

KIC 008191602

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})
008191602-01	OBS	No	0.553369	131.942176	78.4	2.081	8.9	8.1	3.66	7249	3.78	0.00
008191602-02	OBS	No	210.017337	156.874472	3614.5	4.766	8.9	9.9	3.66	7249	39.85	47.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008191602-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008191602-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

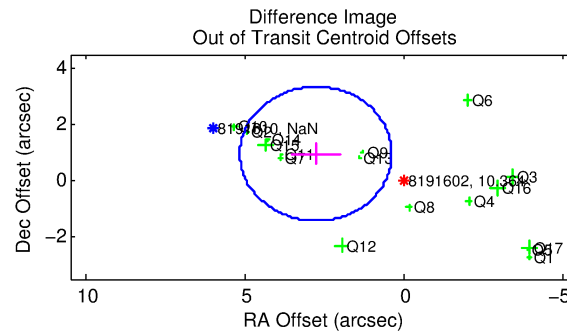
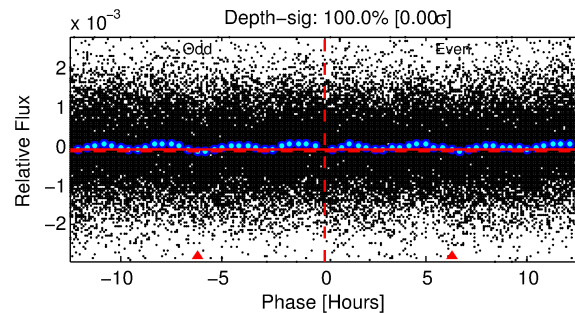
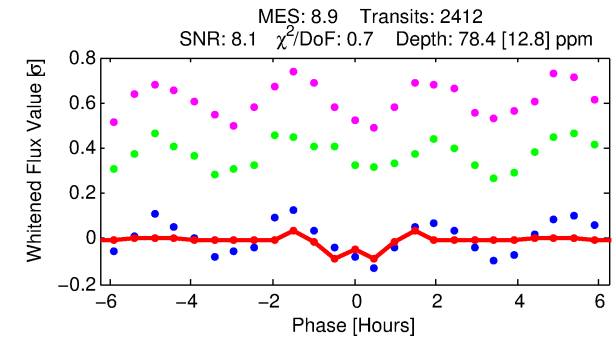
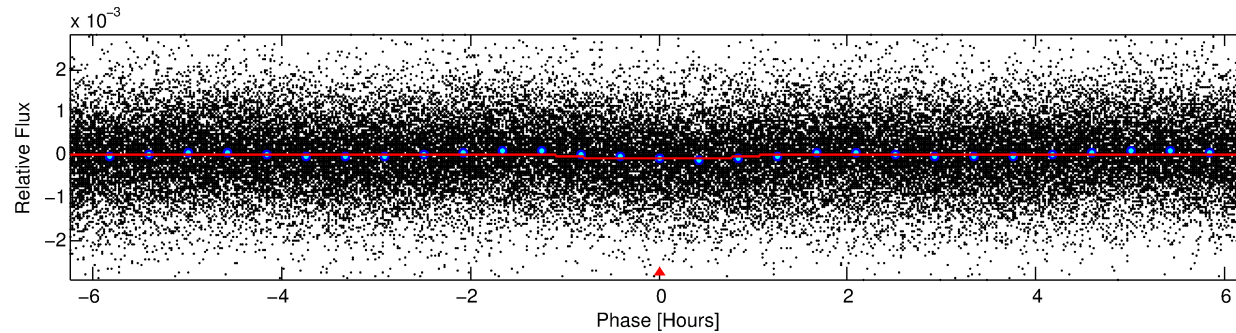
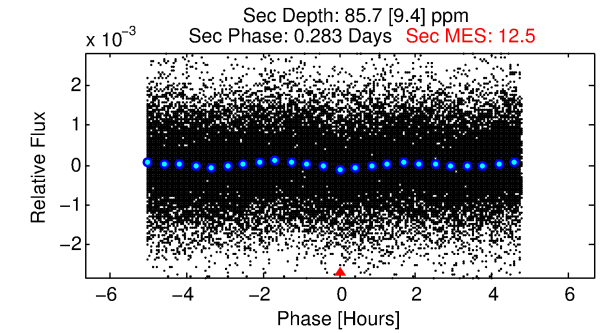
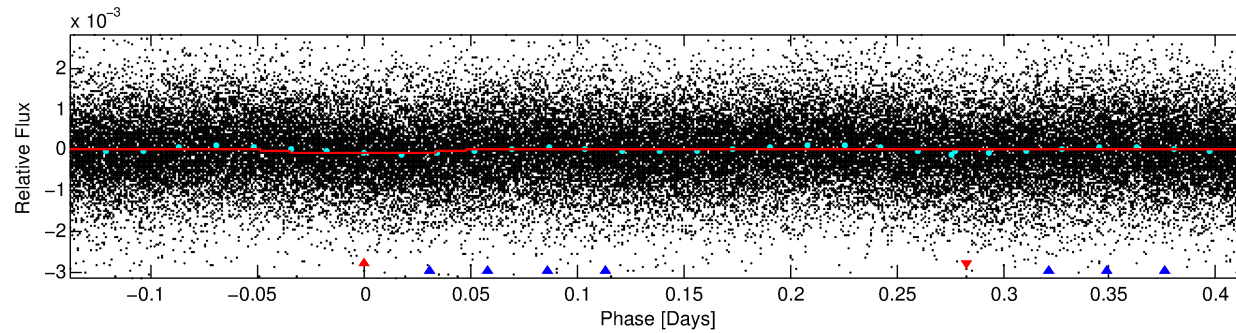
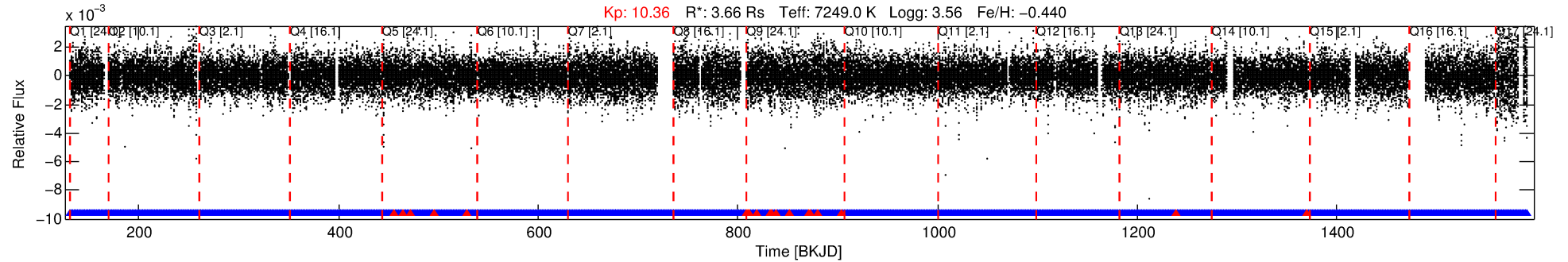
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008191602-01

No Significant Match Found

DV One-Page Summary

KIC: 8191602 Candidate: 1 of 2 Period: 0.553 d



DV Fit Results:

Period = 0.55337 [0.00001] d
Epoch = 131.9422 [0.0014] BKJD
 $R_p/R^* = 0.0095$ [0.0026]
 $a/R^* = 1.32$ [0.87]
 $b = 0.90$ [0.33]
 $\text{Seff} = \text{N/A}$
 $\text{Teq} = \text{N/A}$
 $R_p = 3.78$ [2.47] R_e
 $a = \text{N/A}$
 $A_g = \text{N/A}$
 $\text{Teffp} = \text{N/A}$

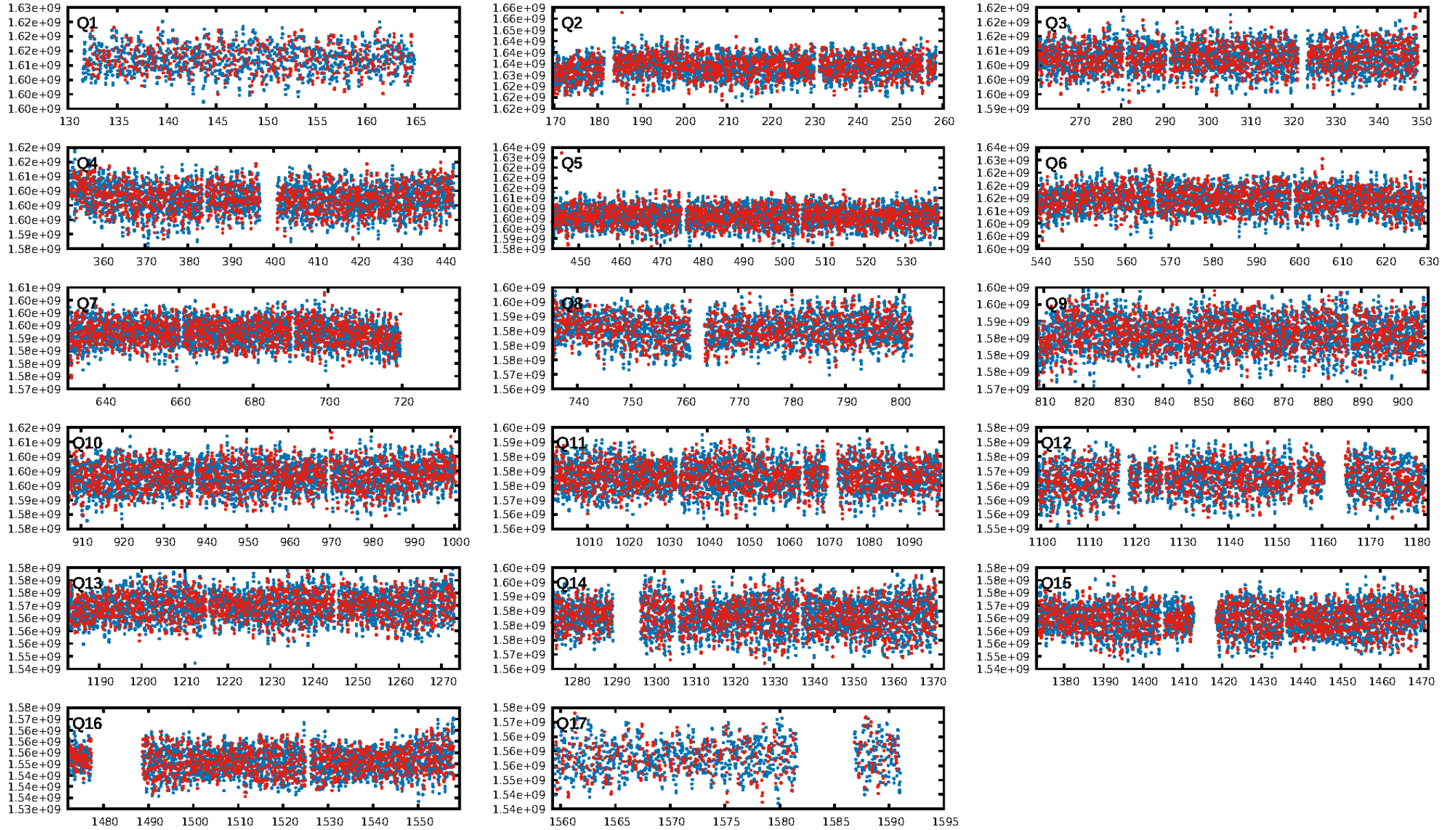
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [966.62σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.56e-15
RollingBand-fgt: 0.99 [2286/2305]
GhostDiagnostic-chr: 1.439
Centroid-sig: 1.2%
Centroid-so: 0.172 arcsec [0.94σ]
OotOffset-rm: 2.937 arcsec [3.69σ]
KicOffset-rm: 2.567 arcsec [2.99σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.18 [3/17]
DiffImageOverlap-fno: 1.00 [17/17]

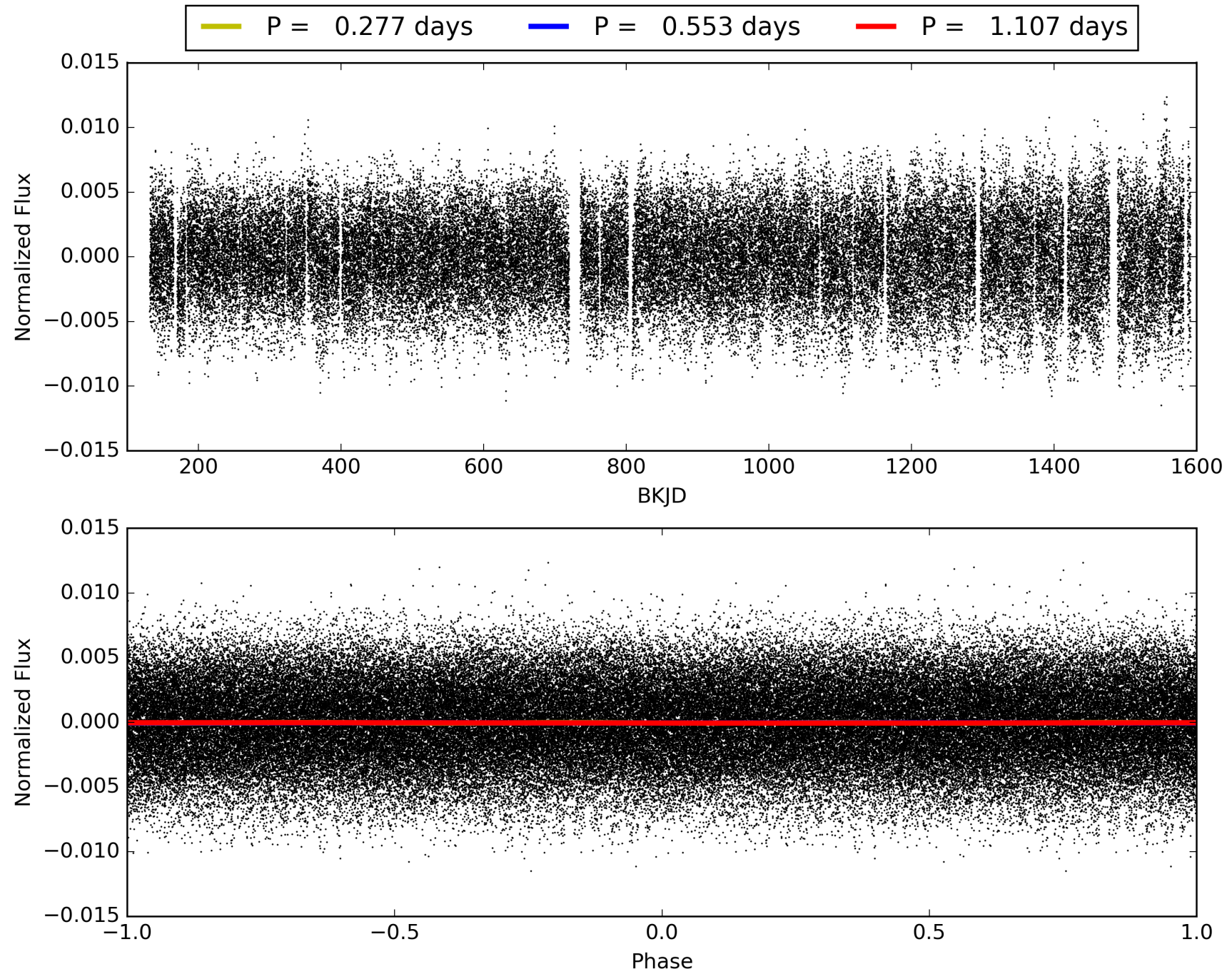
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:31:59 Z

