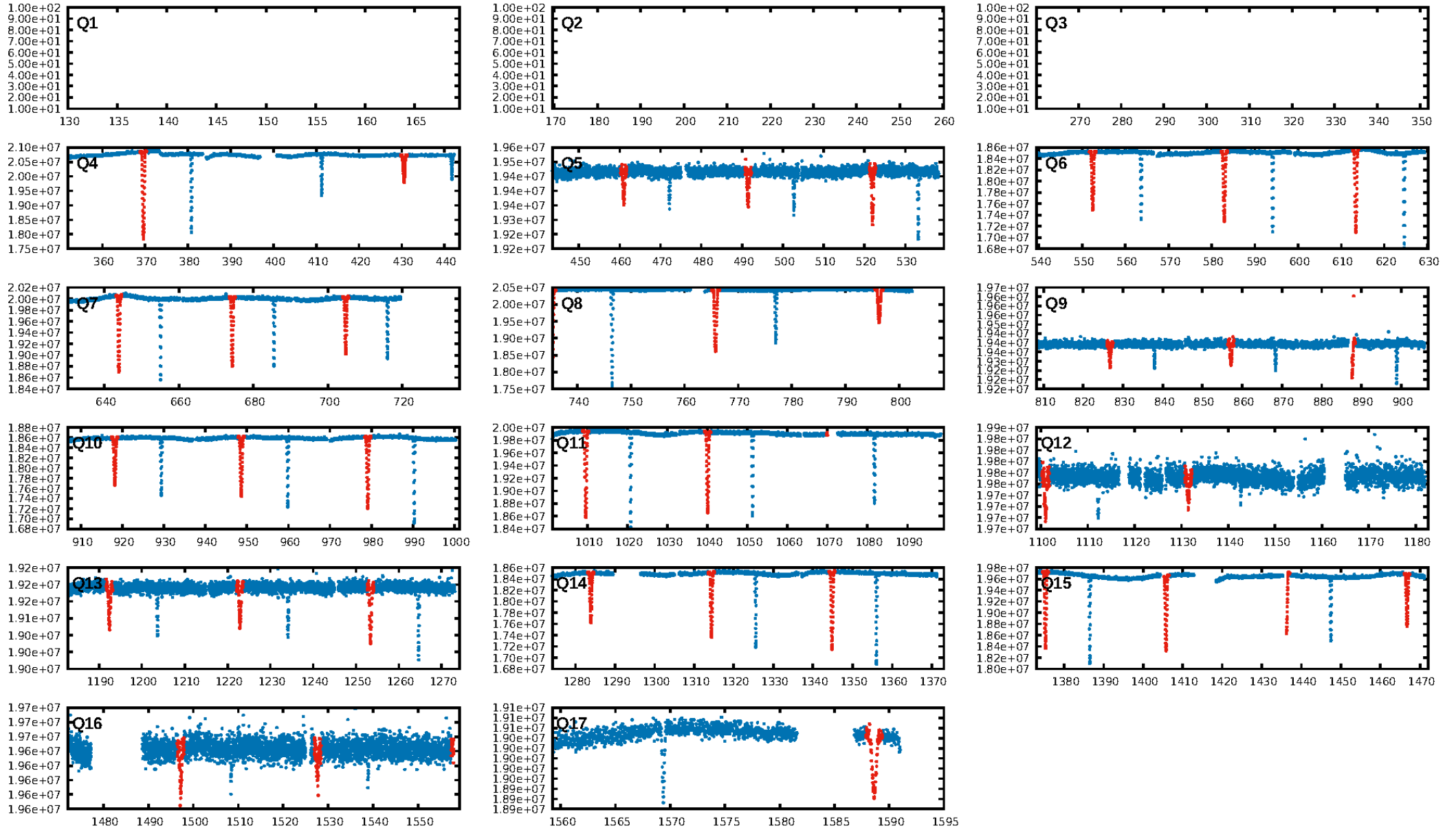
DV Fit Results:

Period = 30.47652 [0.00004] d
Epoch = 156.2380 [0.0012] BKJD
Rp/R* = 0.2303 [0.0028]
a/R* = 11.71 [0.06]
b = 0.81 [0.01]
Seff = 44.38 [16.85]
Teq = 658 [62] K
Rp = 27.29 [7.90] Re
a = 0.1989 [0.0479] AU
Ag = 134.08 [48.24] [2.76σ]
Teffp = 3463 [157] K [16.63σ]

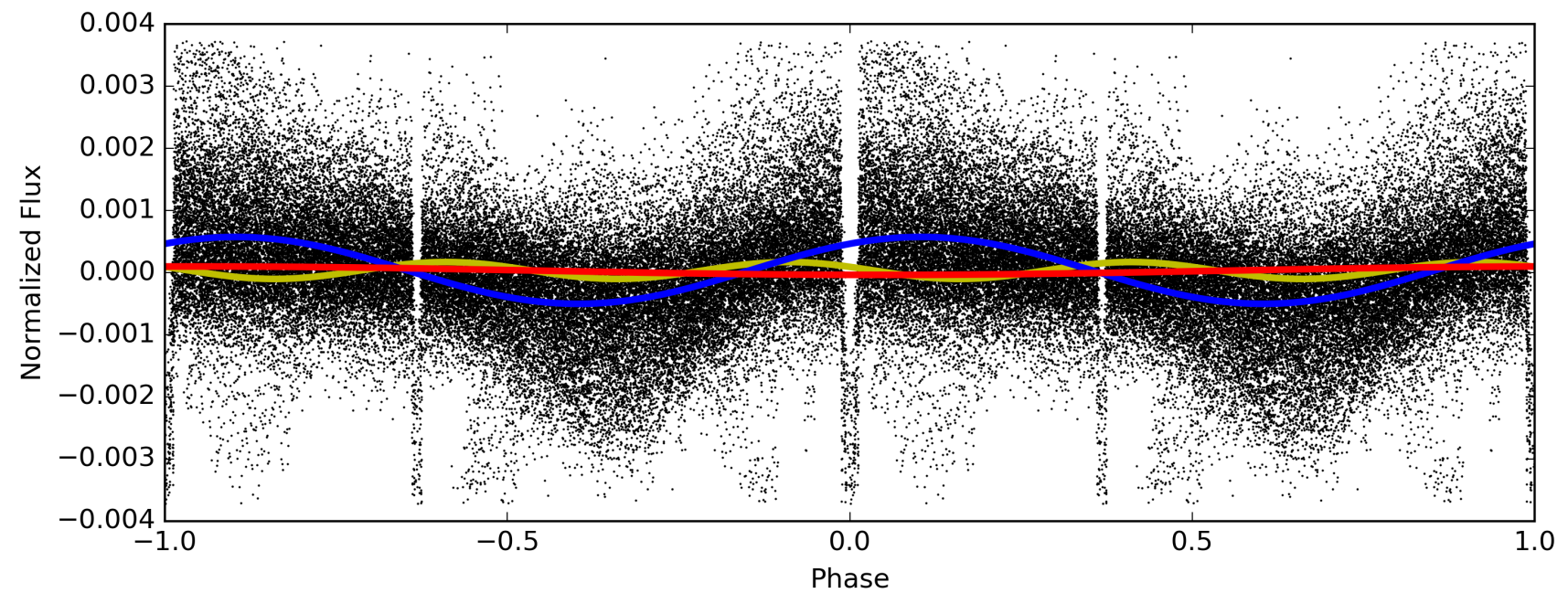
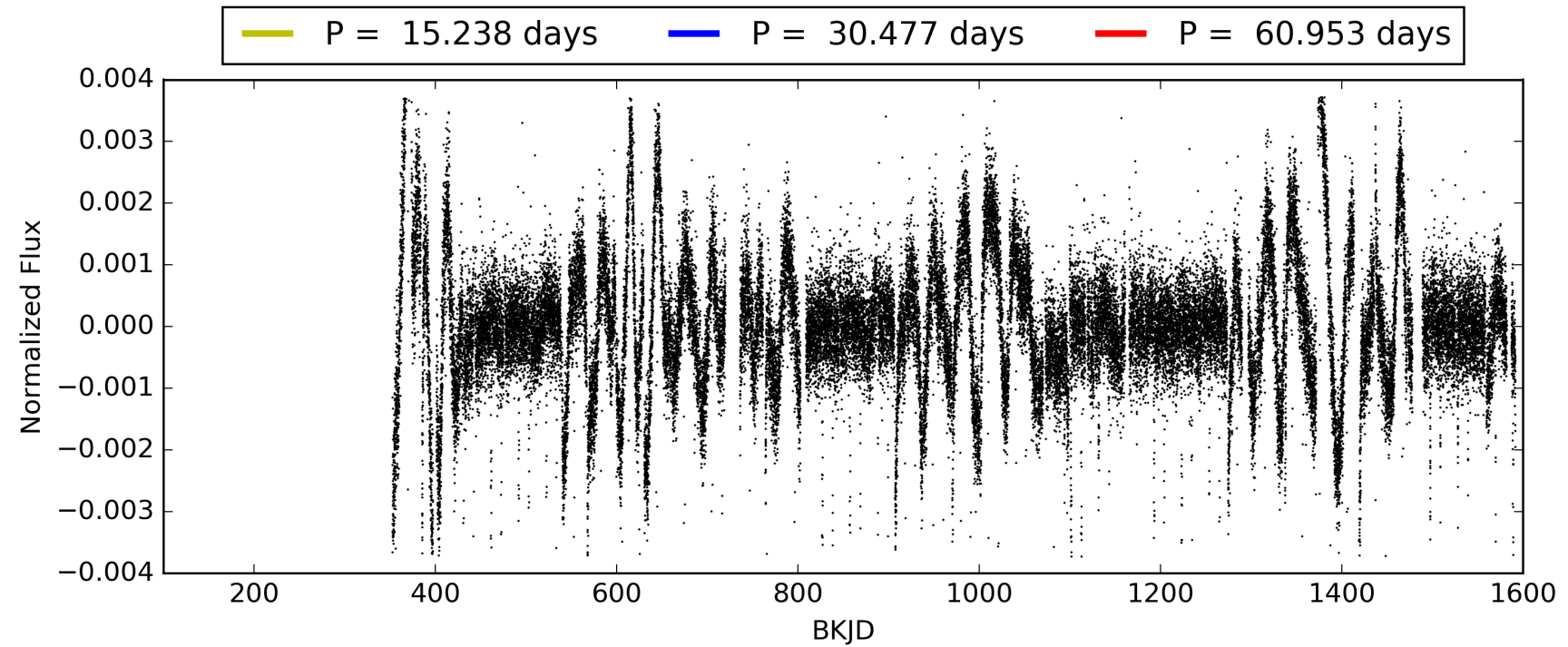
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [37/37]
GhostDiagnostic-chr: -0.3639
Centroid-sig: N/A
Centroid-so: 8.319 arcsec [1312.66σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [11/11]

