

KIC 005038190

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})
005038190-01	OBS	No	1.711954	132.864084	120.2	8.061	7.9	8.3	0.86	5321	1.21	795.31
005038190-02	OBS	No	498.458610	580.308856	1292.3	20.849	10.8	6.7	0.86	5321	3.98	0.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005038190-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—CENT_RESOLVED_OFFSET
005038190-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

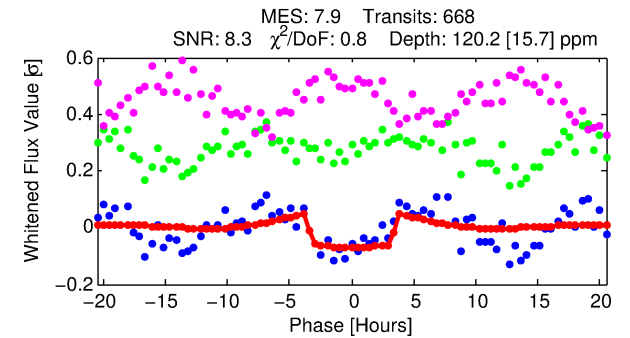
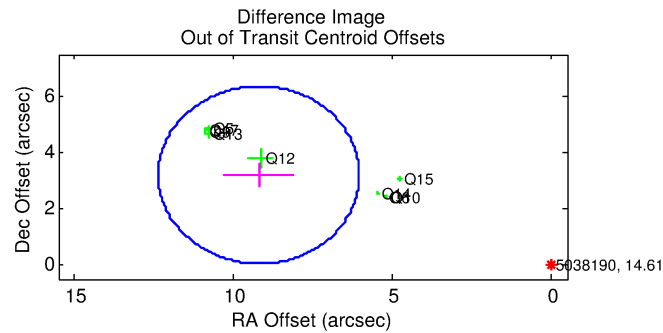
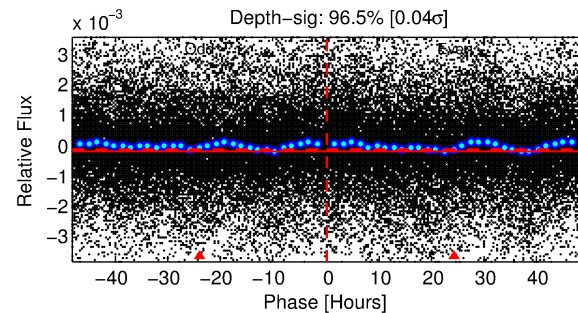
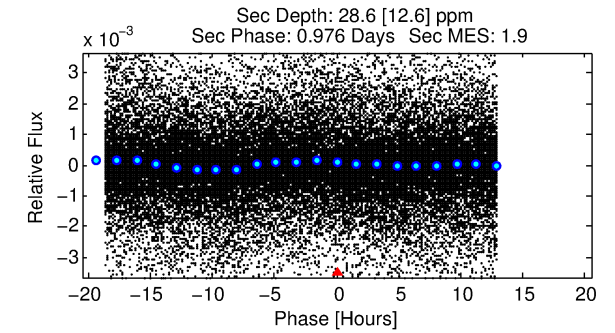
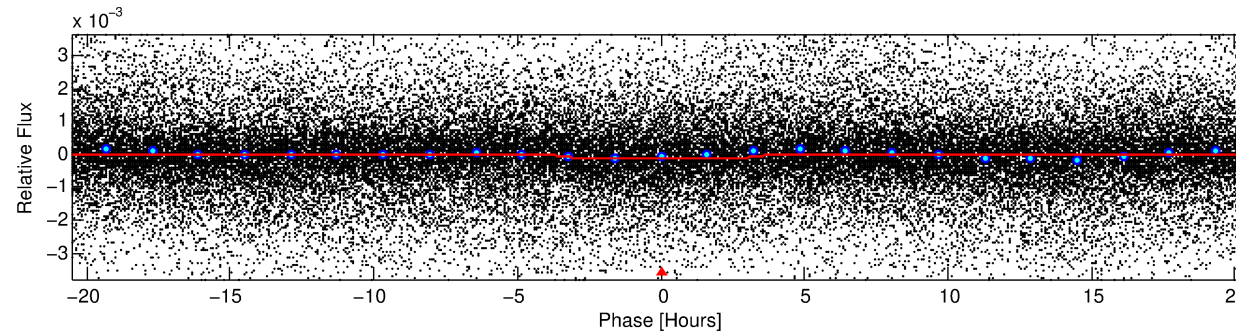
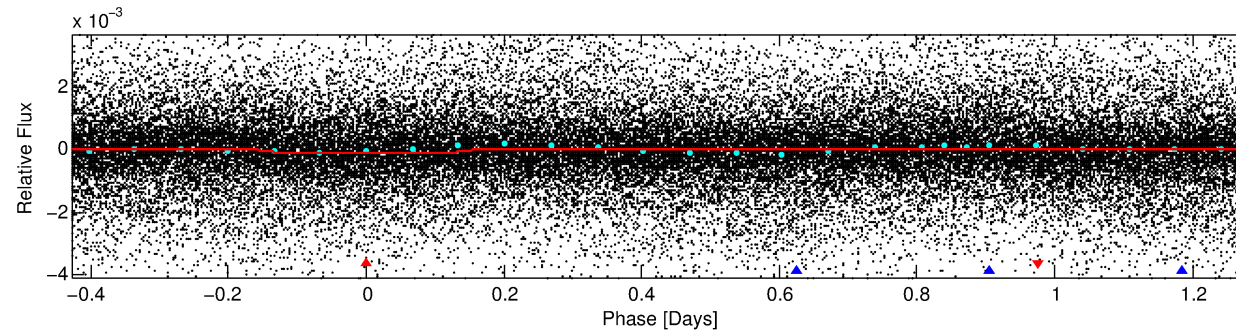
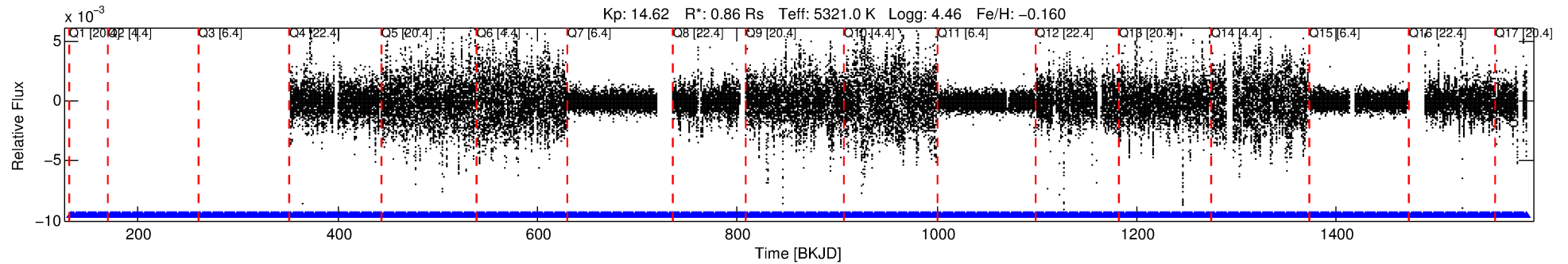
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005038190-01

No Significant Match Found

DV One-Page Summary

KIC: 5038190 Candidate: 1 of 2 Period: 1.712 d



DV Fit Results:

Period = 1.71195 [0.00002] d
Epoch = 132.8641 [0.0071] BKJD
Rp/R* = 0.0129 [0.0012]
a/R* = 1.13 [0.08]
b = 0.95 [0.04]
Seff = 795.31 [244.95]
Teq = 1354 [104] K
Rp = 1.21 [0.25] Re
a = 0.0258 [0.0044] AU
Ag = 7.19 [3.96] [1.56 σ]
Teffp = 3429 [433] K [4.66 σ]

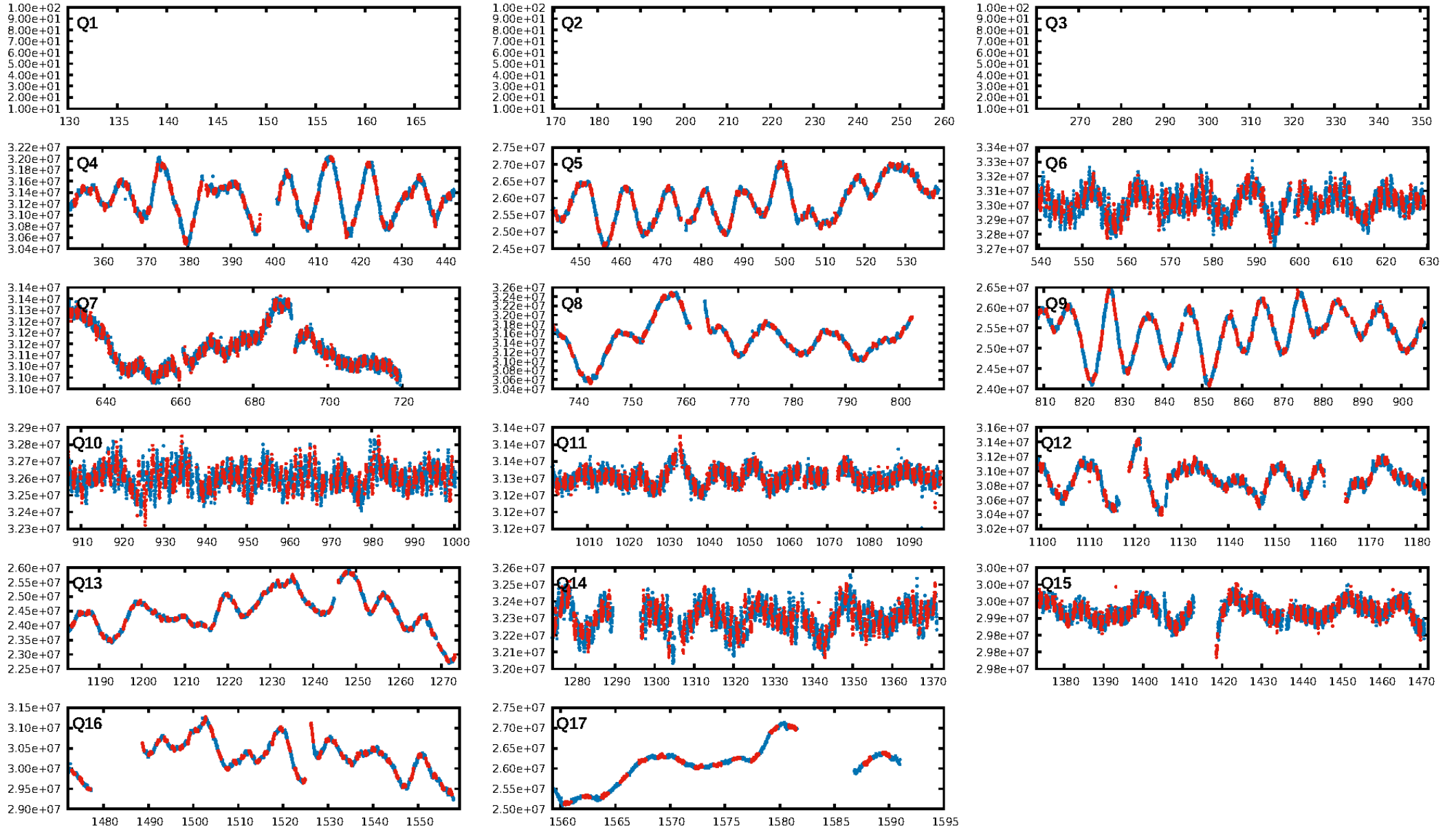
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [533.35 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.70e-13
RollingBand-fgt: 1.00 [653/653]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 3.426 arcsec [2.85 σ]
OotOffset-rm: 9.741 arcsec [9.24 σ]
KicOffset-rm: 8.542 arcsec [10.12 σ]
OotOffset-st: 3/1/1/4 [9]
KicOffset-st: 3/1/1/4 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 1.00 [14/14]

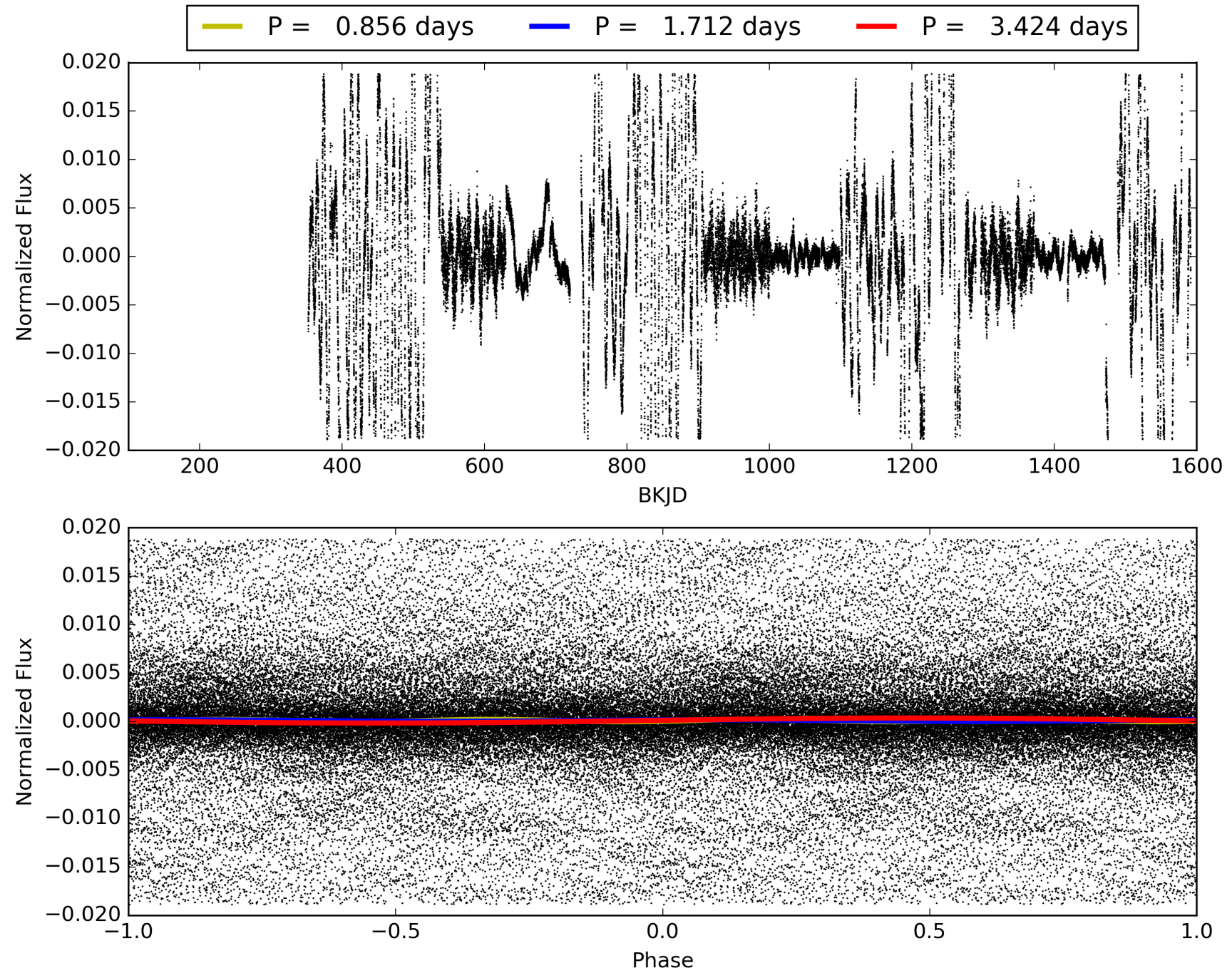
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:01:55 Z