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

TCE 008191602-01, PDC Light Curves

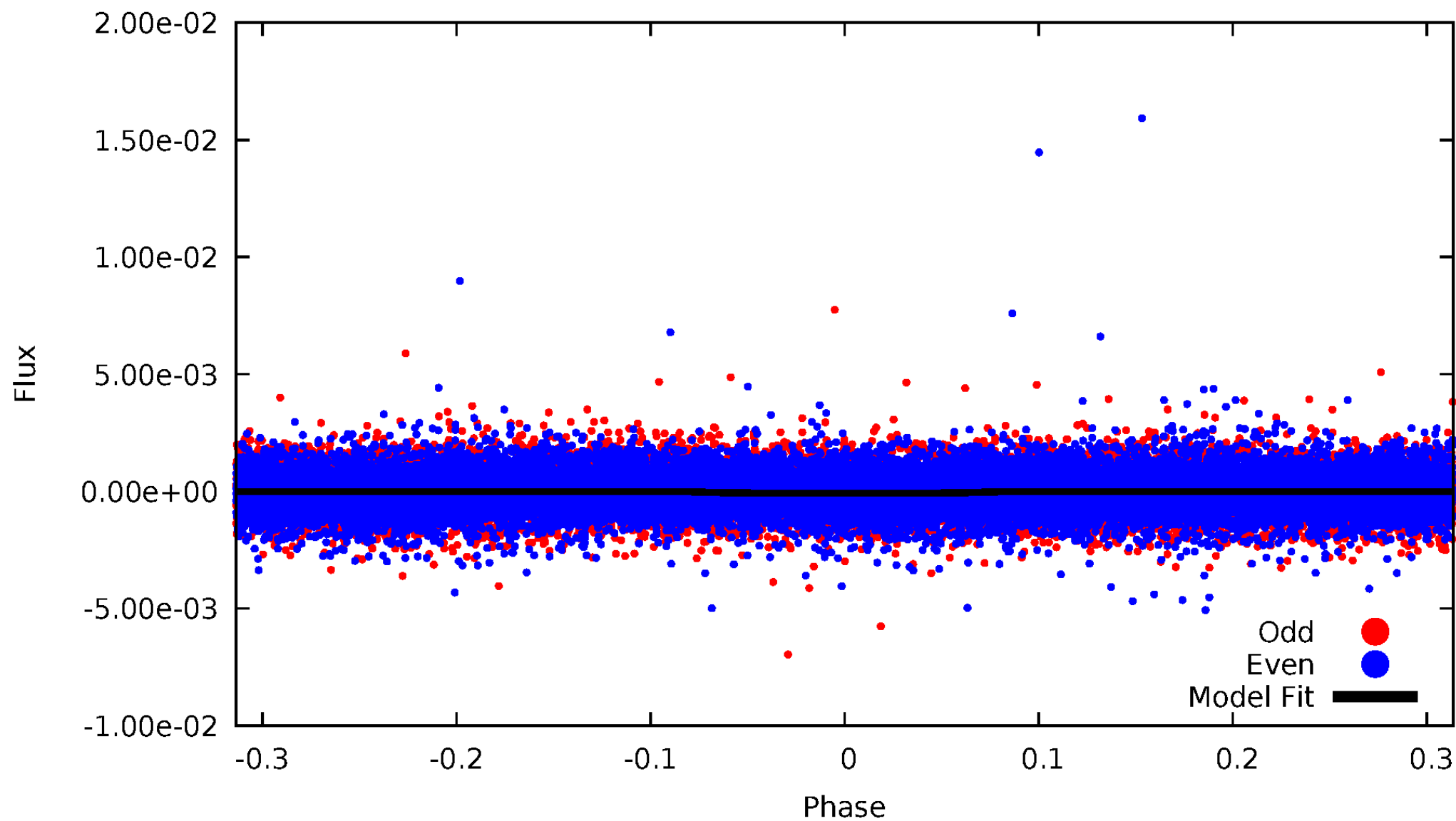


TCE 008191602-01



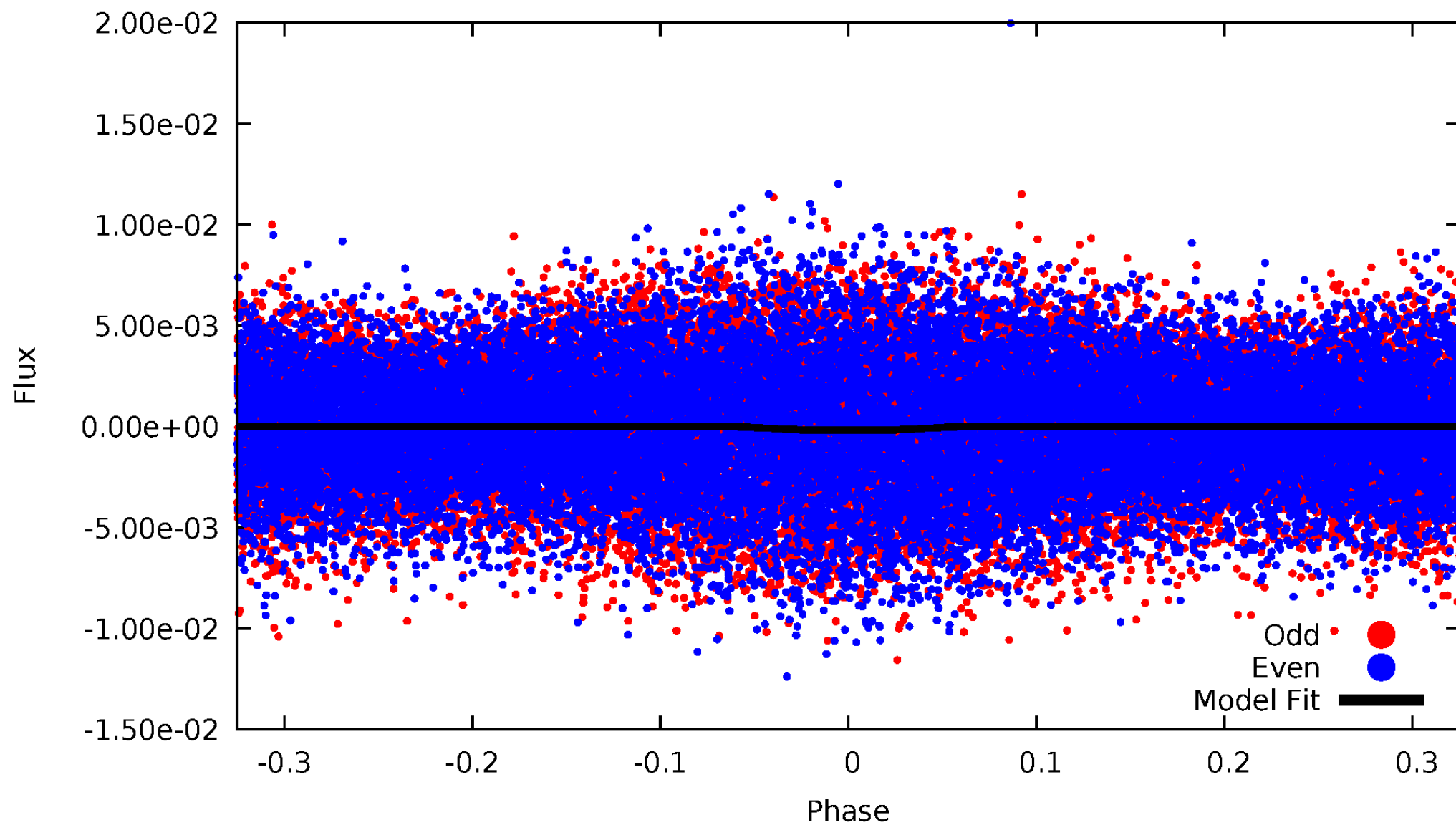
DV Odd/Even

TCE 008191602-01



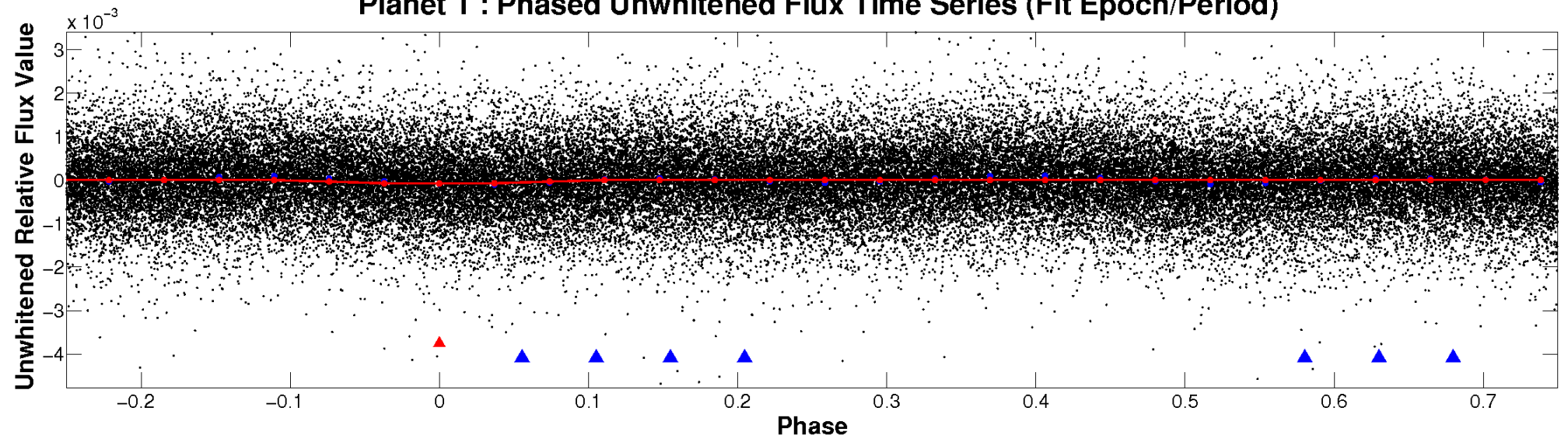
ALT Odd/Even

TCE 008191602-01

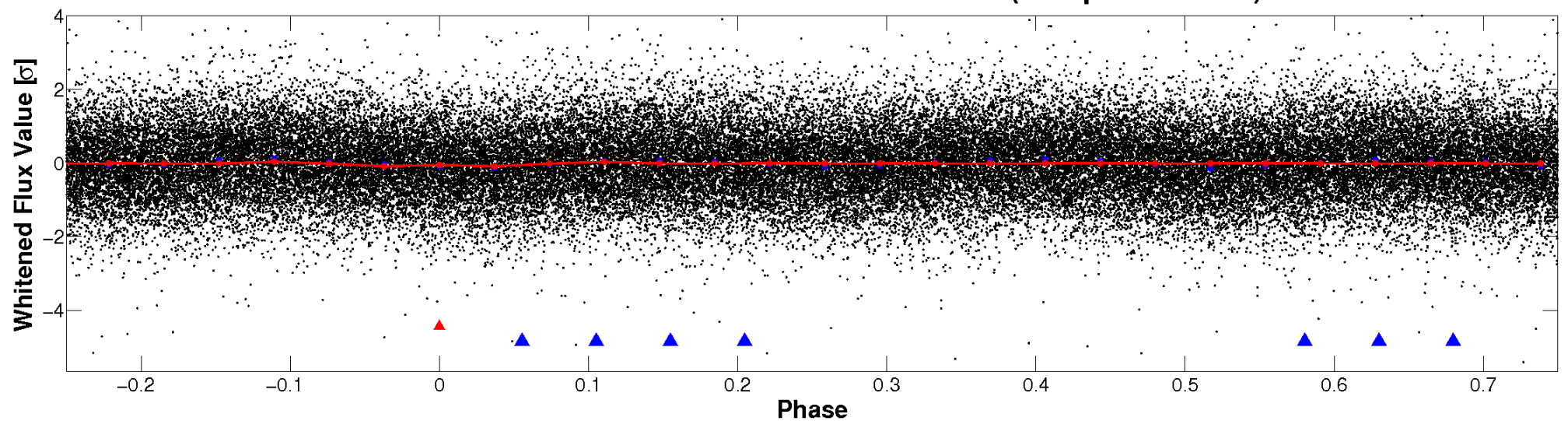


Non-Whitened Vs. Whitened Light Curve

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

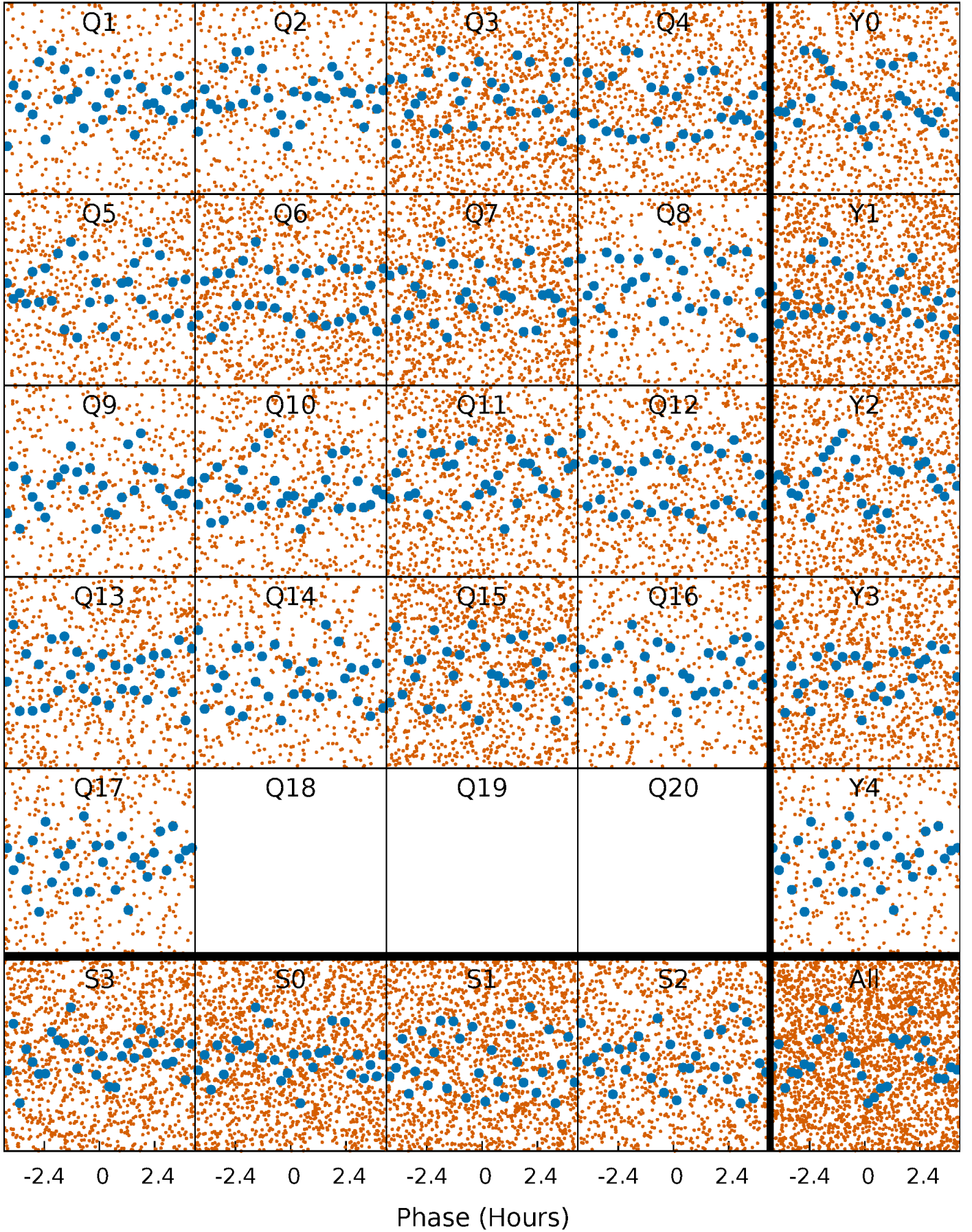