TCE 003098184-01, PDC Light Curves

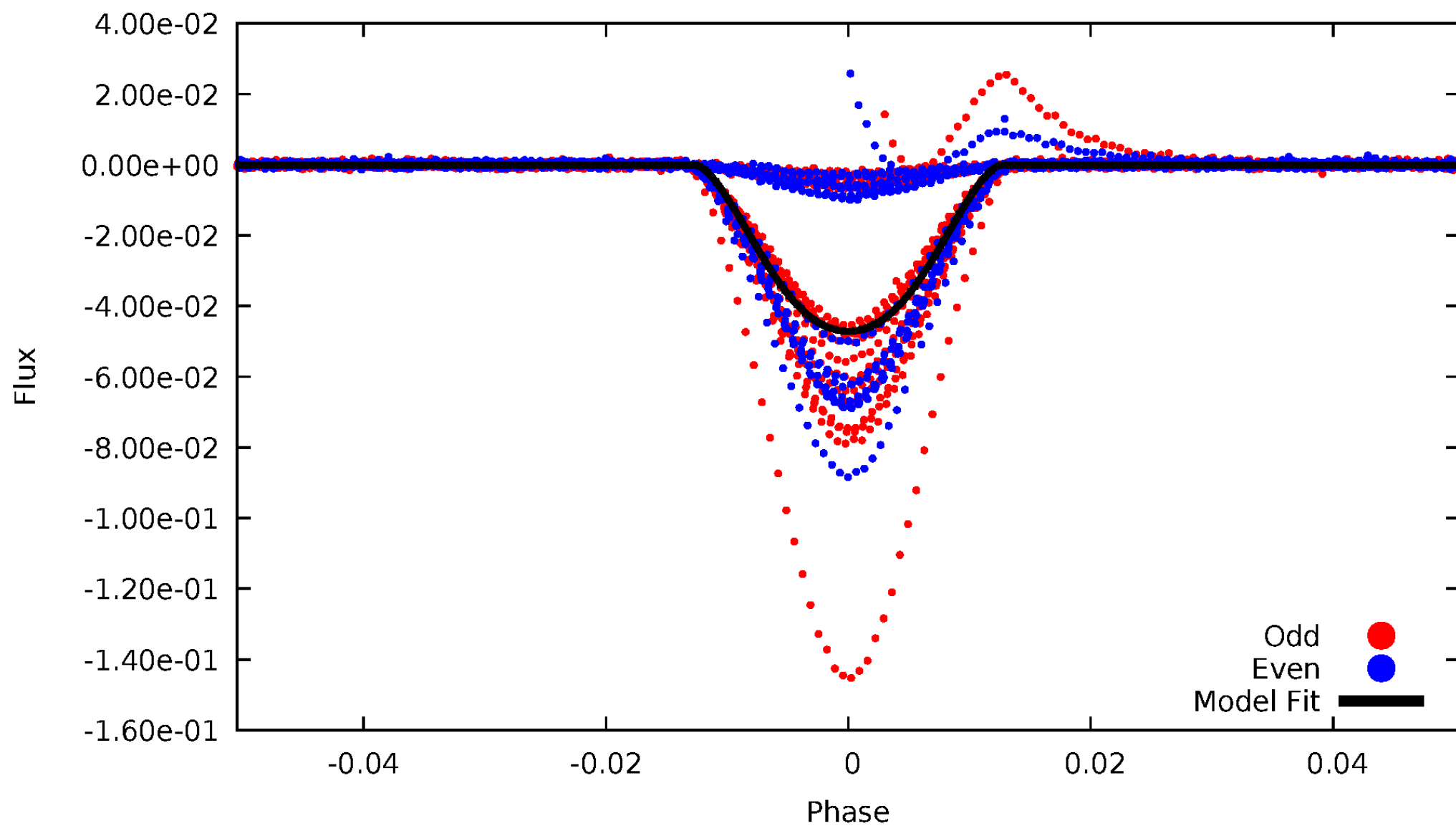


TCE 003098184-01



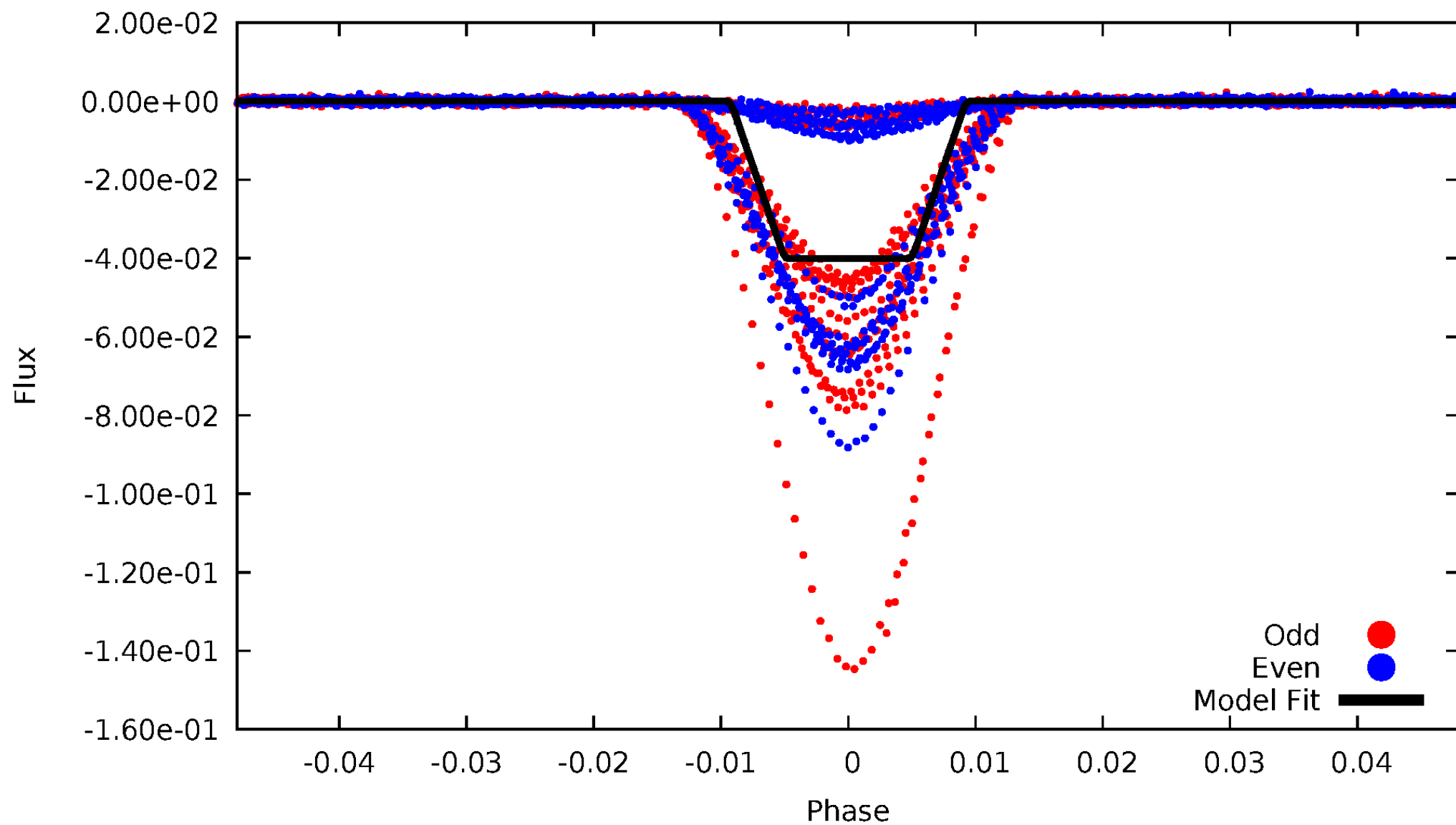
DV Odd/Even

TCE 003098184-01



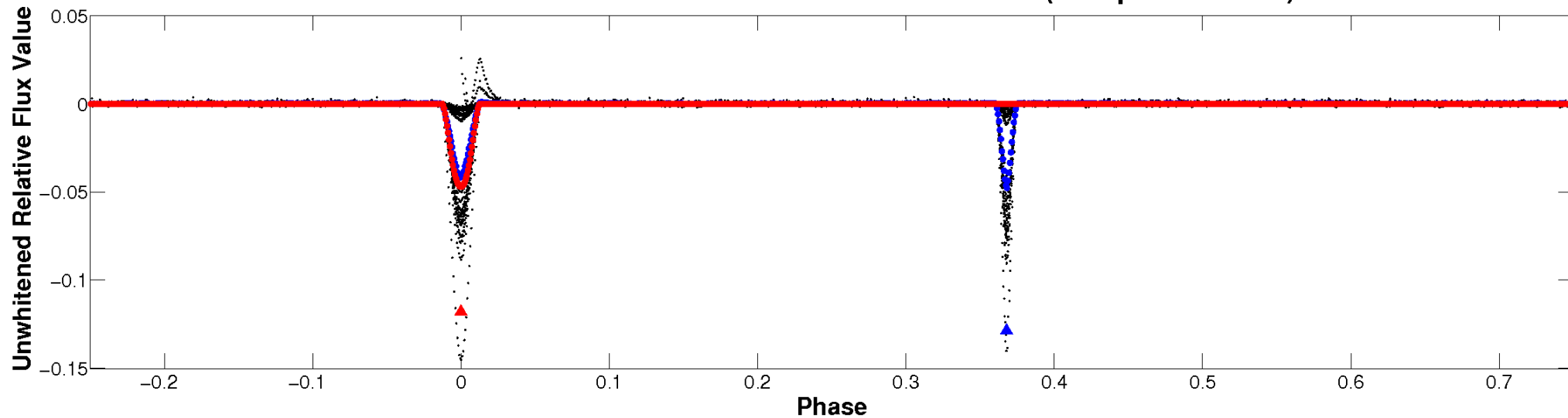
ALT Odd/Even

TCE 003098184-01

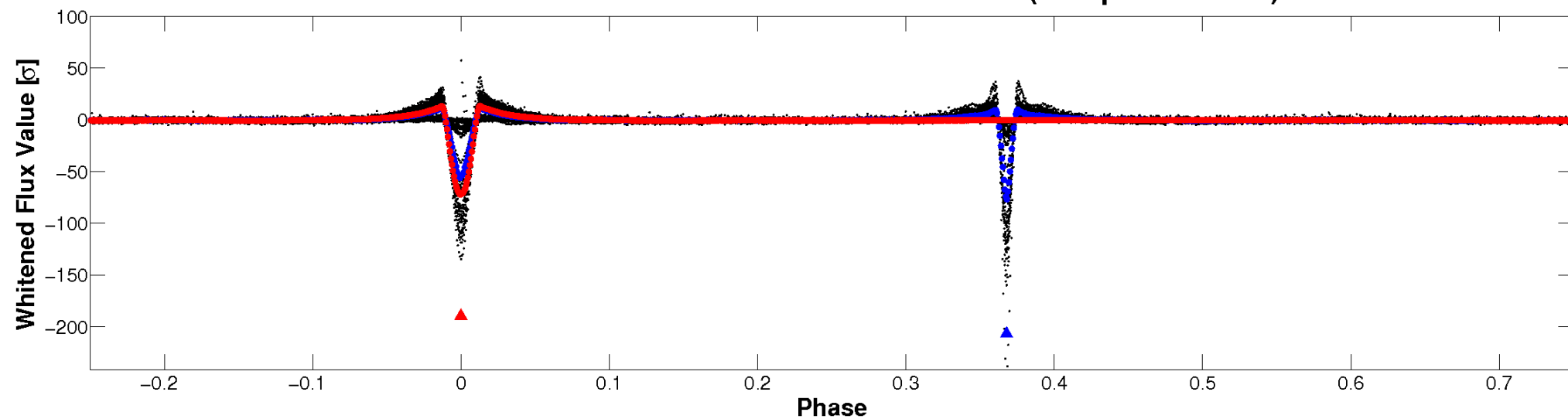


Non-Whitened Vs. Whitened Light Curve

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

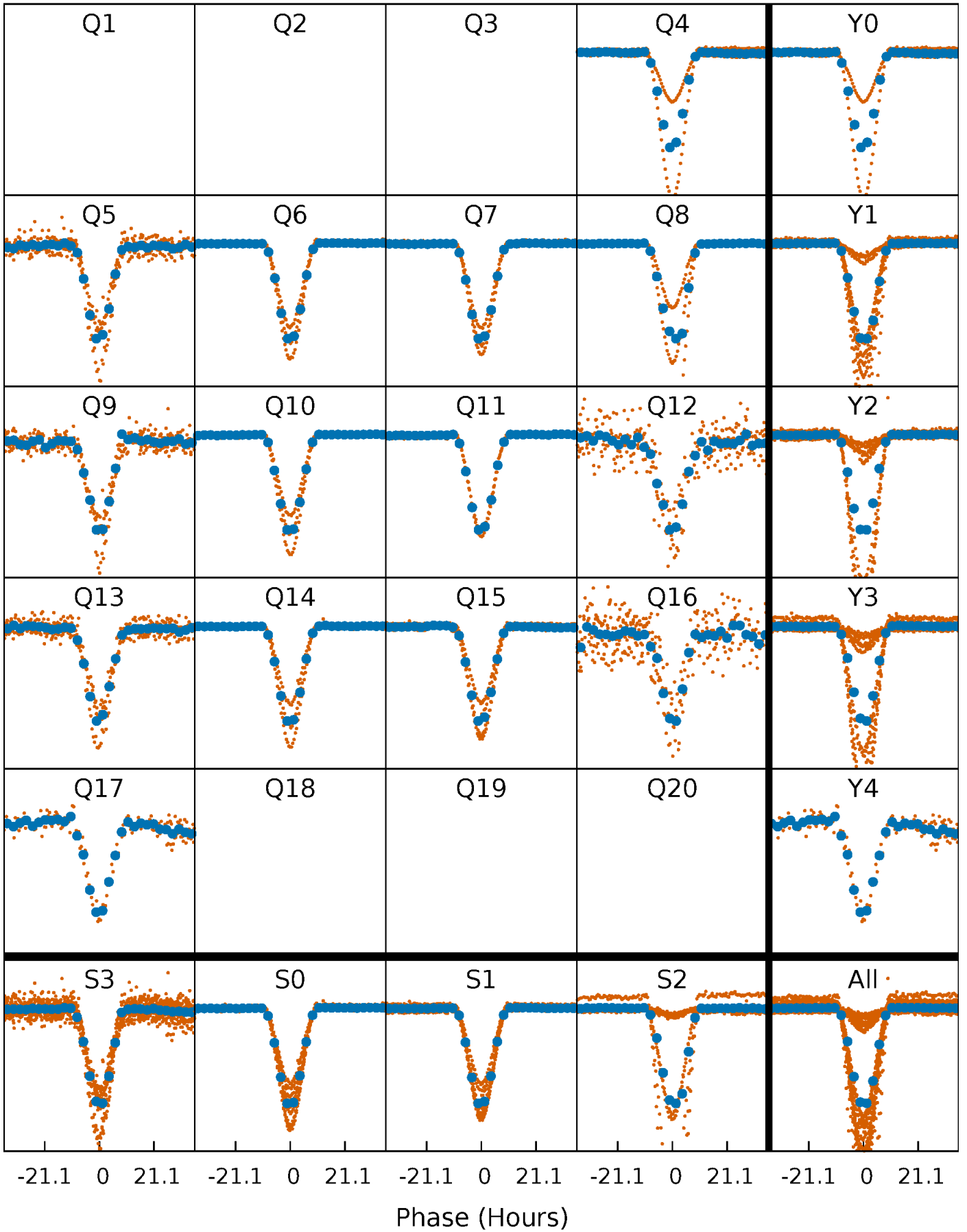


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



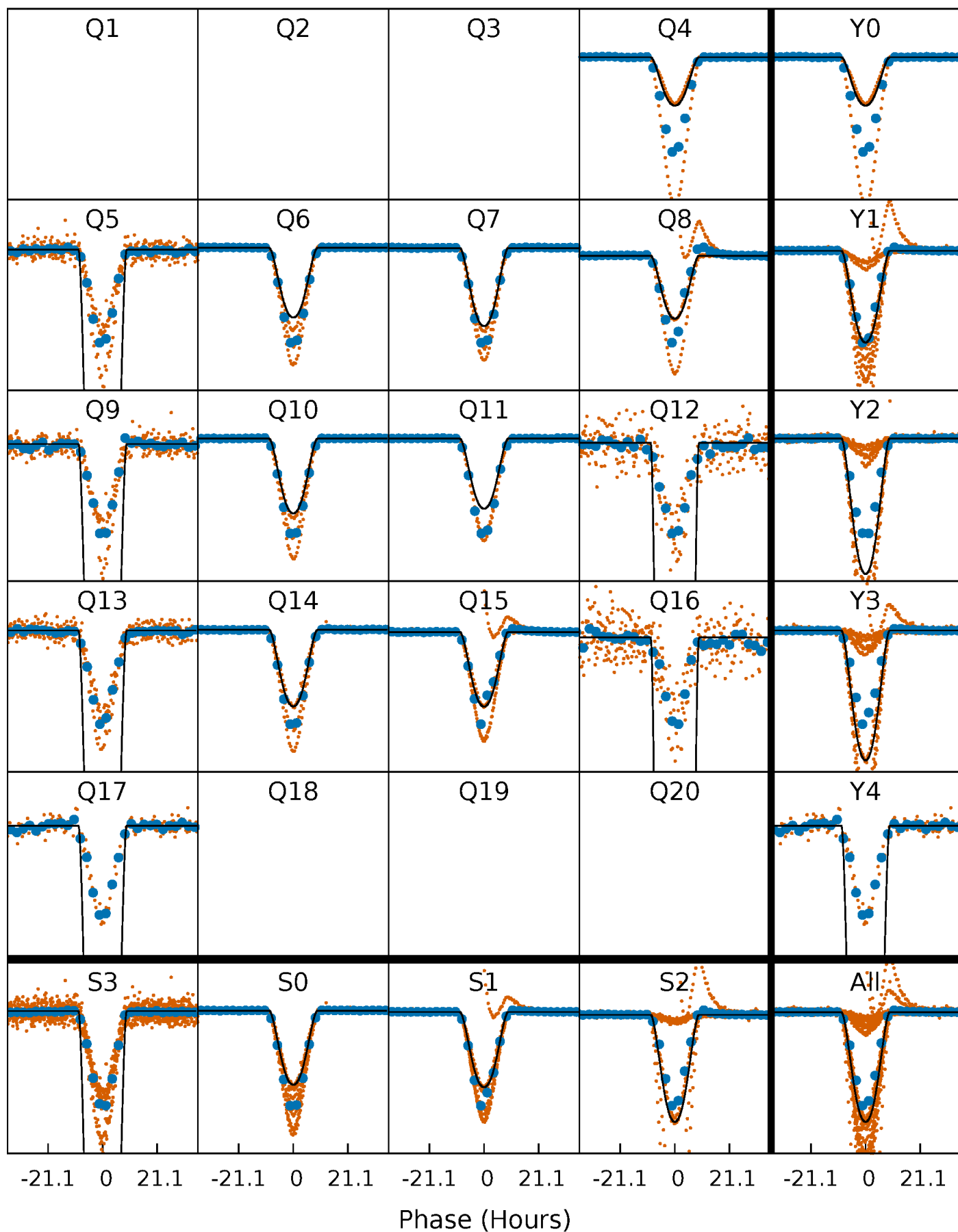
PDC Quarter-Phased Transit Curves

TCE 003098184-01 P= 30.476520 Days $T_0=156.238019$ (BKJD)



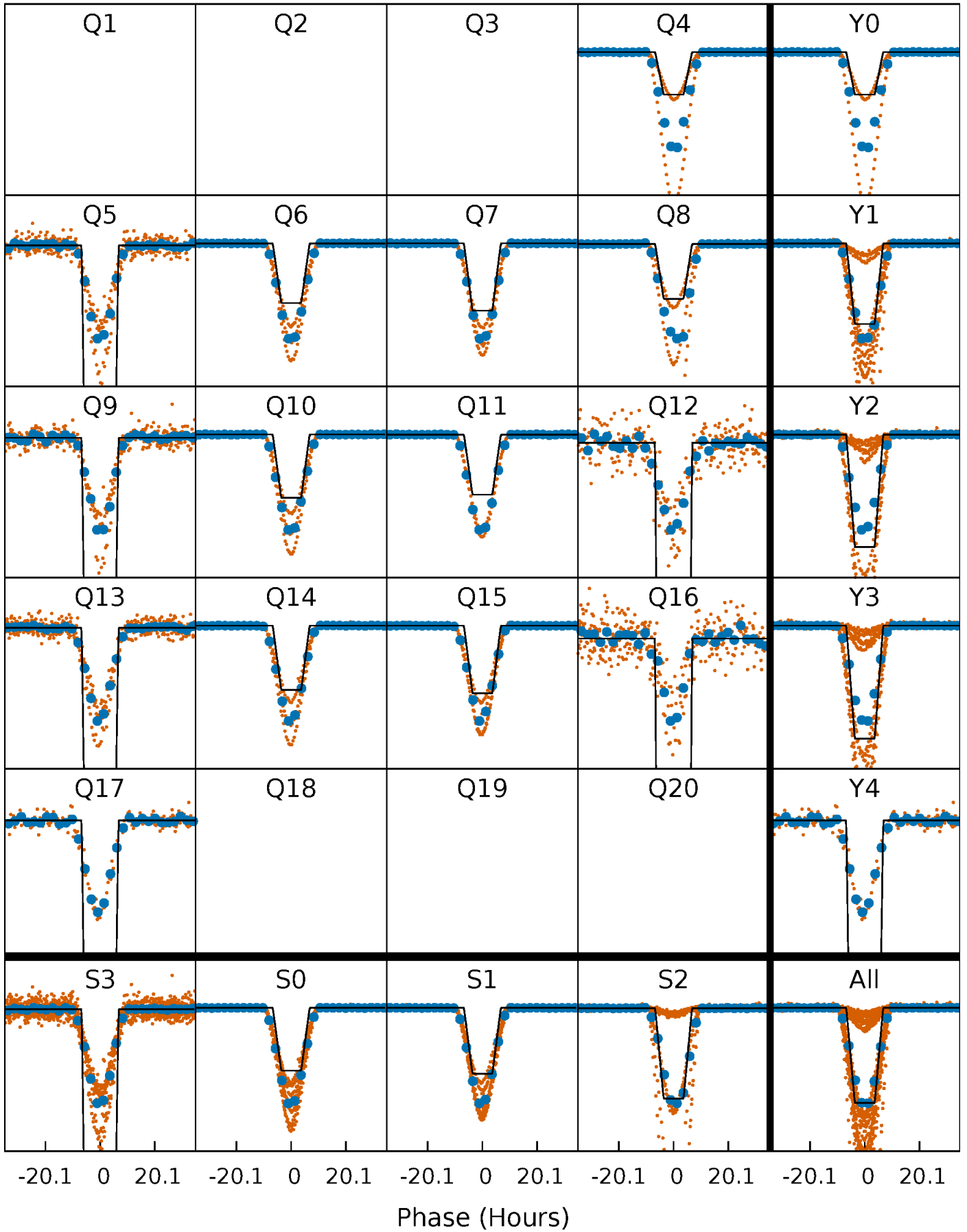
DV Quarter-Phased Transit Curves

TCE 003098184-01 P= 30.476520 Days $T_0=156.238019$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

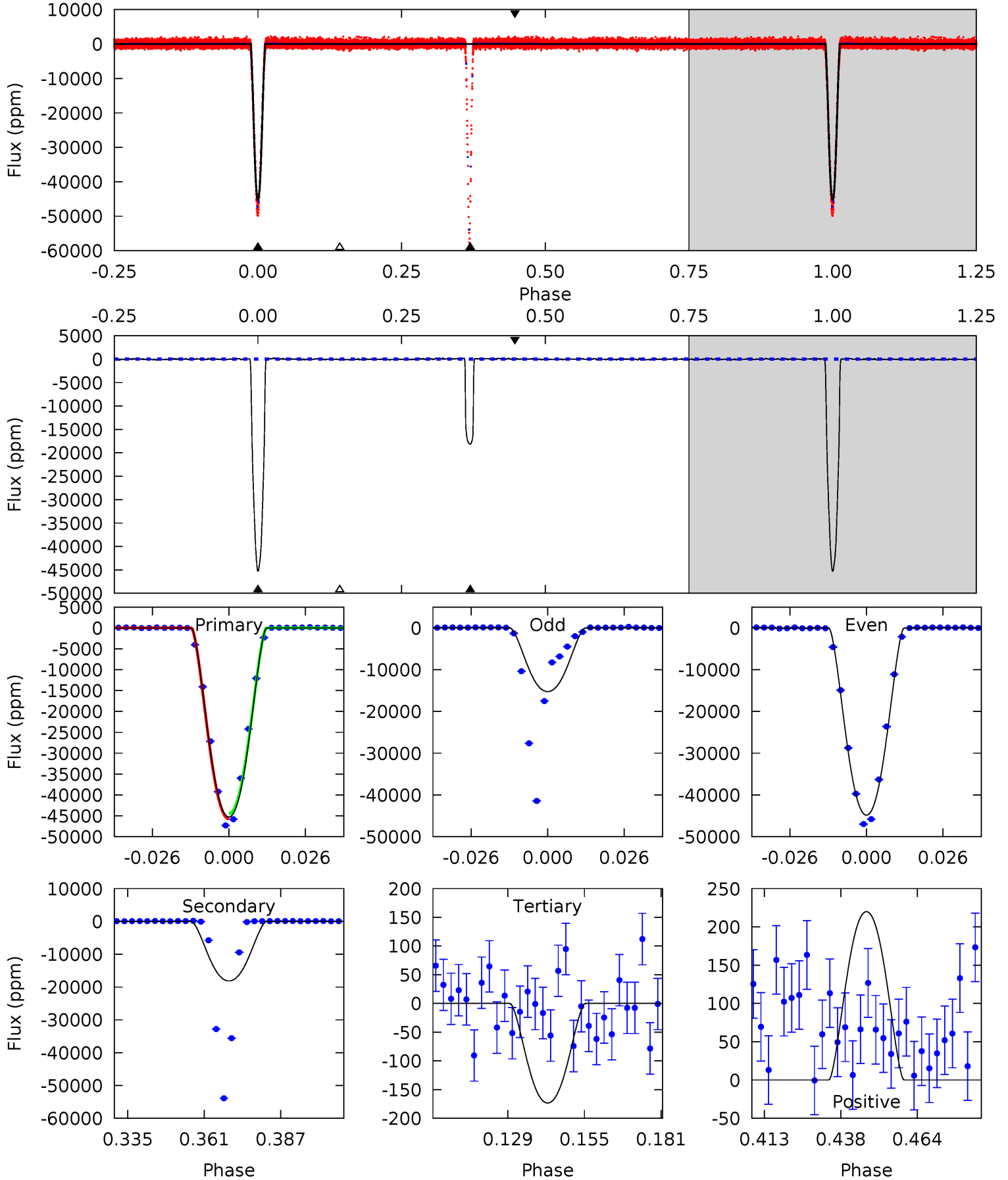
TCE 003098184-01 P= 30.477149 Days $T_0=156.225988$ (BKJD)



DV Model-Shift Uniqueness Test

003098184-01, P = 30.476520 Days, E = 156.238019 Days

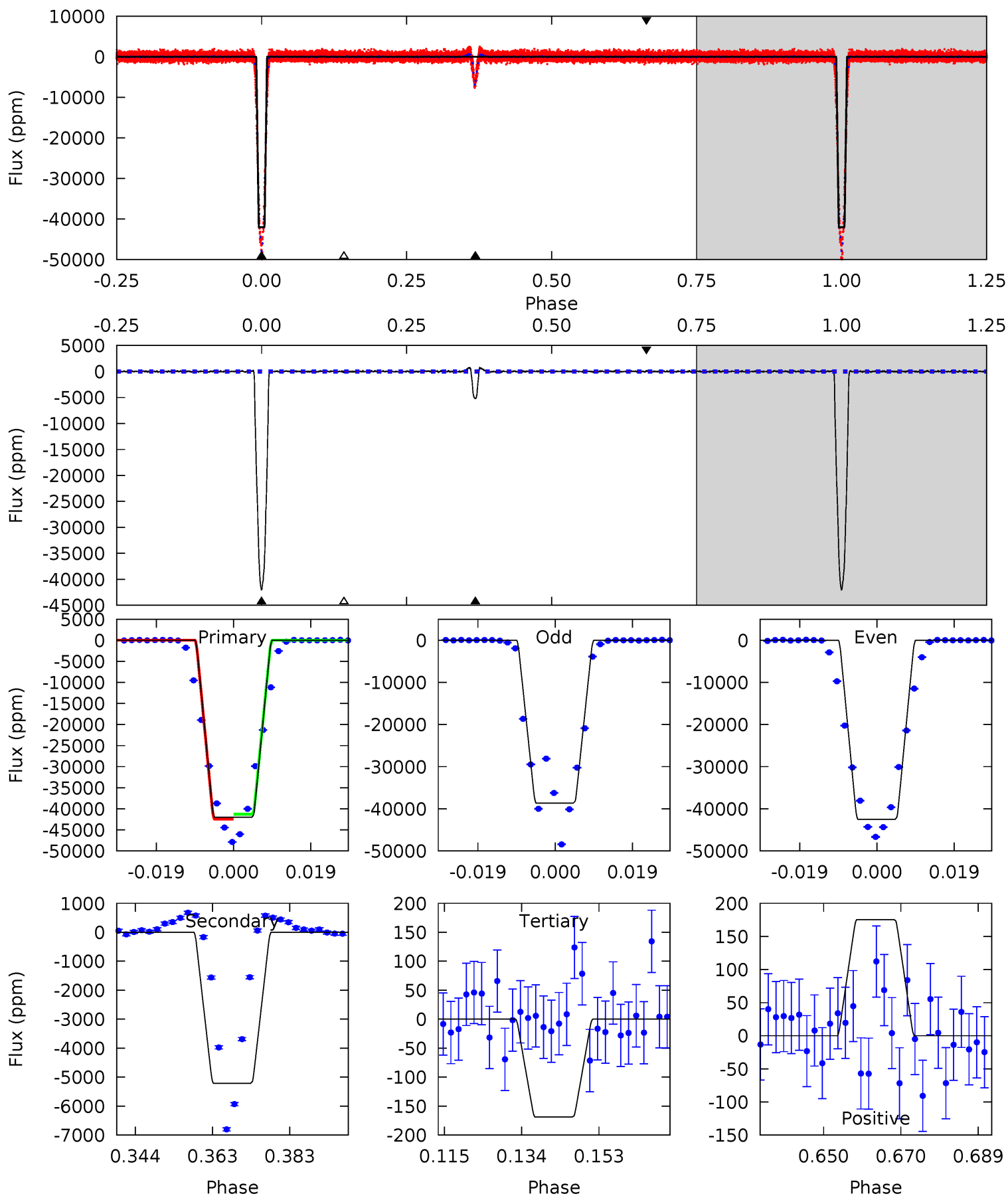
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1633	653.6	6.25	7.93	4.84	2.23	2.51	1627	1625	647.4	645.7	580.5	0.81	0.01	0