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

TCE 005038190-01, PDC Light Curves

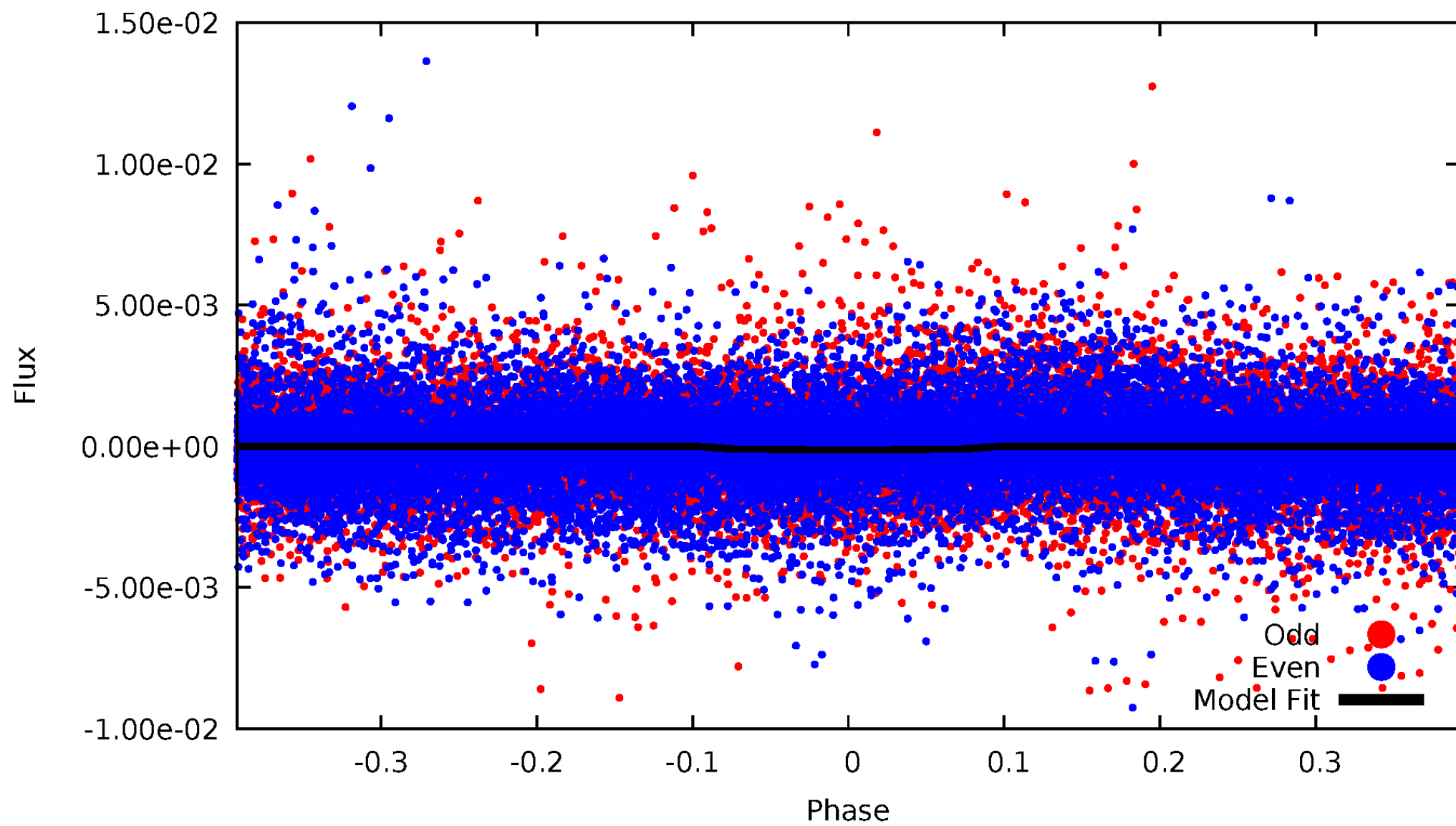


TCE 005038190-01



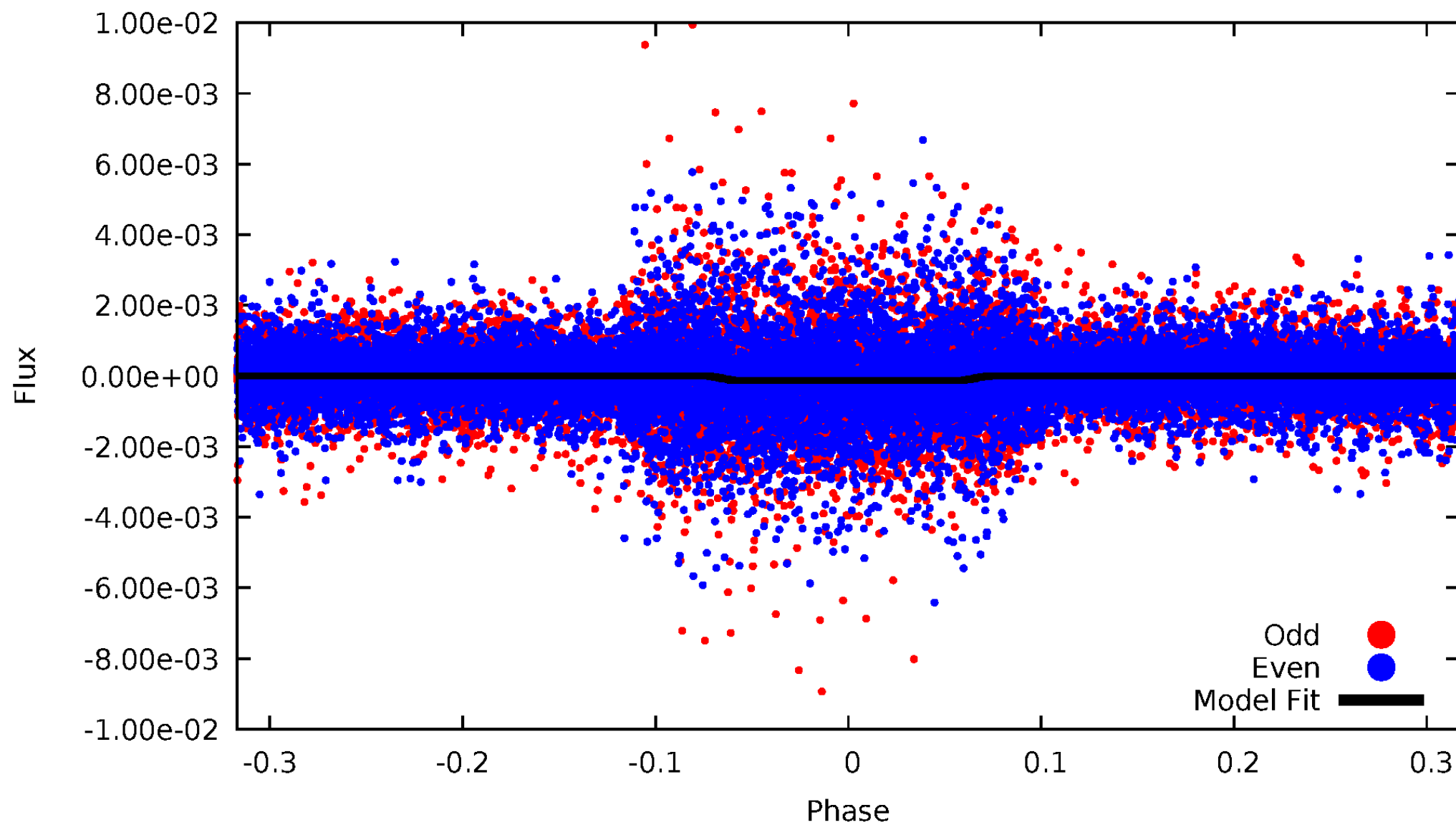
DV Odd/Even

TCE 005038190-01



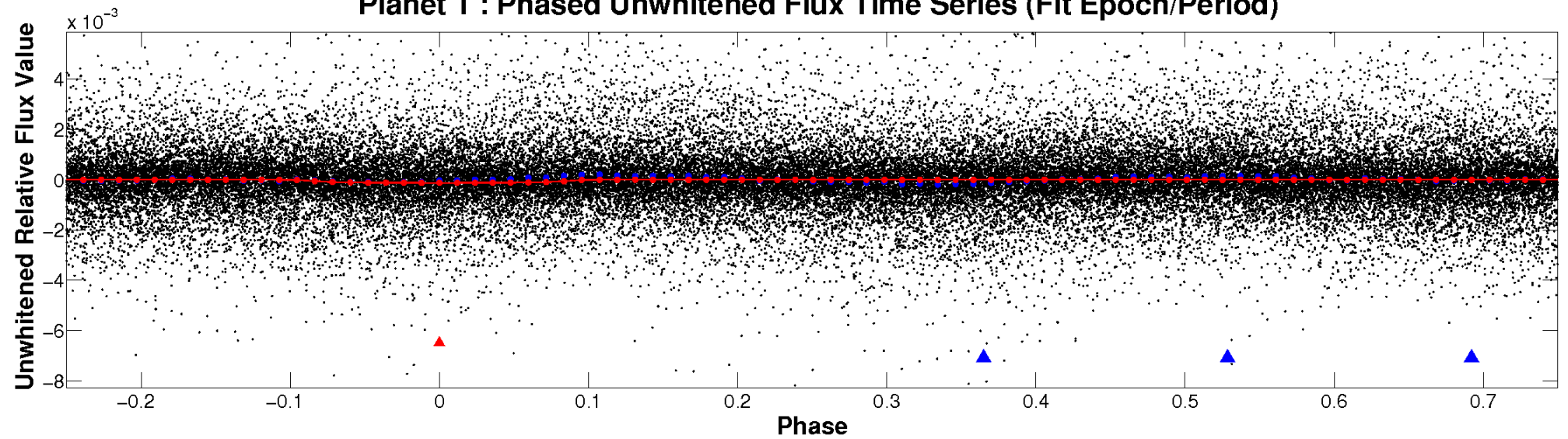
ALT Odd/Even

TCE 005038190-01

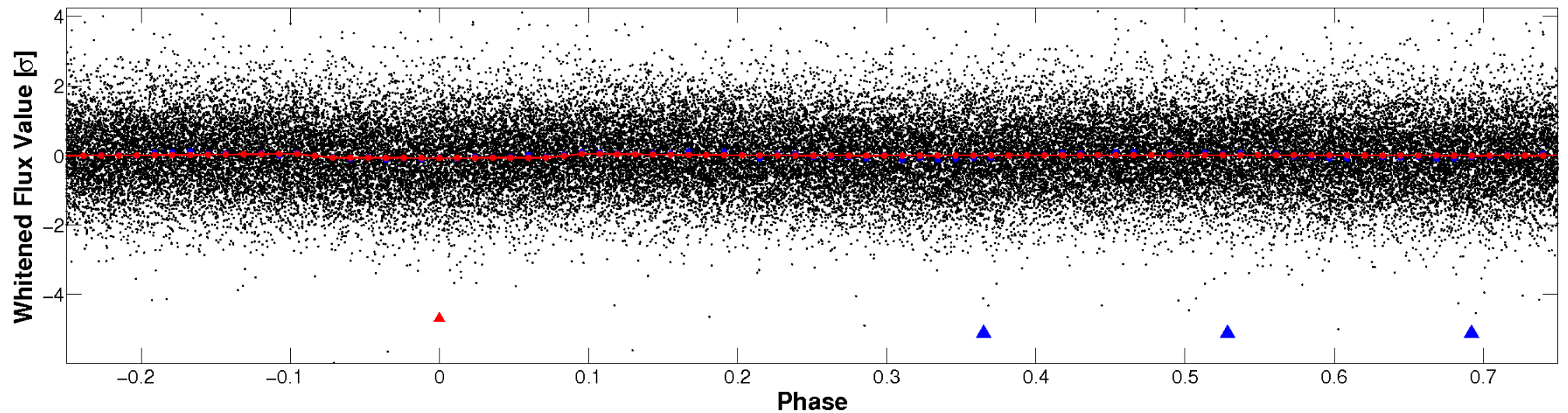


Non-Whitened Vs. Whitened Light Curve

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

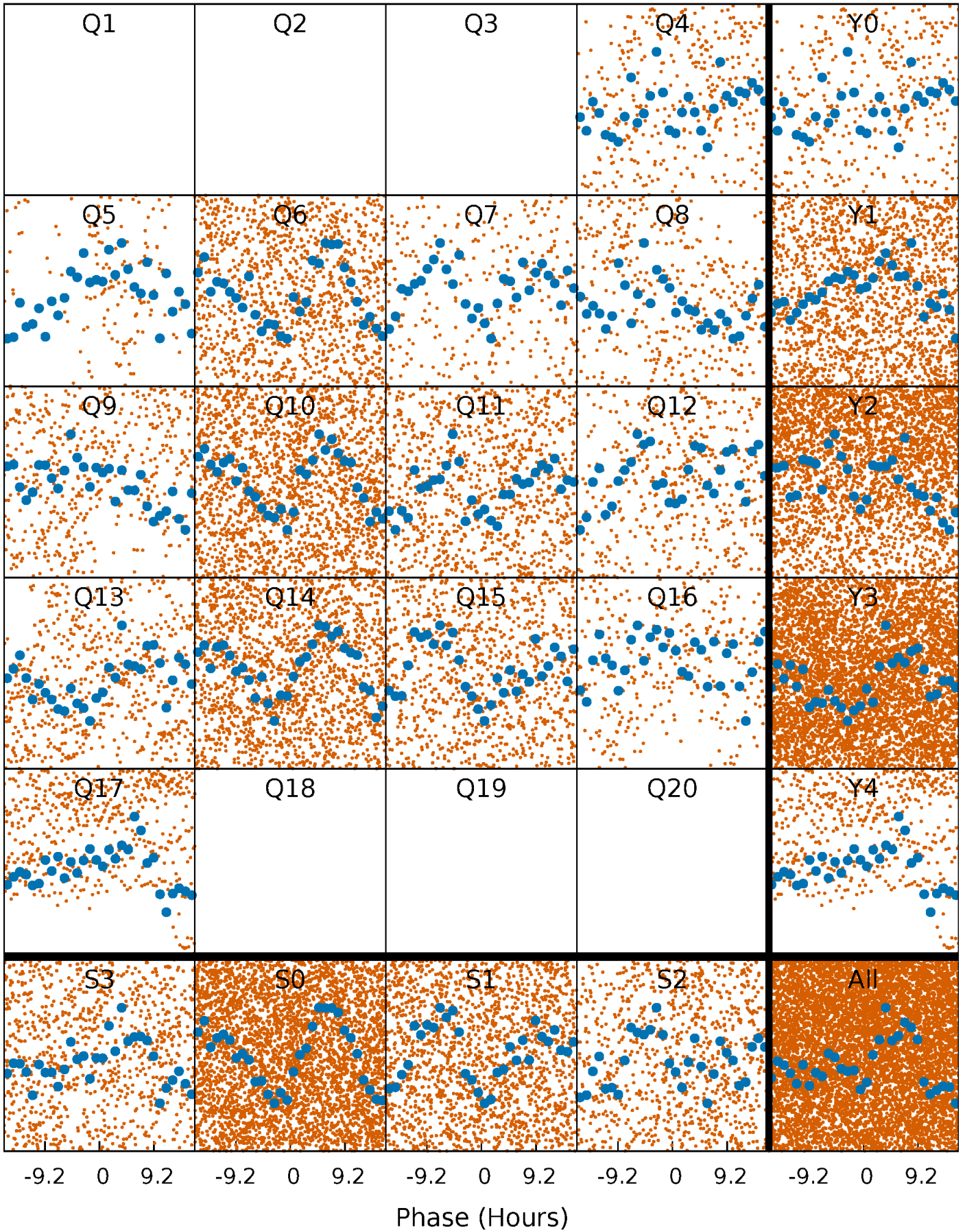


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



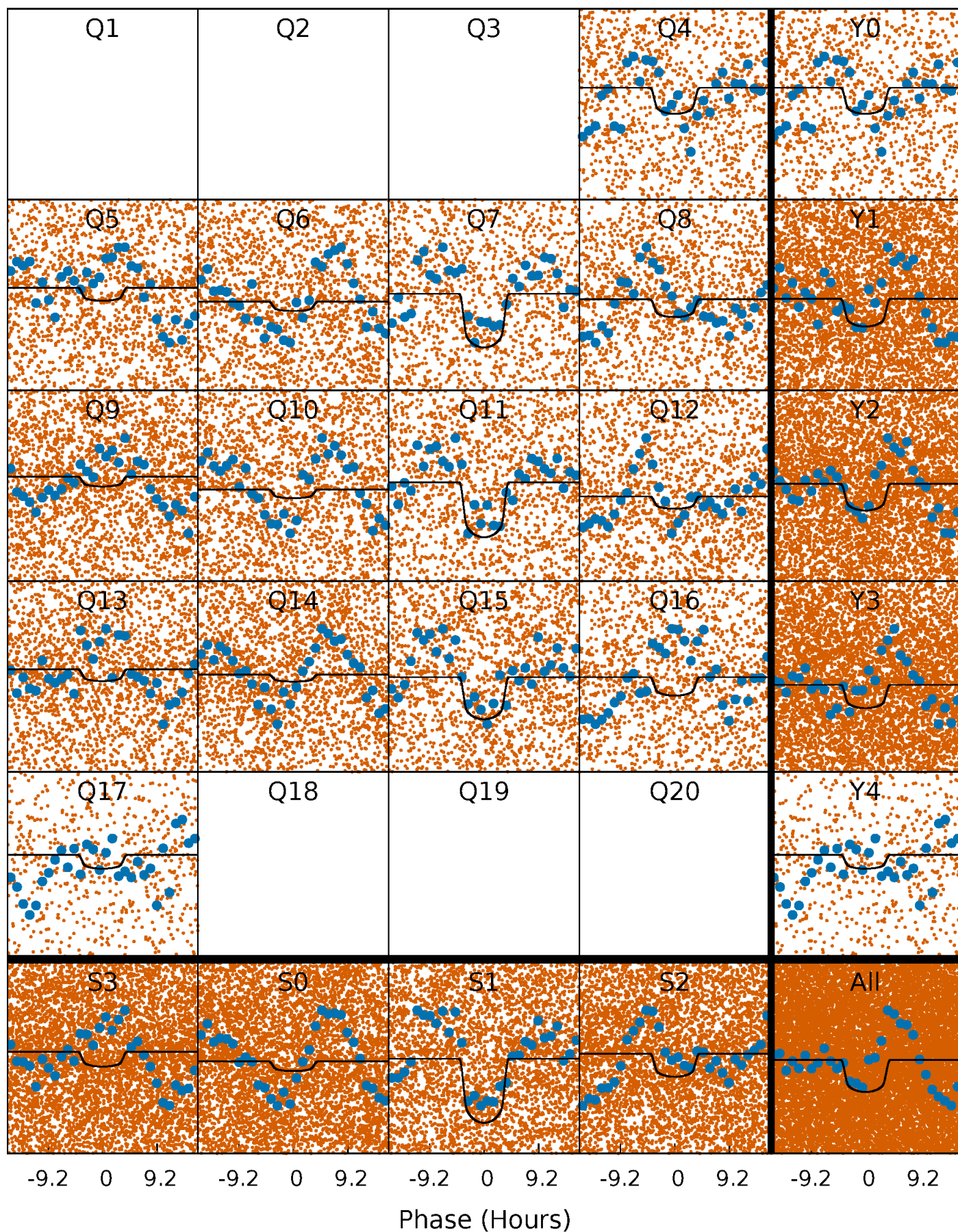
PDC Quarter-Phased Transit Curves

TCE 005038190-01 P= 1.711954 Days $T_0=132.864084$ (BKJD)