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



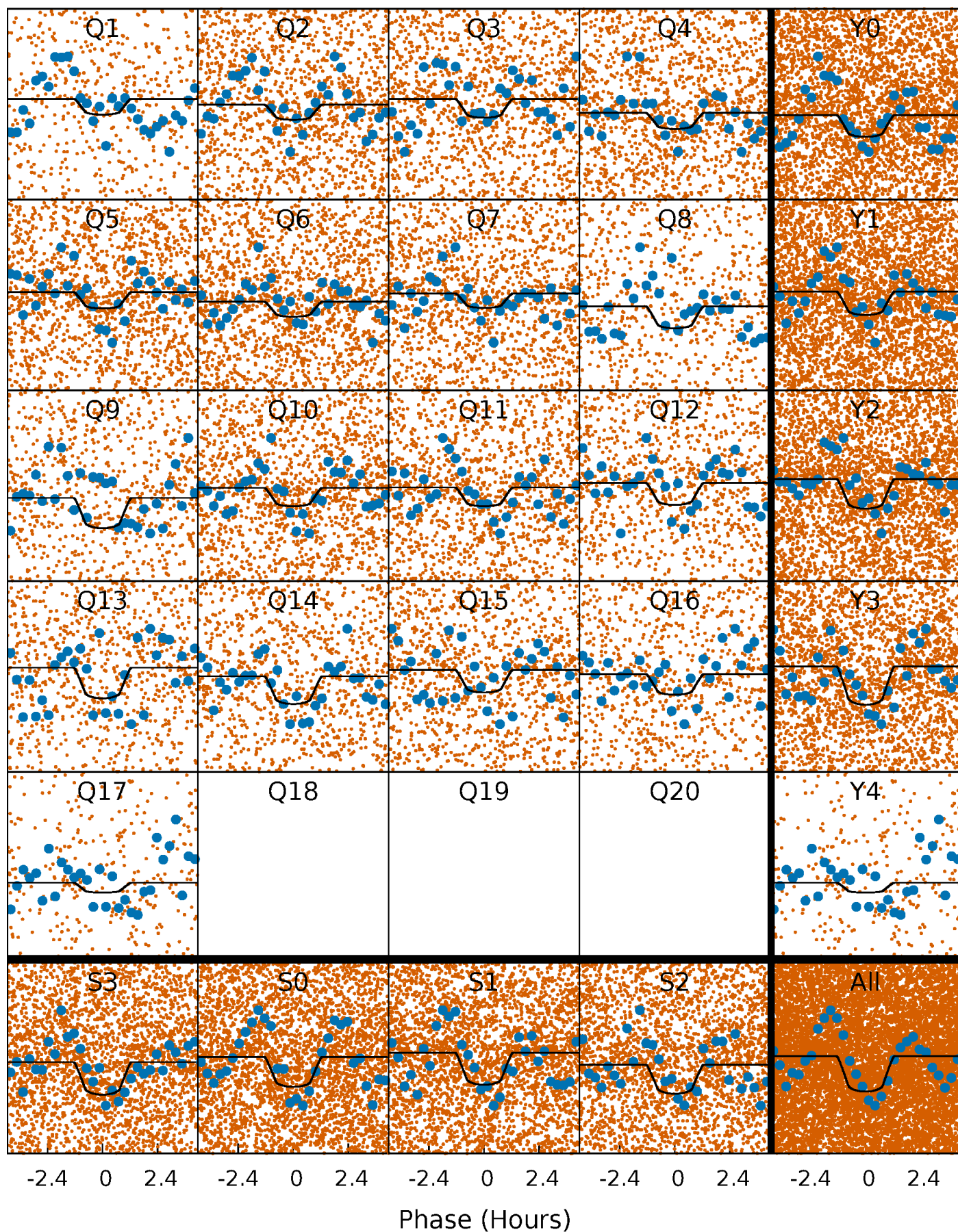
PDC Quarter-Phased Transit Curves

TCE 008191602-01 P= 0.553369 Days $T_0=131.942176$ (BKJD)



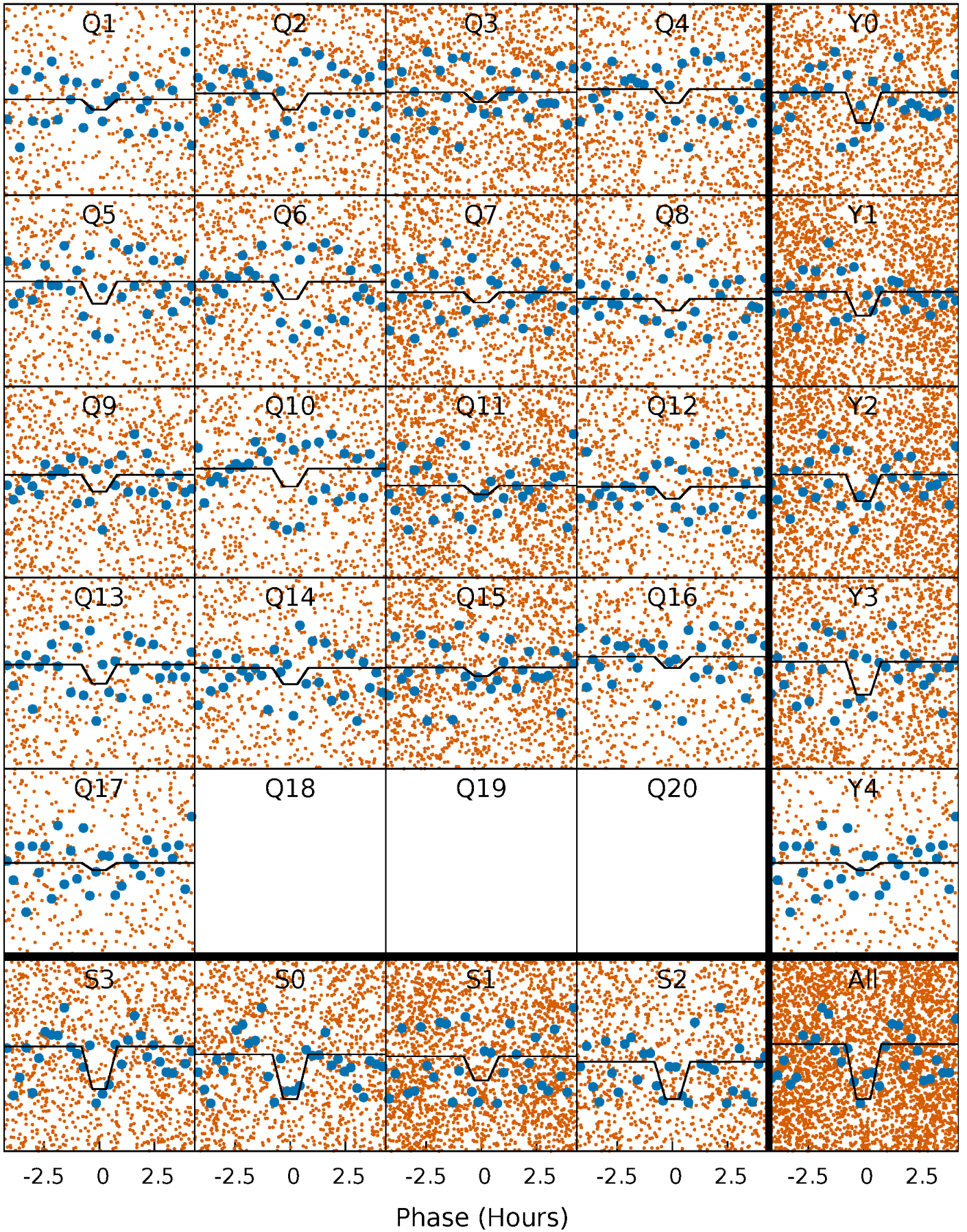
DV Quarter-Phased Transit Curves

TCE 008191602-01 P= 0.553369 Days $T_0=131.942176$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

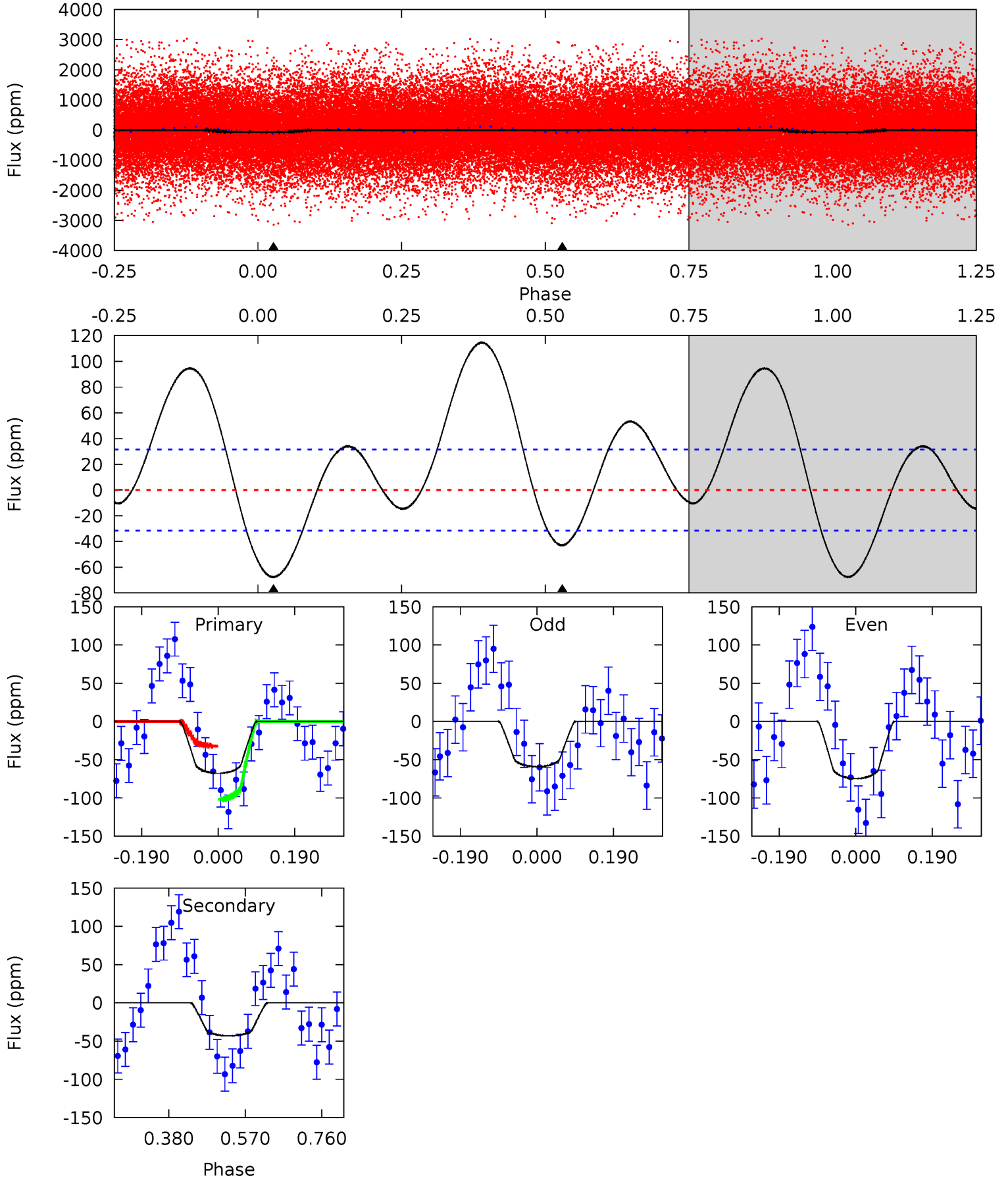
TCE 008191602-01 P= 0.553380 Days $T_0=131.943918$ (BKJD)