Alt Model-Shift Uniqueness Test

003098184-01, P = 30.477149 Days, E = 156.225988 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
992.0	123.1	3.99	4.14	4.90	2.34	1.24	988.0	987.9	119.1	119.0	43.9	0.89	0.02	0



Stellar Parameters For KIC 003098184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6384^{+179}_{-246}	$4.419^{+0.062}_{-0.188}$	$-0.160^{+0.250}_{-0.300}$	$1.086^{+0.314}_{-0.134}$	$1.129^{+0.150}_{-0.150}$	$1.240^{+0.422}_{-0.616}$
	+3%/-4%	+1%/-4%	+156%/-188%	+29%/-12%	+13%/-13%	+34%/-50%
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 003098184-01 / KOI 1091.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-18130 ± 28	$28.10^{+4.43}_{-2.38}$	936^{+66}_{-52}	4980^{+131}_{-156}	506^{+78}_{-117}
Alt.	-5213 ± 42	$24.39^{+3.70}_{-2.17}$	934^{+65}_{-49}	4115^{+93}_{-108}	190^{+30}_{-43}

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

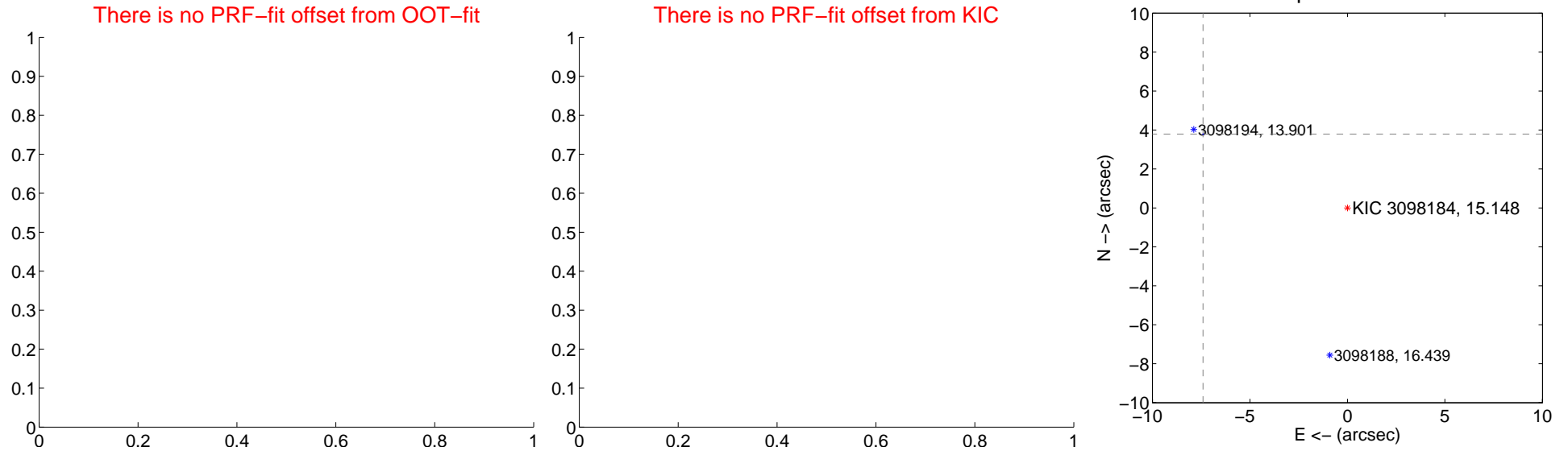
DV Centroid Data

Supplemental centroid analysis for 003098184-01. Kepler magnitude: 15.15. Transit SNR 805.59

There are 0 quarters with good PRF difference image offsets

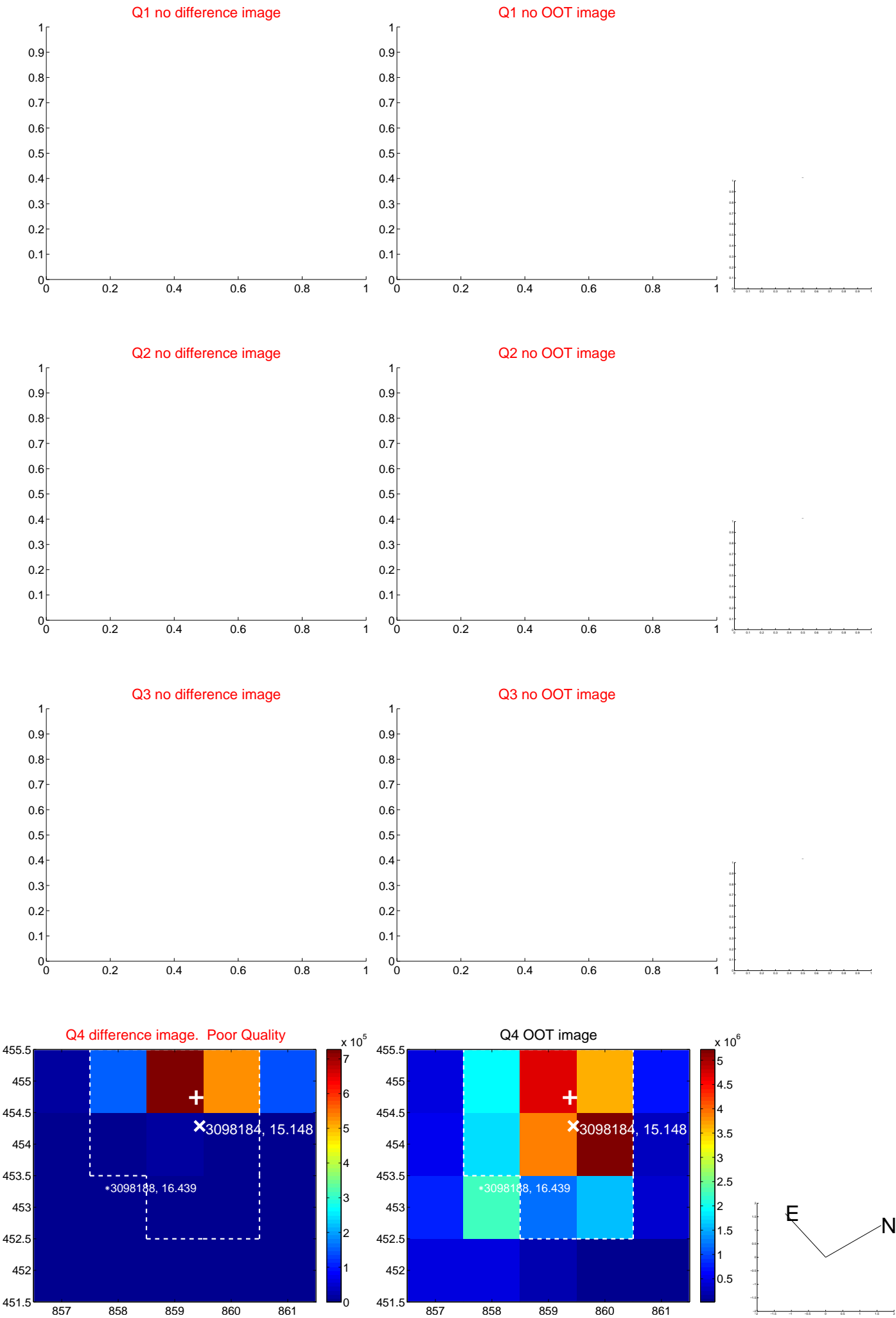
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	8.32 ± 0.01	1312.67	7.41 ± 0.01	3.79 ± 0.01

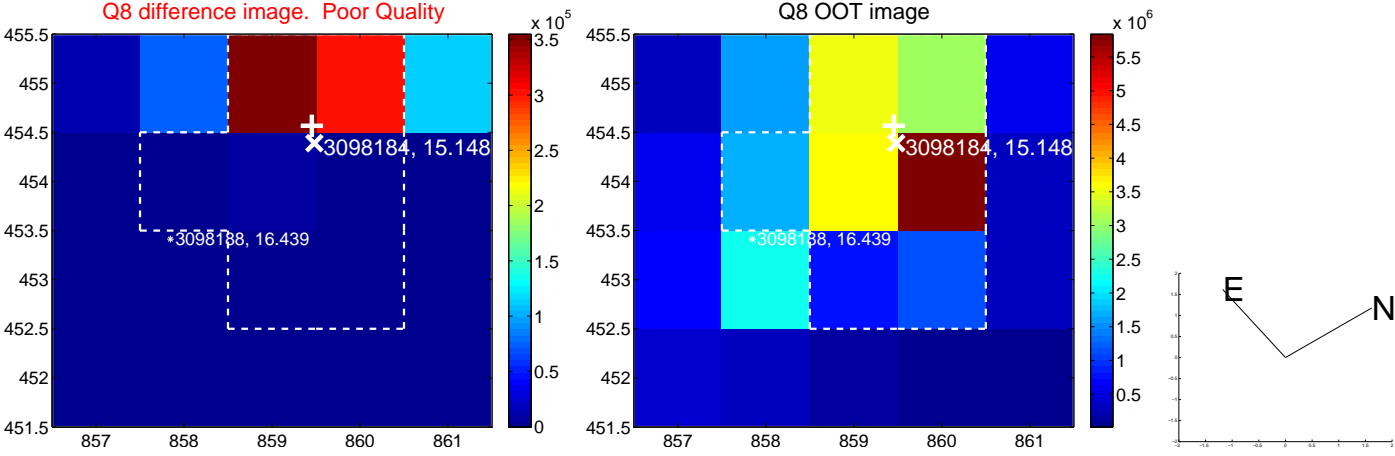
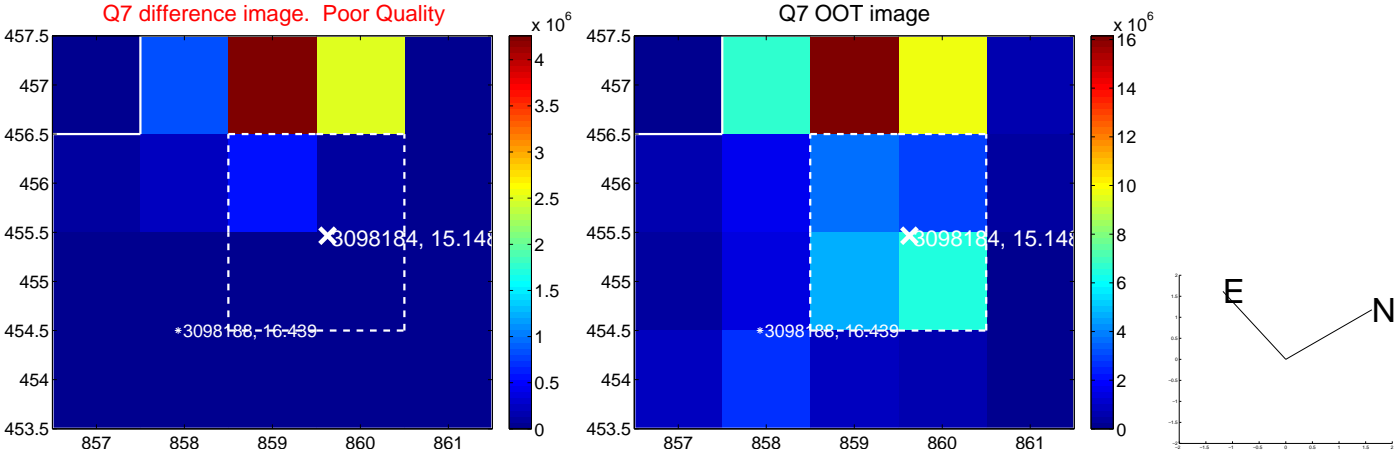
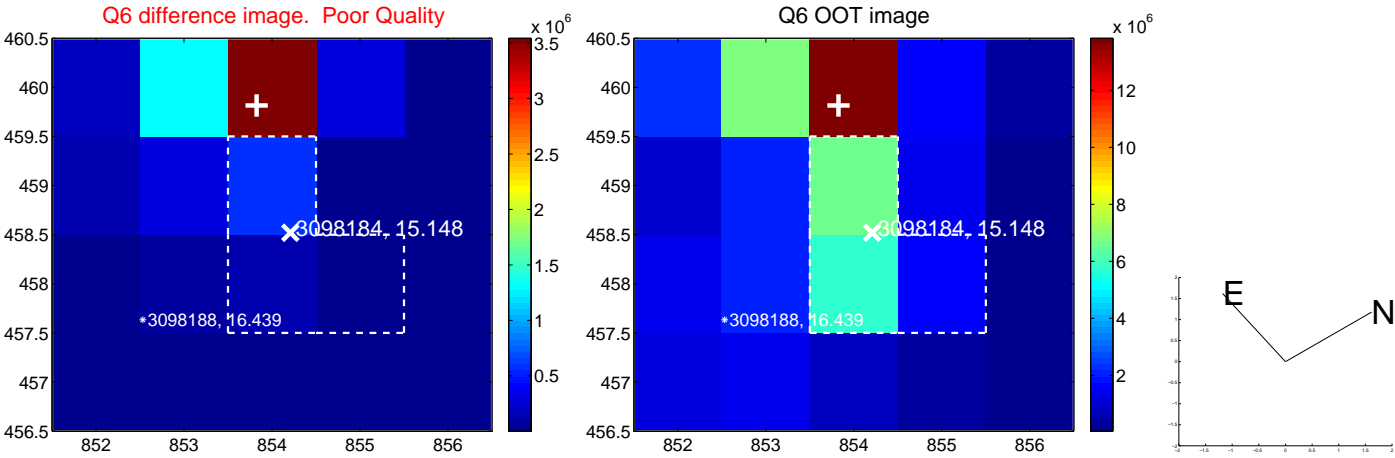
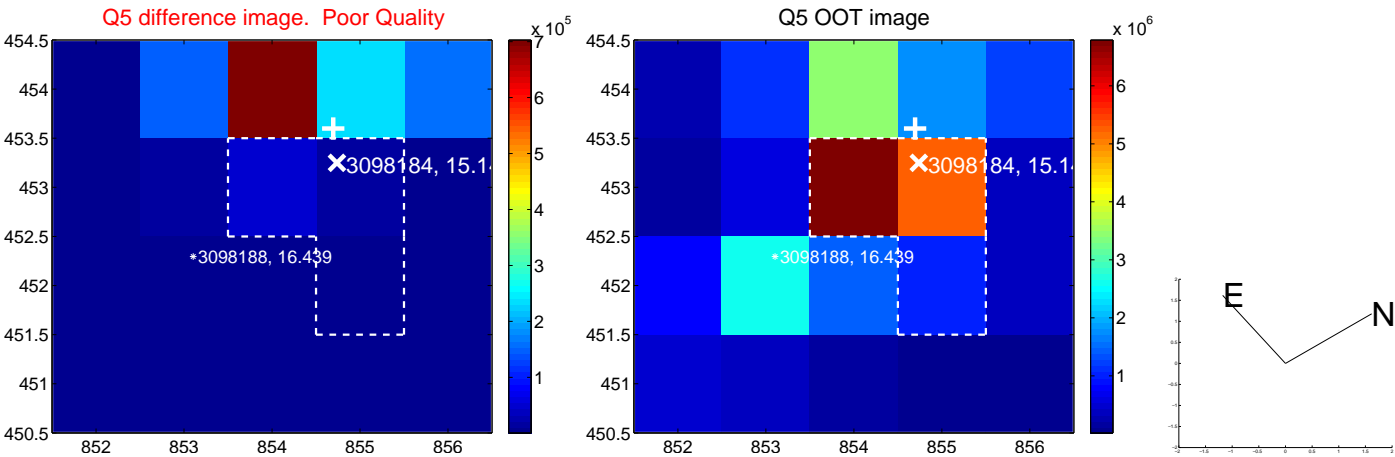


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

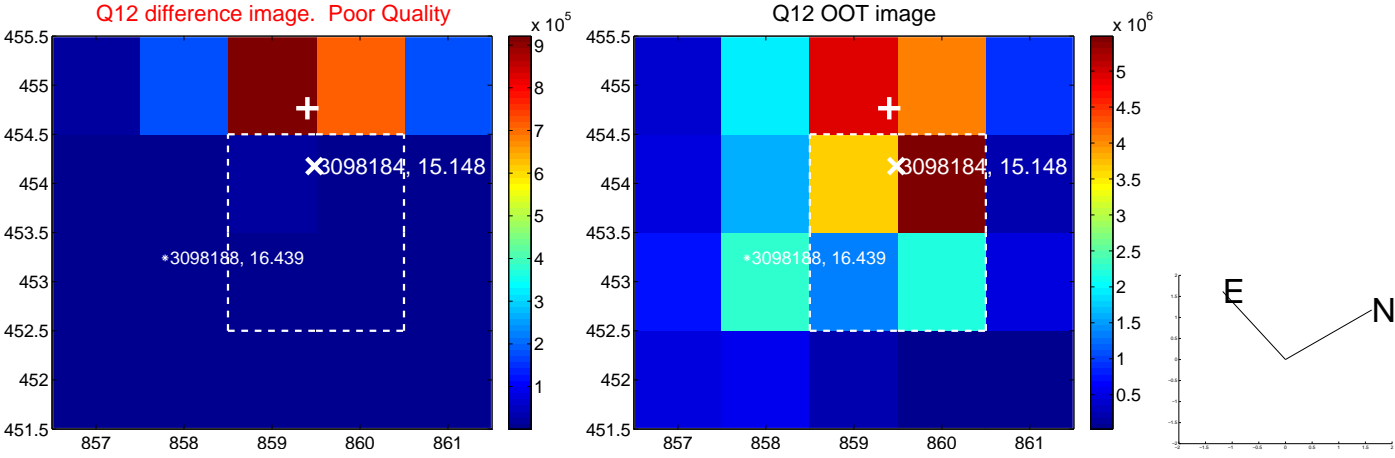
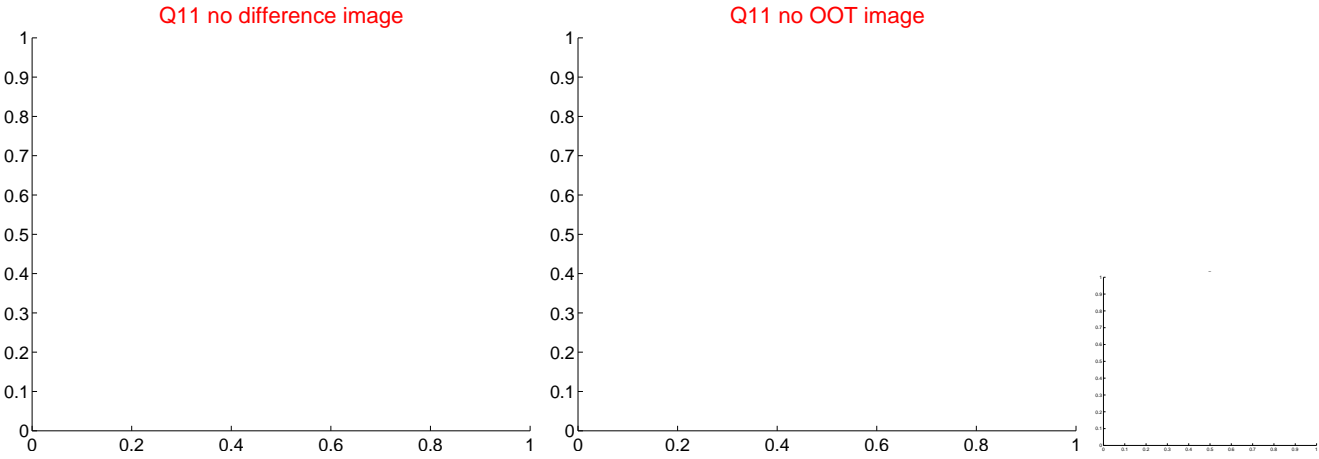
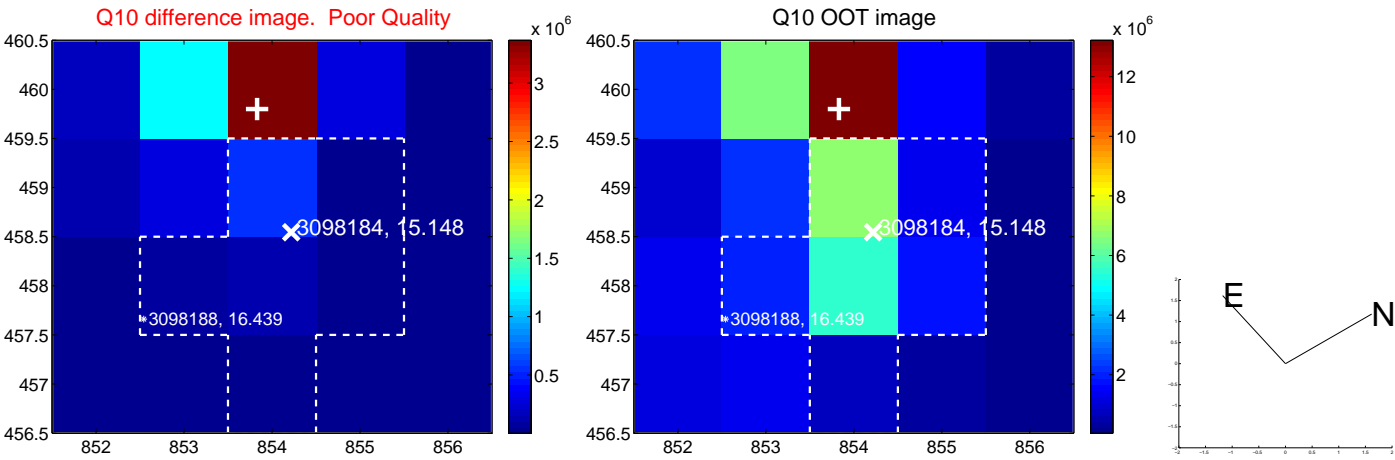
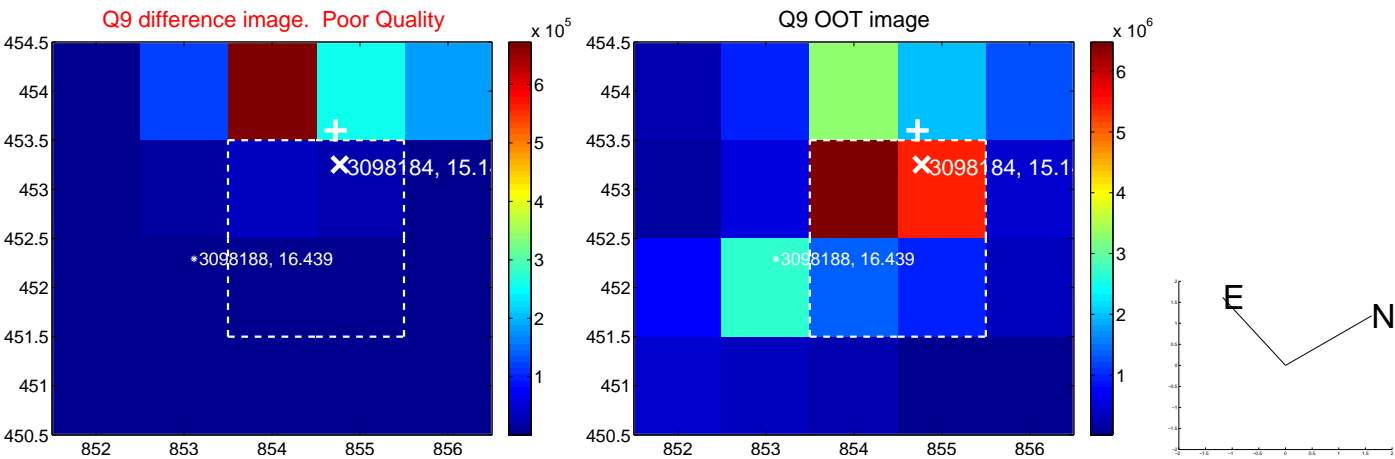
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