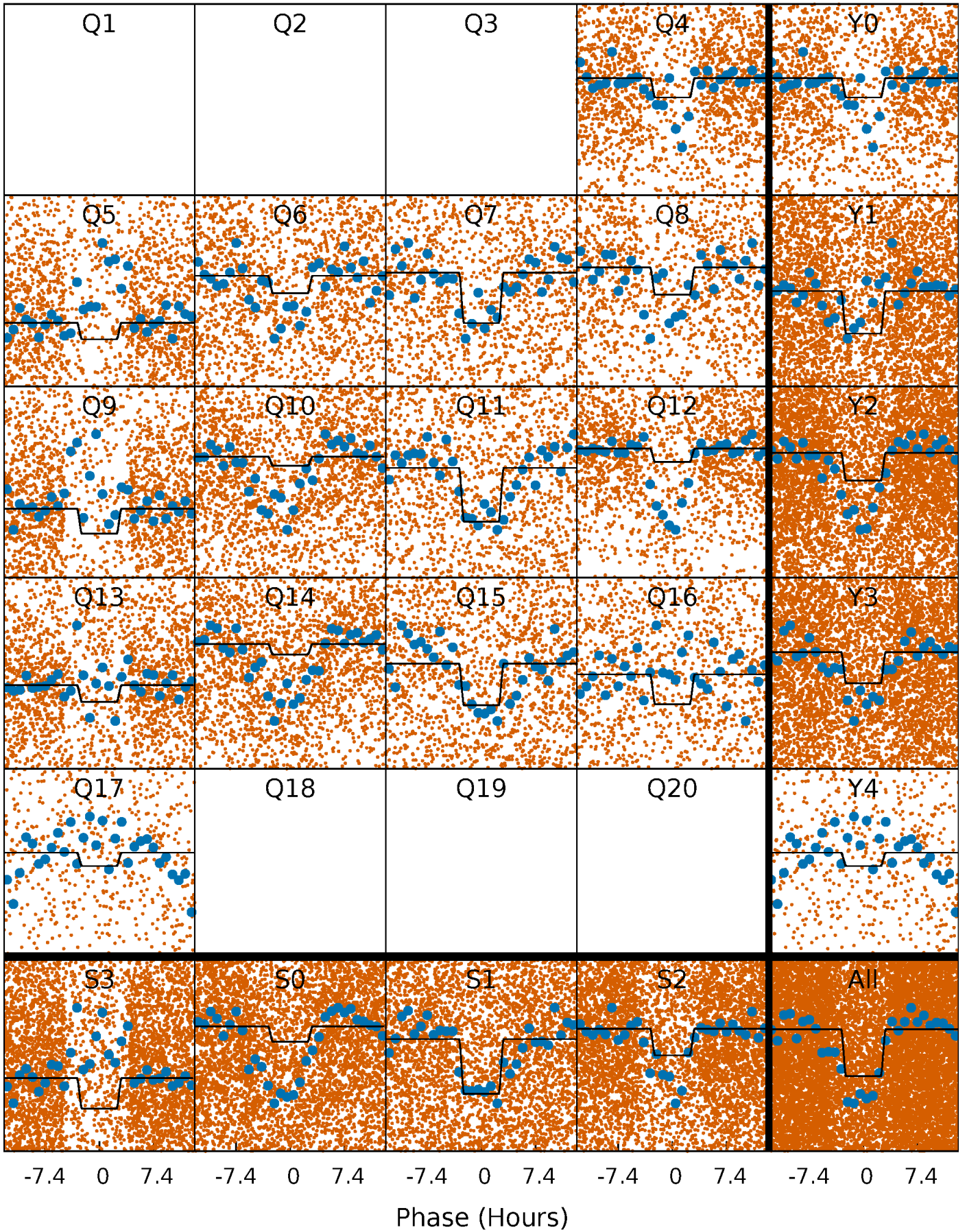
DV Quarter-Phased Transit Curves

TCE 005038190-01 P= 1.711954 Days $T_0=132.864084$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

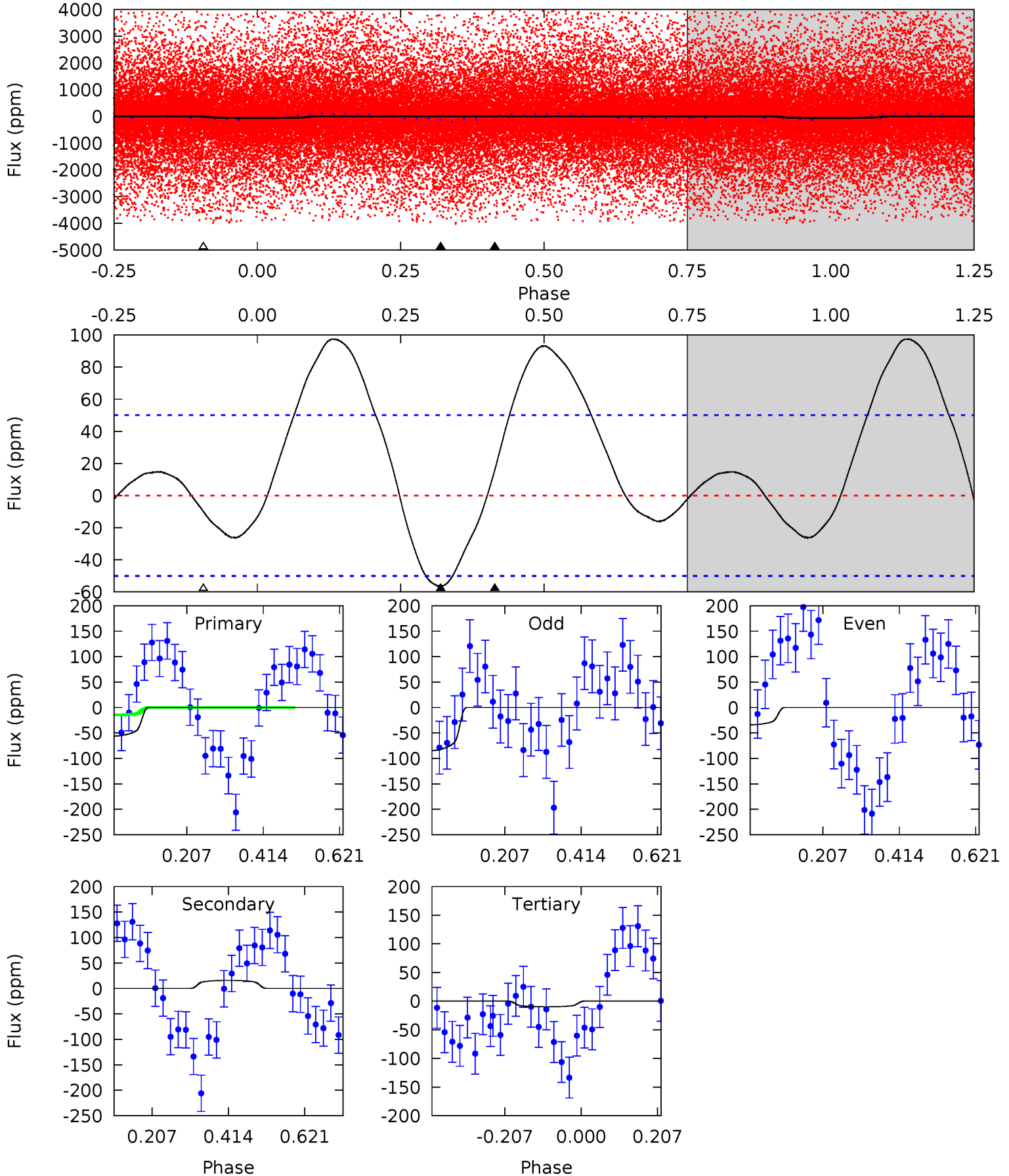
TCE 005038190-01 P= 1.711836 Days $T_0=132.915424$ (BKJD)



DV Model-Shift Uniqueness Test

005038190-01, P = 1.711954 Days, E = 132.864084 Days

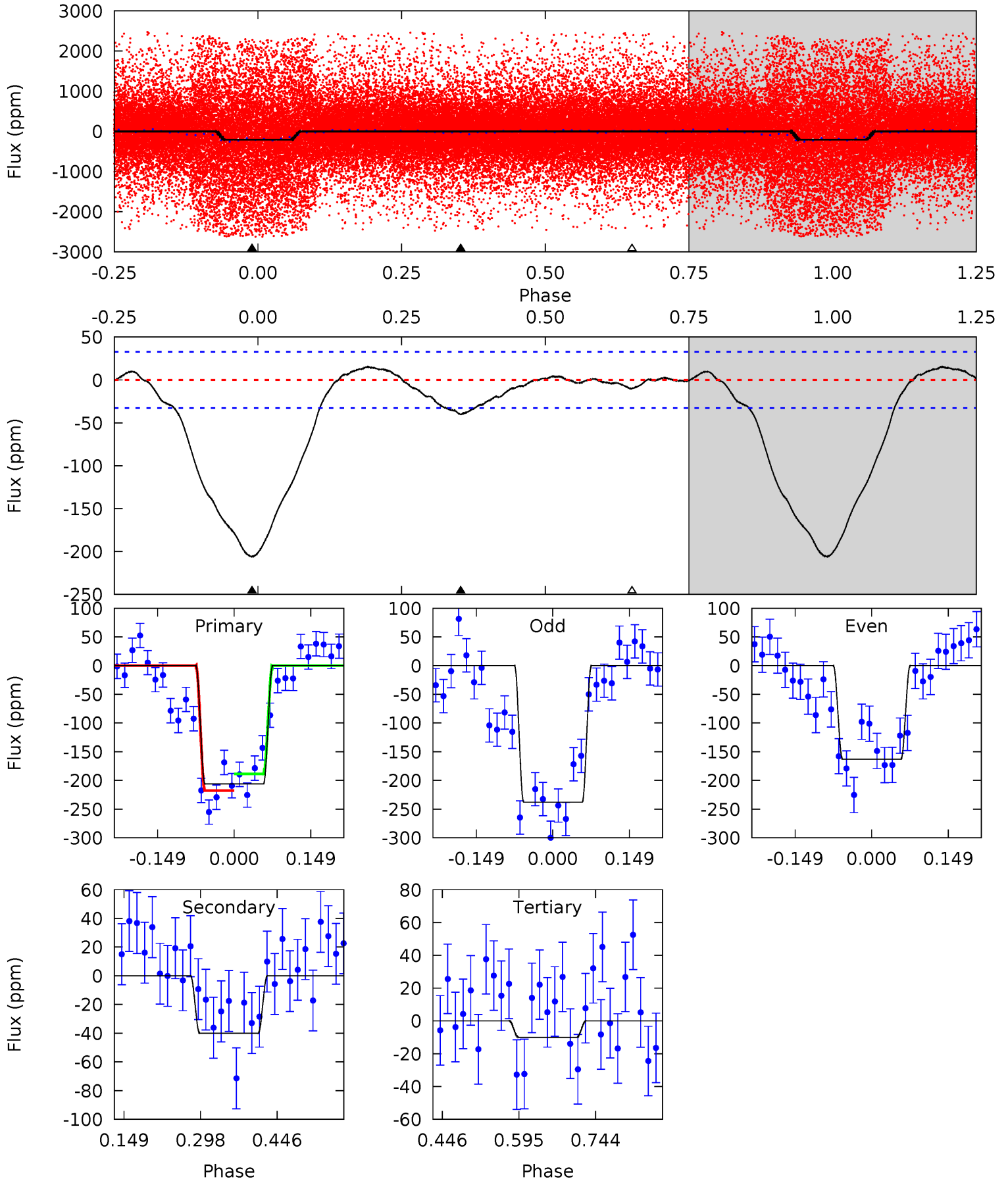
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.97	-1.40	0.87	0	4.41	1.26	2.39	4.10	4.97	-2.27	-1.40	2.26	0.29	0.63	4.13



Alt Model-Shift Uniqueness Test

005038190-01, P = 1.711836 Days, E = 132.915424 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.2	5.48	1.37	0	4.48	1.44	1.06	26.8	28.2	4.11	5.48	5.17	1.21	0.07	2.02



Stellar Parameters For KIC 005038190

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5321^{+204}_{-185}	$4.463^{+0.126}_{-0.154}$	$-0.160^{+0.300}_{-0.300}$	$0.858^{+0.160}_{-0.120}$	$0.779^{+0.115}_{-0.057}$	$1.740^{+0.882}_{-0.729}$
	+4%/-3%	+3%/-3%	+188%/-188%	+19%/-14%	+15%/-7%	+51%/-42%
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 005038190-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	16 ± 11	$1.23^{+0.18}_{-0.16}$	1904^{+124}_{-119}	-3464^{+467}_{-358}	$-3.751^{+2.510}_{-3.325}$
Alt.	-40 ± 7	$1.07^{+0.17}_{-0.15}$	1898^{+121}_{-109}	4187^{+276}_{-259}	13^{+6}_{-4}

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 $A_{obs} \gg 1.0$

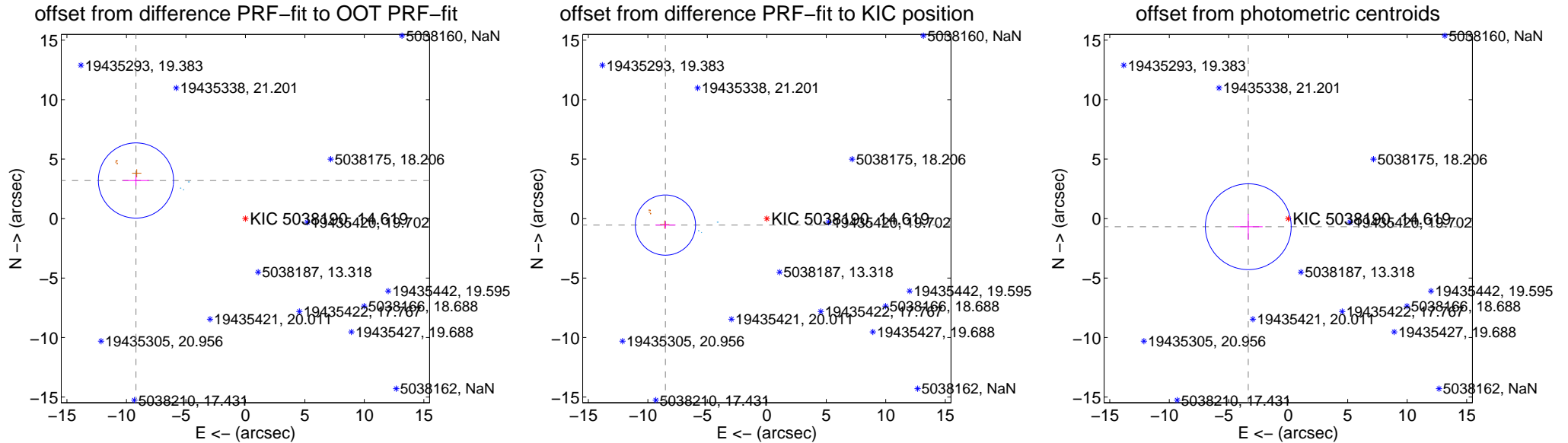
DV Centroid Data

Supplemental centroid analysis for 005038190-01. Kepler magnitude: 14.62. Transit SNR 8.27

There are 4 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.24 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.741 ± 1.054	9.24	9.199 ± 1.106	3.202 ± 0.421
PRF-fit source offset from KIC position	8.542 ± 0.844	10.12	8.524 ± 0.845	-0.547 ± 0.318
photometric centroid source offset	3.43 ± 1.20	2.85	3.36 ± 1.21	-0.68 ± 1.08