DV Model-Shift Uniqueness Test

008191602-01, P = 0.553369 Days, E = 131.388807 Days

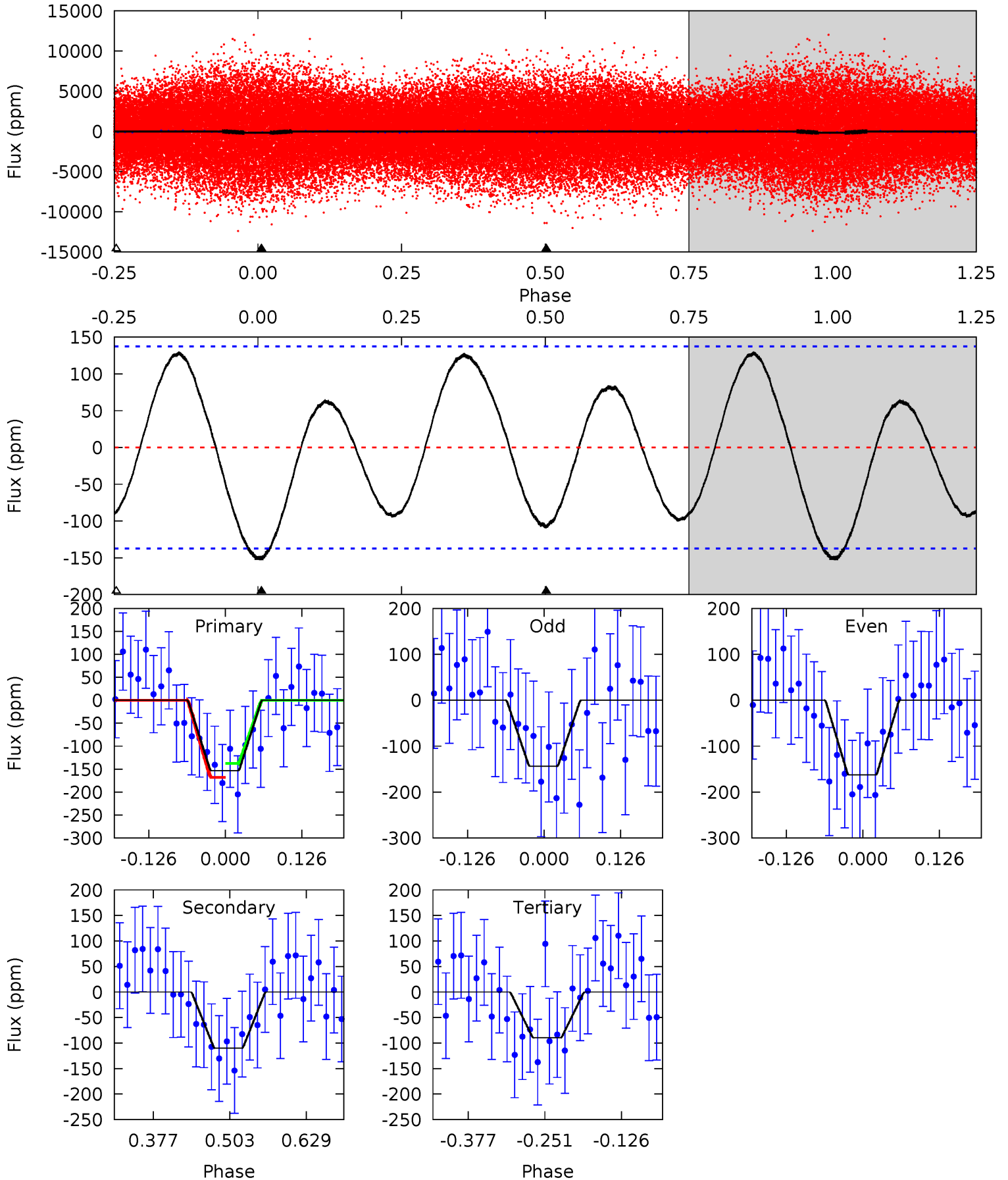
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.50	6.03	0	0	4.43	1.31	3.48	9.50	9.50	6.03	6.03	1.10	0.88	0.63	4.99



Alt Model-Shift Uniqueness Test

008191602-01, P = 0.553380 Days, E = 131.390538 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.04	3.61	2.95	0	4.52	1.53	2.49	2.09	5.04	0.67	3.61	0.29	2.27	0.46	0.50



Stellar Parameters For KIC 008191602

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7249^{+205}_{-281}	$3.559^{+0.595}_{-0.105}$	$-0.440^{+0.300}_{-0.300}$	$3.662^{+0.384}_{-2.175}$	$1.773^{+0.177}_{-0.566}$	$0.051^{+0.428}_{-0.012}$
	+3%/-4%	+17%/-3%	+68%/-68%	+10%/-59%	+10%/-32%	+842%/-23%
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 008191602-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-43 ± 7	$3.43^{+1.26}_{-1.26}$	6596^{+474}_{-965}	4790^{+1617}_{-8521}	$0.500^{+0.711}_{-0.239}$
Alt.	-110 ± 30	$5.01^{+1.41}_{-1.66}$	6623^{+434}_{-981}	5373^{+1133}_{-1606}	$0.613^{+0.681}_{-0.273}$

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 $A_{obs} \gg 1.0$

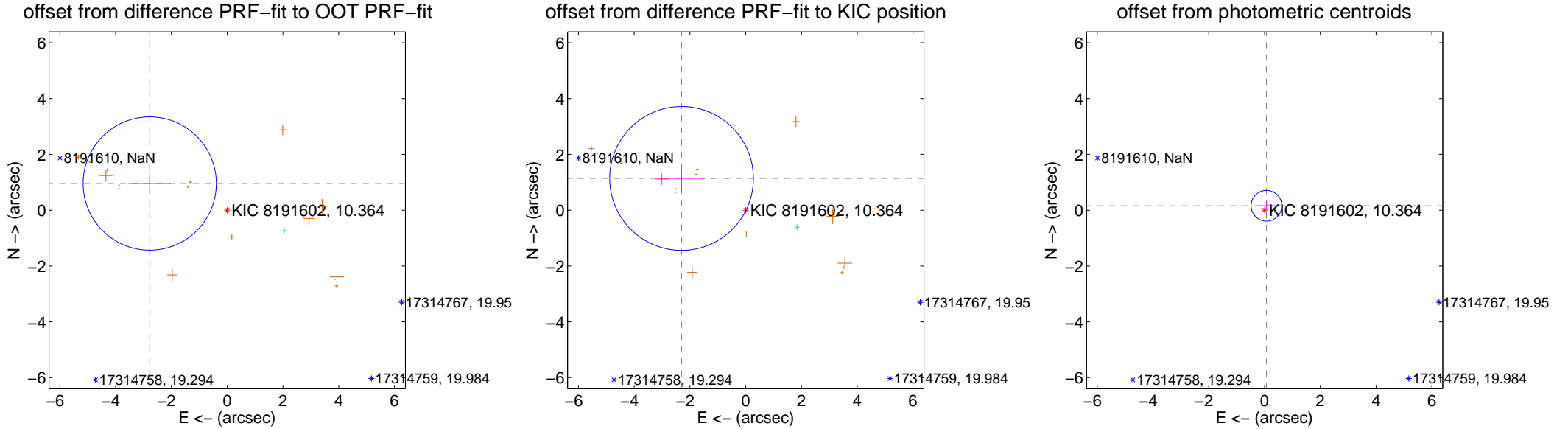
DV Centroid Data

Supplemental centroid analysis for 008191602-01. **Kepler magnitude: 10.36.** Transit SNR 8.10

There are 3 quarters with good PRF difference image offsets

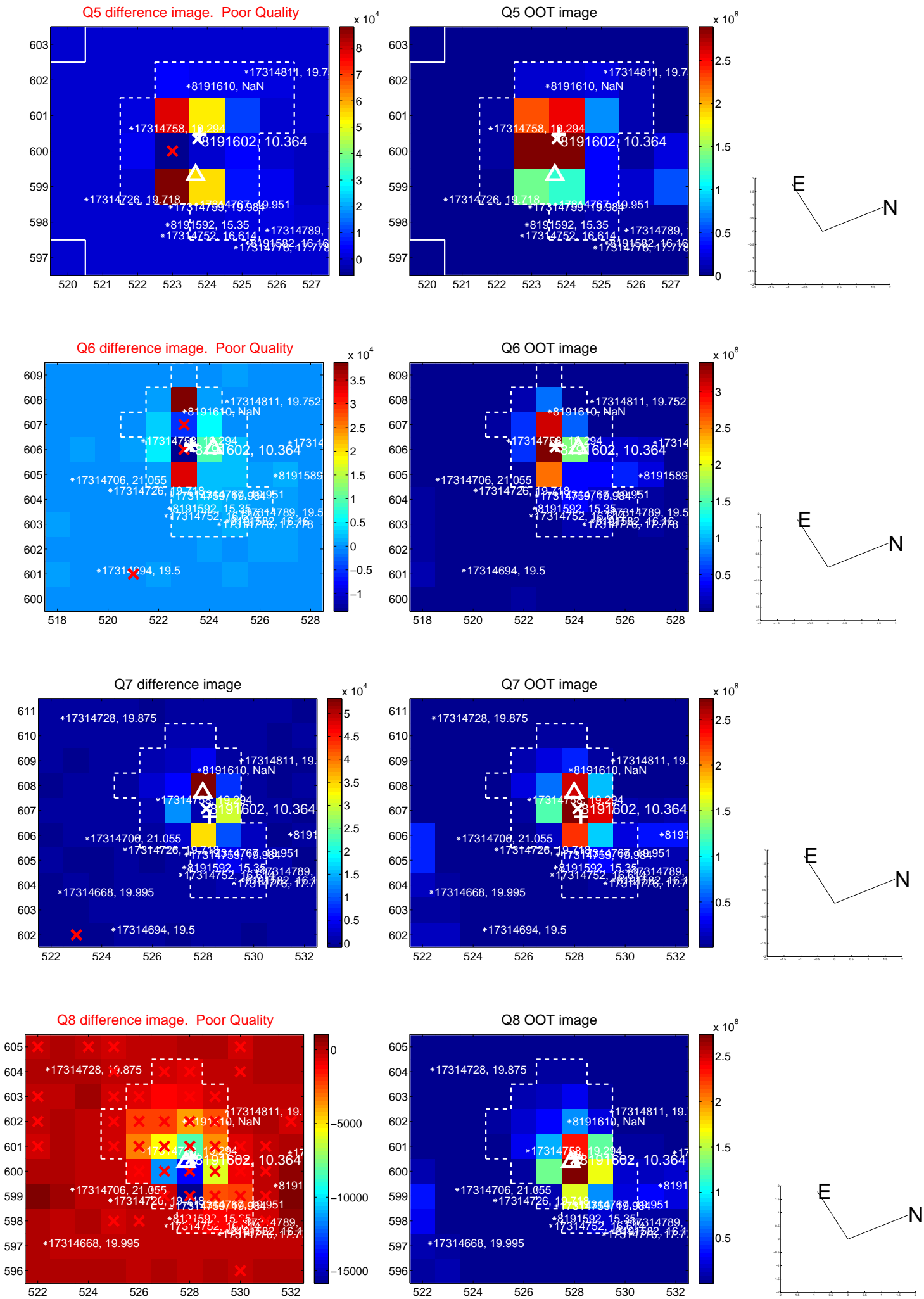
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.937 ± 0.796	3.69	2.778 ± 0.763	0.956 ± 0.370
PRF-fit source offset from KIC position	2.567 ± 0.859	2.99	2.301 ± 0.826	1.138 ± 0.423
photometric centroid source offset	0.17 ± 0.18	0.94	-0.07 ± 0.31	0.16 ± 0.15