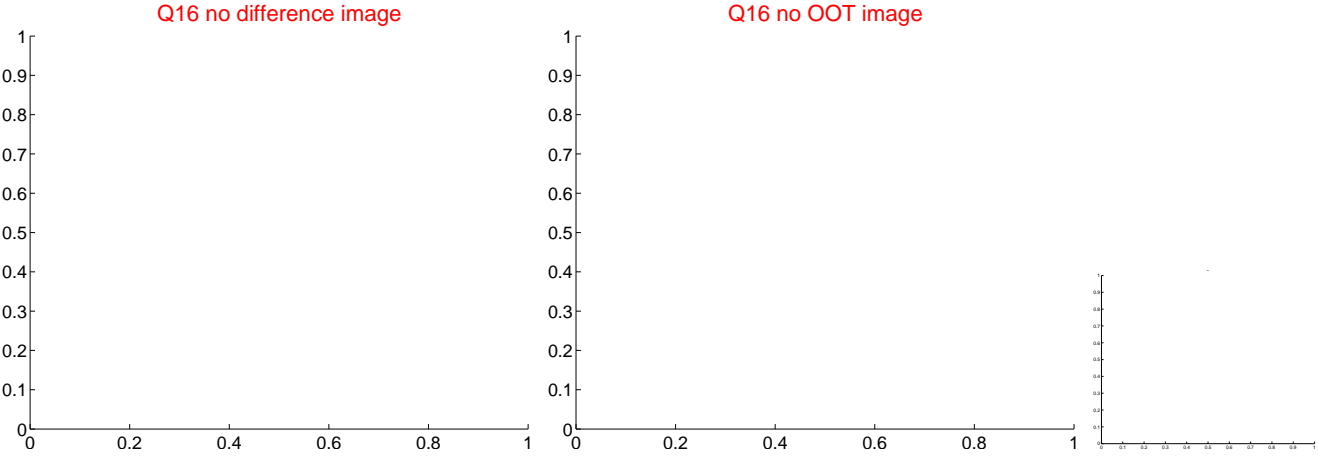
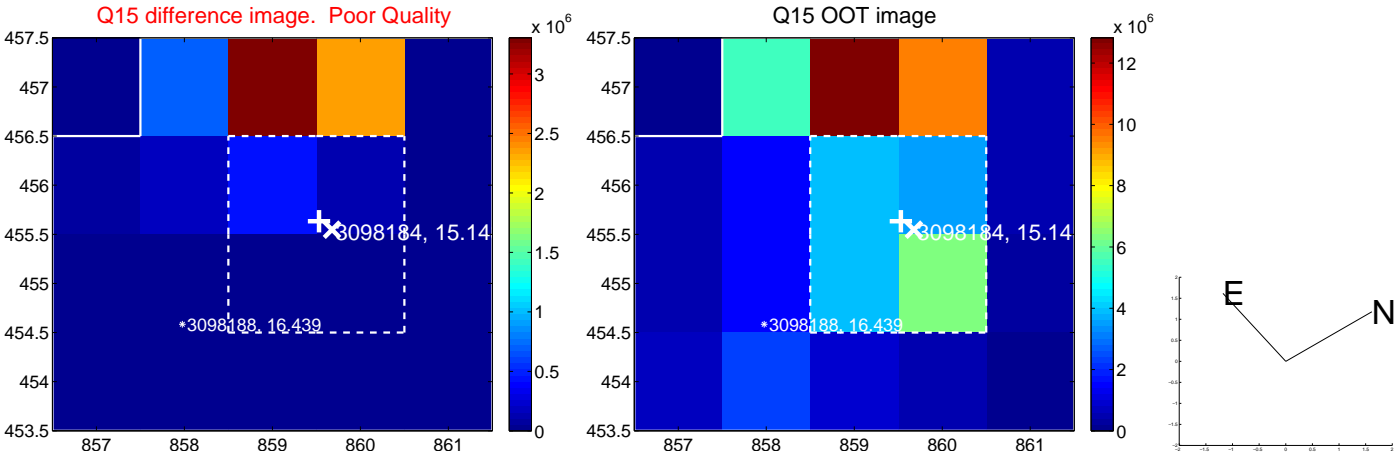
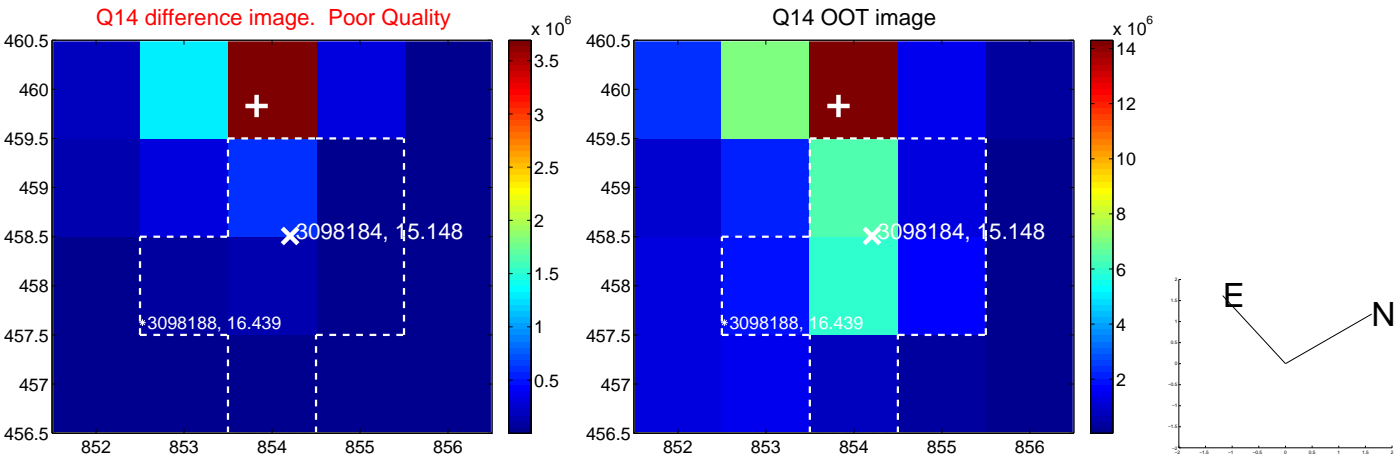
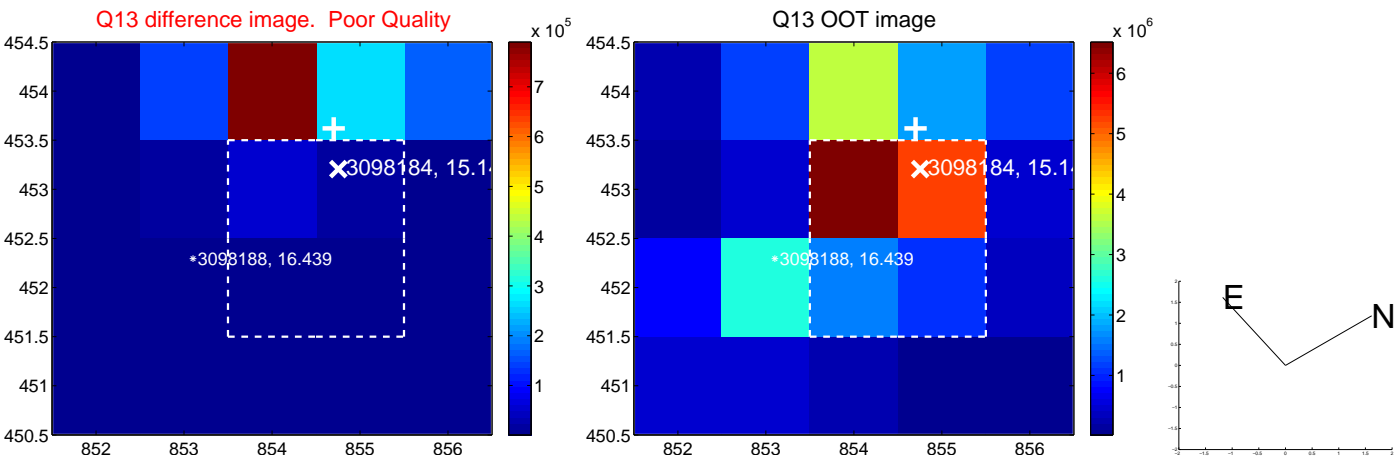
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



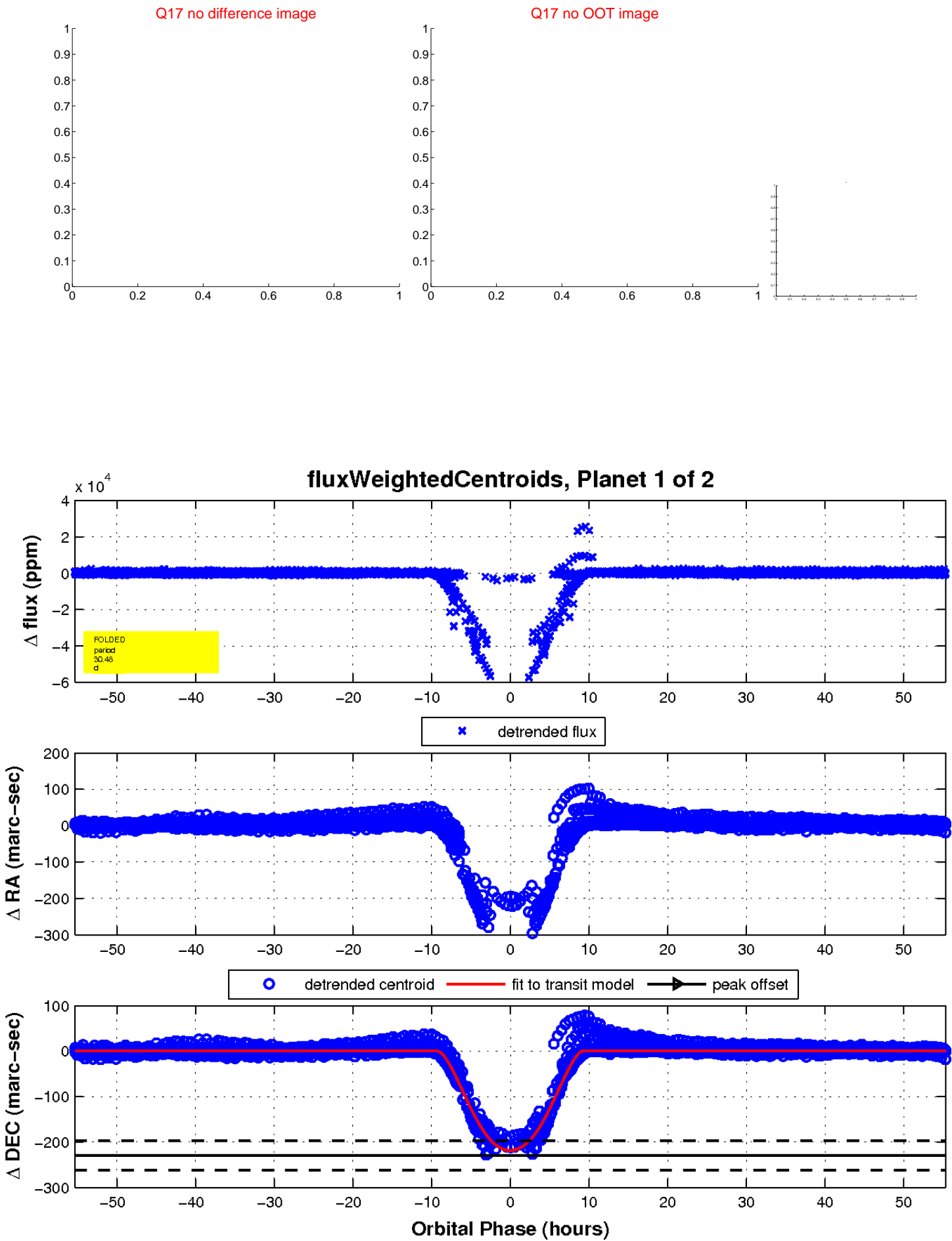
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

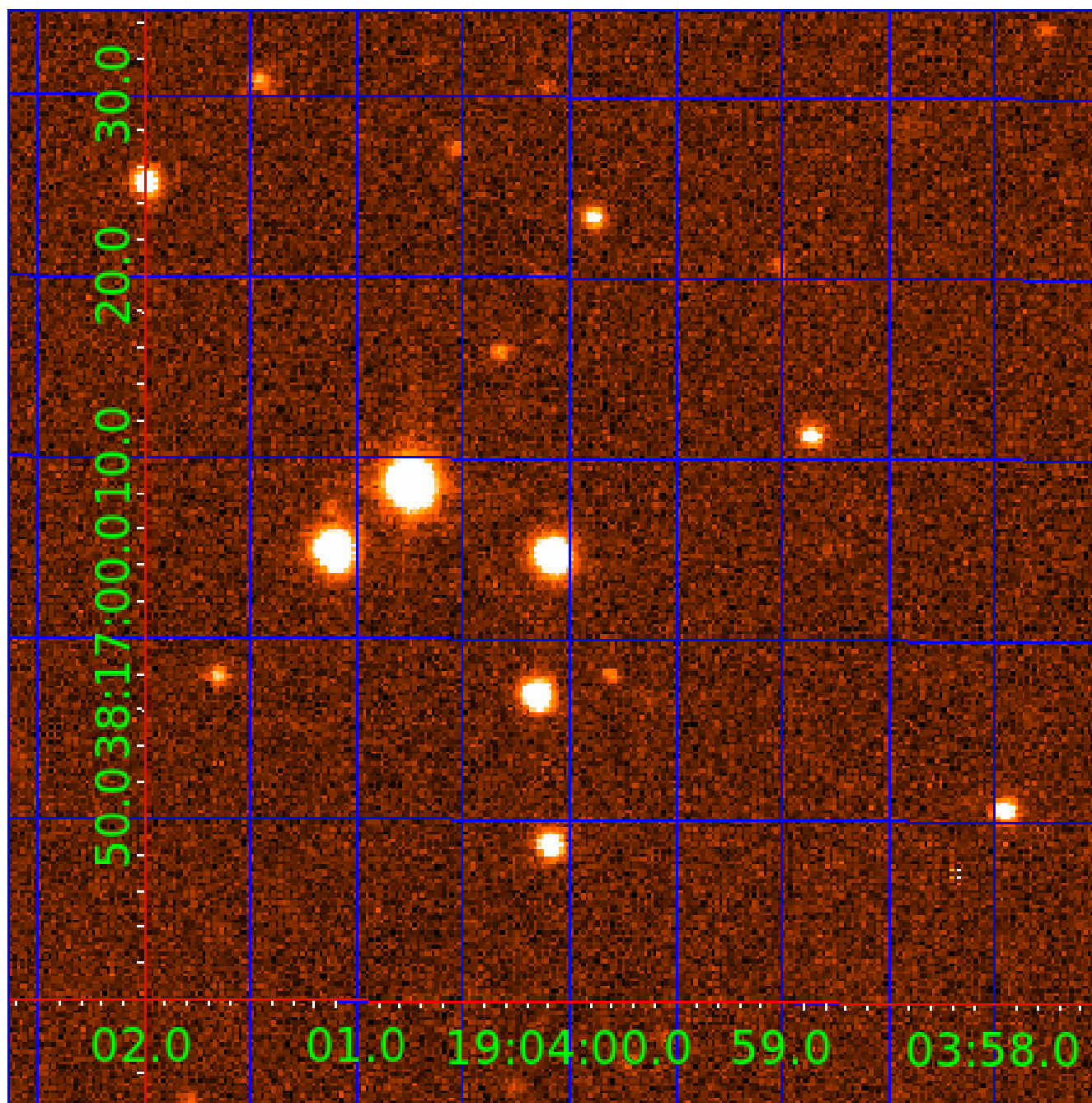


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003098184

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})
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003098184-02	OBS	No	30.476547	136.971903	55240.0	9.840	1101.9	759.8	1.09	6384	37.89	44.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003098184-01	OBS	FP	0.00	0	1	0	1	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_FEW_MEAS—EPHEM_MATCH
003098184-02	OBS	FP	0.00	1	1	0	1	IS_SEC_TCE—CENT_FEW_MEAS—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 003098184-02