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



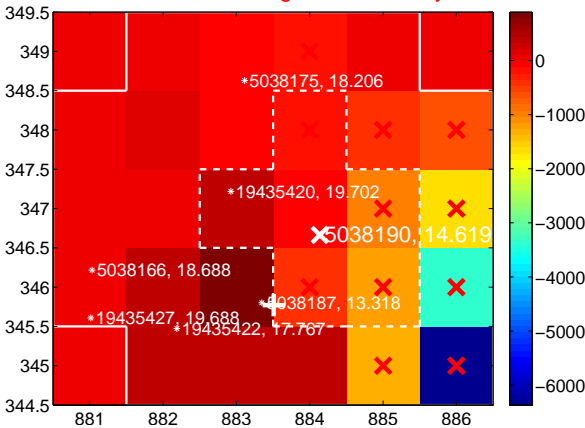
Q3 no difference image



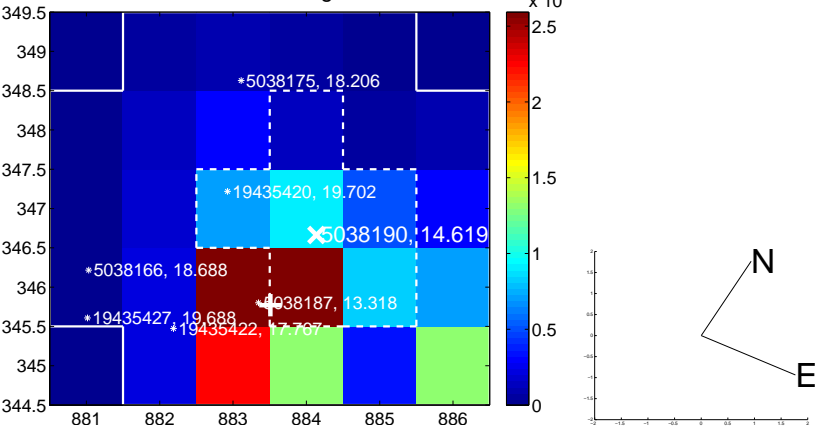
Q3 no OOT image



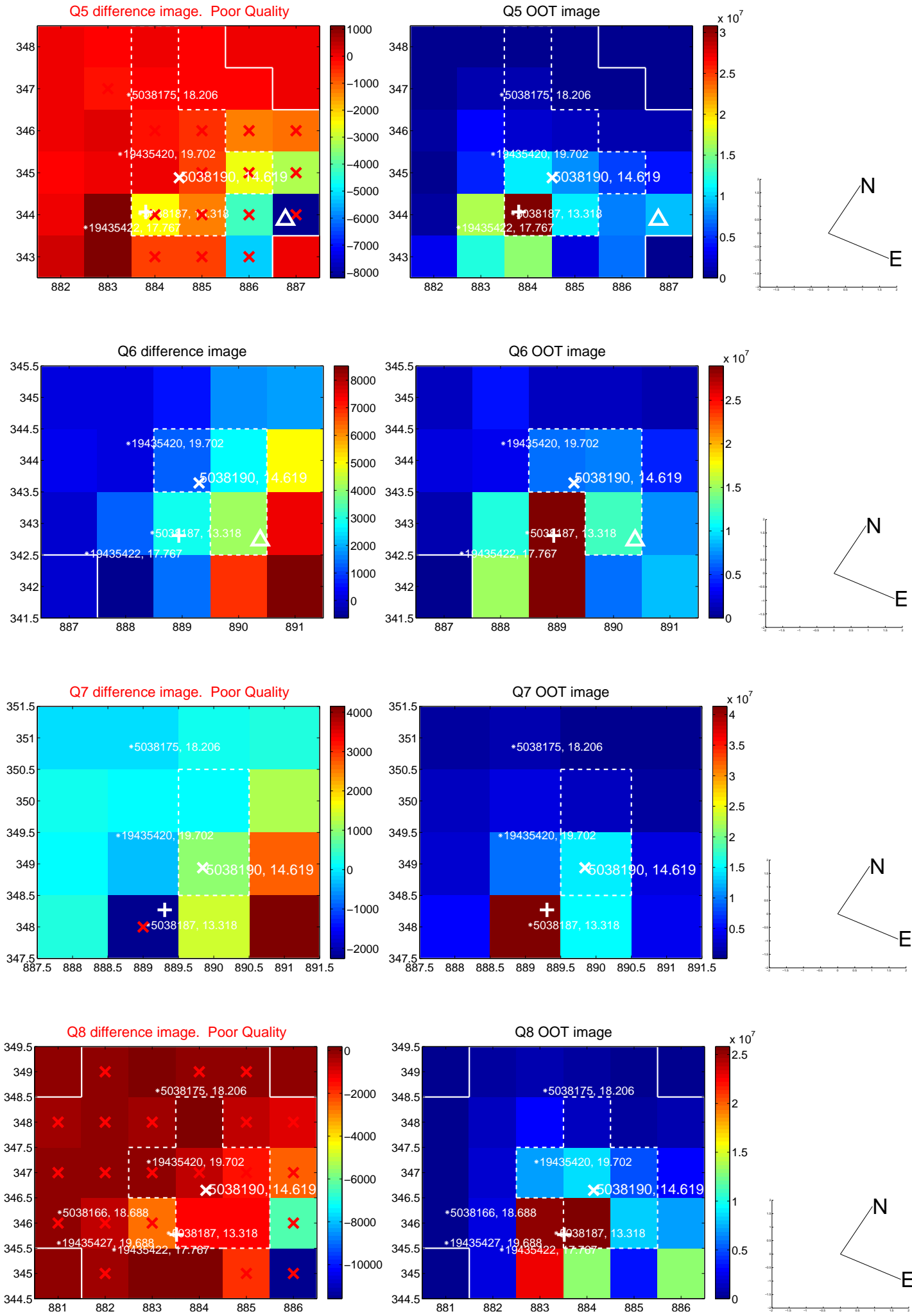
Q4 difference image. Poor Quality



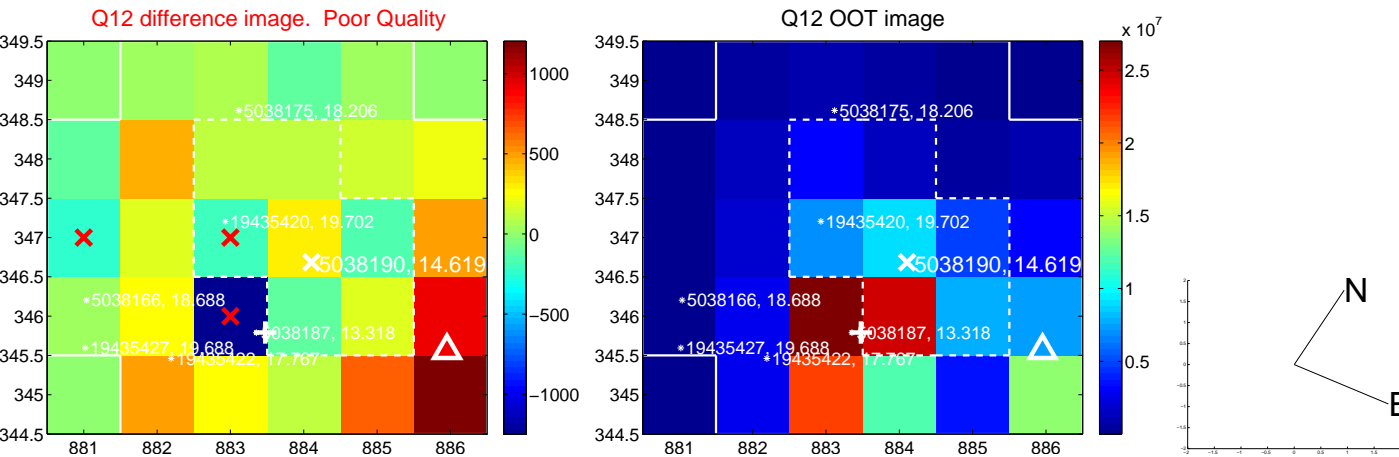
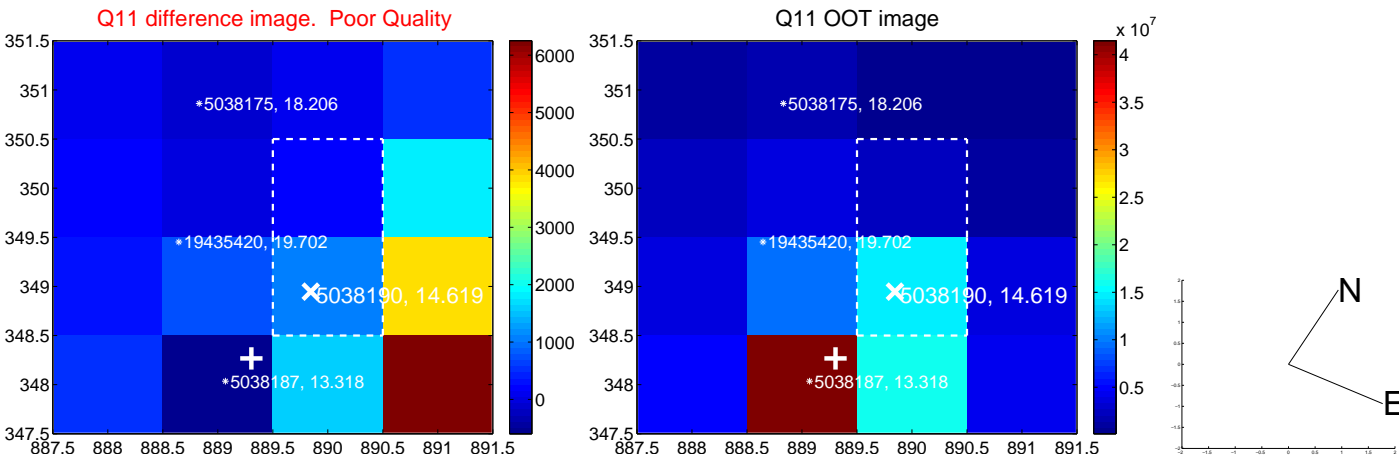
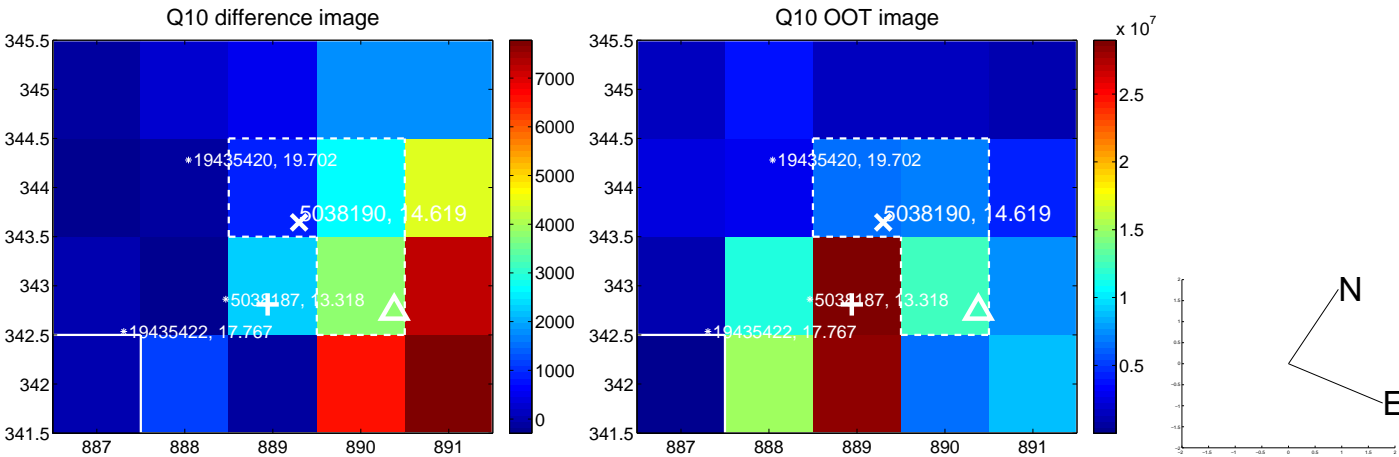
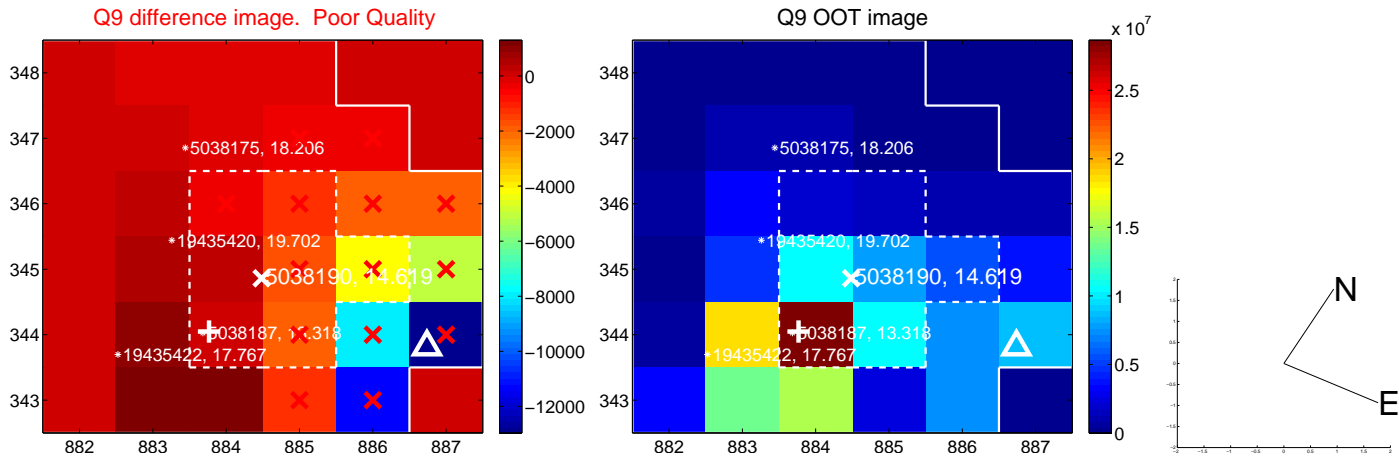
Q4 OOT image



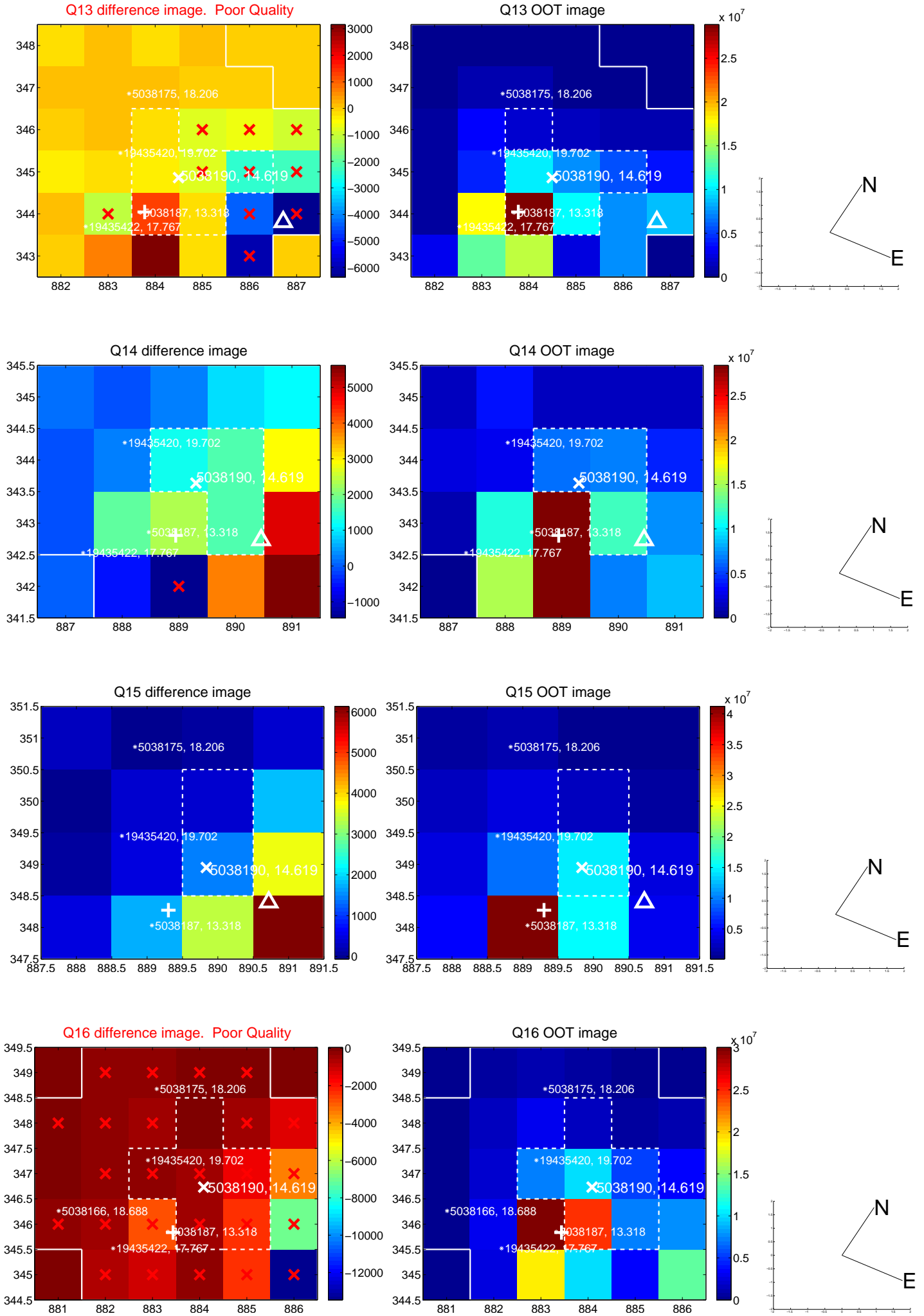
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