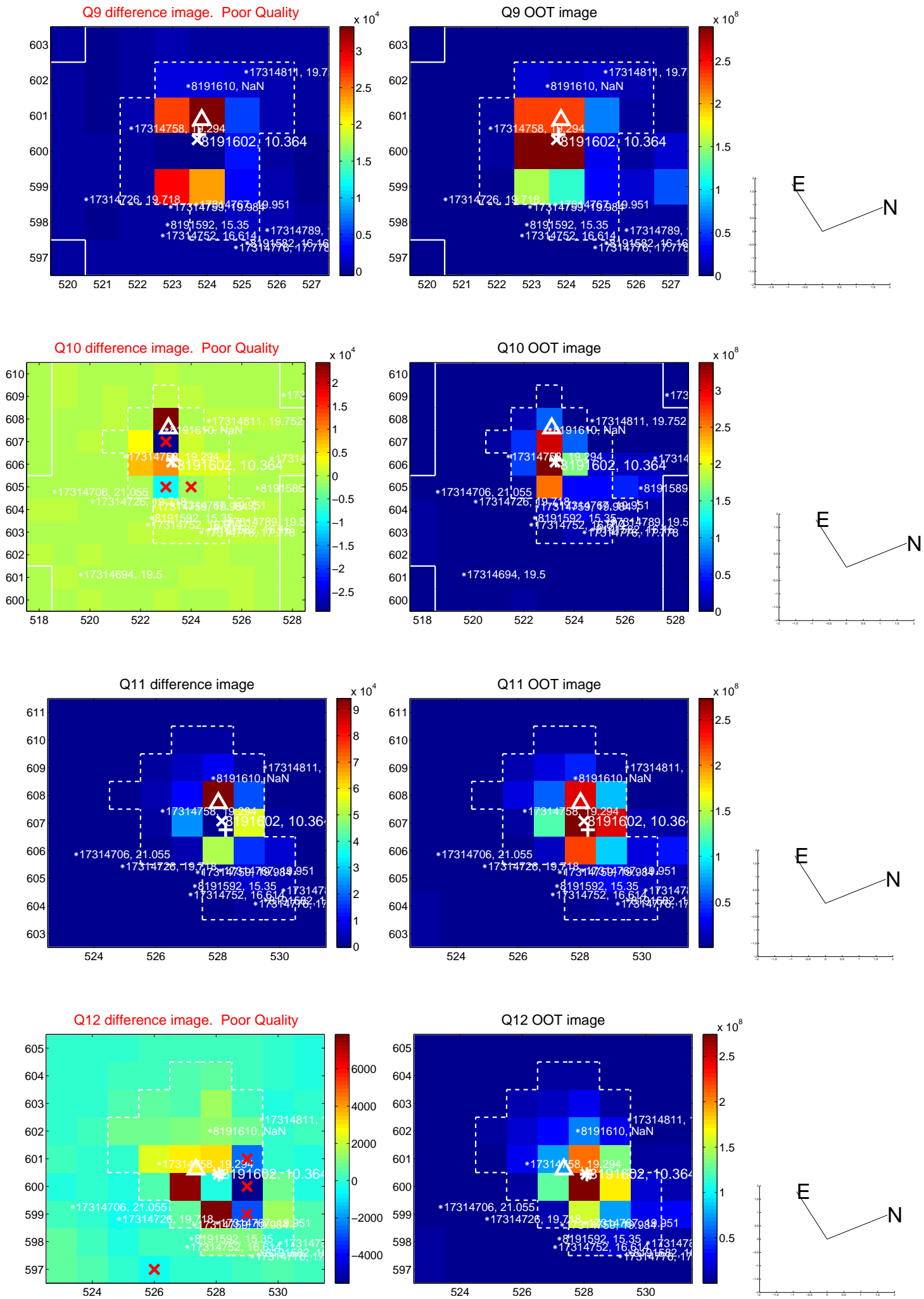


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

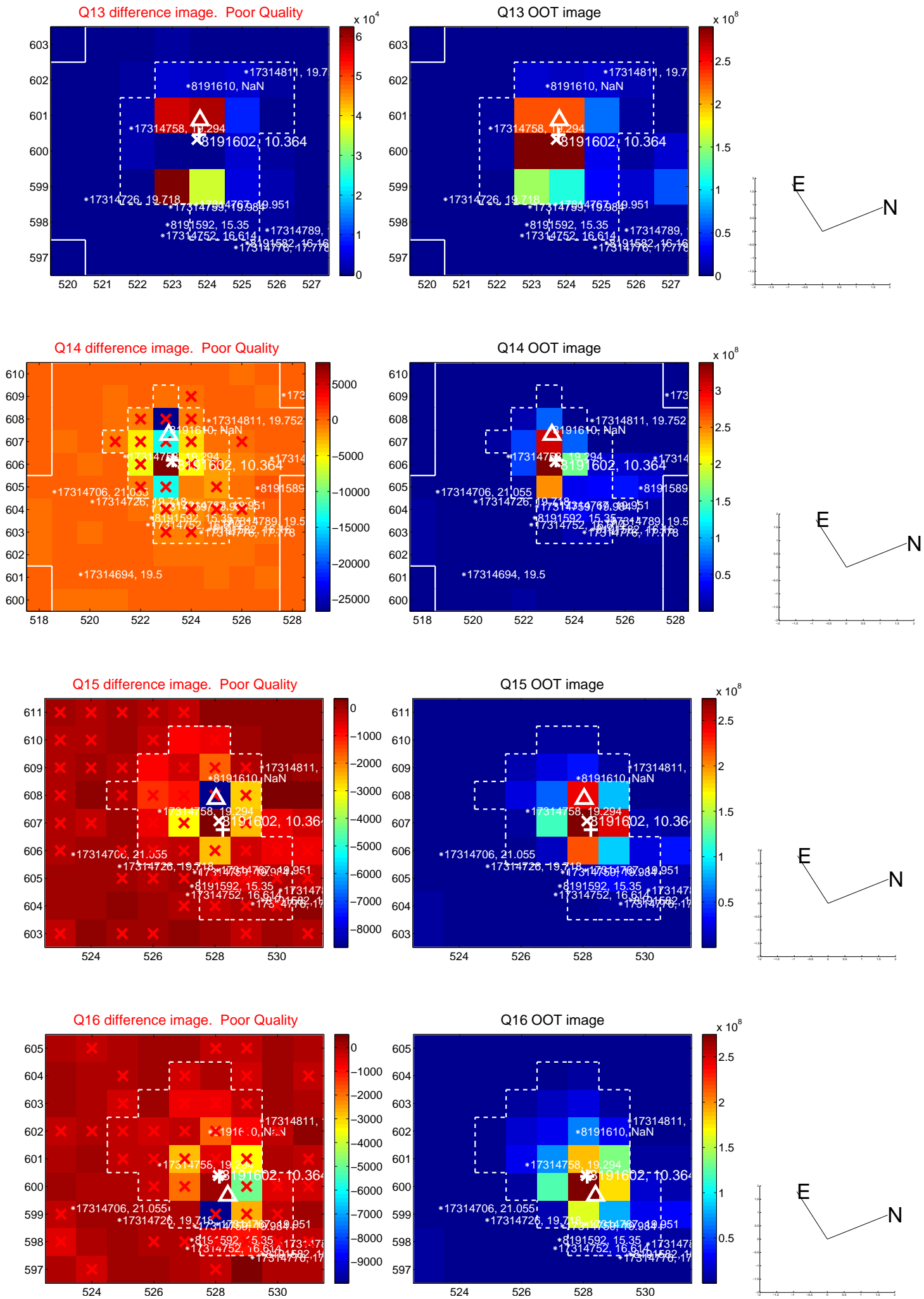
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



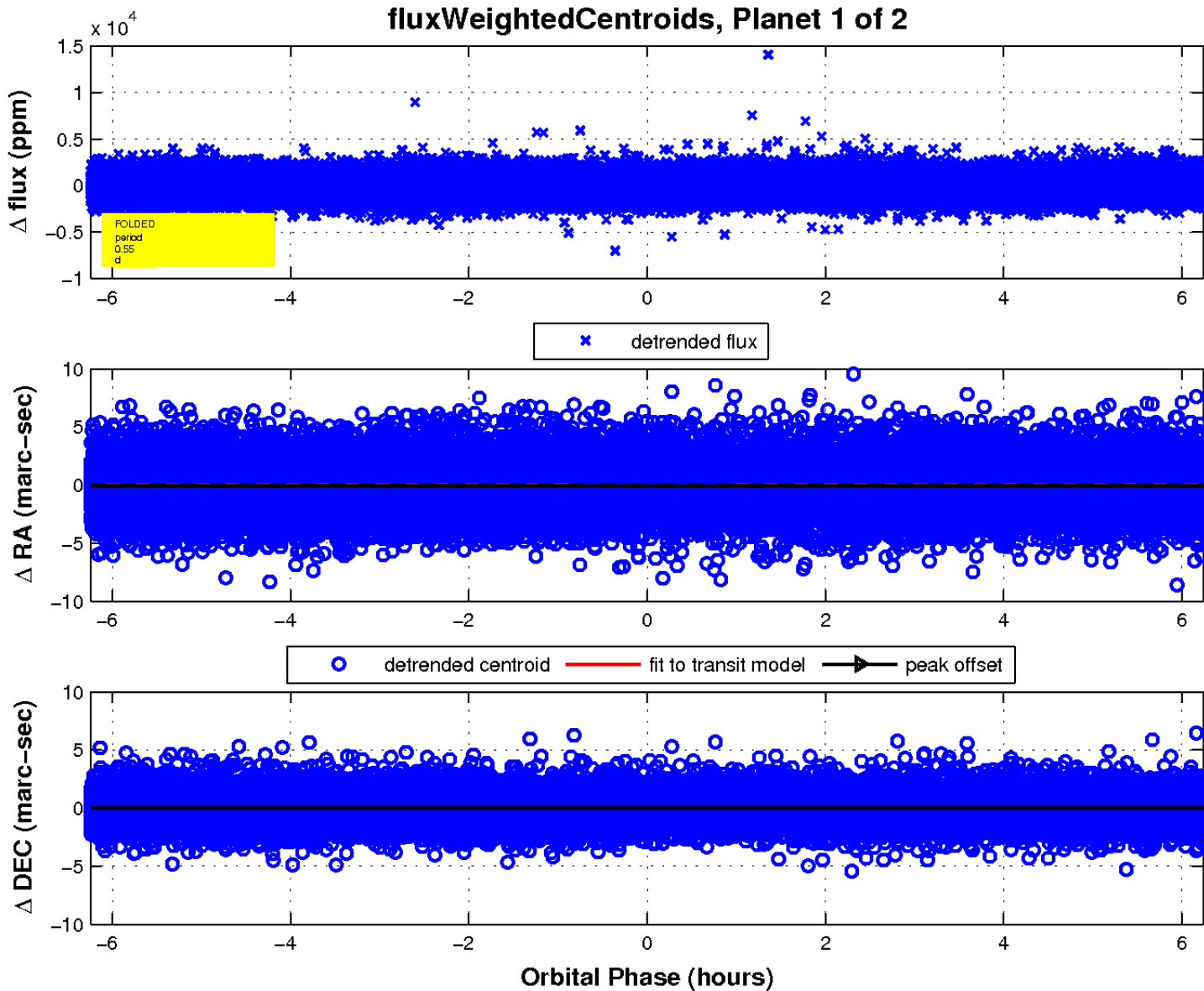
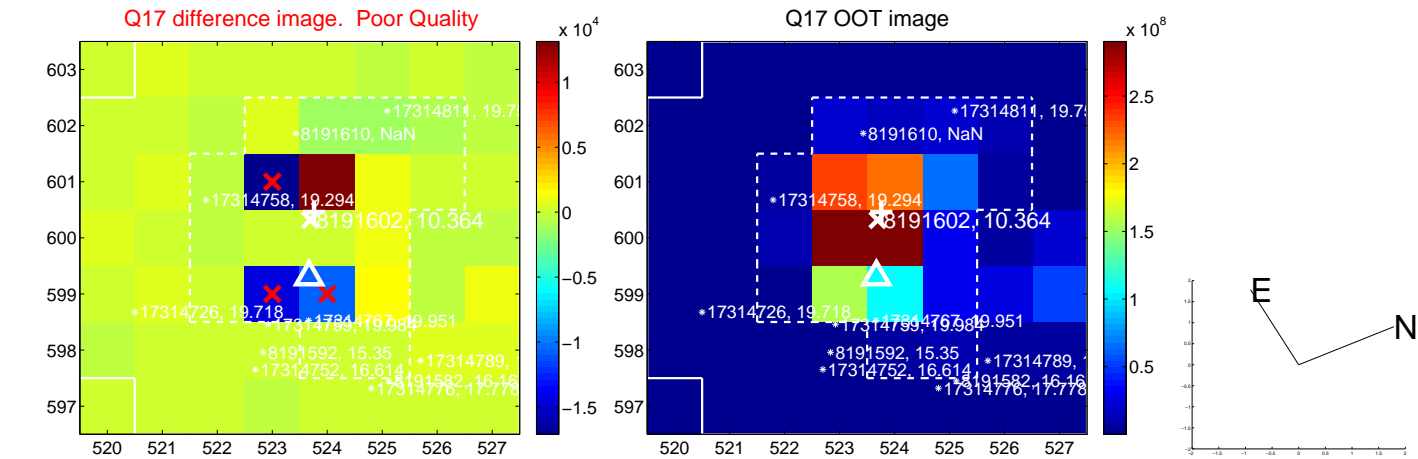
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



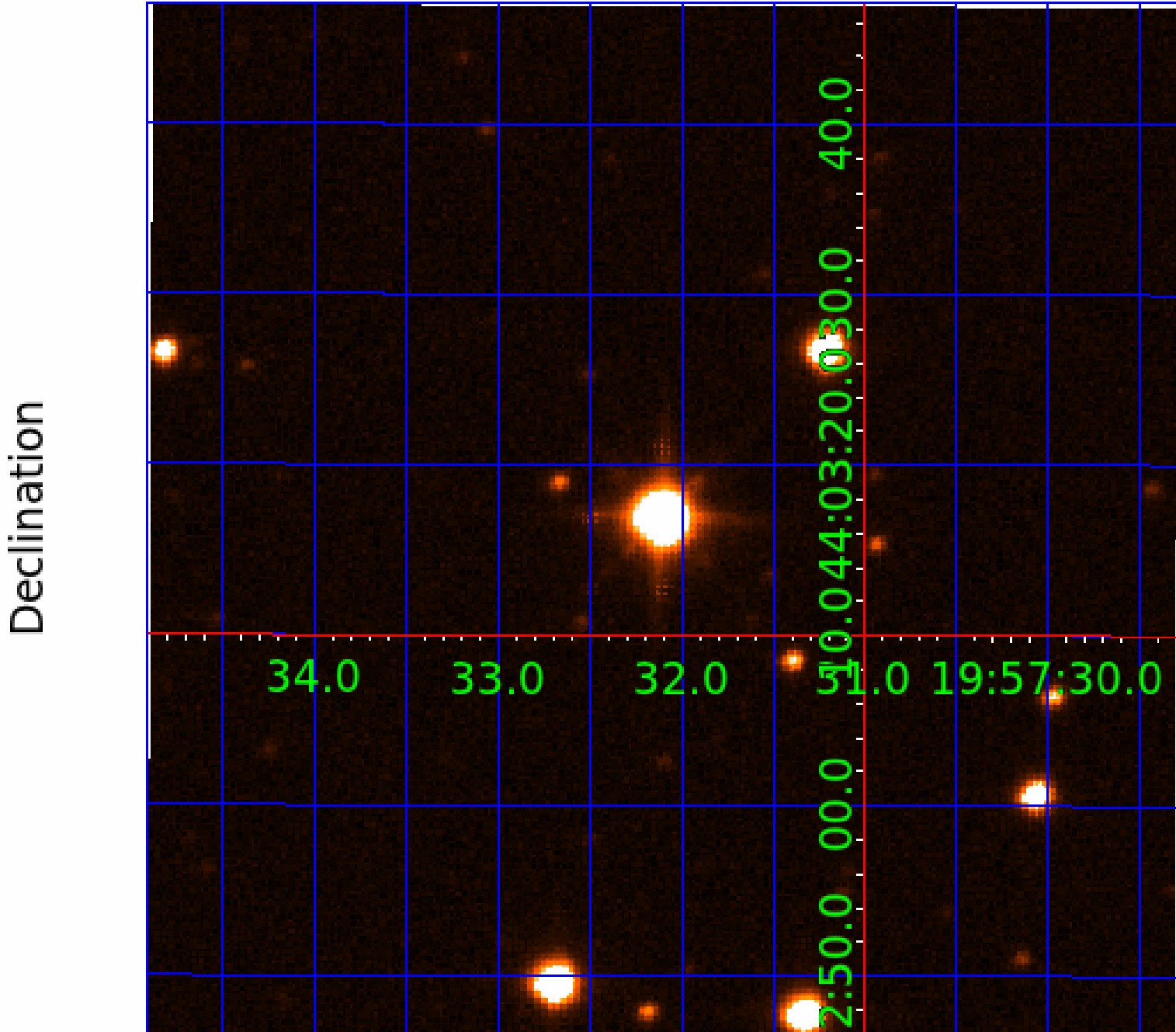
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008191602