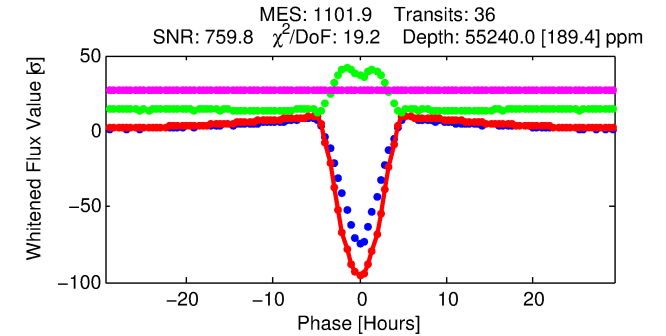
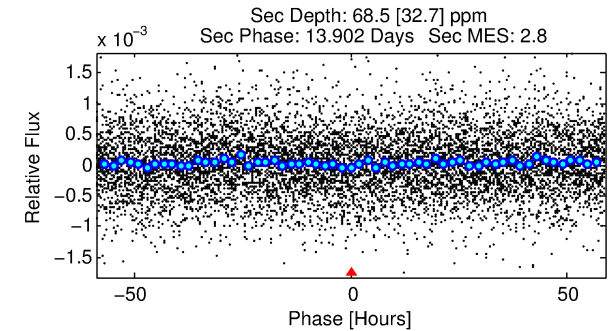
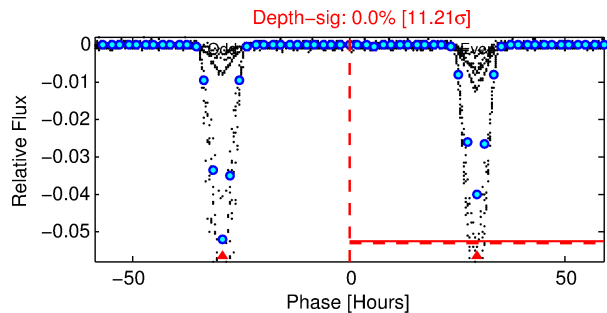
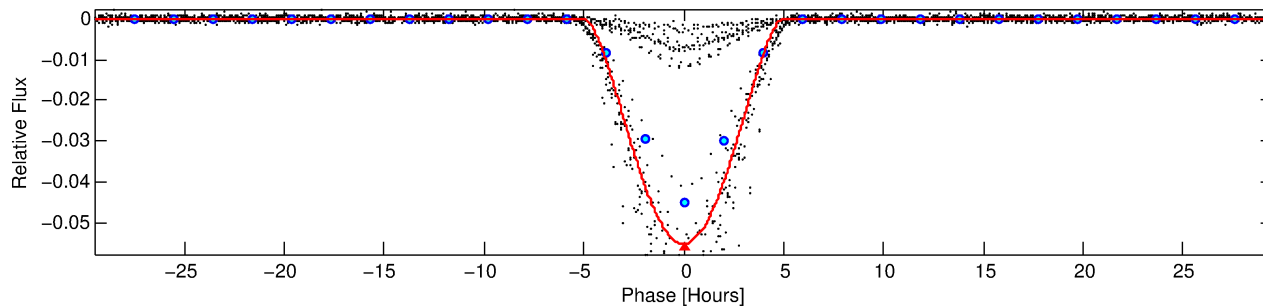
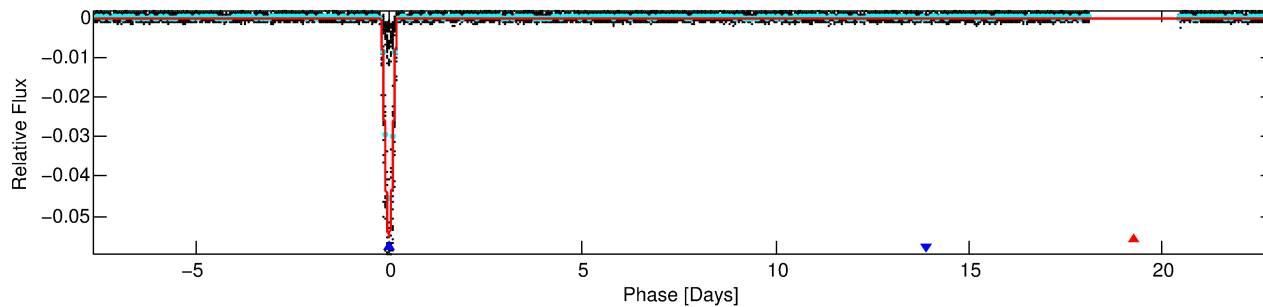
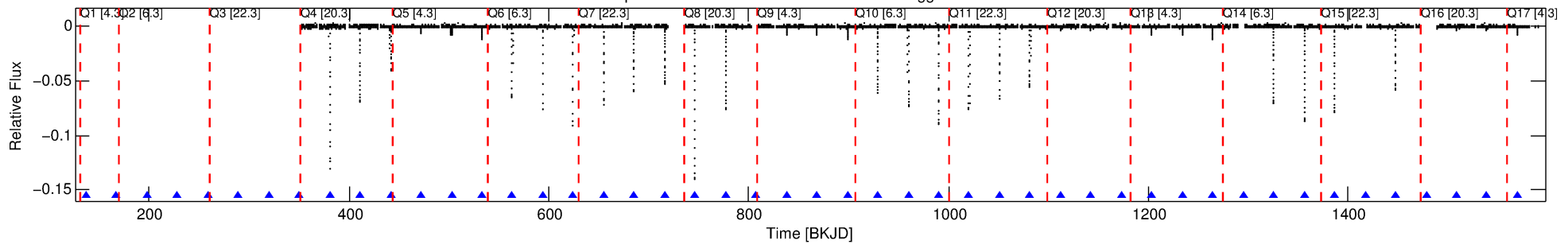
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
003098184-02	3098184	003098194-02	3098194	1:1	8.8	-2	0	13.90	15.15	6.11	Direct-PRF	0	0.32	0.11

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: 3098184 Candidate: 2 of 2 Period: 30.477 d
KOI: K01091 Corr: No Ephemeris Match

Kp: 15.15 R*: 1.09 Rs Teff: 6384.0 K Logg: 4.42 Fe/H: -0.160



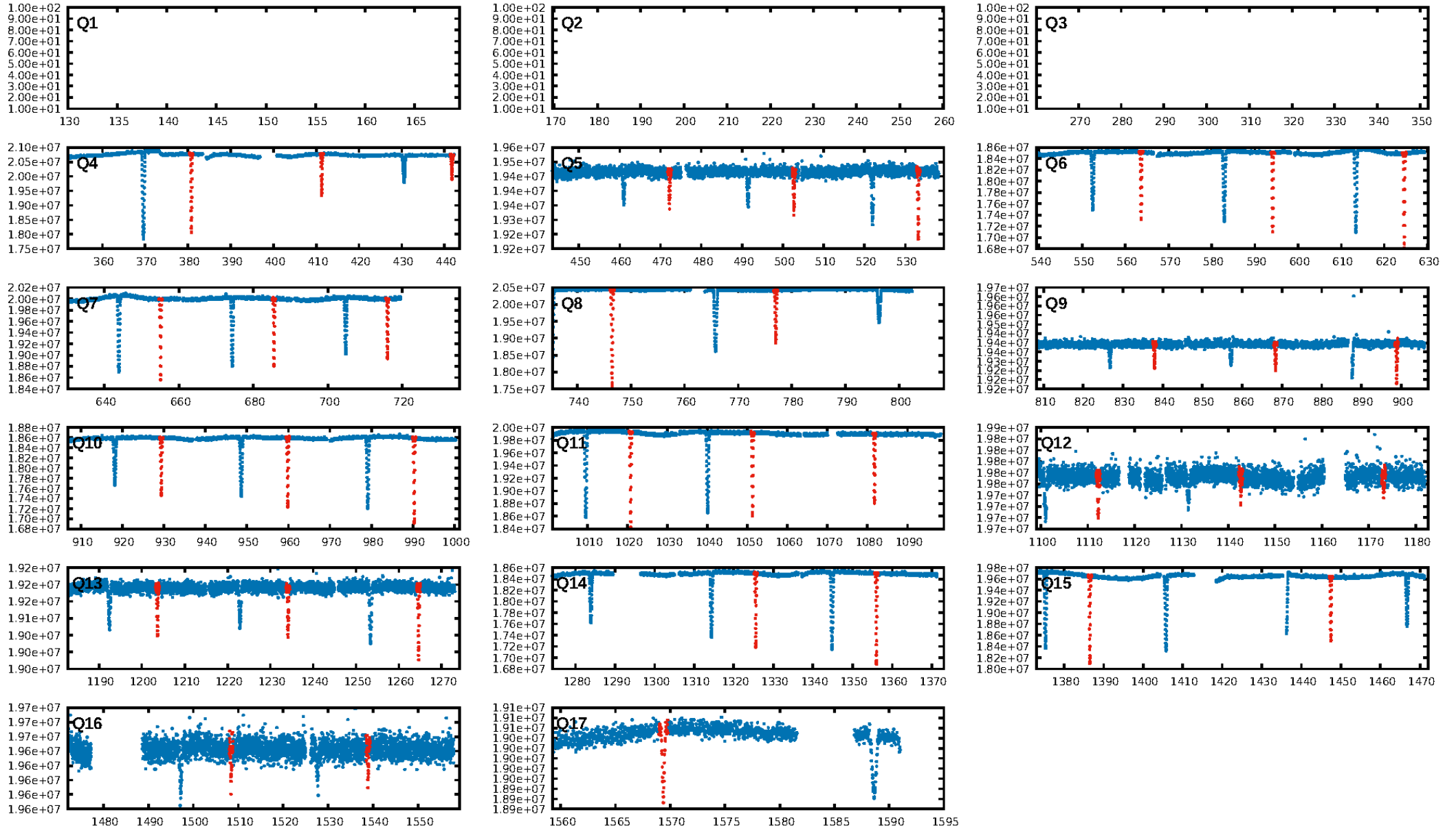
DV Fit Results:

Period = 30.47655 [0.00003] d
Epoch = 136.9719 [0.0010] BKJD
Rp/R* = 0.3197 [0.0477]
a/R* = 22.11 [0.21]
b = 0.93 [0.07]
Seff = 44.38 [16.85]
Teq = 658 [62] K
Rp = 37.89 [12.33] Re
a = 0.1989 [0.0479] AU
Ag = 1.04 [0.69] [0.05σ]
Teffp = 1027 [150] K [2.27σ]

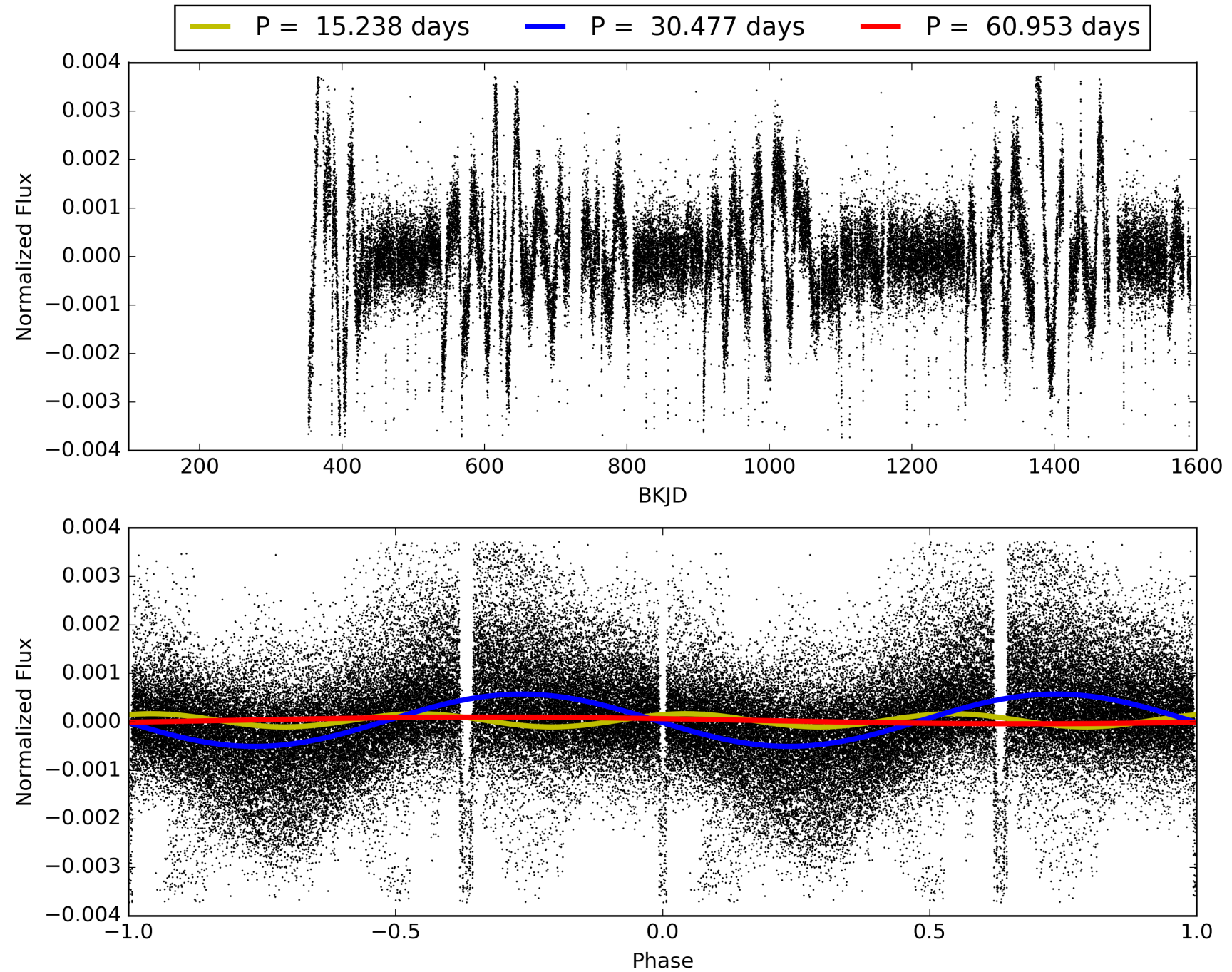
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-figt: 1.00 [35/35]
GhostDiagnostic-chr: -0.2654
Centroid-sig: N/A
Centroid-so: 8.259 arcsec [1356.97σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [14/14]