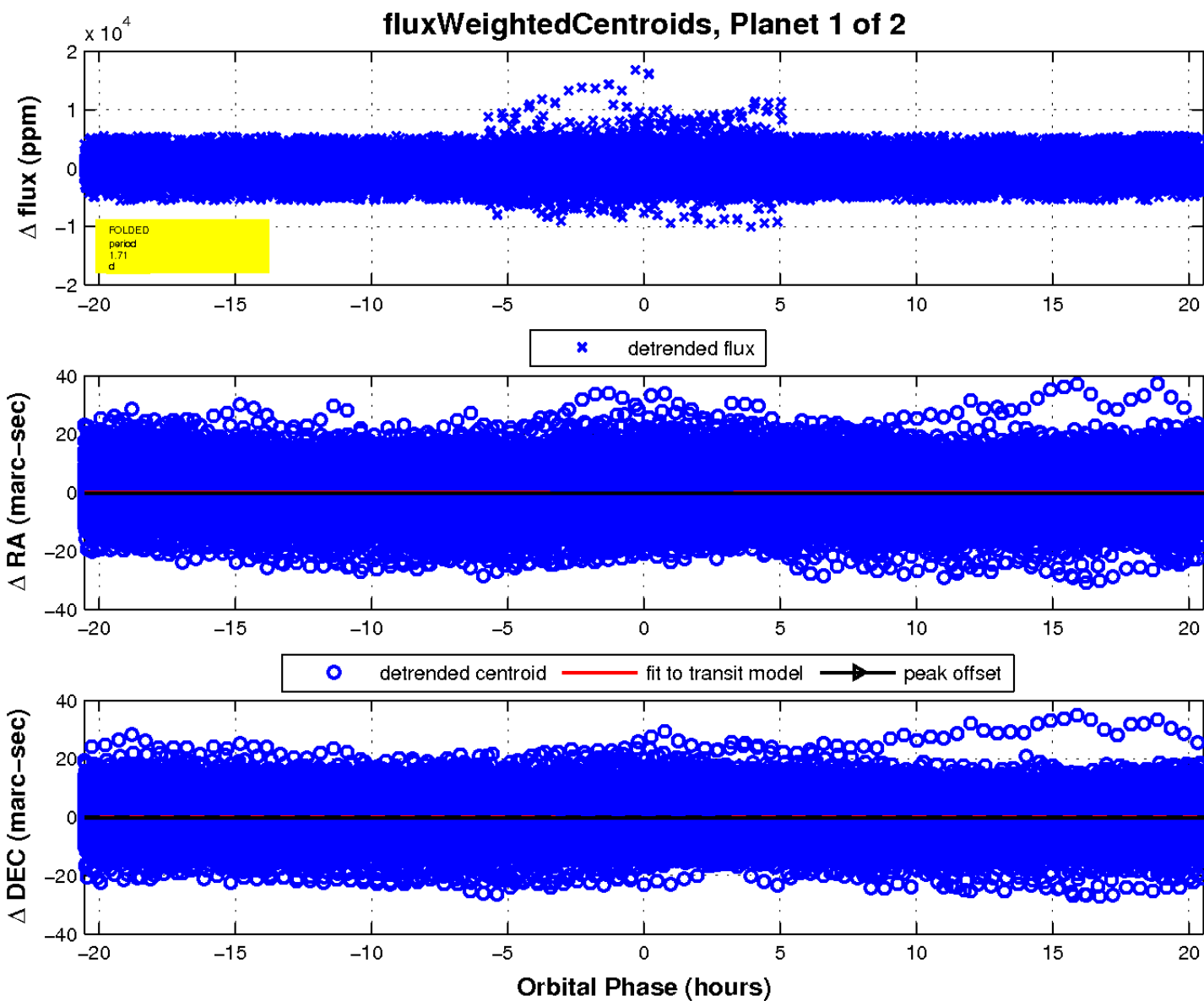
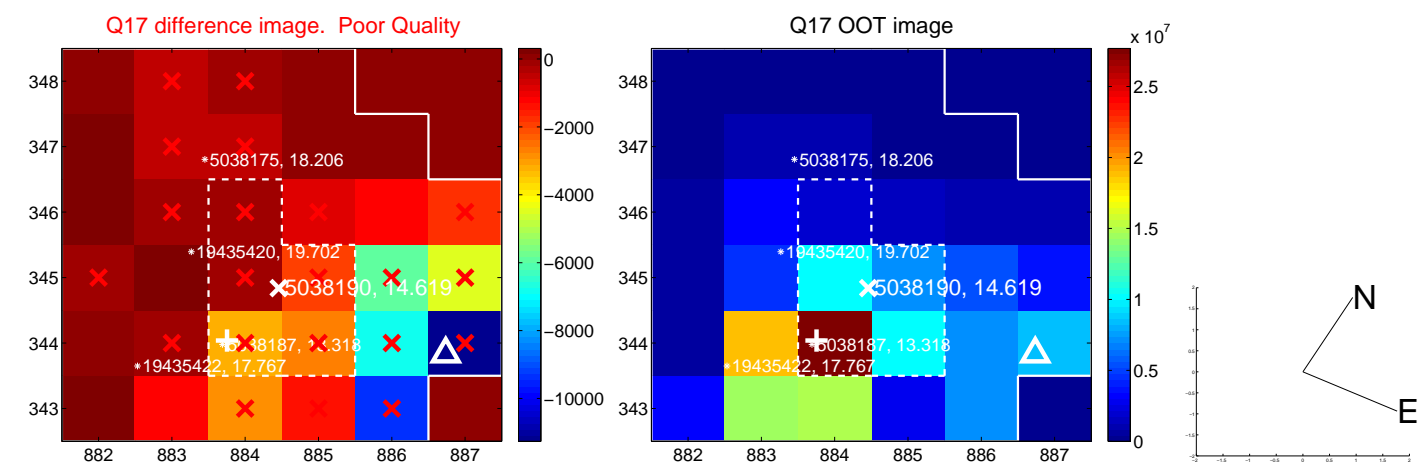
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



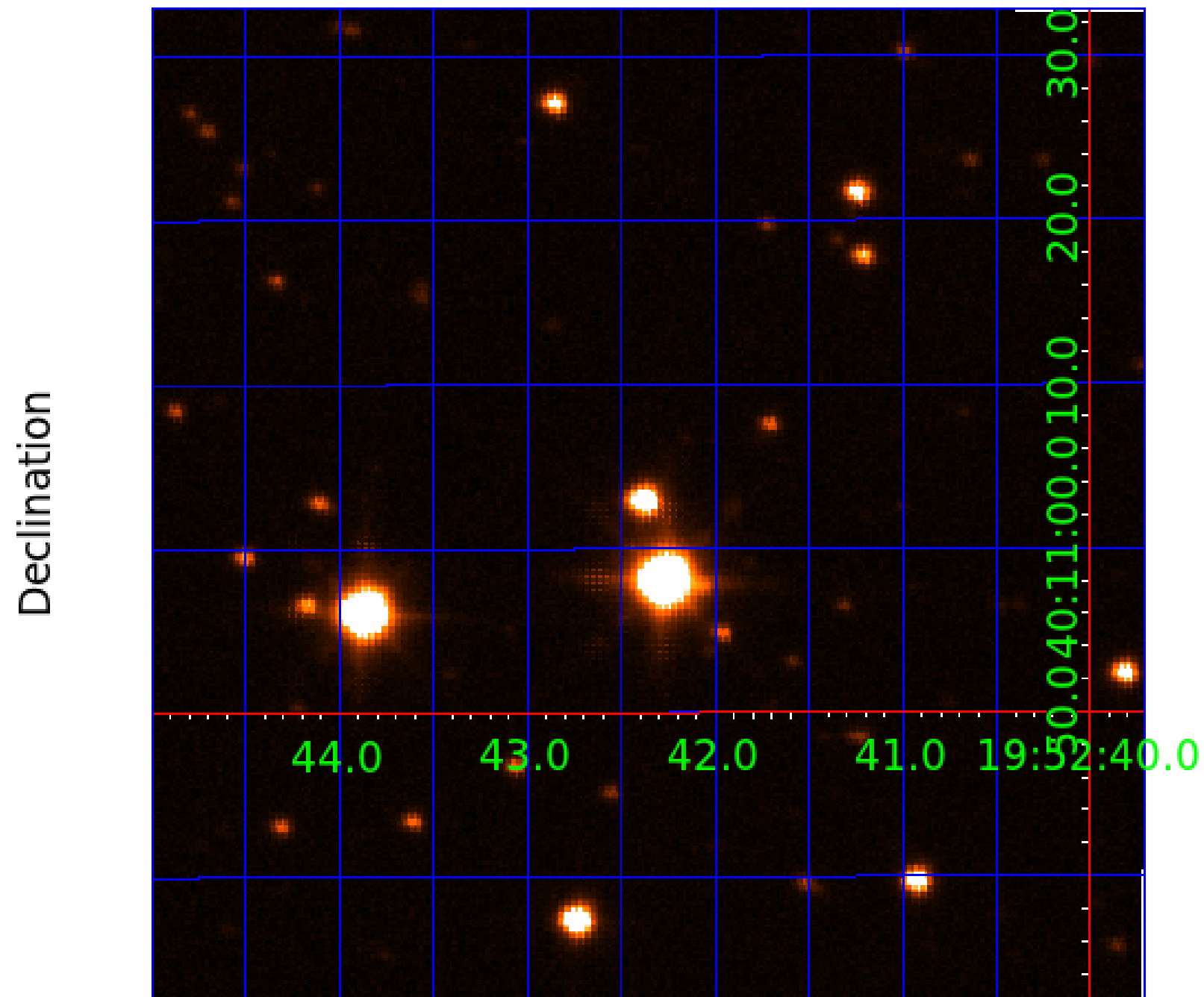
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005038190

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})
005038190-01	OBS	No	1.711954	132.864084	120.2	8.061	7.9	8.3	0.86	5321	1.21	795.31
005038190-02	OBS	No	498.458610	580.308856	1292.3	20.849	10.8	6.7	0.86	5321	3.98	0.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005038190-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—CENT_RESOLVED_OFFSET
005038190-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

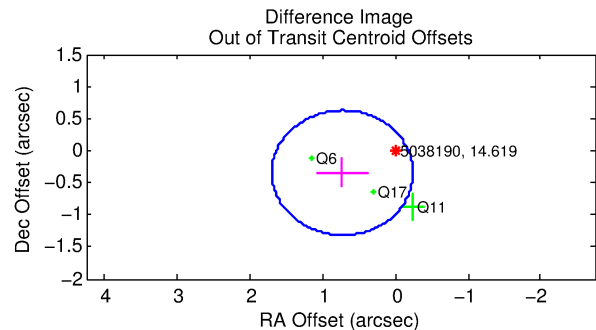
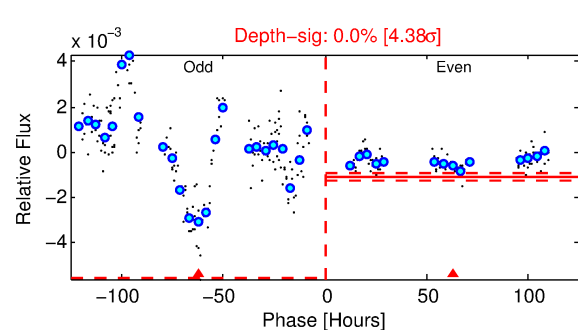
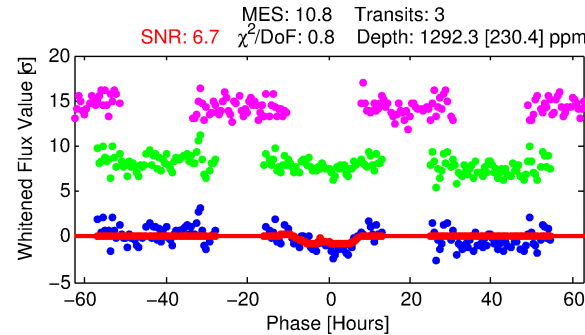
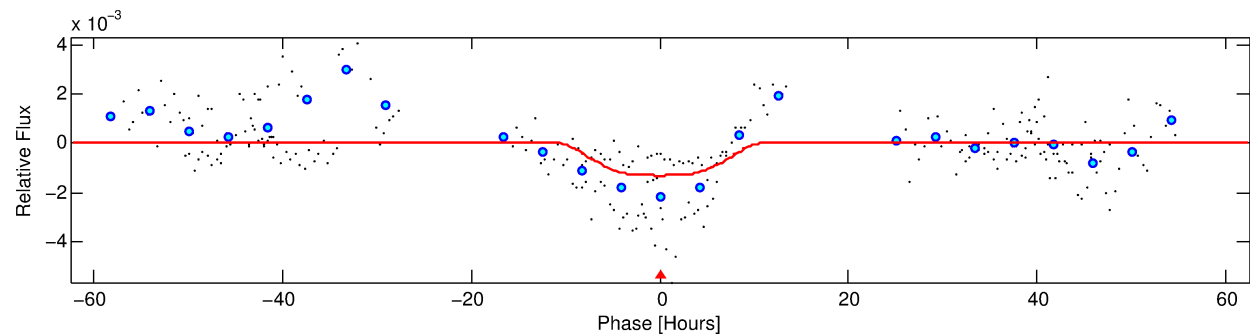
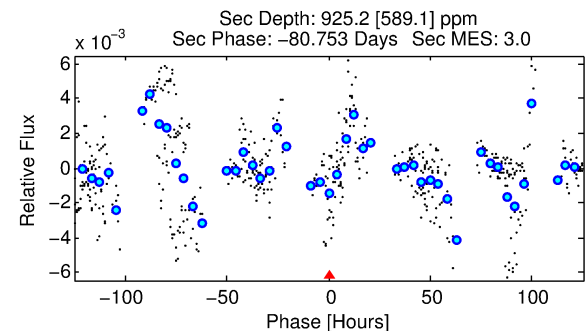
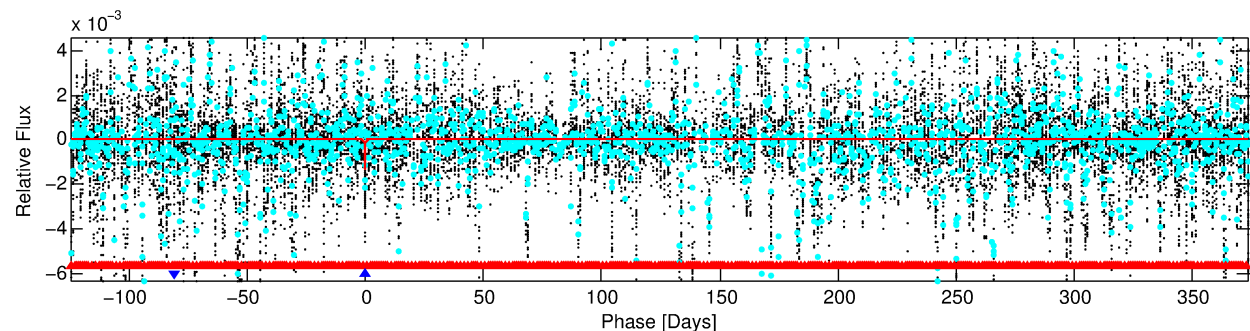
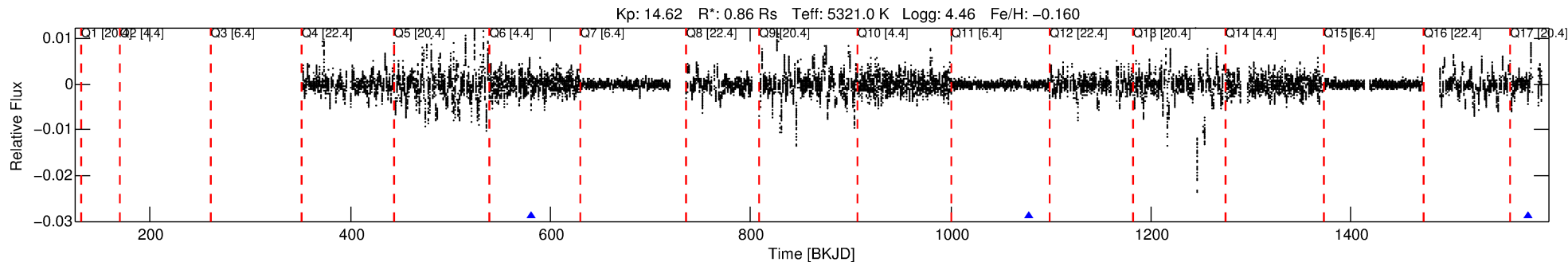
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005038190-02

No Significant Match Found

DV One-Page Summary

KIC: 5038190 Candidate: 2 of 2 Period: 498.459 d



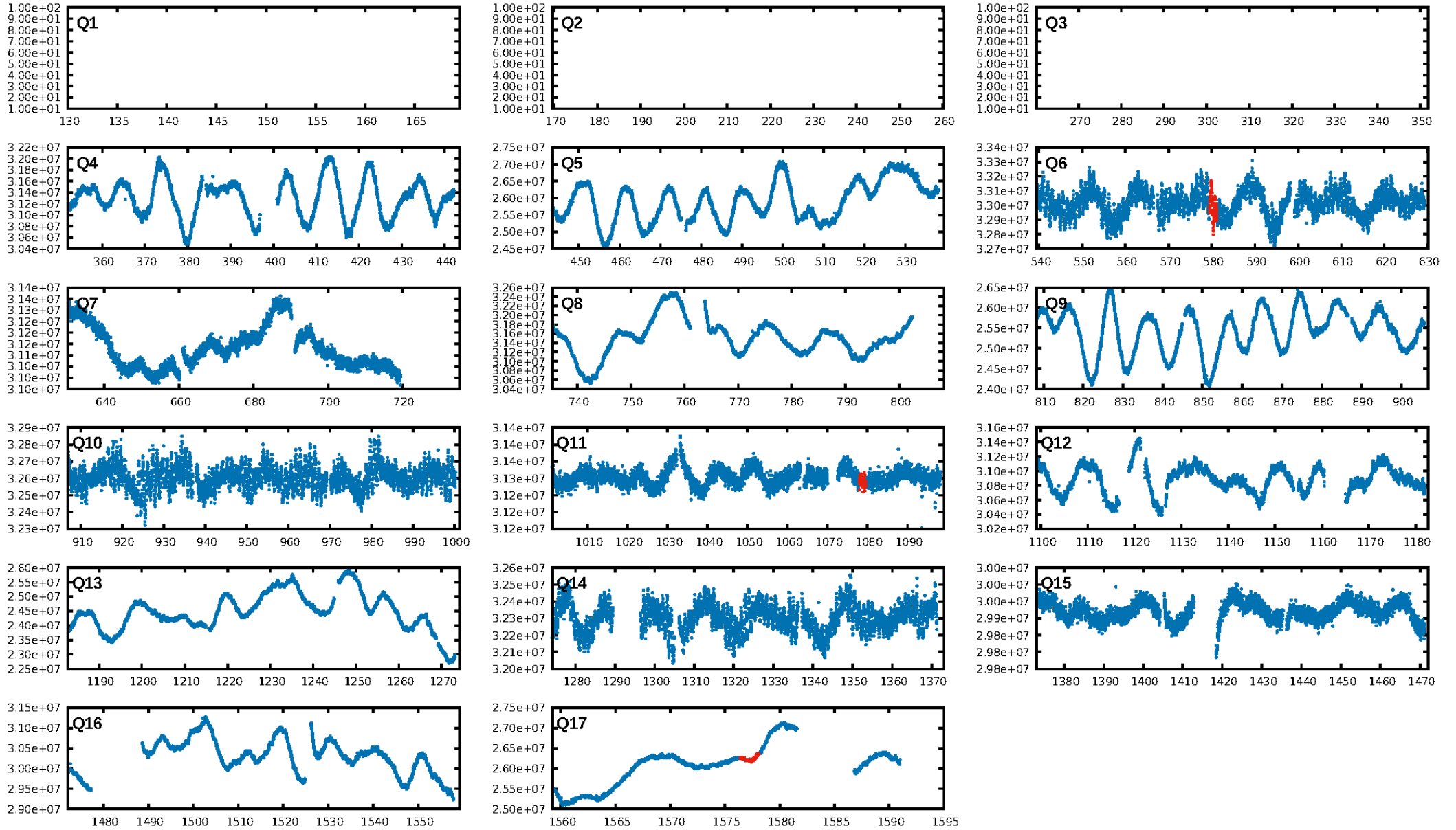
DV Fit Results:

Period = 498.45861 [0.09436] d
Epoch = 580.3089 [0.0968] BKJD
Rp/R* = 0.0426 [0.0052]
a/R* = 79.59 [22.34]
b = 0.95 [0.03]
Seff = 0.41 [0.13]
Teq = 204 [16] K
Rp = 3.98 [0.89] Re
a = 1.1327 [0.1943] AU
Ag = 41143.49 [30119.67] [1.37σ]
Teffp = 4499 [786] K [5.46σ]

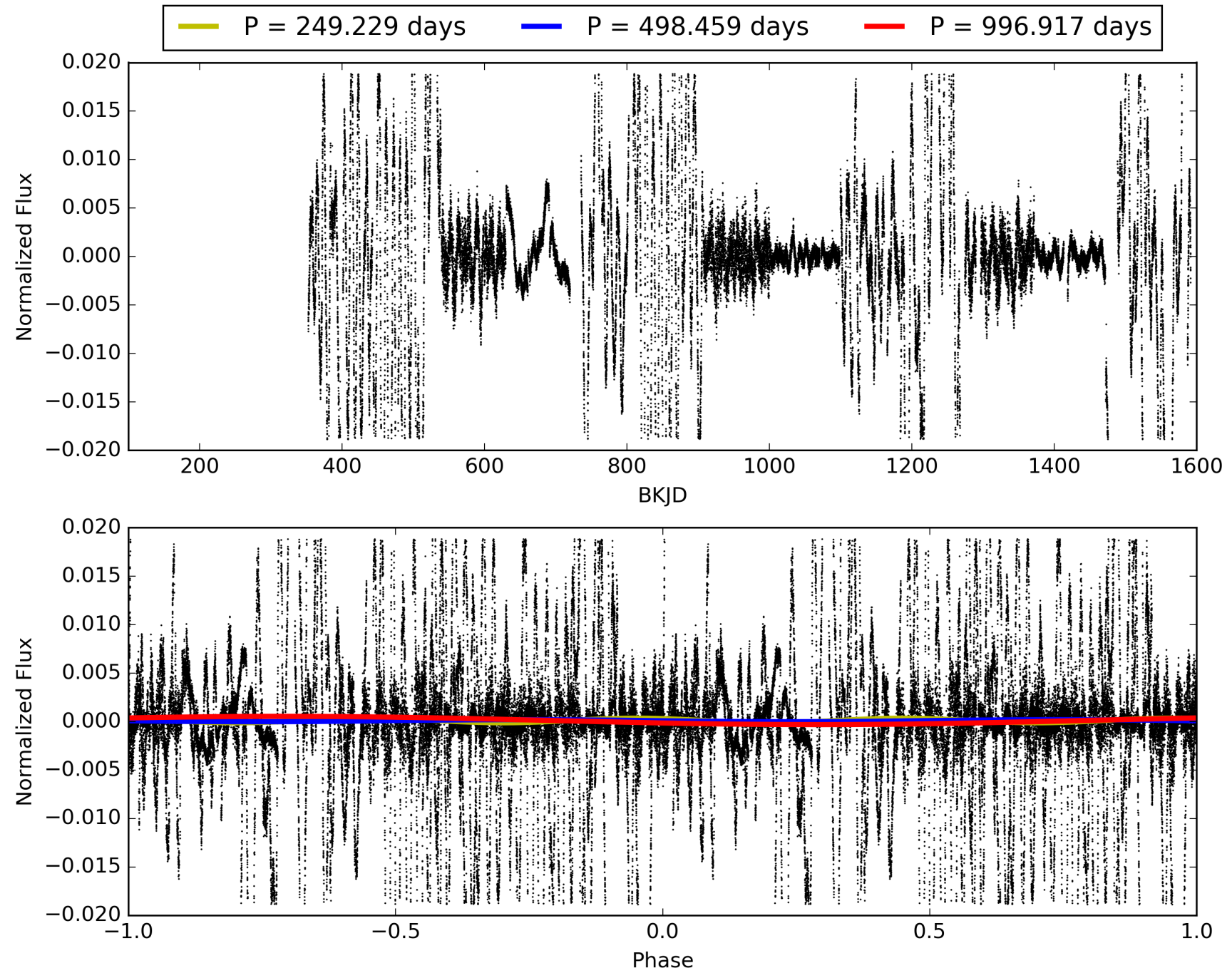
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [533.35σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.02e-10
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: N/A
Centroid-sig: 52.5%
Centroid-so: 3.508 arcsec [2.32σ]
OotOffset-rm: 0.805 arcsec [2.49σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 4.187 arcsec [10.23σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