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})
008191602-01	OBS	No	0.553369	131.942176	78.4	2.081	8.9	8.1	3.66	7249	3.78	0.00
008191602-02	OBS	No	210.017337	156.874472	3614.5	4.766	8.9	9.9	3.66	7249	39.85	47.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008191602-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008191602-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

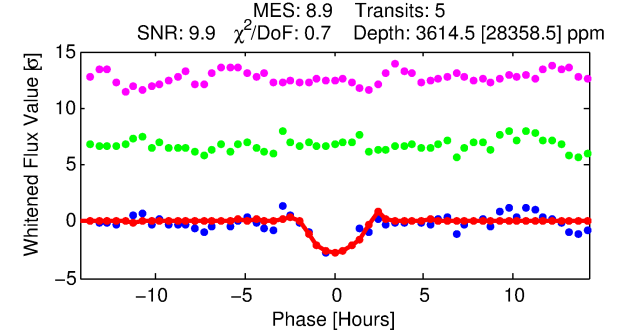
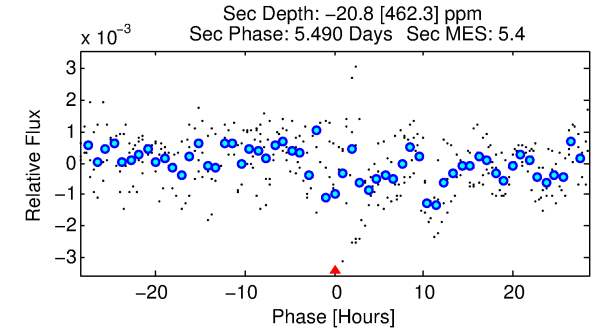
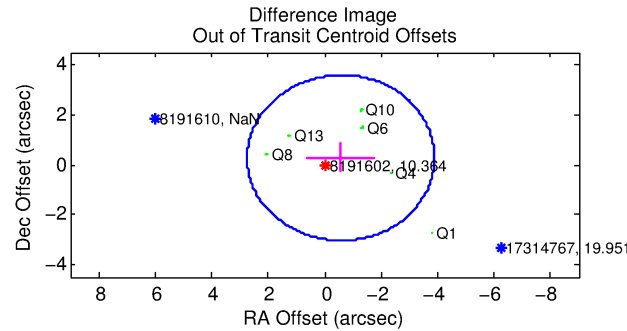
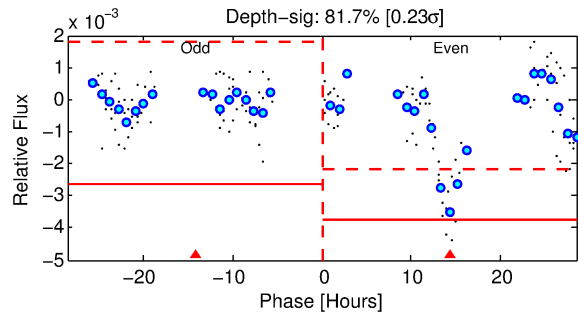
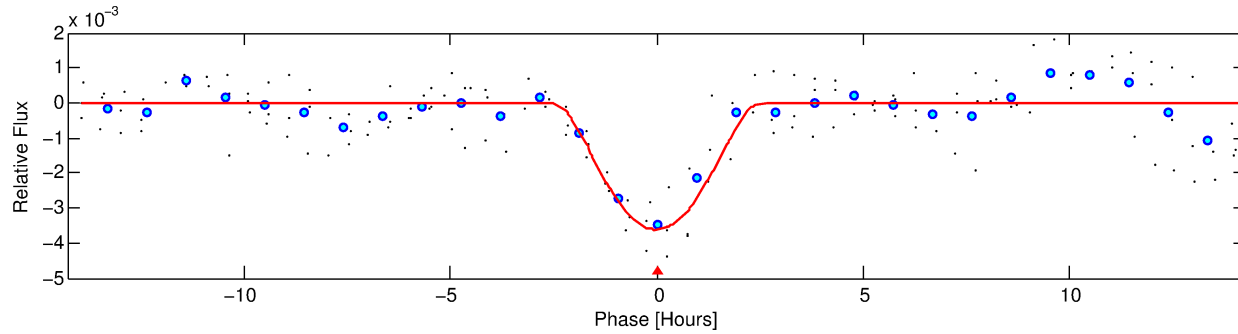
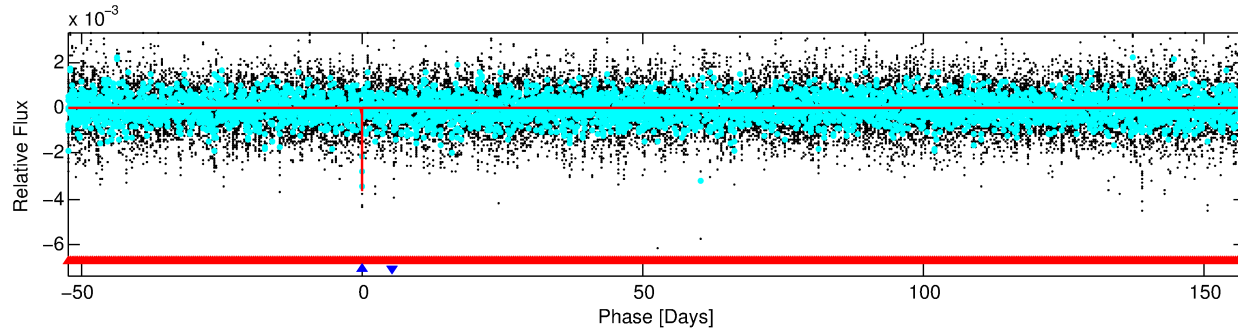
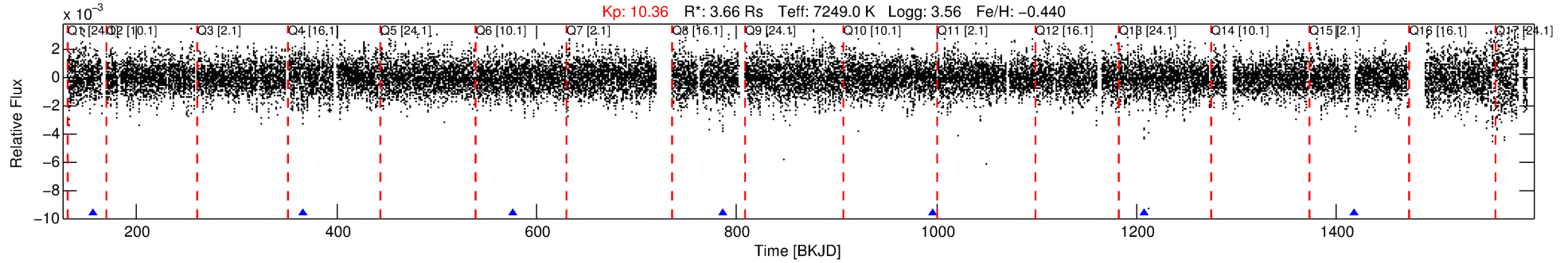
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008191602-02

No Significant Match Found

DV One-Page Summary

KIC: 8191602 Candidate: 2 of 2 Period: 210.017 d



DV Fit Results:

Period = 210.01734 [0.00292] d
Epoch = 156.8745 [0.0103] BKJD
Rp/R* = 0.0997 [0.1931]
a/R* = 154.04 [61.64]
b = 1.00 [0.25]
Seff = 47.37 [47.72]
Teq = 669 [168] K
Rp = 39.85 [80.70] Re
a = 0.8369 [0.5059] AU
Ag = N/A
Teffp = N/A

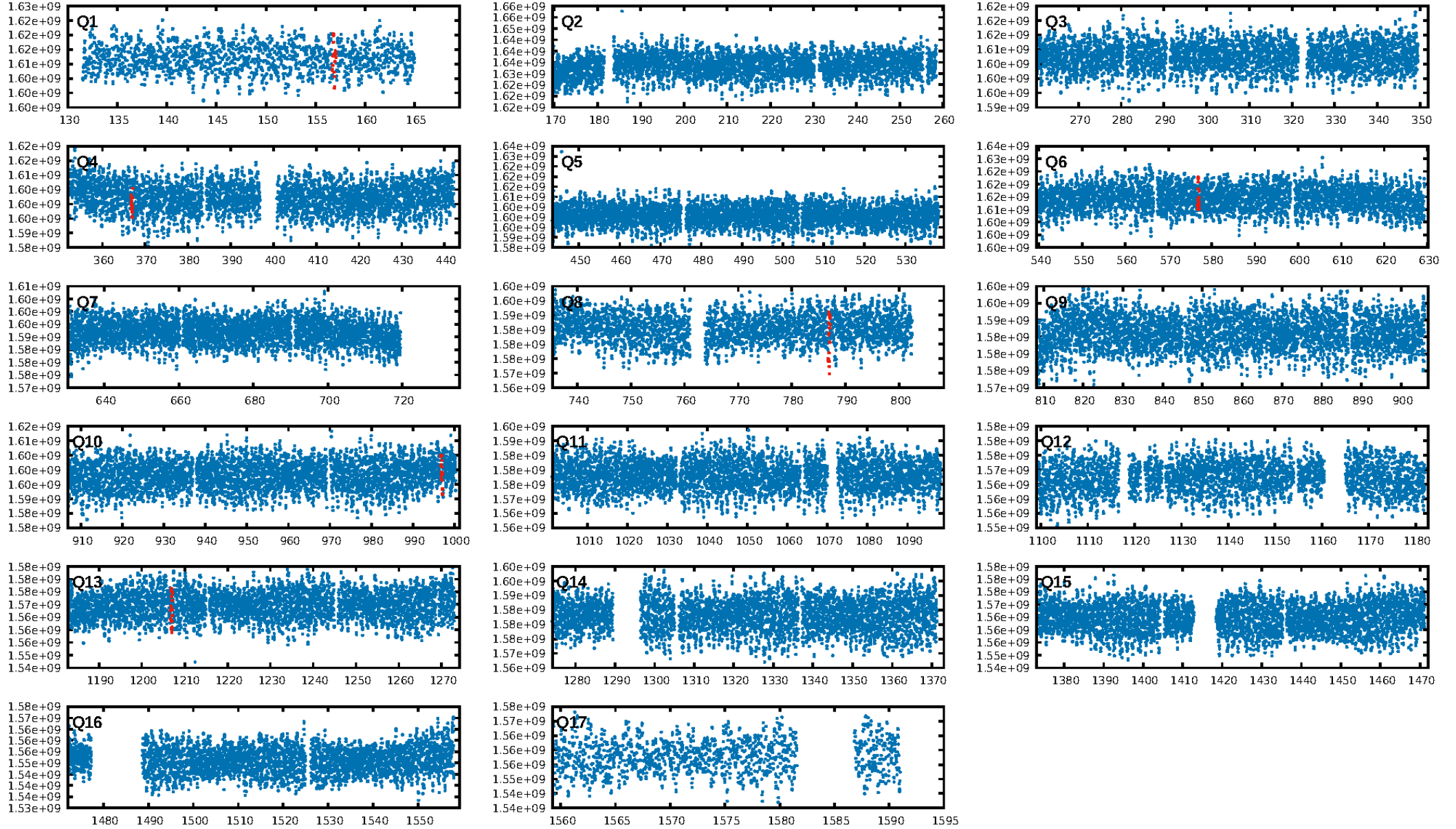
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [966.62 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.30e-11
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.156
Centroid-sig: 20.3%
Centroid-so: 0.937 arcsec [5.28 σ]
OotOffset-rm: 0.636 arcsec [0.58 σ]
KicOffset-rm: 0.599 arcsec [0.63 σ]
OotOffset-st: 2/0/2/2 [6]
KicOffset-st: 2/0/2/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/6]

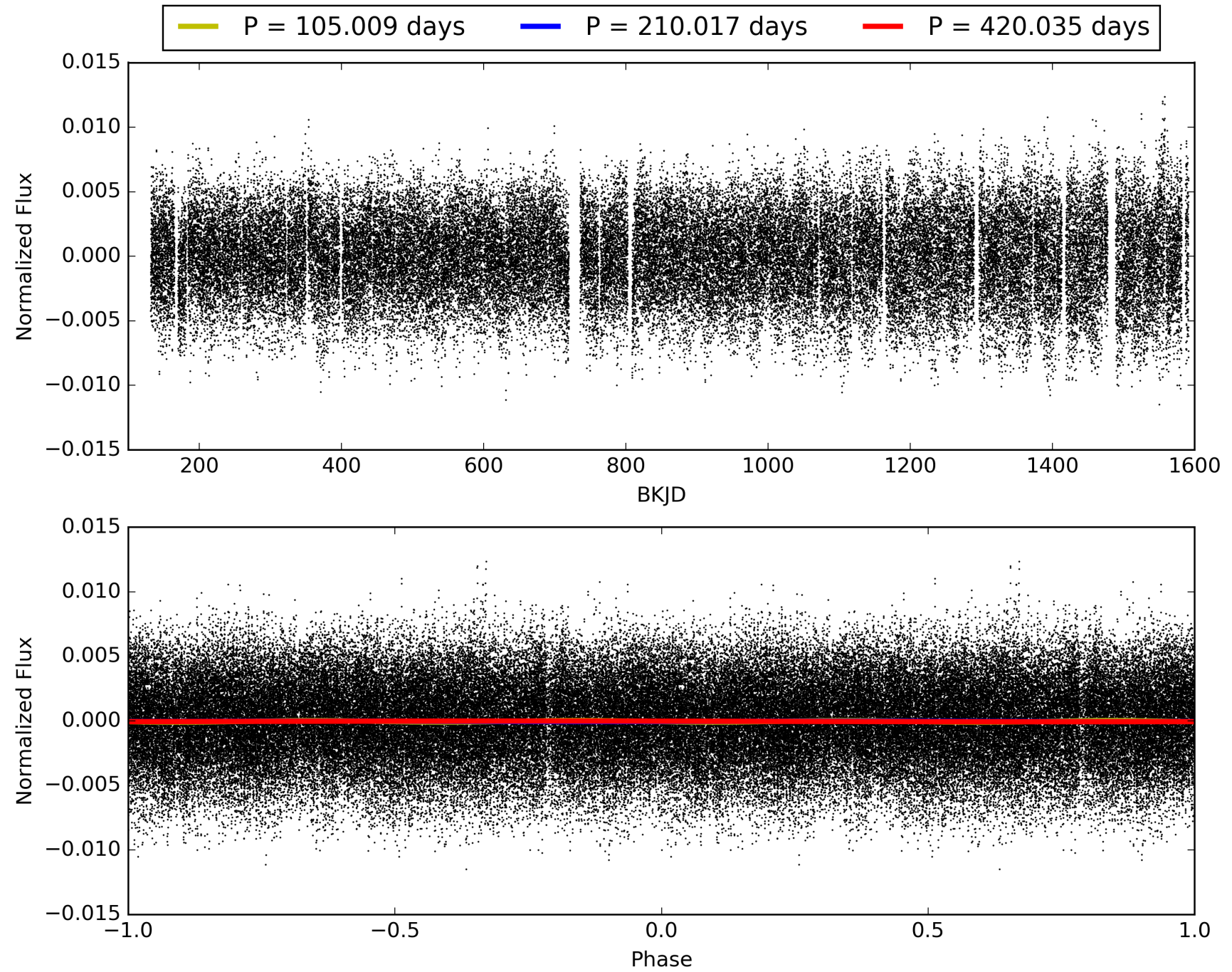
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:32:17 Z