TCE 003098184-02, PDC Light Curves

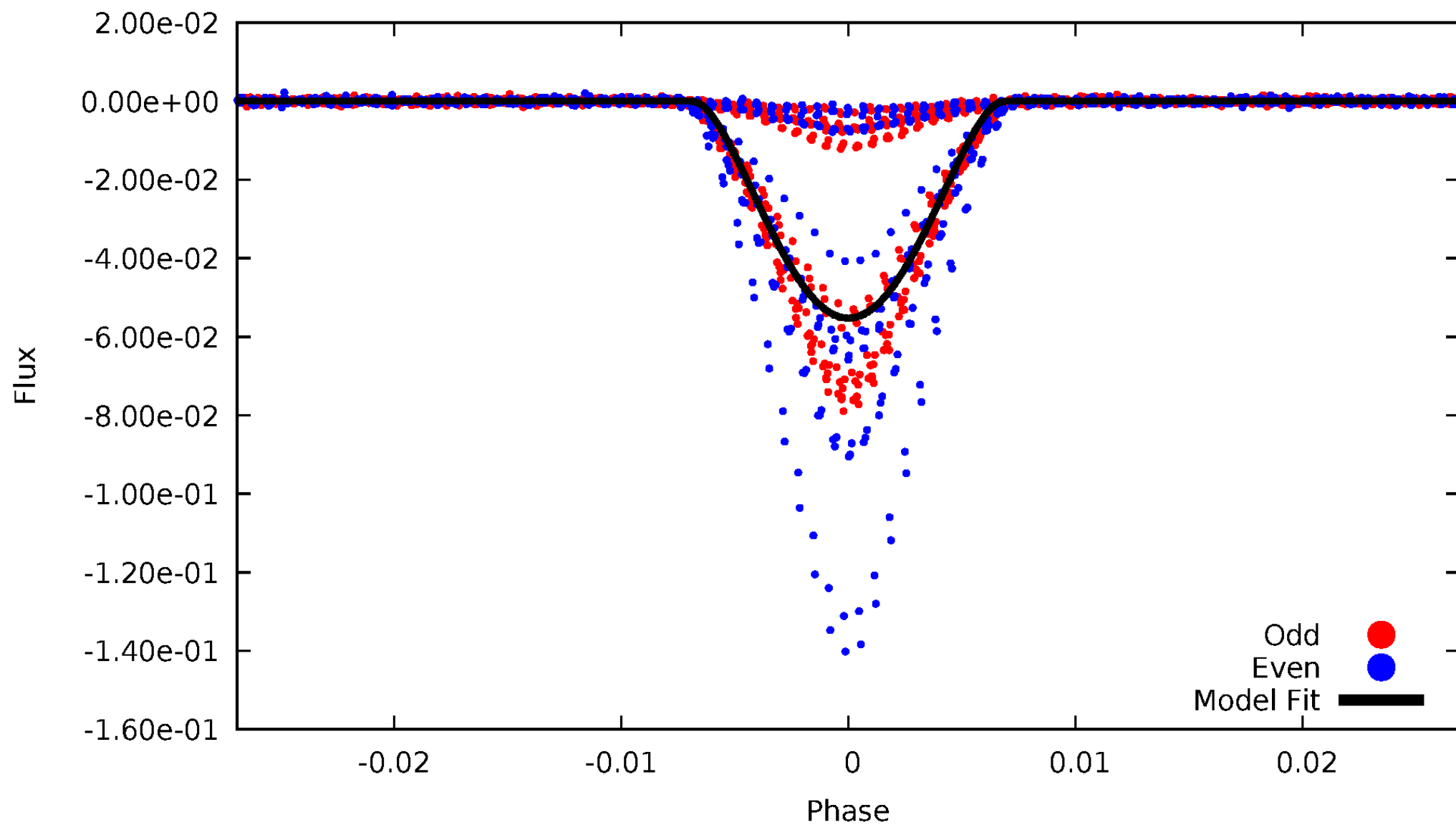


TCE 003098184-02



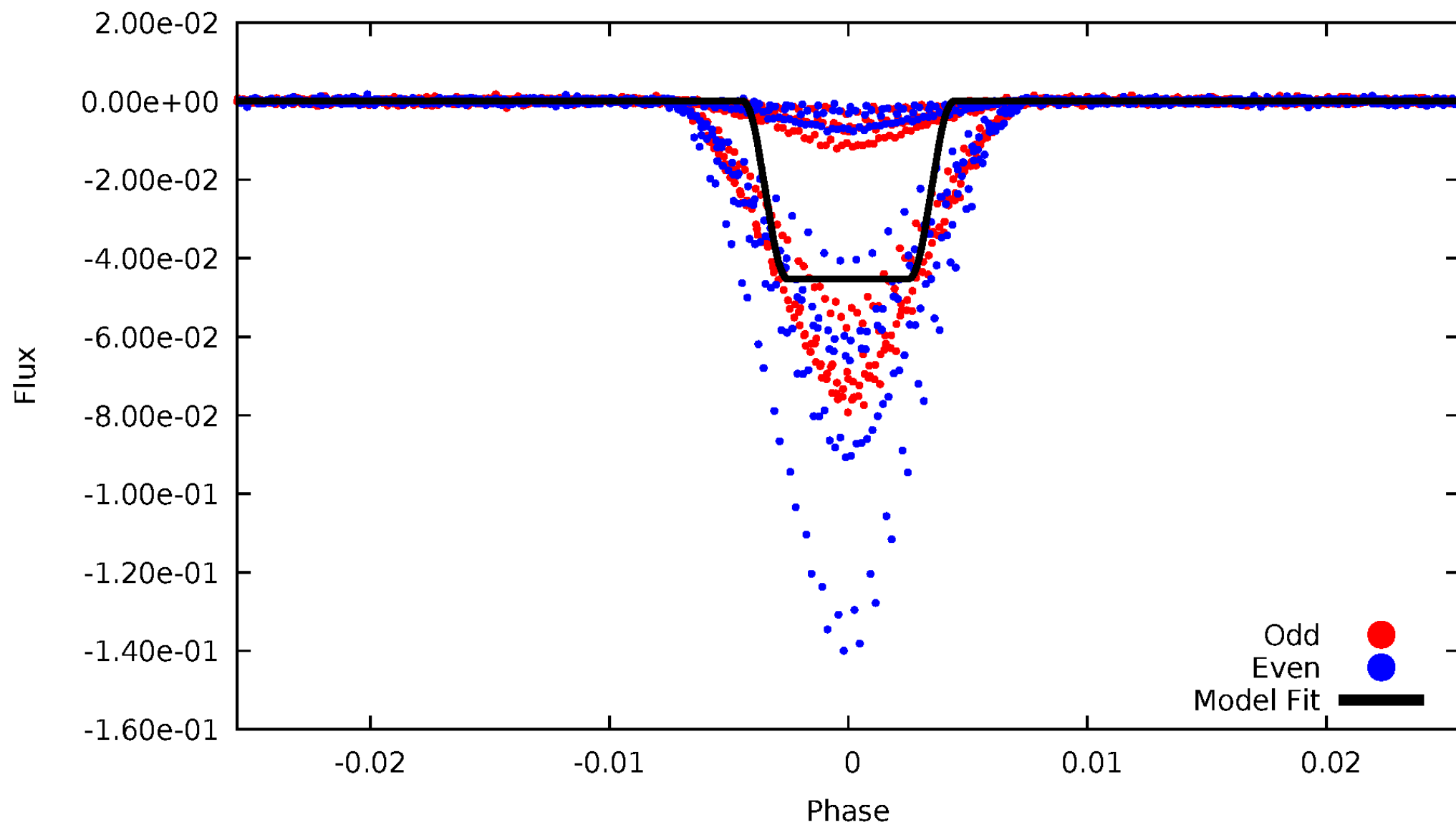
DV Odd/Even

TCE 003098184-02



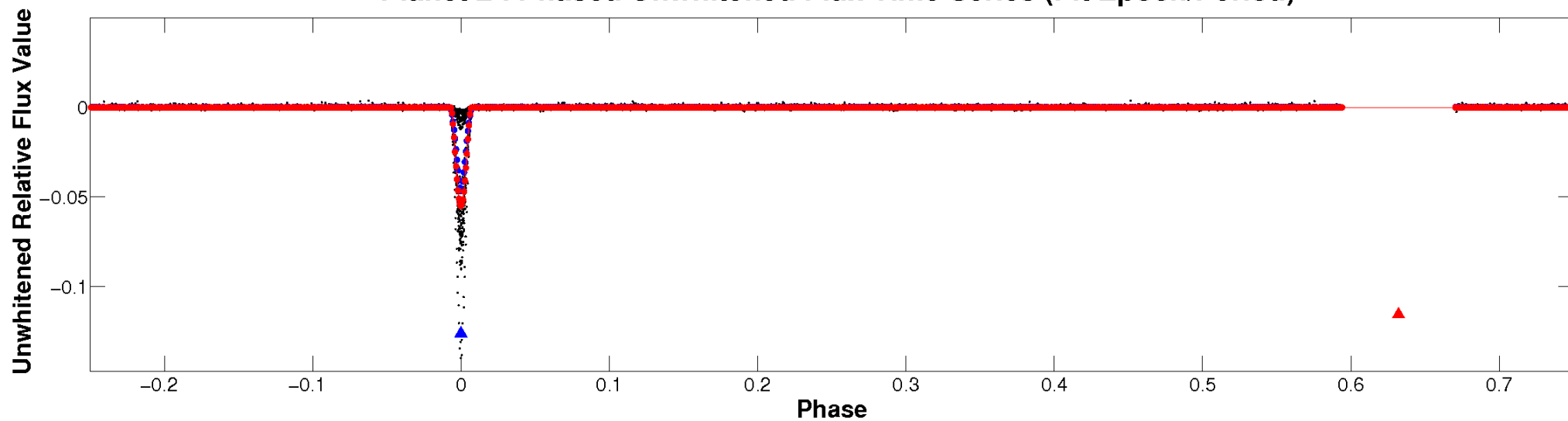
ALT Odd/Even

TCE 003098184-02

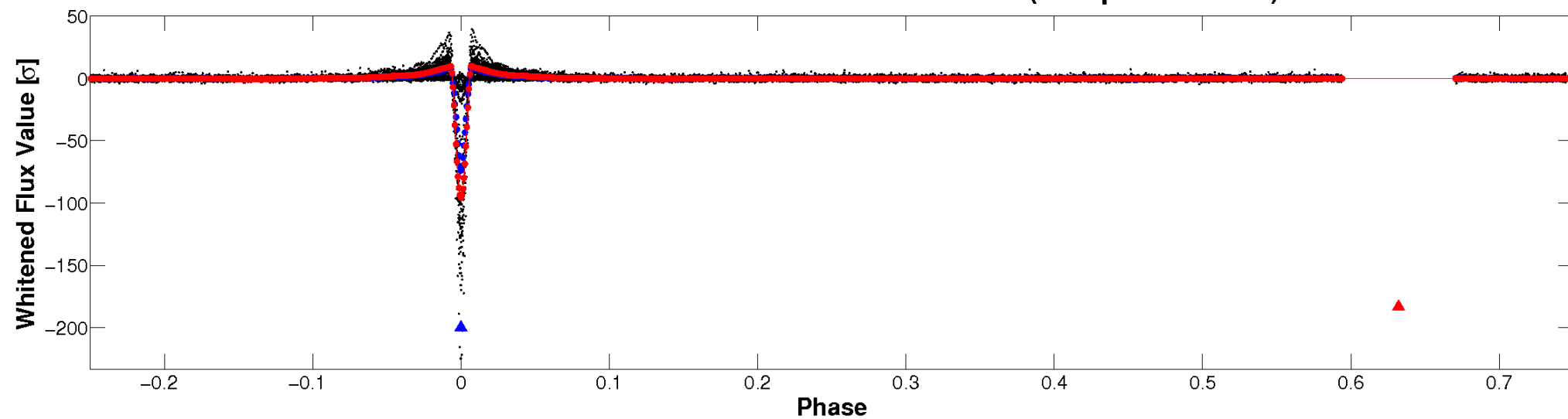


Non-Whitened Vs. Whitened Light Curve

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

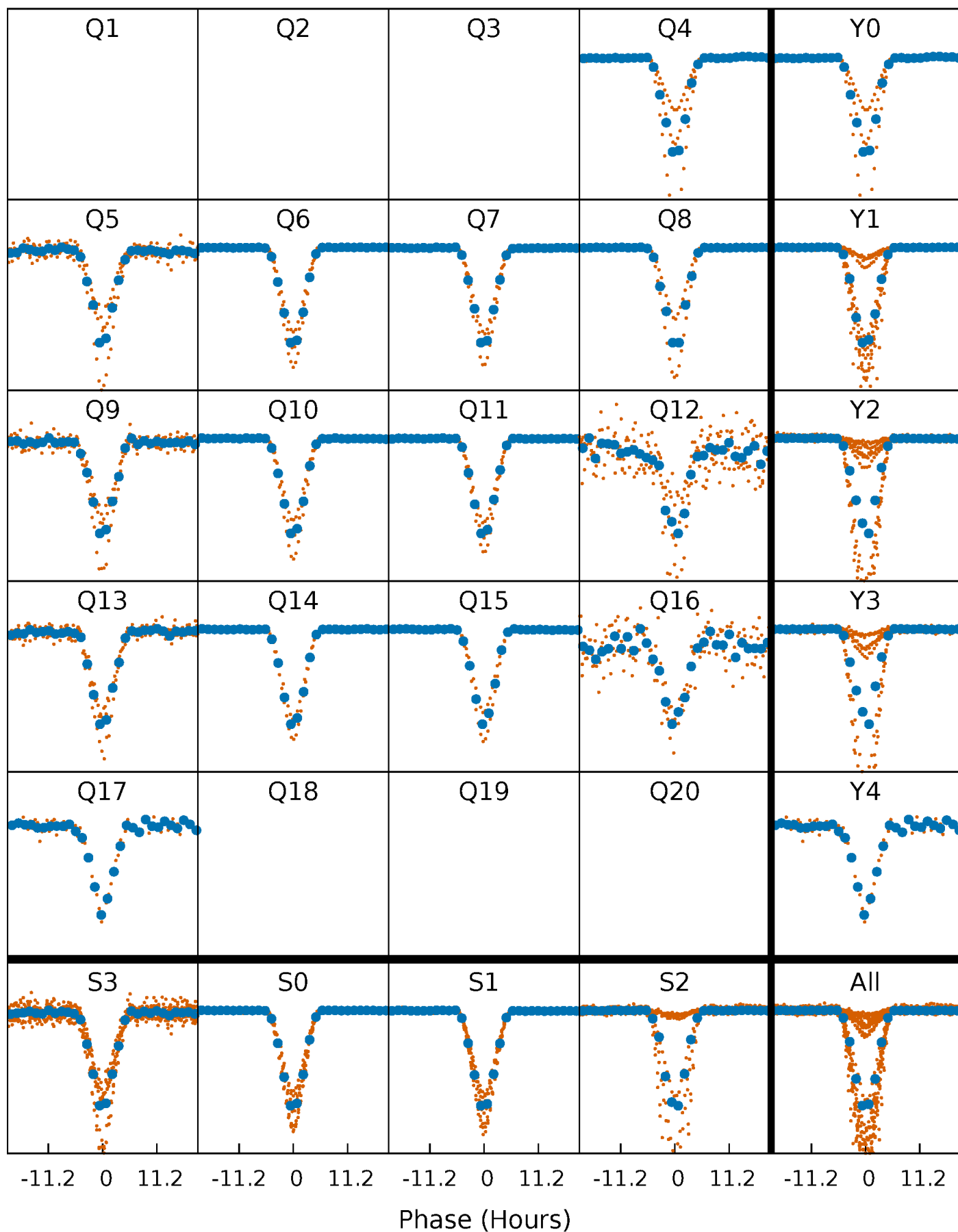


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



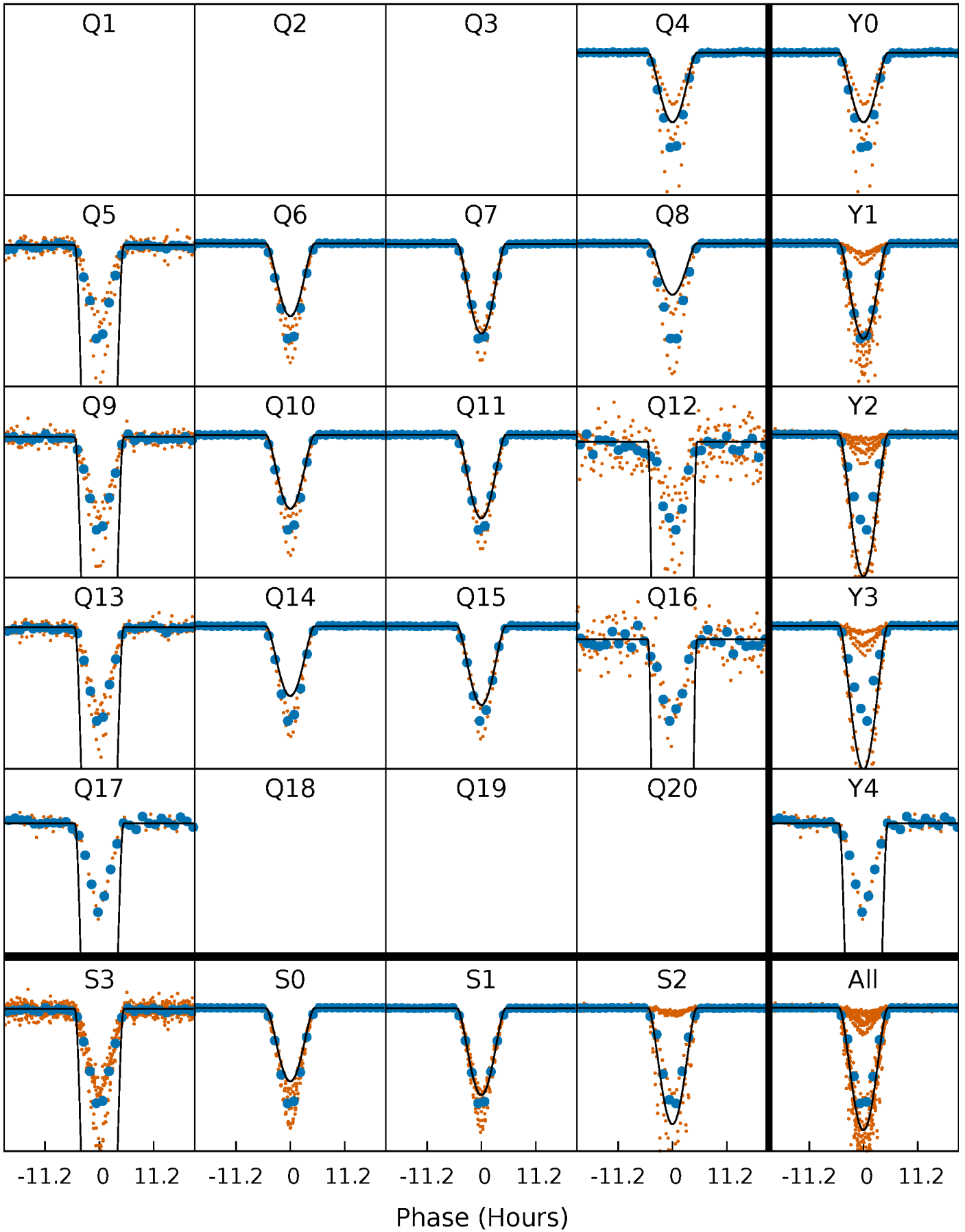
PDC Quarter-Phased Transit Curves

TCE 003098184-02 $P = 30.476547$ Days $T_0 = 136.971903$ (BKJD)



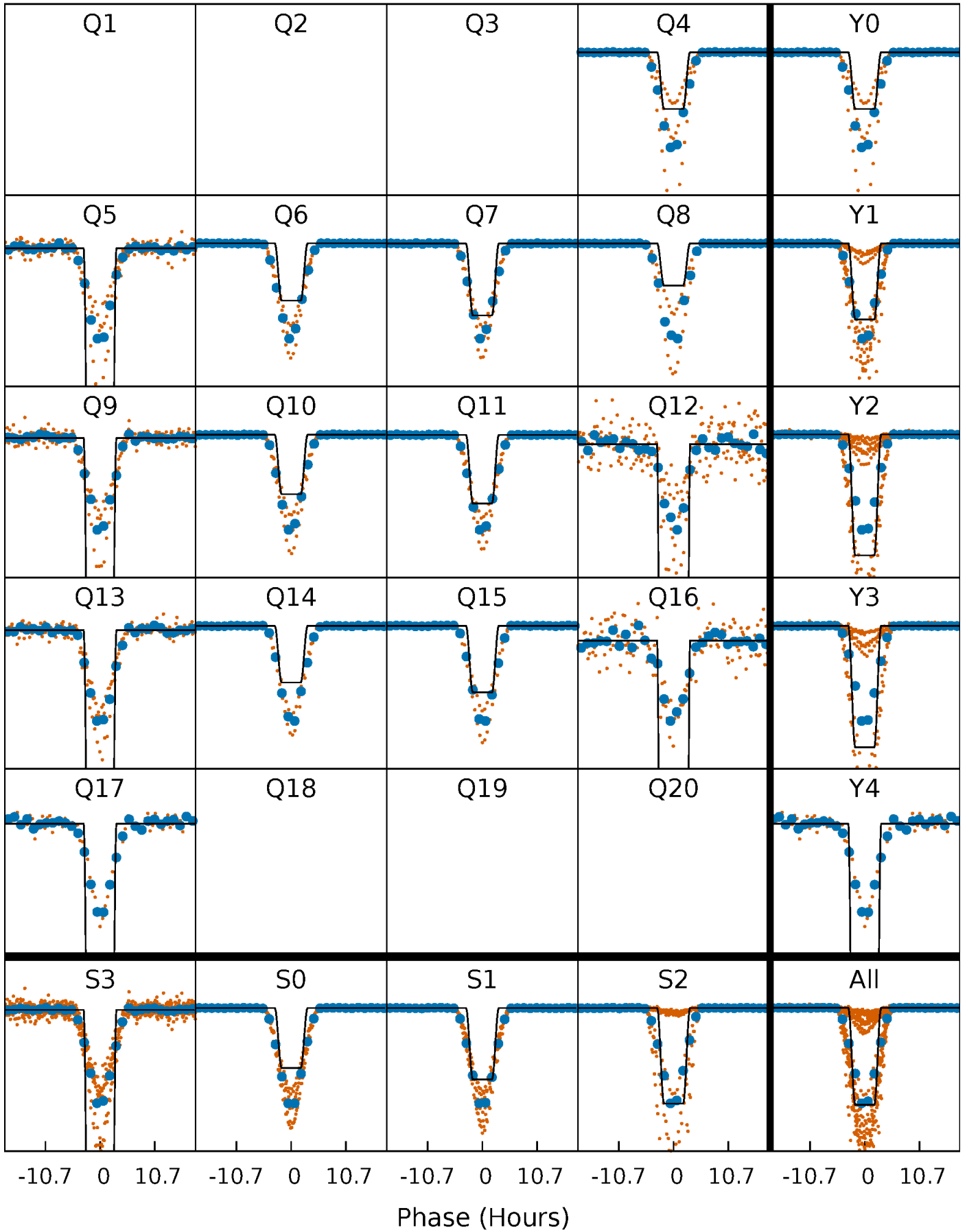
DV Quarter-Phased Transit Curves

TCE 003098184-02 P= 30.476547 Days $T_0=136.971903$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

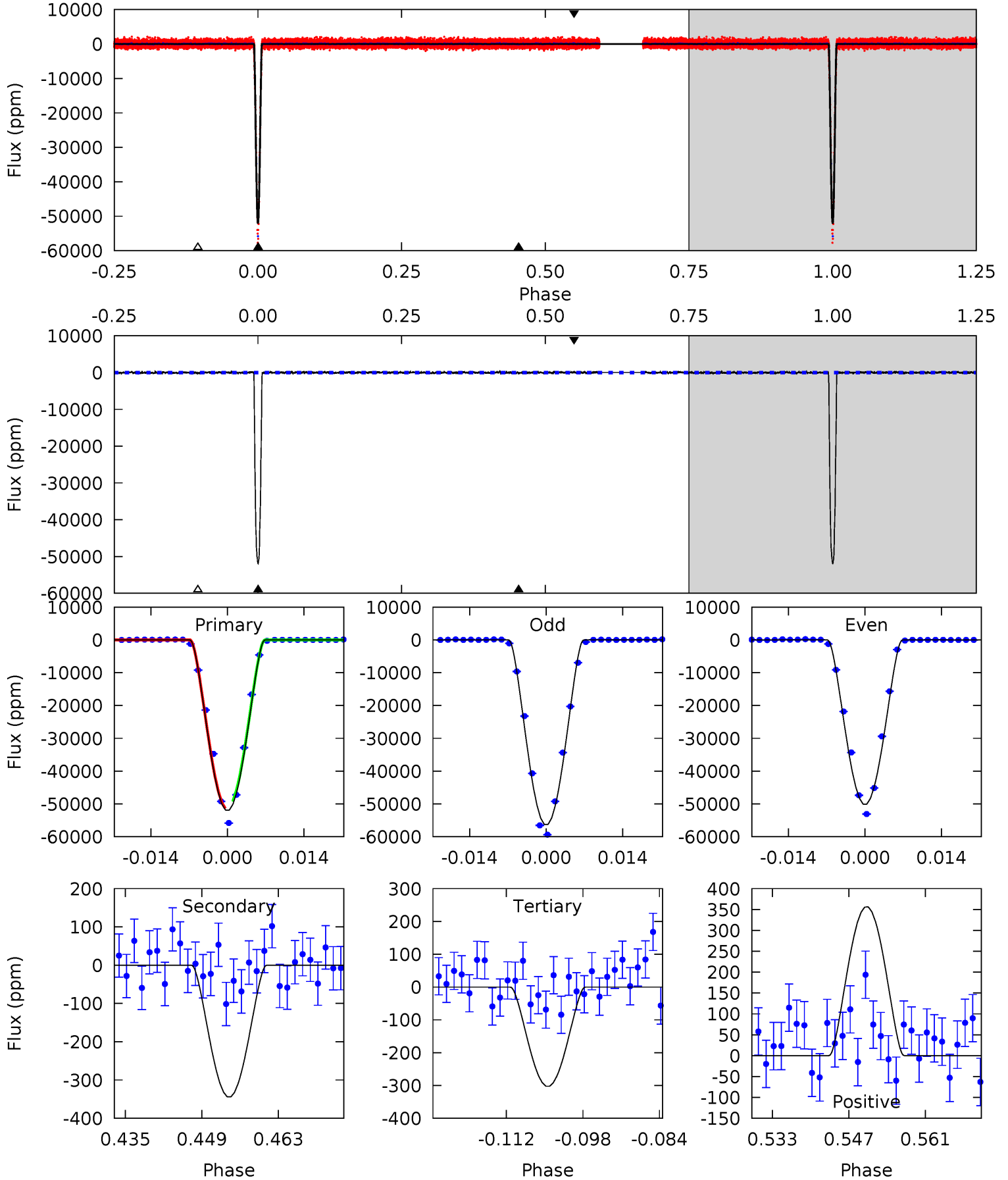
TCE 003098184-02 P= 30.476157 Days $T_0=136.981794$ (BKJD)