TCE 005038190-02, PDC Light Curves

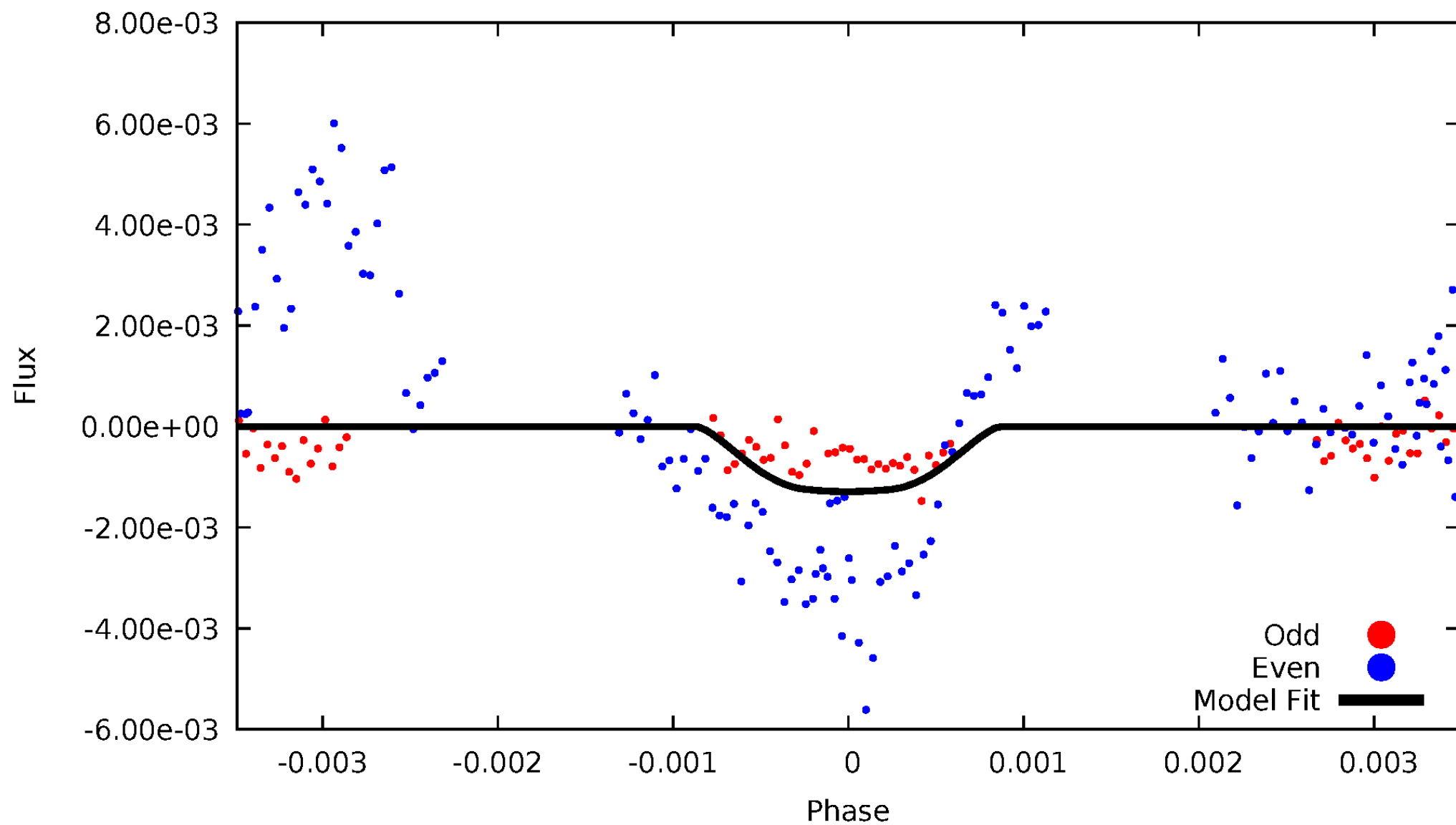


TCE 005038190-02



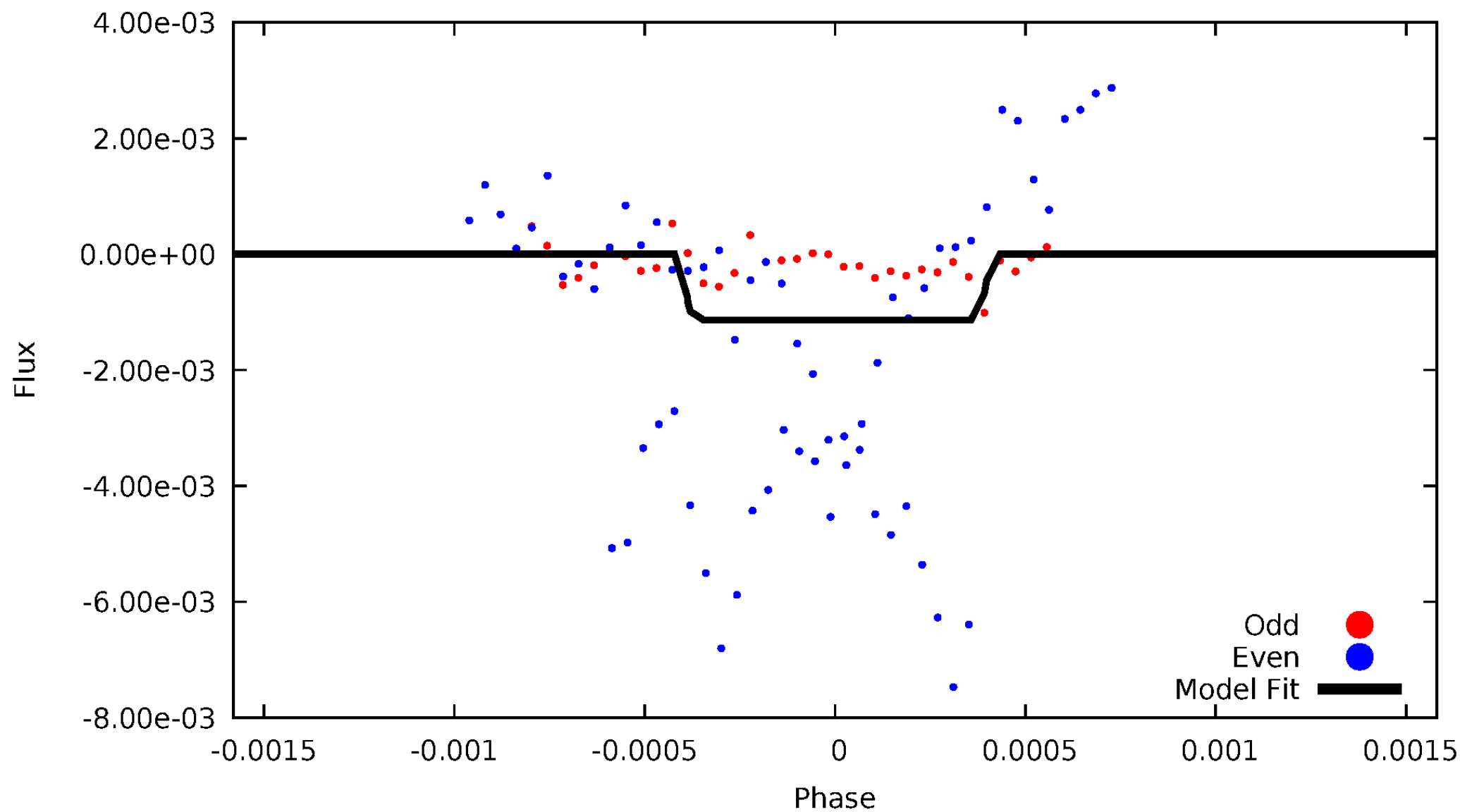
DV Odd/Even

TCE 005038190-02



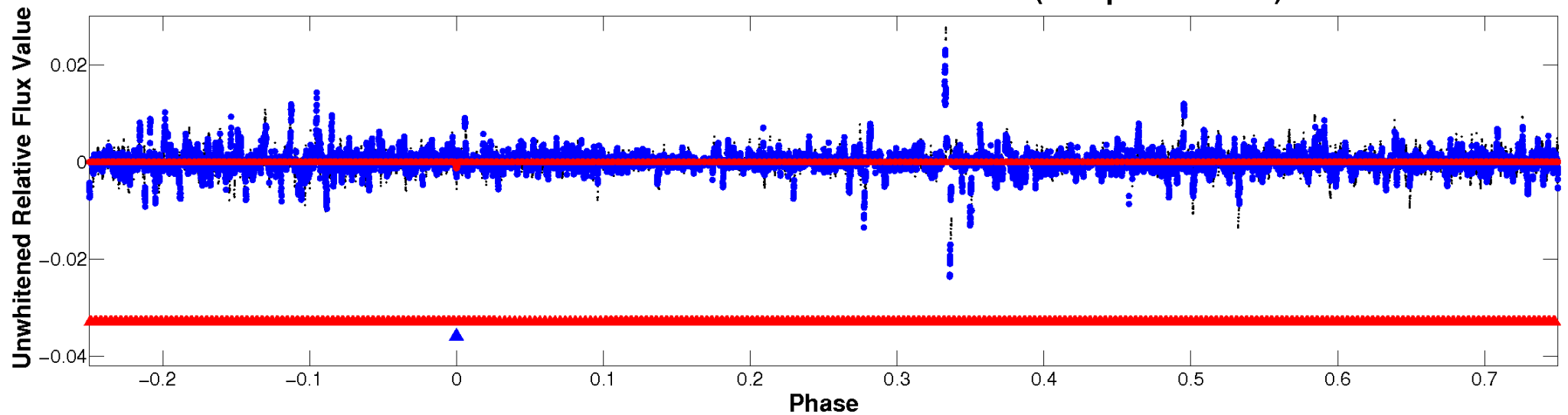
ALT Odd/Even

TCE 005038190-02

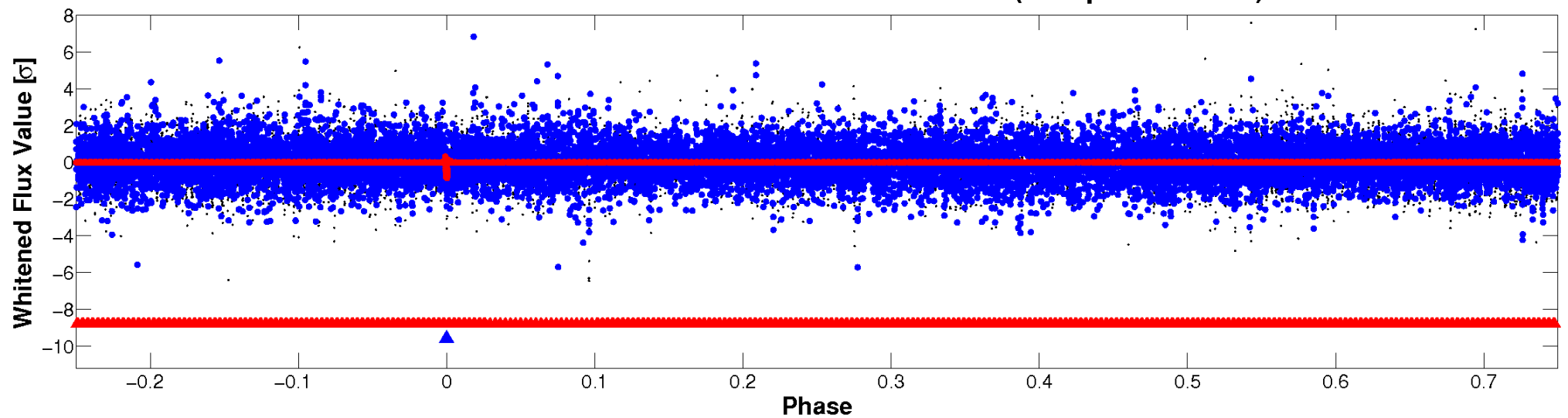


Non-Whitened Vs. Whitened Light Curve

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

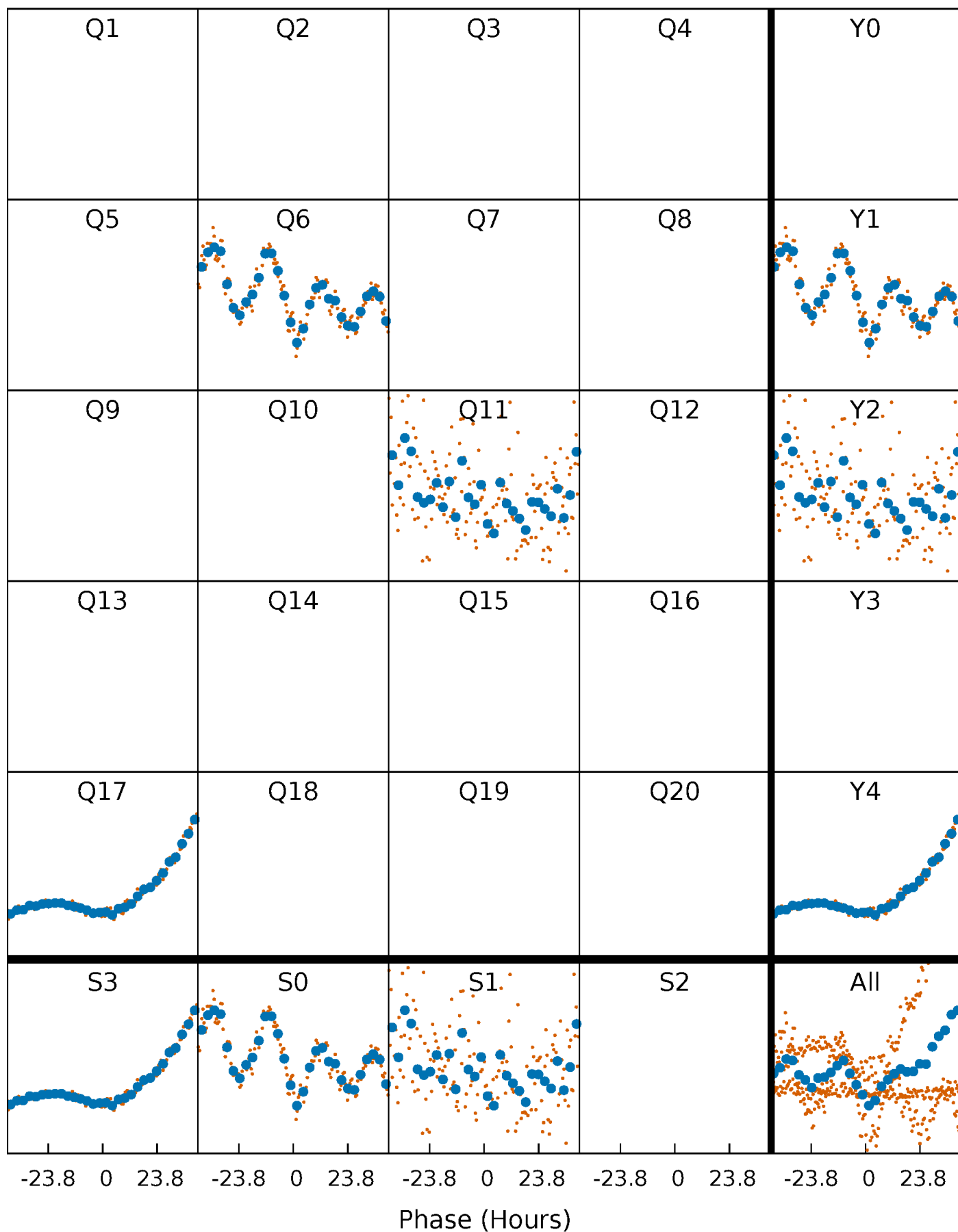


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



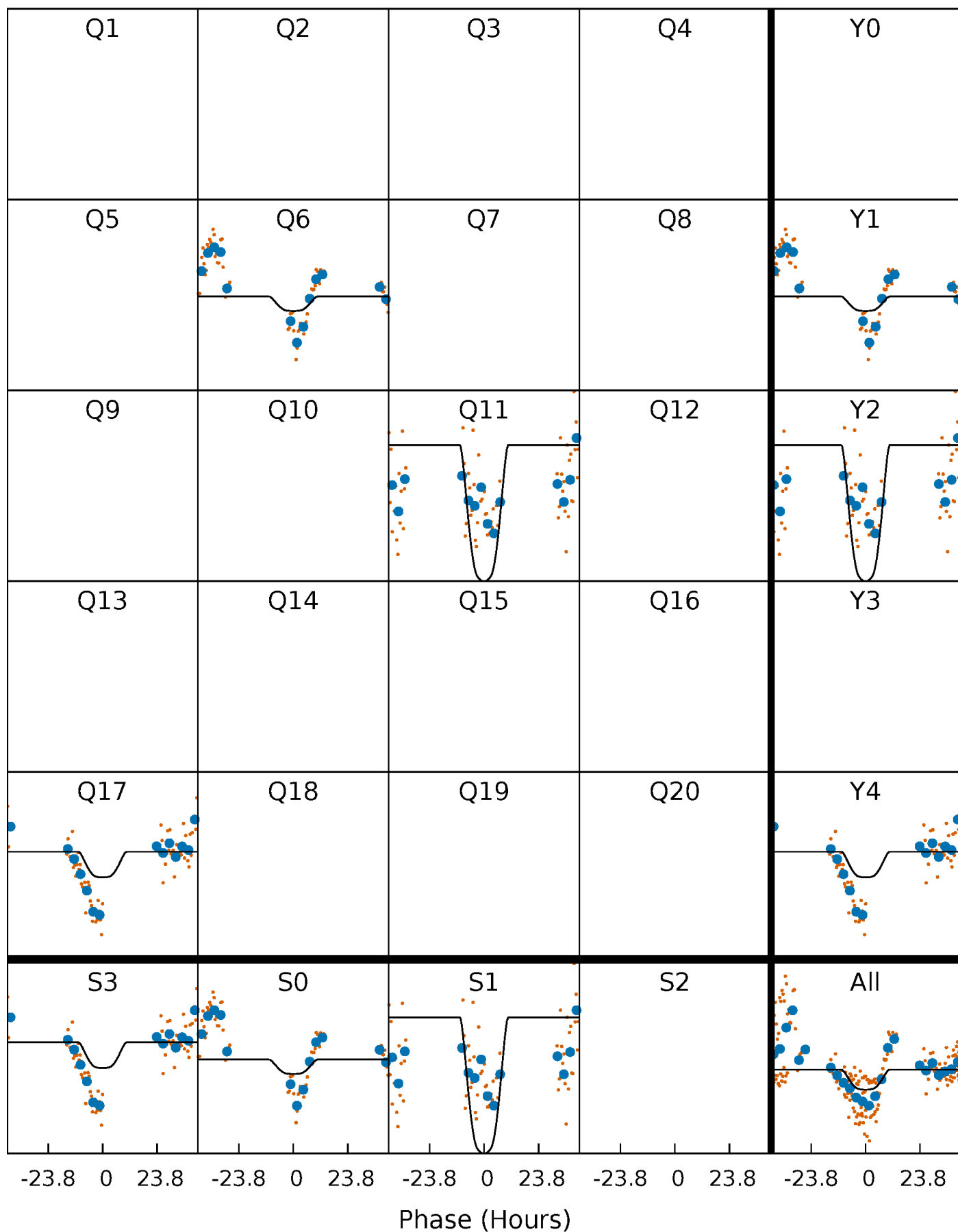
PDC Quarter-Phased Transit Curves

TCE 005038190-02 $P=498.458610$ Days $T_0=580.308856$ (BKJD)



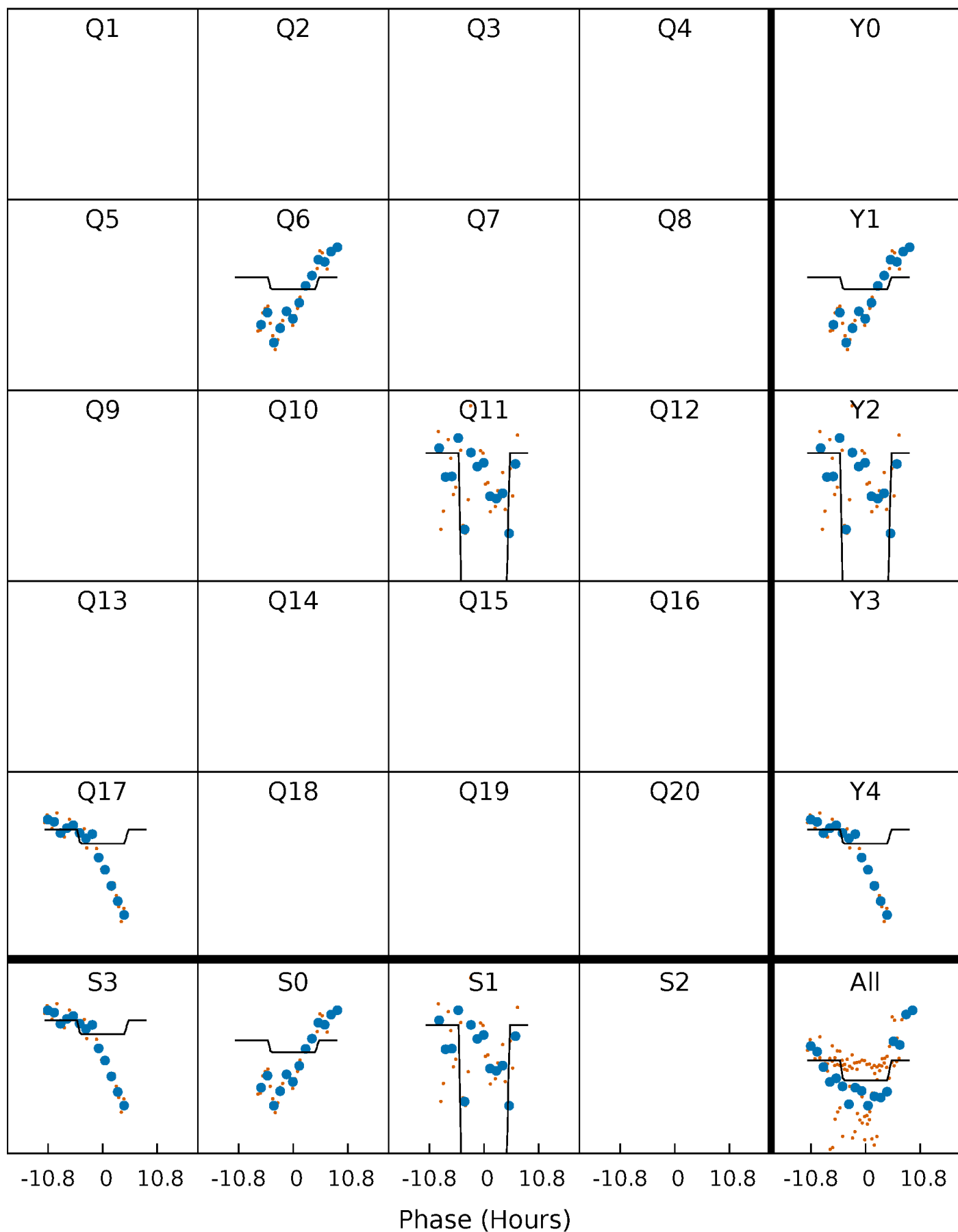
DV Quarter-Phased Transit Curves

TCE 005038190-02 $P=498.458610$ Days $T_0=580.308856$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

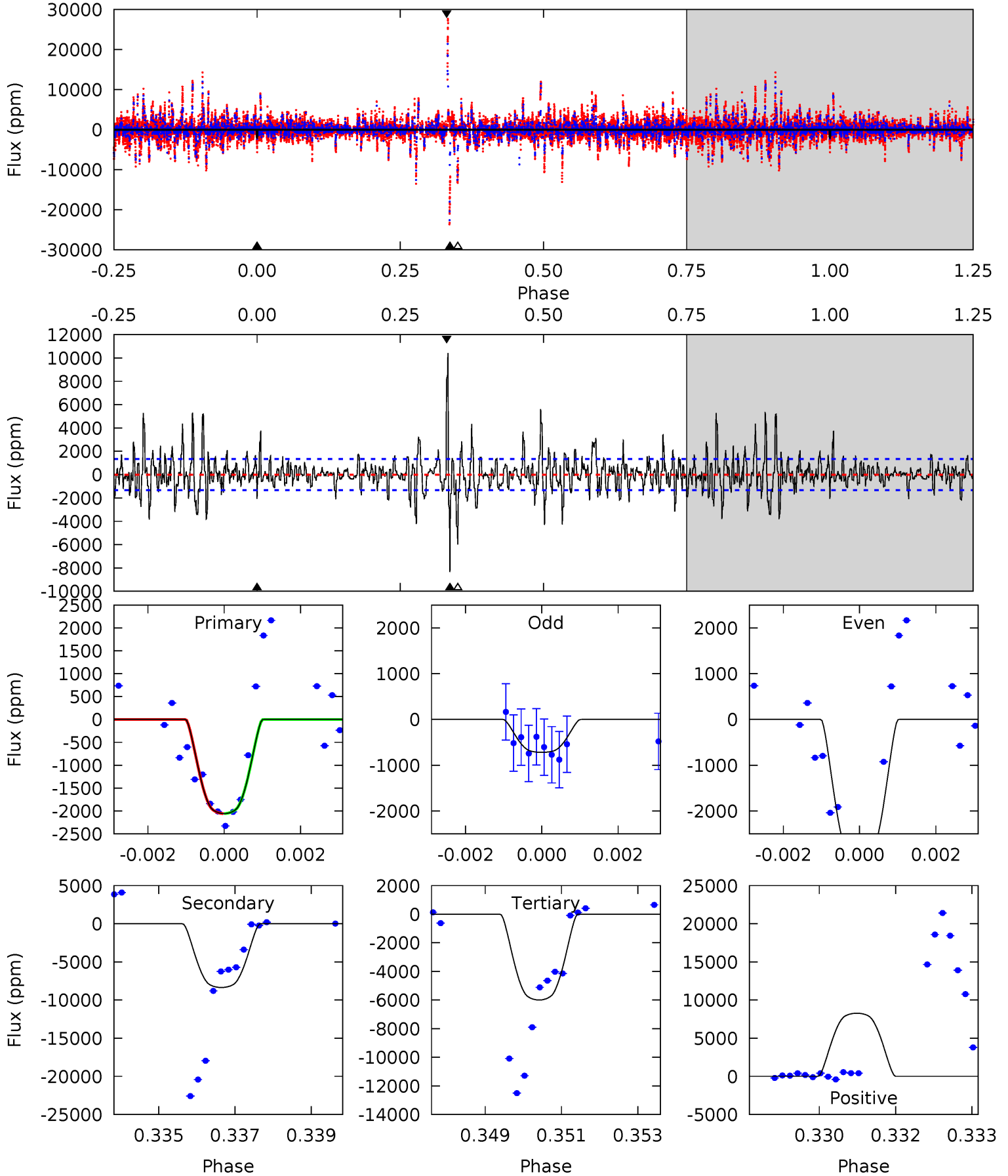
TCE 005038190-02 P=498.272361 Days $T_0=580.508064$ (BKJD)