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

TCE 008191602-02, PDC Light Curves

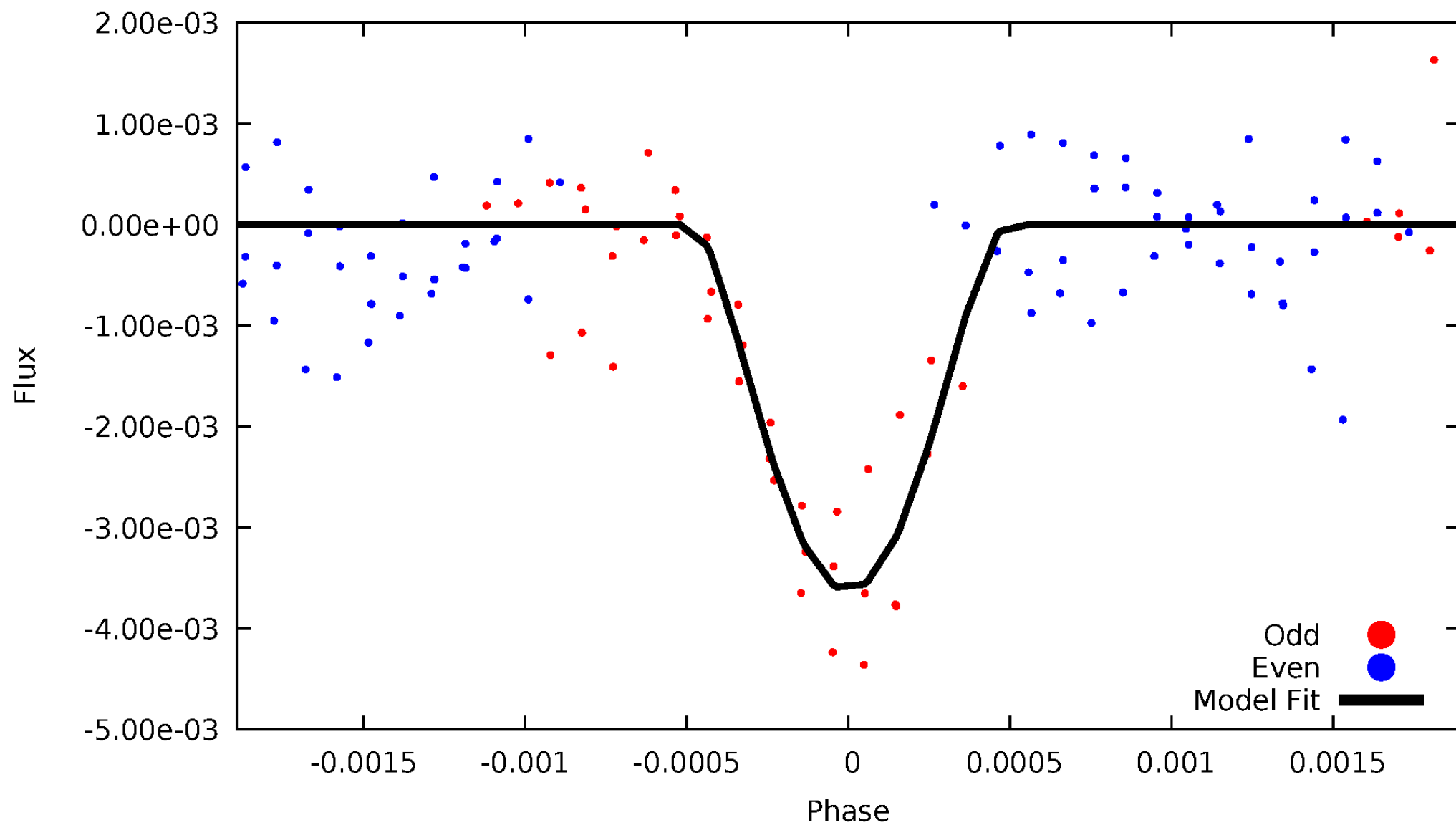


TCE 008191602-02



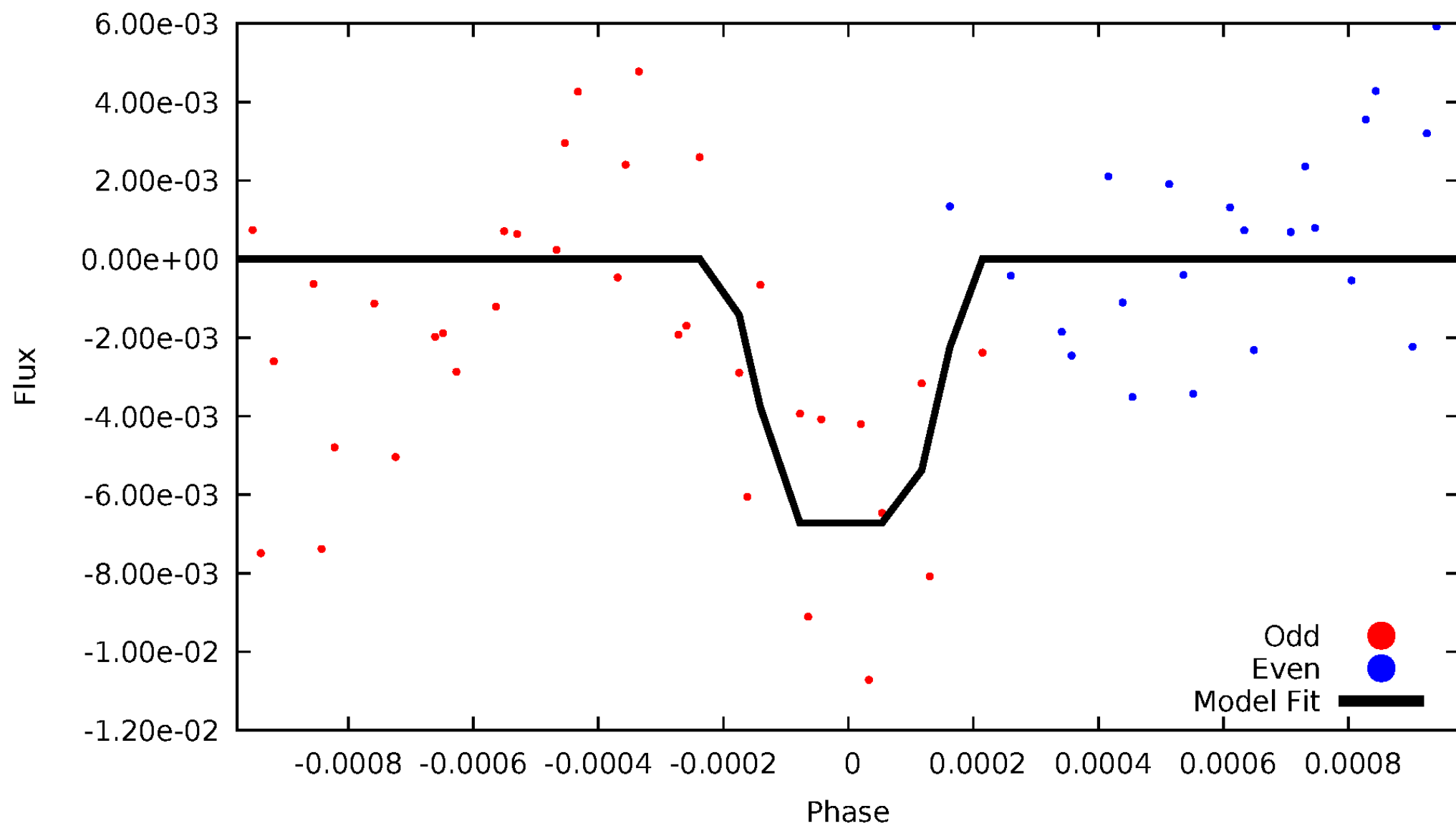
DV Odd/Even

TCE 008191602-02



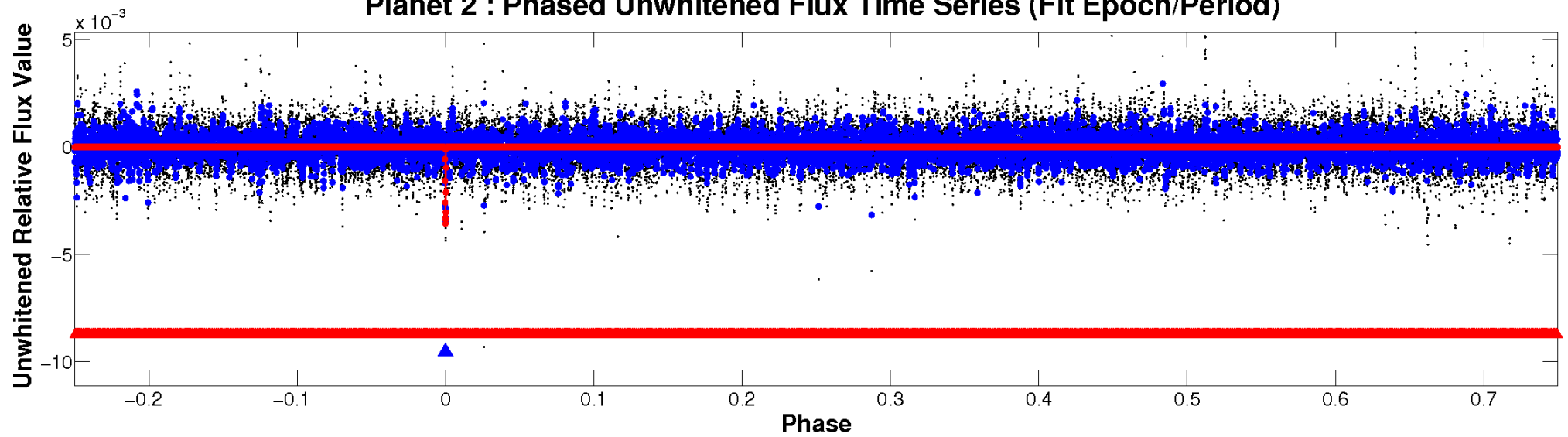
ALT Odd/Even

TCE 008191602-02

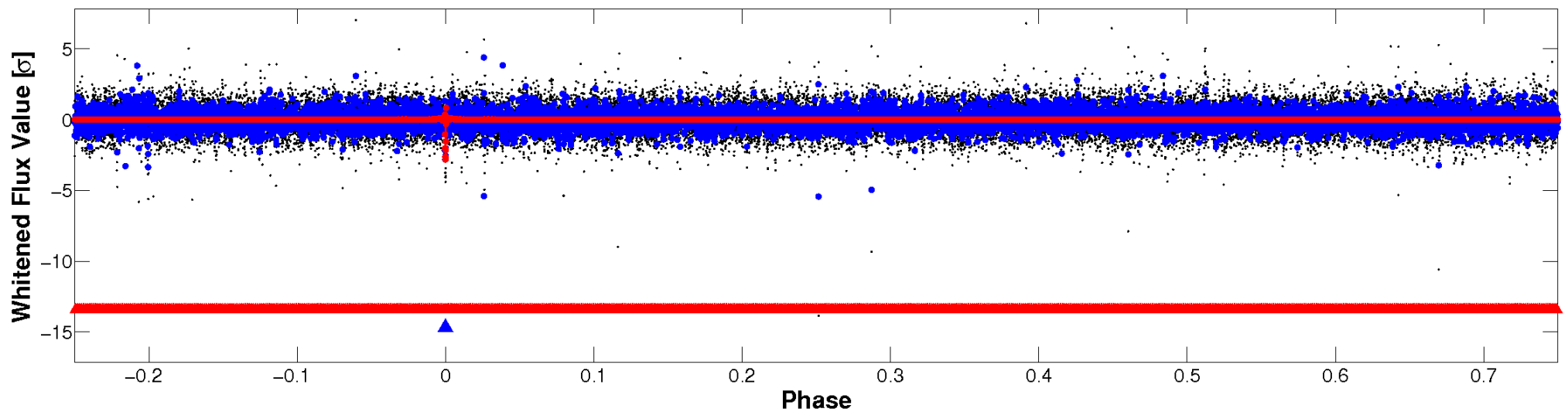


Non-Whitened Vs. Whitened Light Curve

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

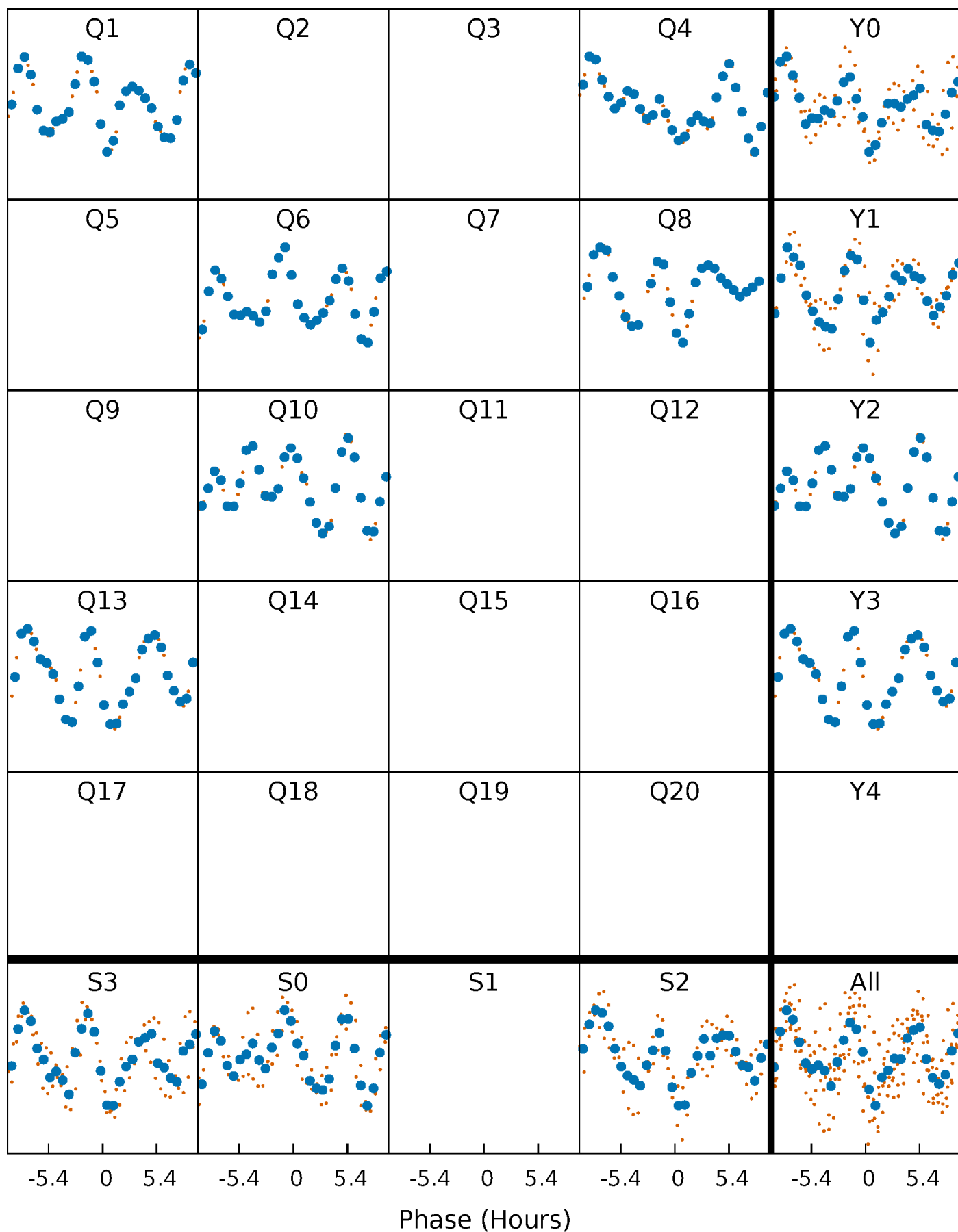


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