DV Model-Shift Uniqueness Test

003098184-02, P = 30.476547 Days, E = 136.971903 Days

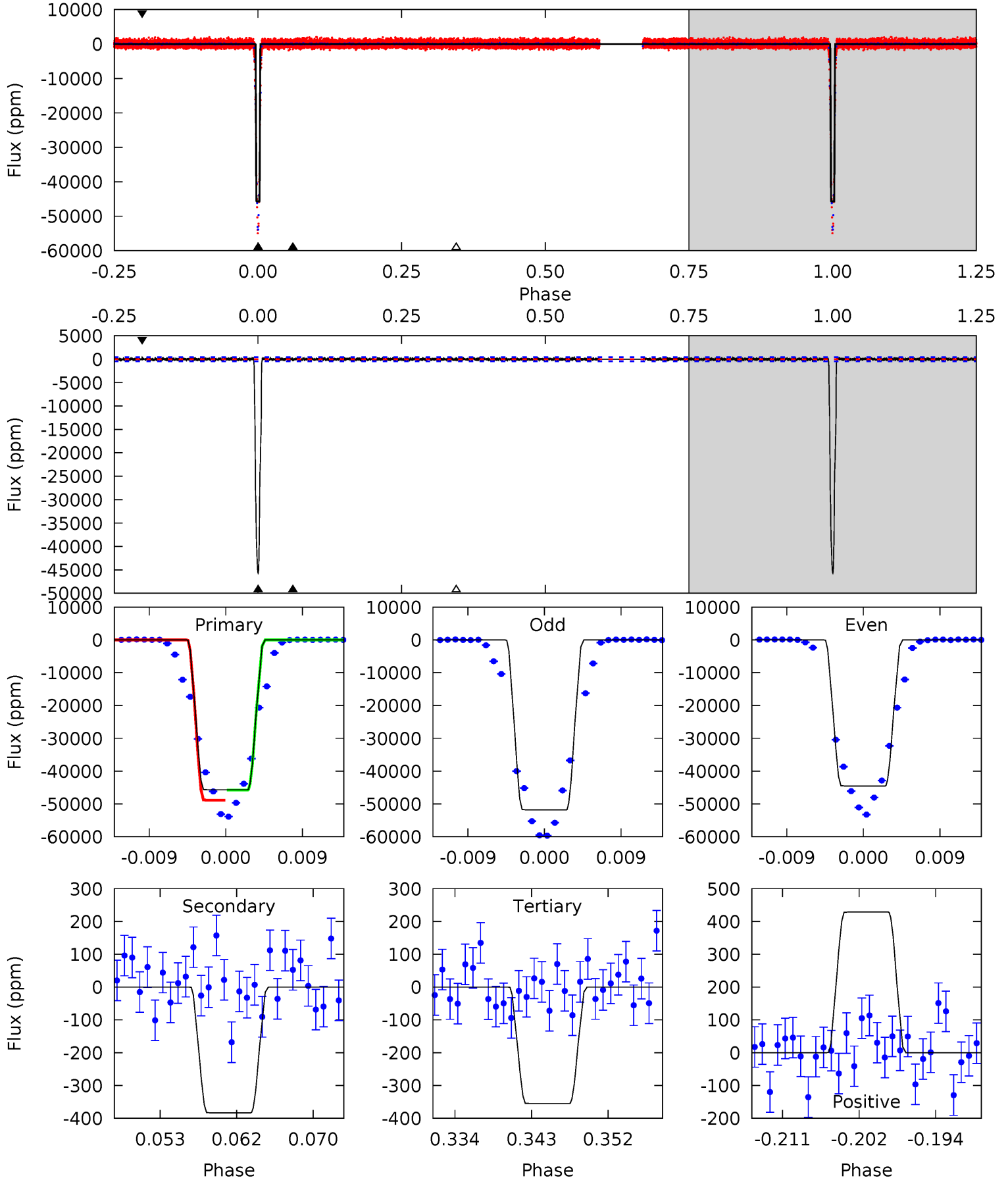
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1262	8.37	7.35	8.65	4.96	2.46	2.54	1255	1253	1.02	-0.29	82.5	0.83	0.01	0



Alt Model-Shift Uniqueness Test

003098184-02, P = 30.476157 Days, E = 136.981794 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
515.9	4.33	4.01	4.84	5.05	2.62	1.17	511.9	511.1	0.32	-0.51	44.4	0.82	0.01	0



Stellar Parameters For KIC 003098184

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6384^{+179}_{-246}	$4.419^{+0.062}_{-0.188}$	$-0.160^{+0.250}_{-0.300}$	$1.086^{+0.314}_{-0.134}$	$1.129^{+0.150}_{-0.150}$	$1.240^{+0.422}_{-0.616}$
	+3%/-4%	+1%/-4%	+156%/-188%	+29%/-12%	+13%/-13%	+34%/-50%
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 003098184-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-344 ± 41	$39.43^{+8.57}_{-6.55}$	939^{+70}_{-45}	2399^{+104}_{-101}	$4.746^{+2.096}_{-1.664}$
Alt.	-383 ± 89	$26.09^{+6.84}_{-6.14}$	936^{+64}_{-47}	2697^{+210}_{-173}	12^{+9}_{-5}

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

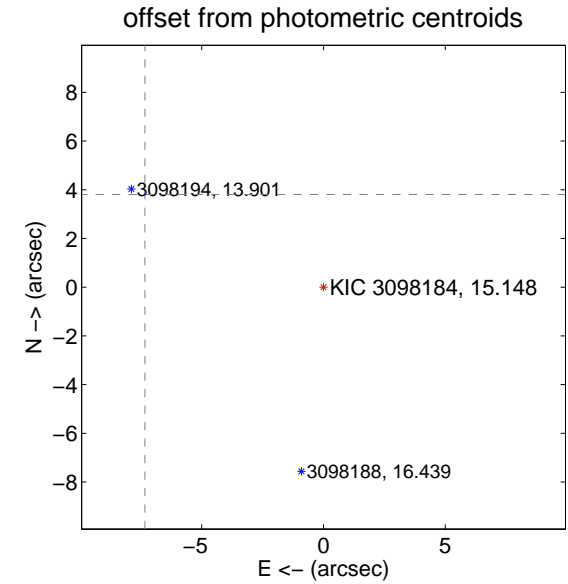
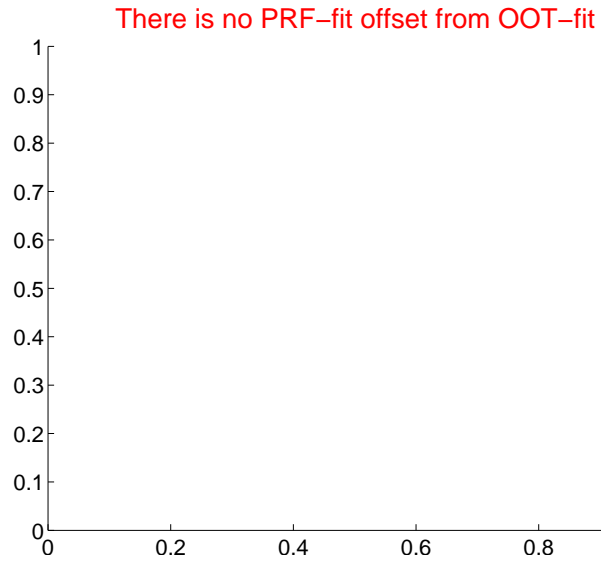
DV Centroid Data

Supplemental centroid analysis for 003098184-02. Kepler magnitude: 15.15. Transit SNR 759.82

There are 0 quarters with good PRF difference image offsets

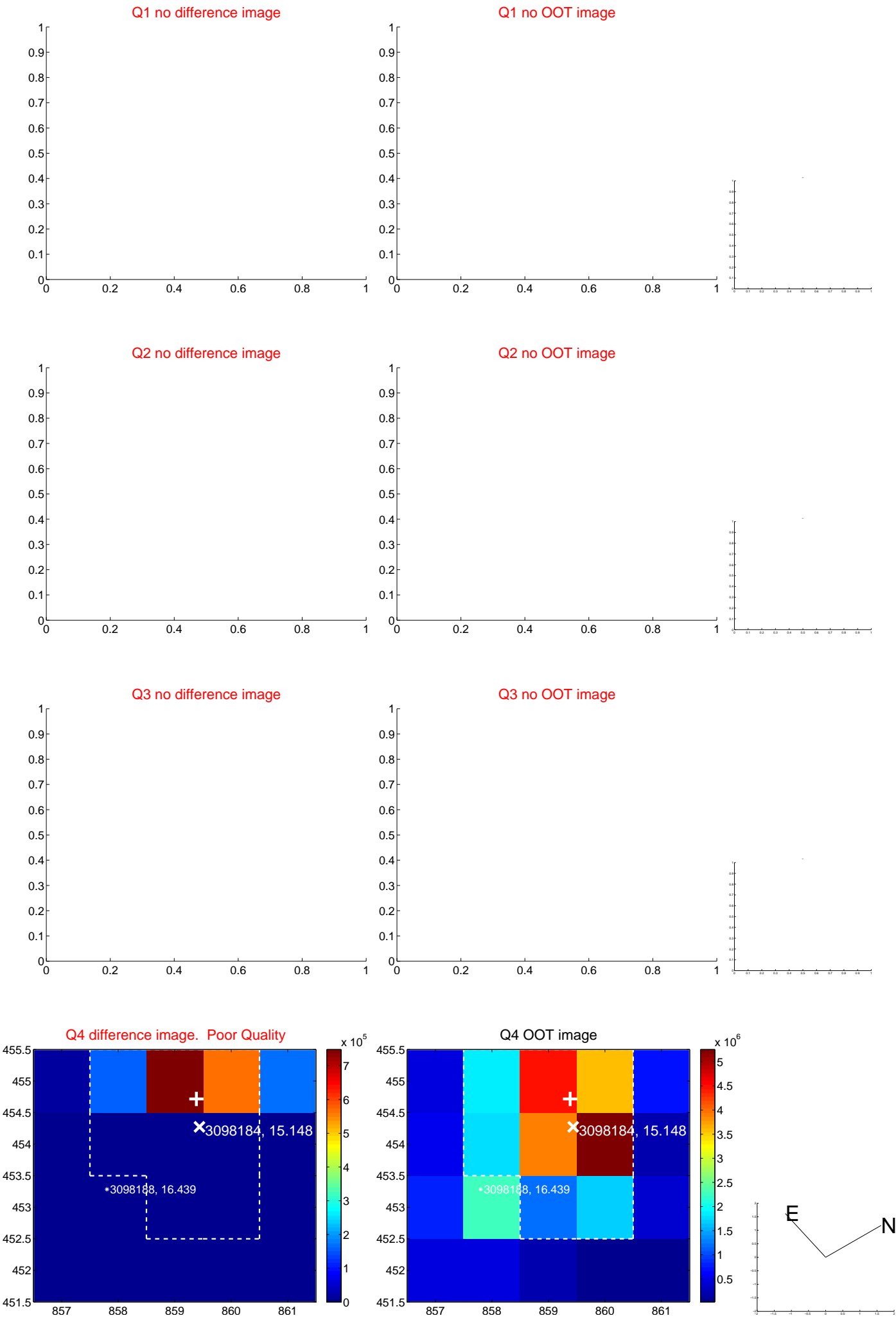
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	8.26 ± 0.01	1356.97	7.33 ± 0.01	3.81 ± 0.01

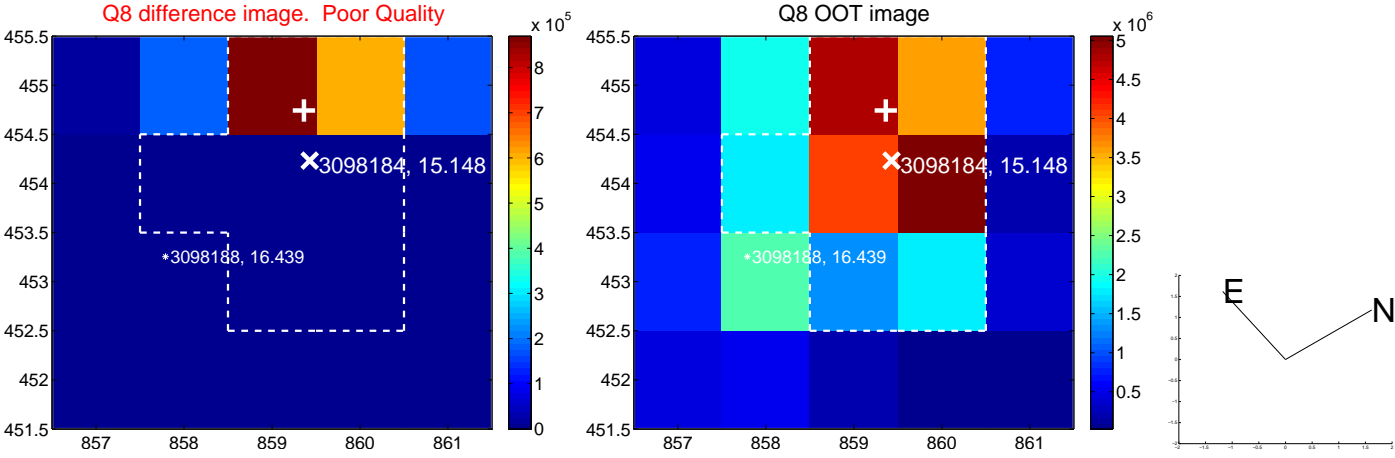
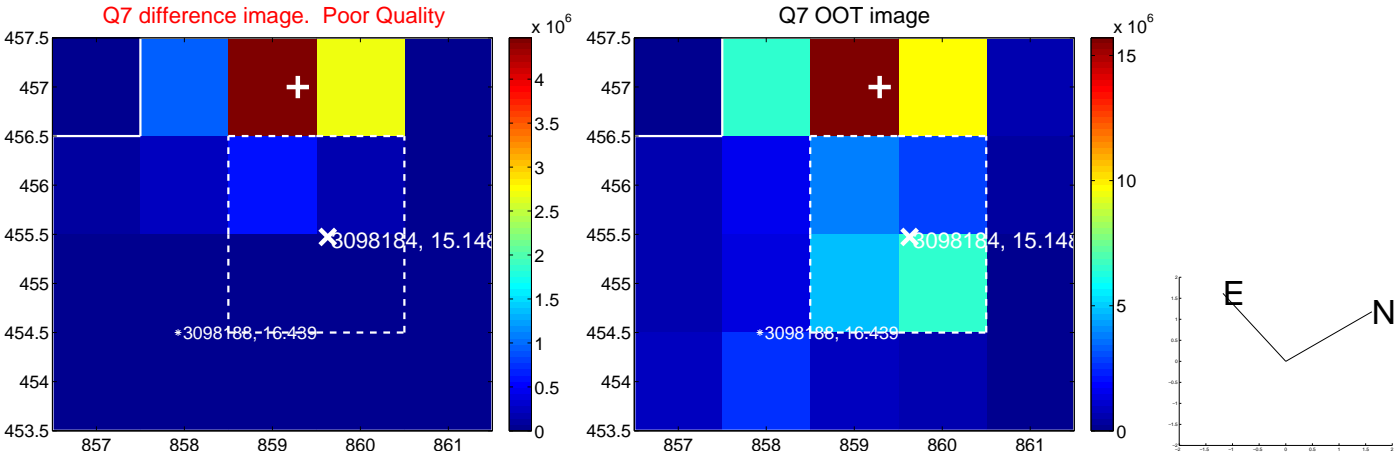
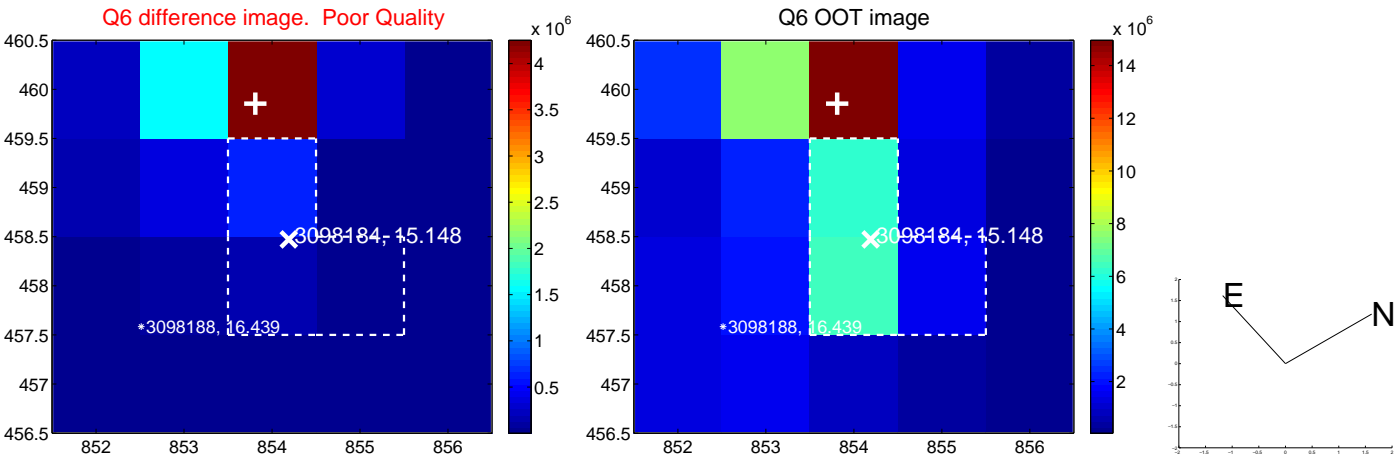
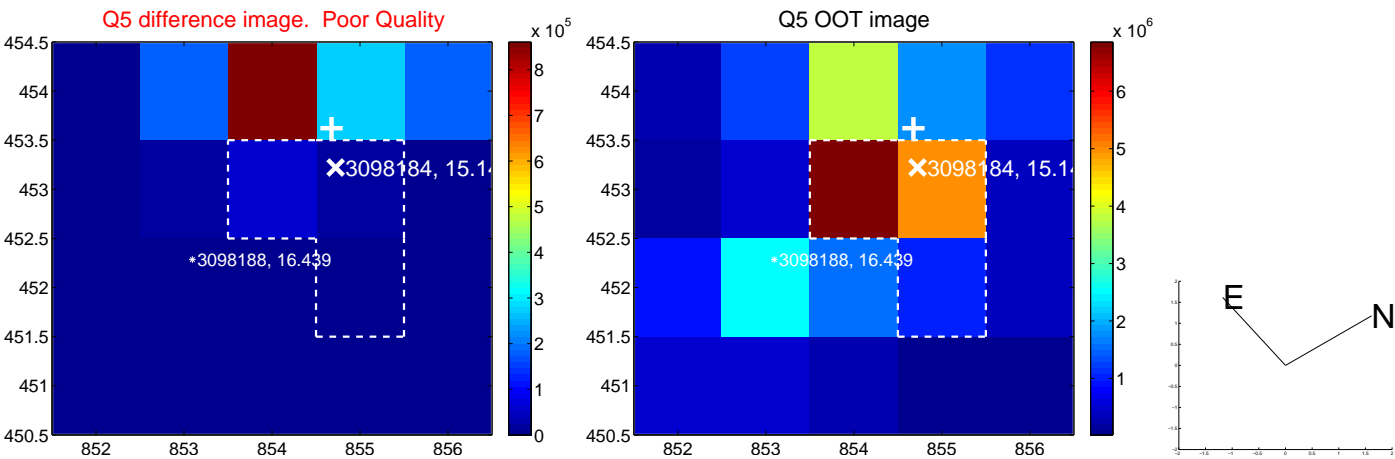