DV Model-Shift Uniqueness Test

005038190-02, P = 498.458610 Days, E = 81.850246 Days

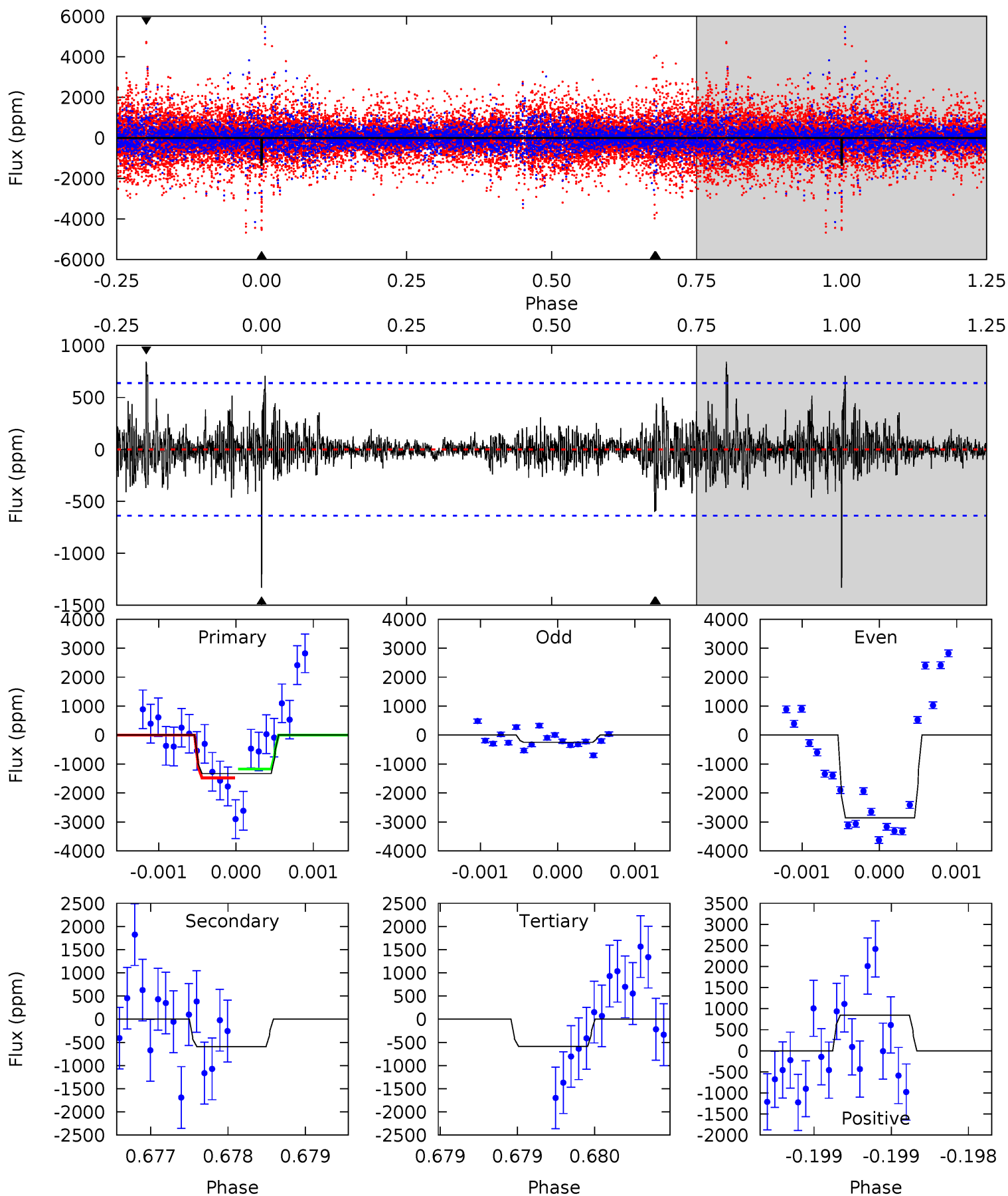
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.28	33.6	24.1	33.3	5.35	3.13	5.24	-15.9	-25.0	9.49	0.31	4.53	0.80	0.56	0.00



Alt Model-Shift Uniqueness Test

005038190-02, P = 498.272361 Days, E = 82.235703 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	5.11	5.04	7.27	5.49	3.36	1.00	6.43	4.19	0.07	-2.17	11.3	0.70	0.39	1.33



Stellar Parameters For KIC 005038190

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5321^{+204}_{-185}	$4.463^{+0.126}_{-0.154}$	$-0.160^{+0.300}_{-0.300}$	$0.858^{+0.160}_{-0.120}$	$0.779^{+0.115}_{-0.057}$	$1.740^{+0.882}_{-0.729}$
	+4%/-3%	+3%/-3%	+188%/-188%	+19%/-14%	+15%/-7%	+51%/-42%
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 005038190-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8355 ± 248	$4.05^{+0.73}_{-0.60}$	287^{+19}_{-16}	7911^{+820}_{-646}	$362832^{+140576}_{-97709}$
Alt.	-593 ± 116	$3.23^{+0.66}_{-0.62}$	287^{+19}_{-16}	4630^{+414}_{-334}	40428^{+22557}_{-13071}

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 $A_{obs} \gg 1.0$

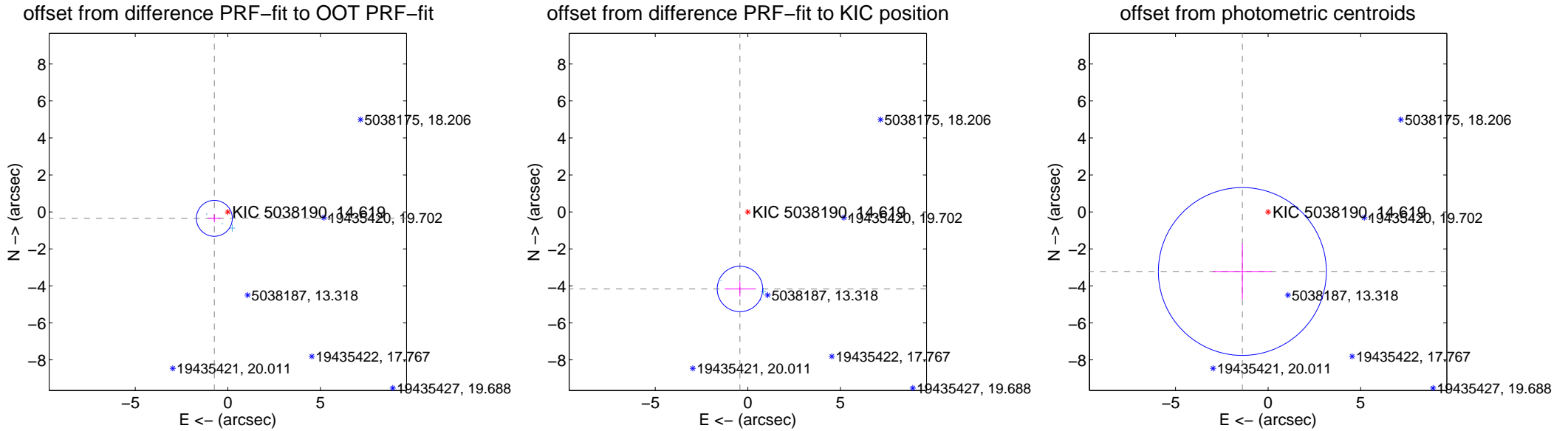
DV Centroid Data

Supplemental centroid analysis for 005038190-02. Kepler magnitude: 14.62. Transit SNR 6.66

There are 3 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.25 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.805 ± 0.324	2.49	0.727 ± 0.344	-0.346 ± 0.214
PRF-fit source offset from KIC position	4.187 ± 0.409	10.23	0.426 ± 0.825	-4.165 ± 0.403
photometric centroid source offset	3.51 ± 1.51	2.32	1.39 ± 1.61	-3.22 ± 1.49



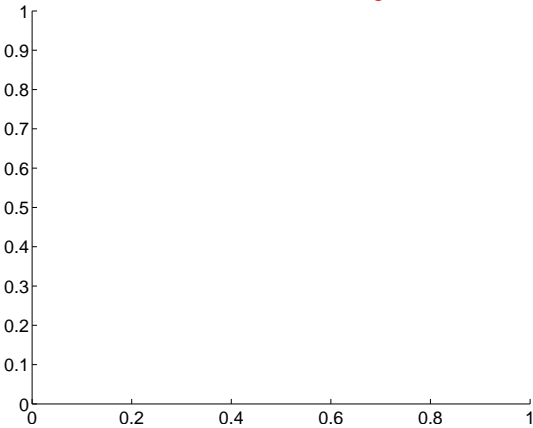
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

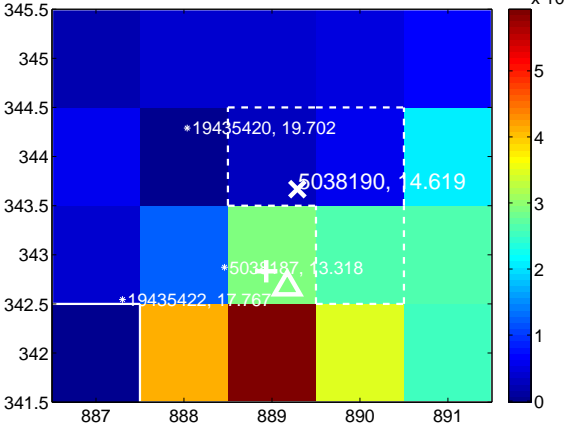
Q5 no difference image



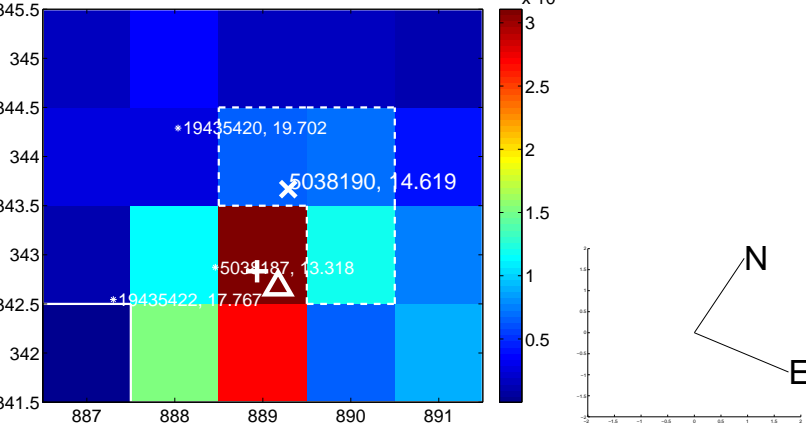
Q5 no OOT image



Q6 difference image



Q6 OOT image



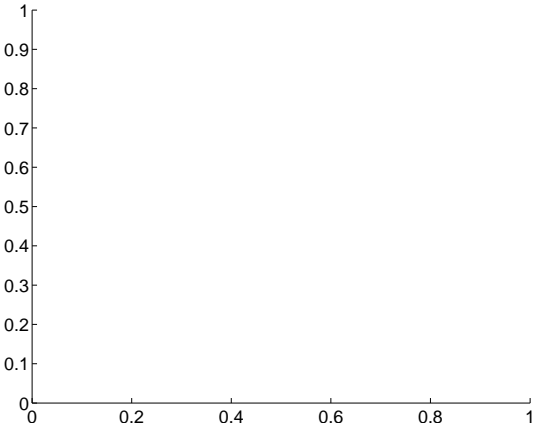
Q7 no difference image



Q7 no OOT image



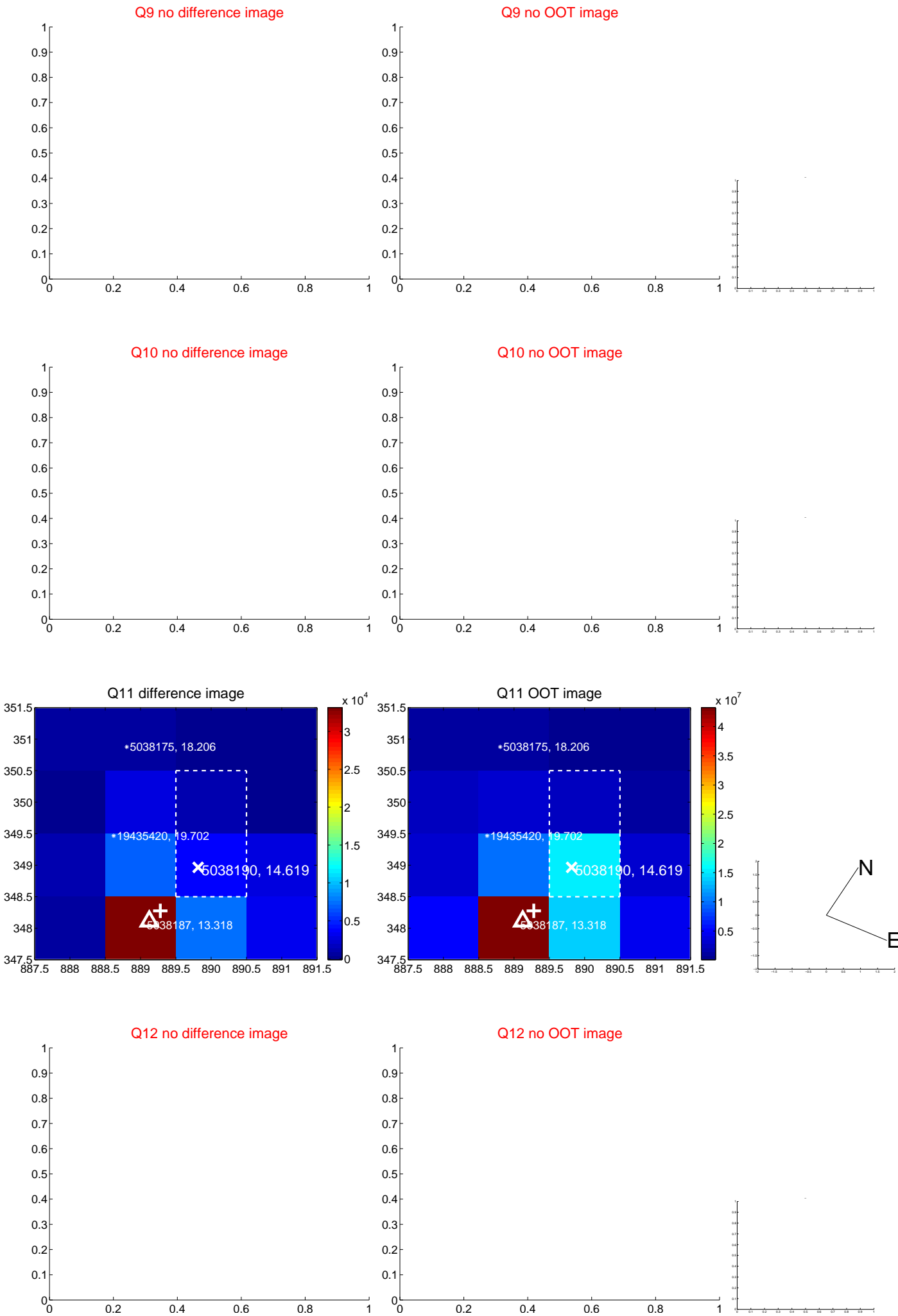
Q8 no difference image



Q8 no OOT image



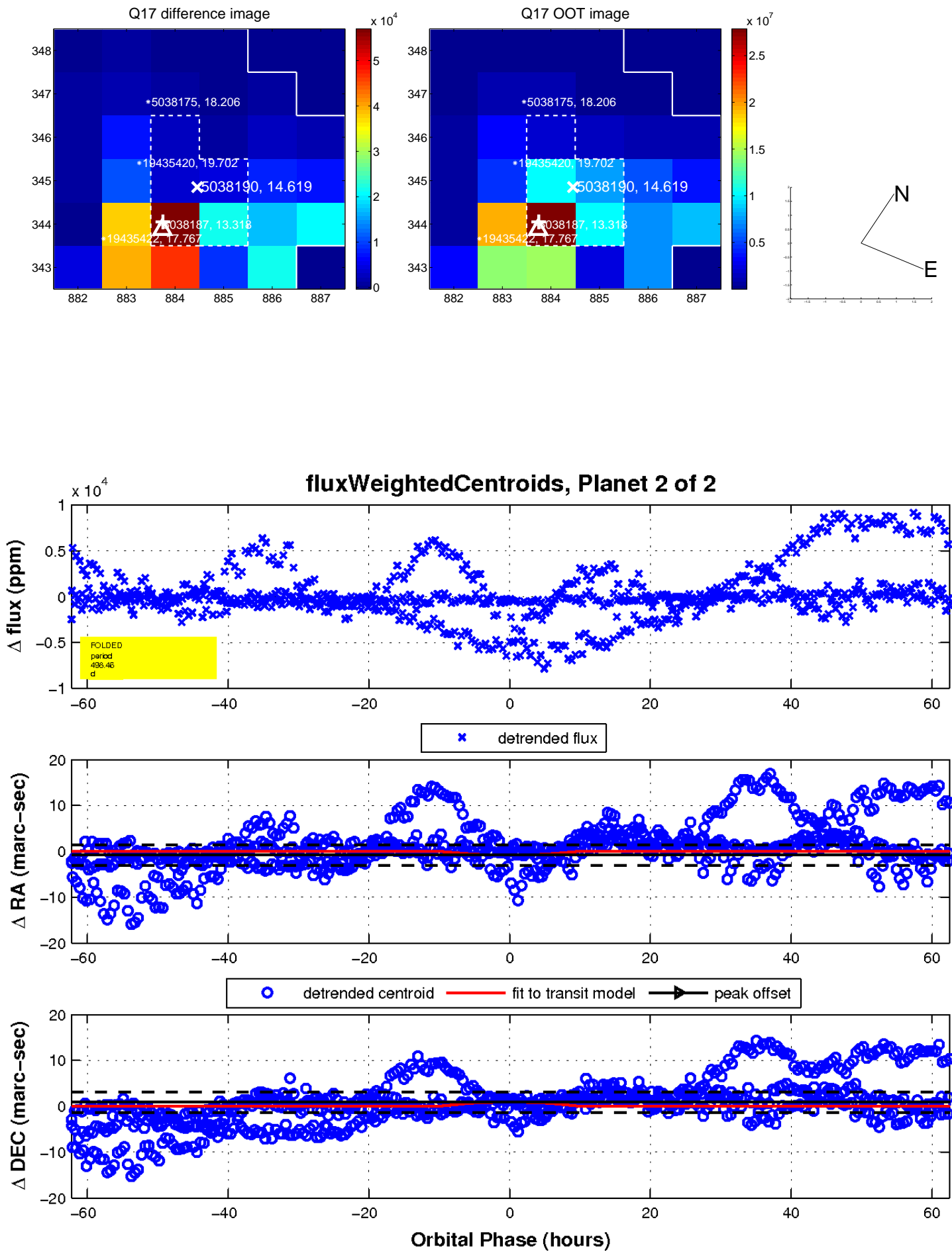
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