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

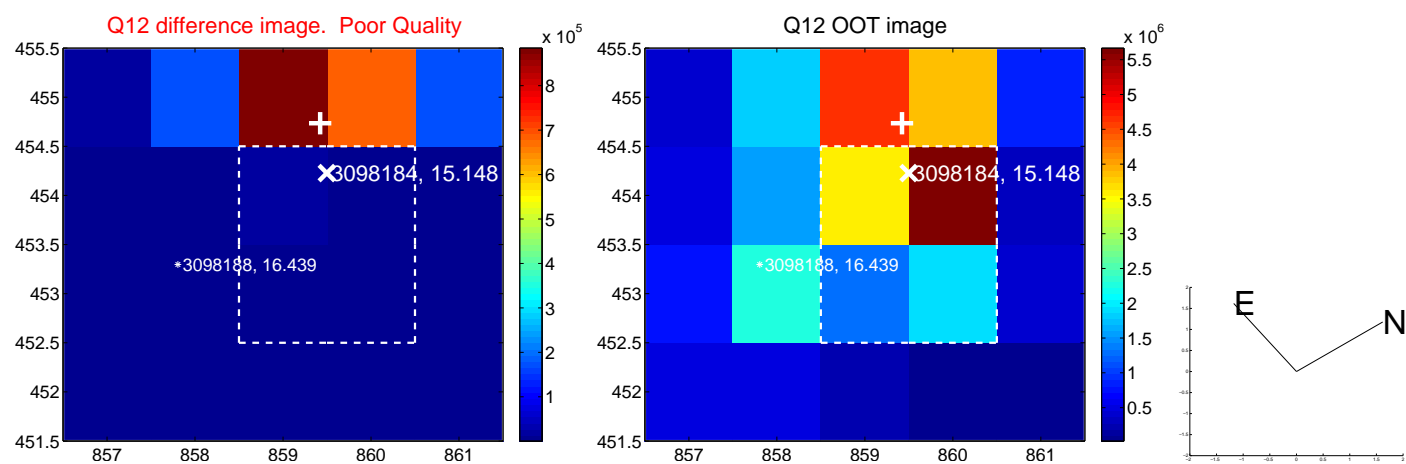
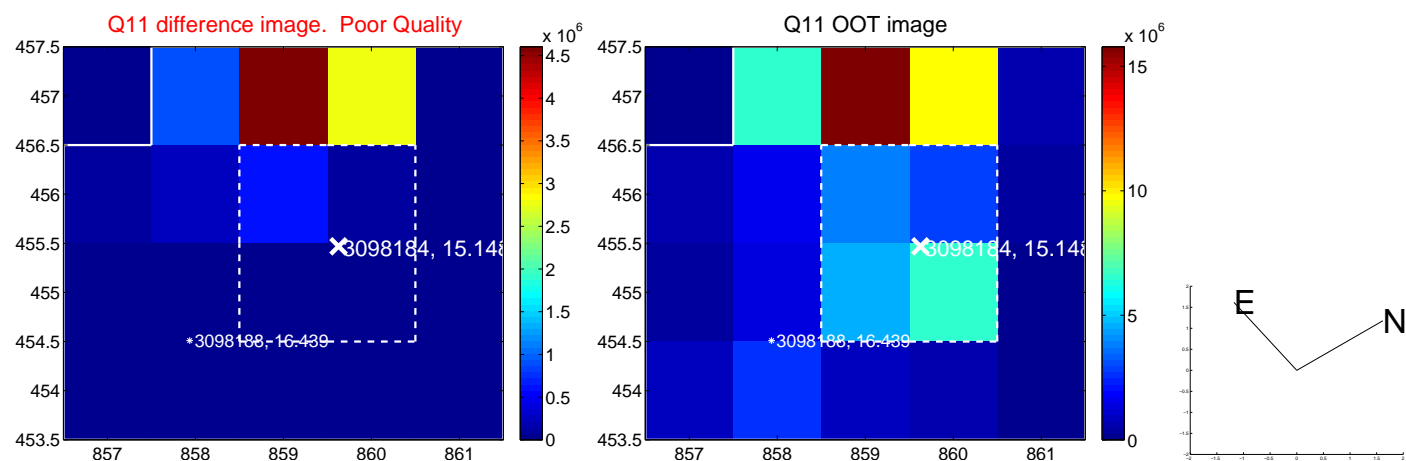
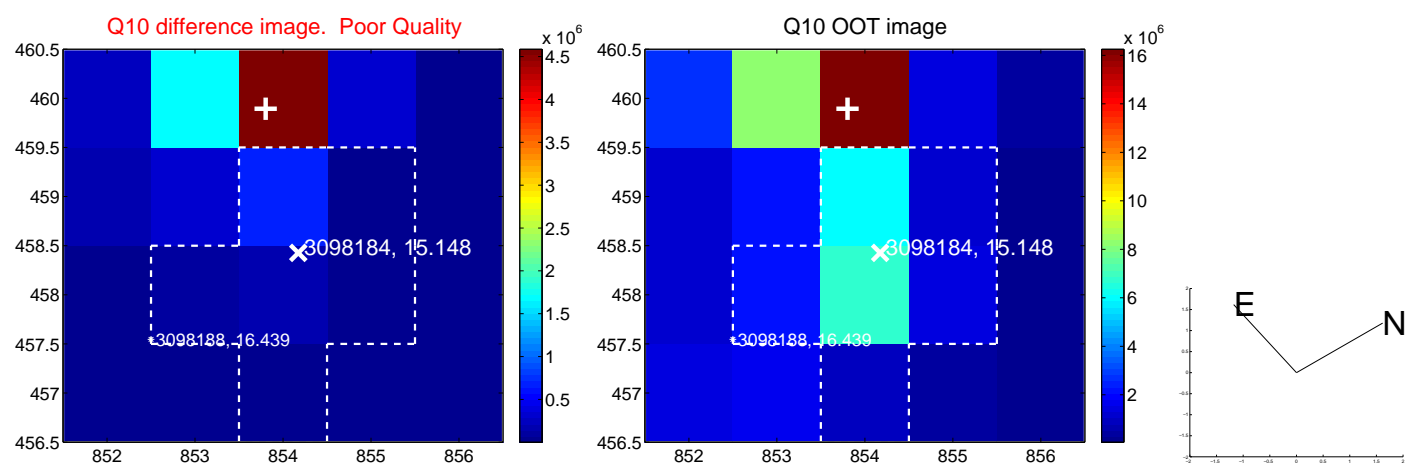
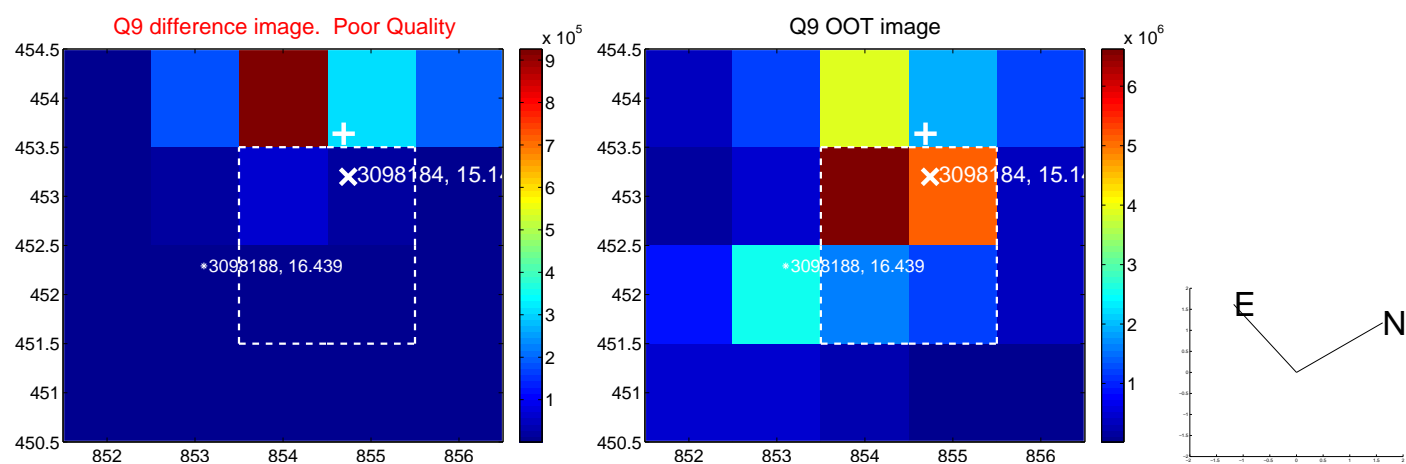
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



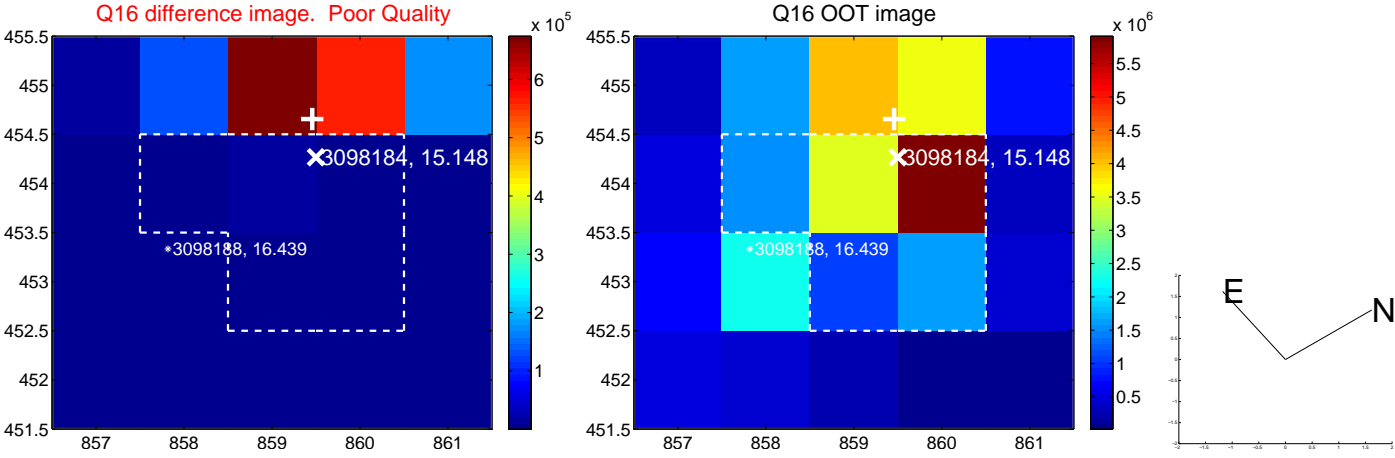
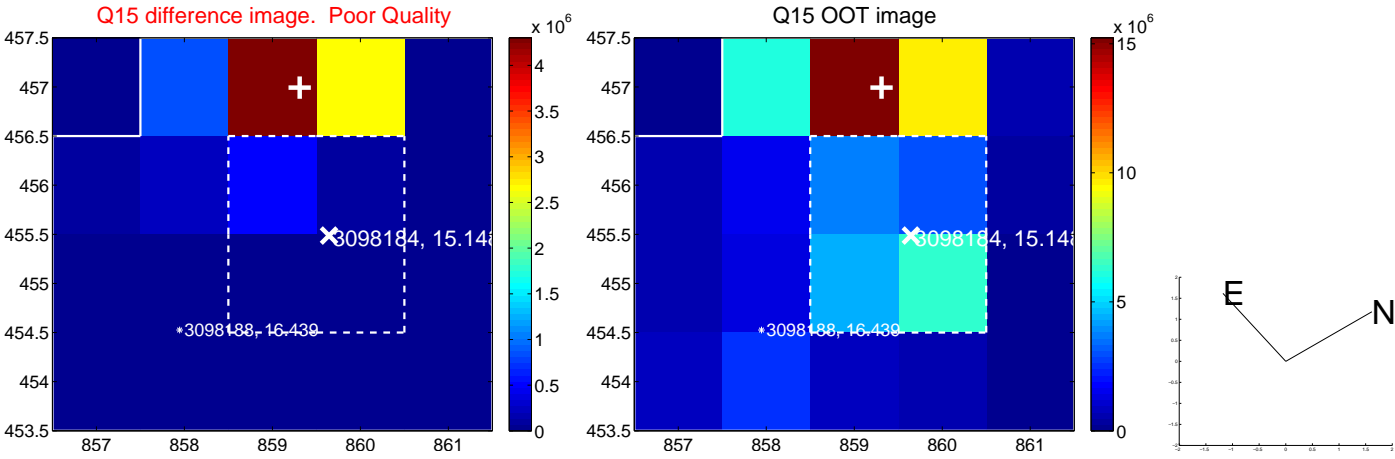
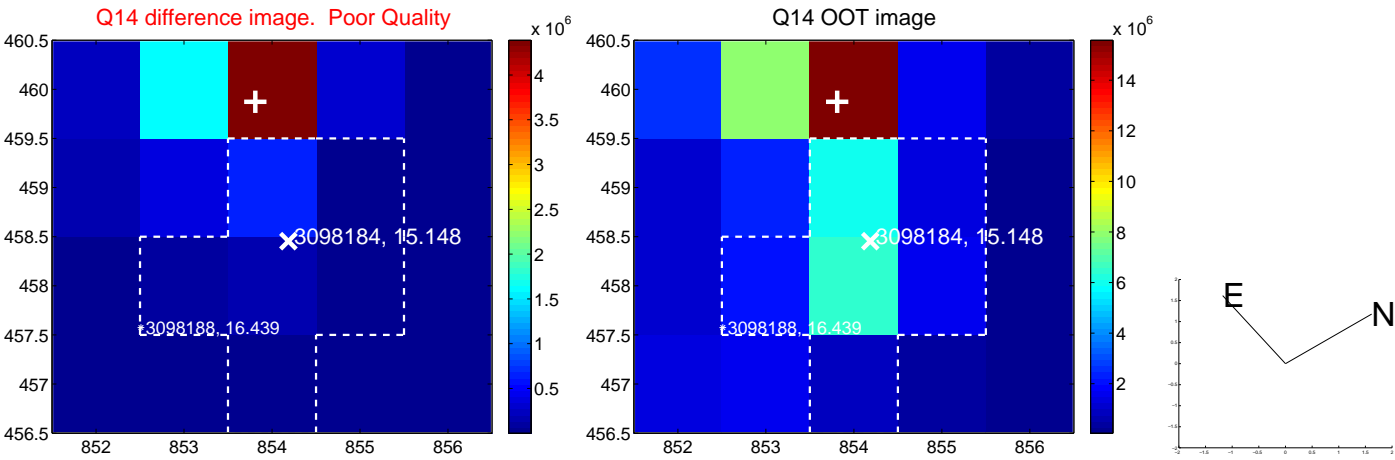
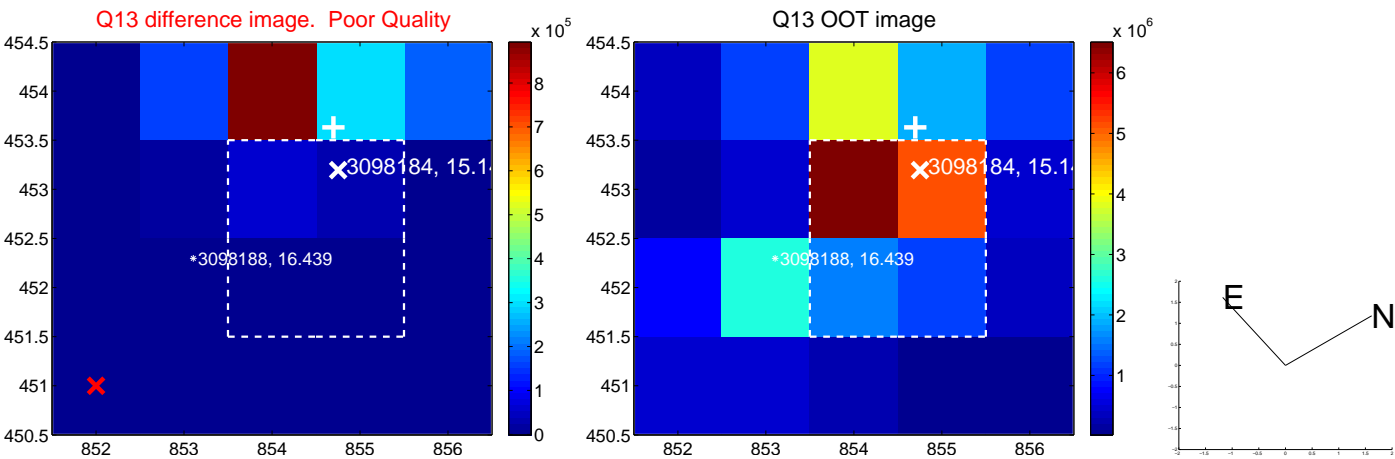
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



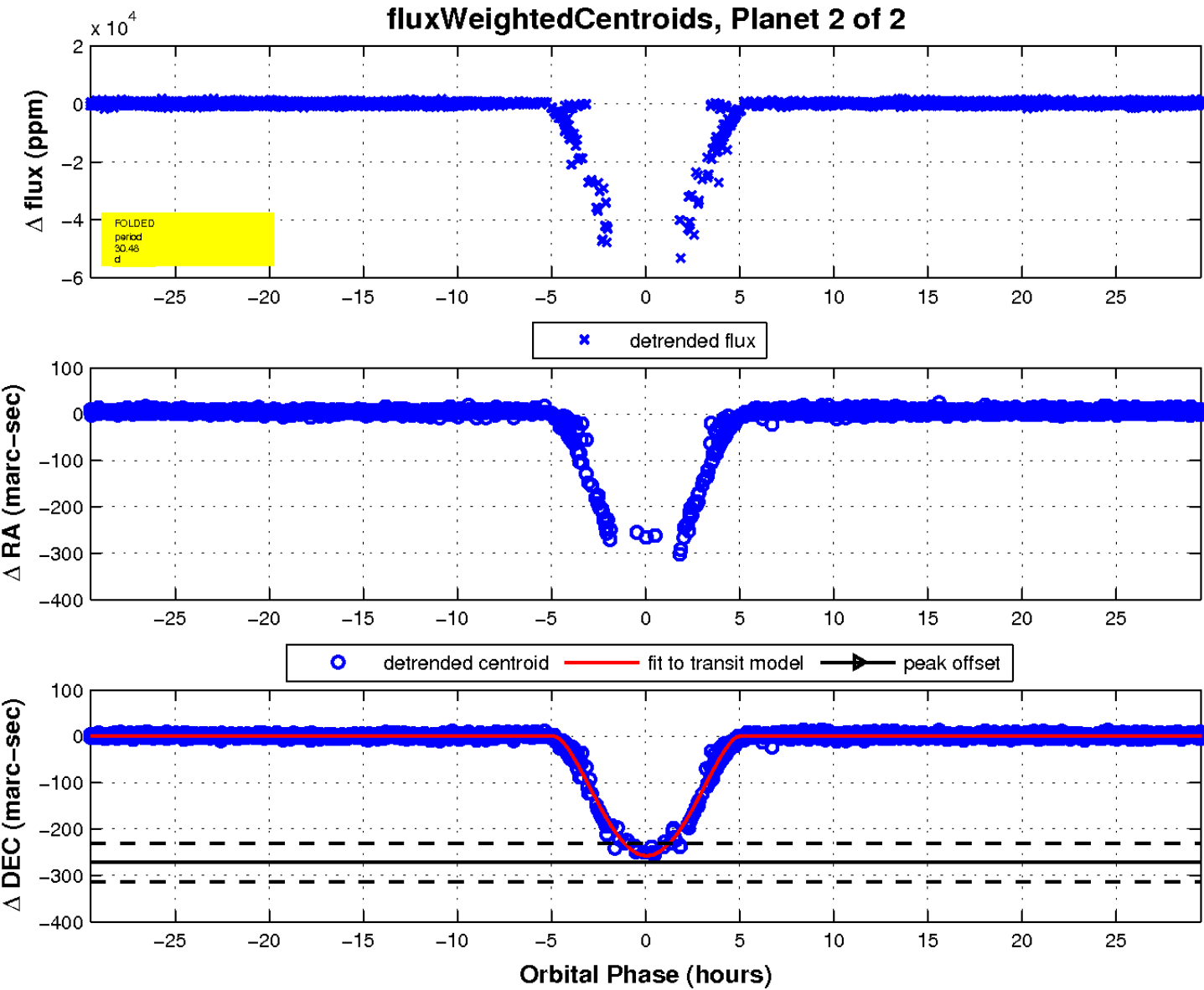
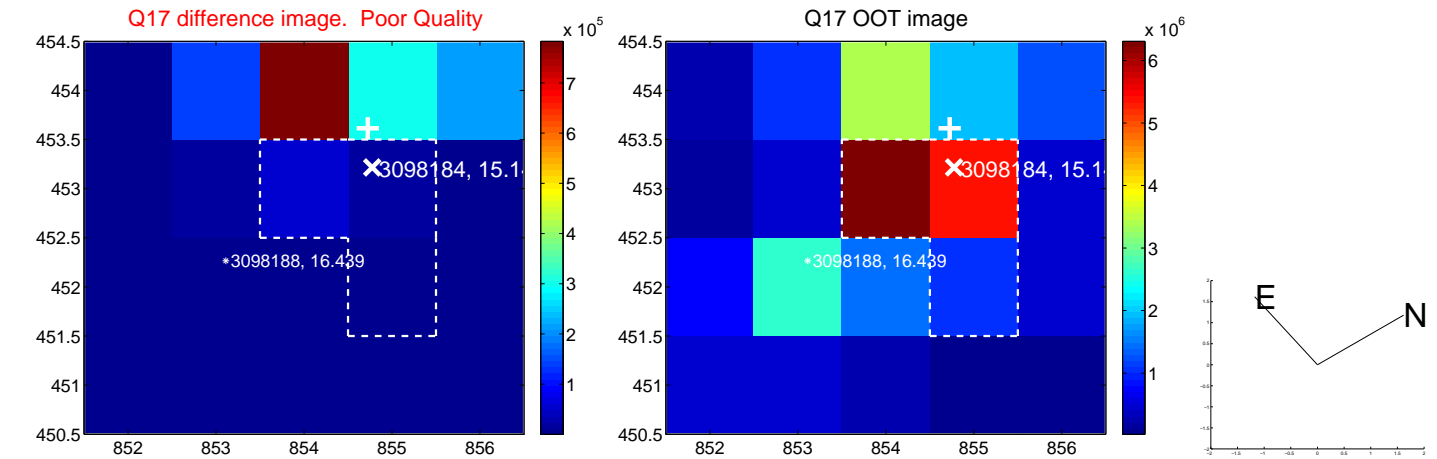
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