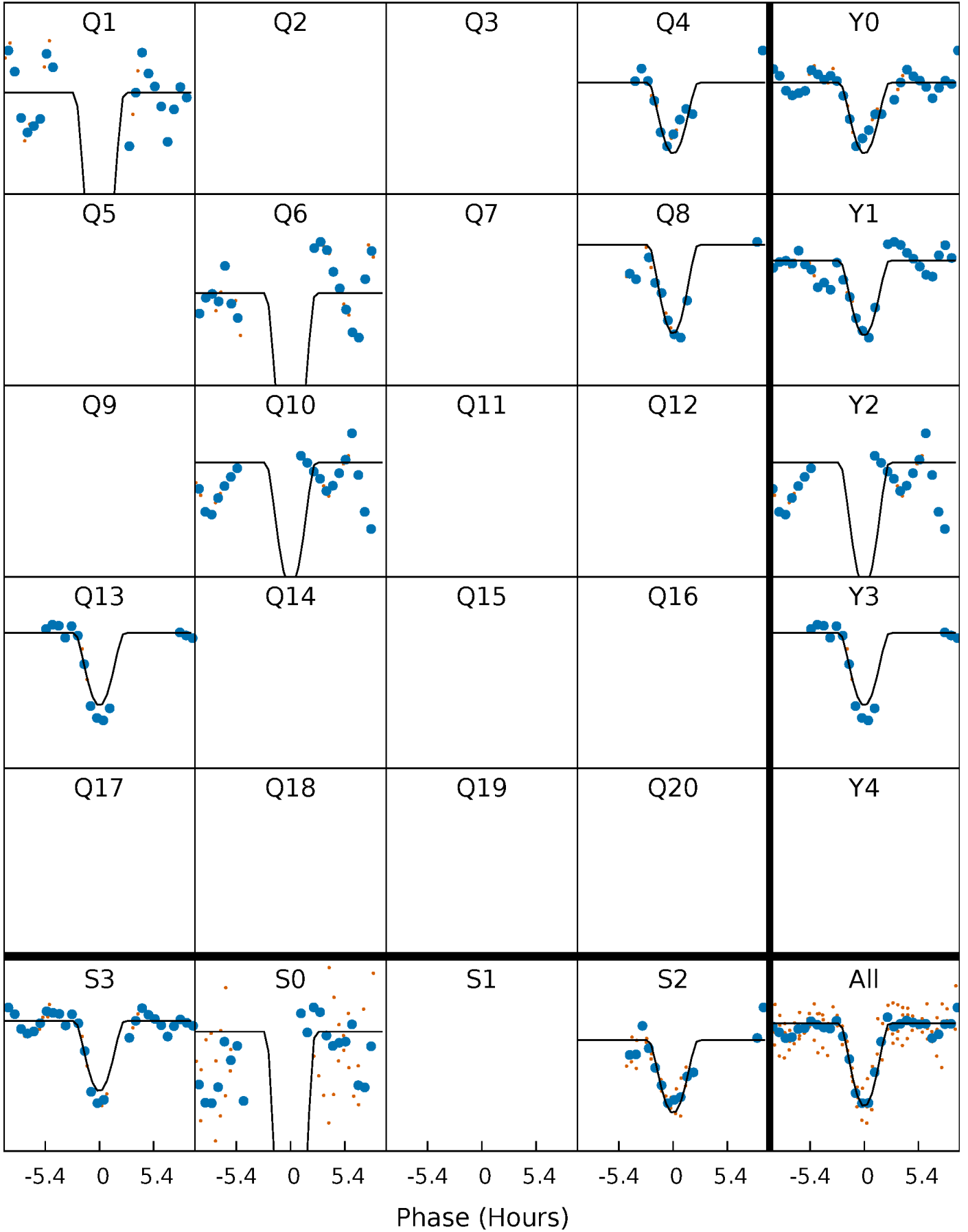
PDC Quarter-Phased Transit Curves

TCE 008191602-02 $P=210.017337$ Days $T_0=156.874472$ (BKJD)



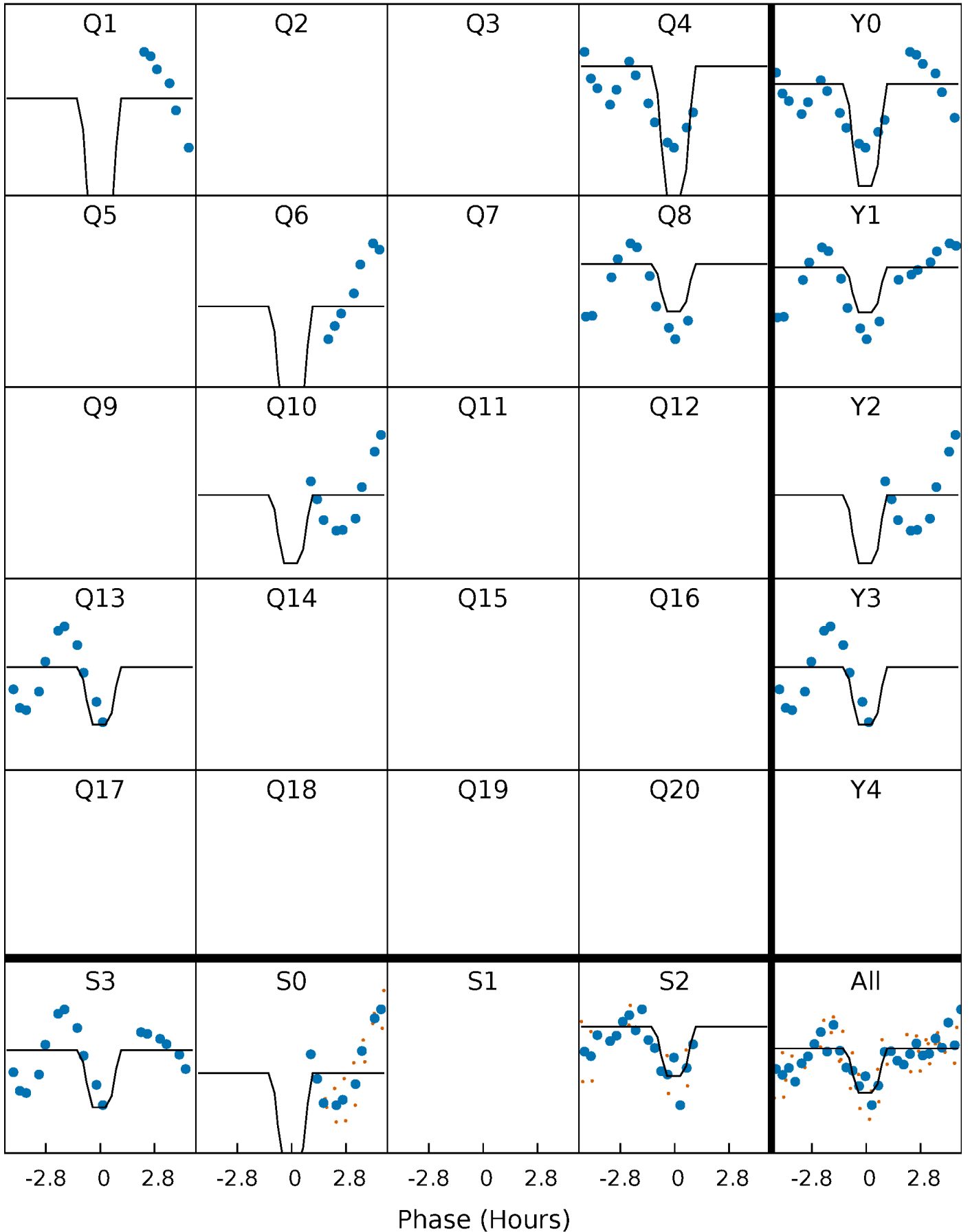
DV Quarter-Phased Transit Curves

TCE 008191602-02 $P=210.017337$ Days $T_0=156.874472$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

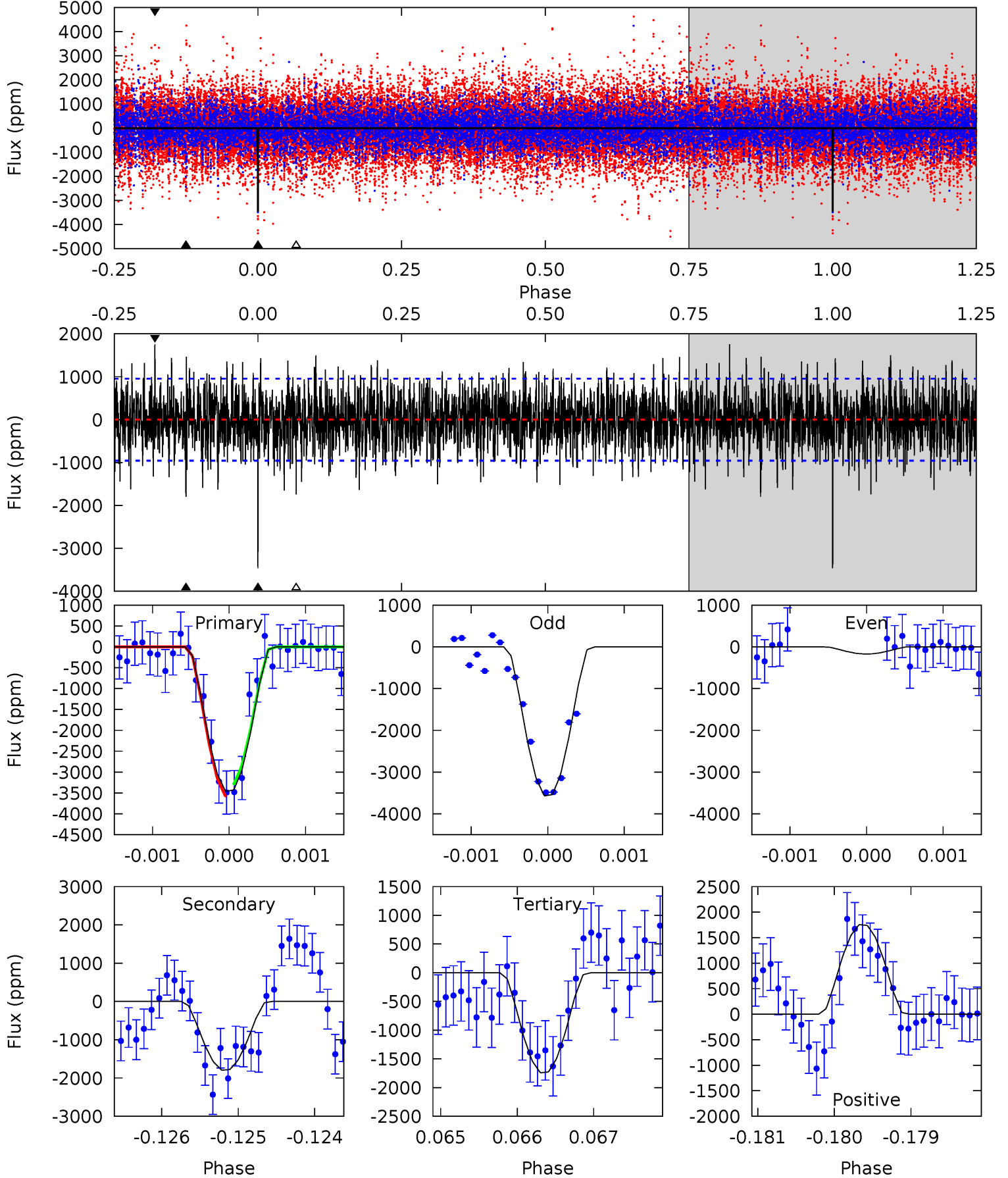
TCE 008191602-02 P=210.014836 Days $T_0=156.906220$ (BKJD)



DV Model-Shift Uniqueness Test

008191602-02, P = 210.017337 Days, E = 156.874472 Days

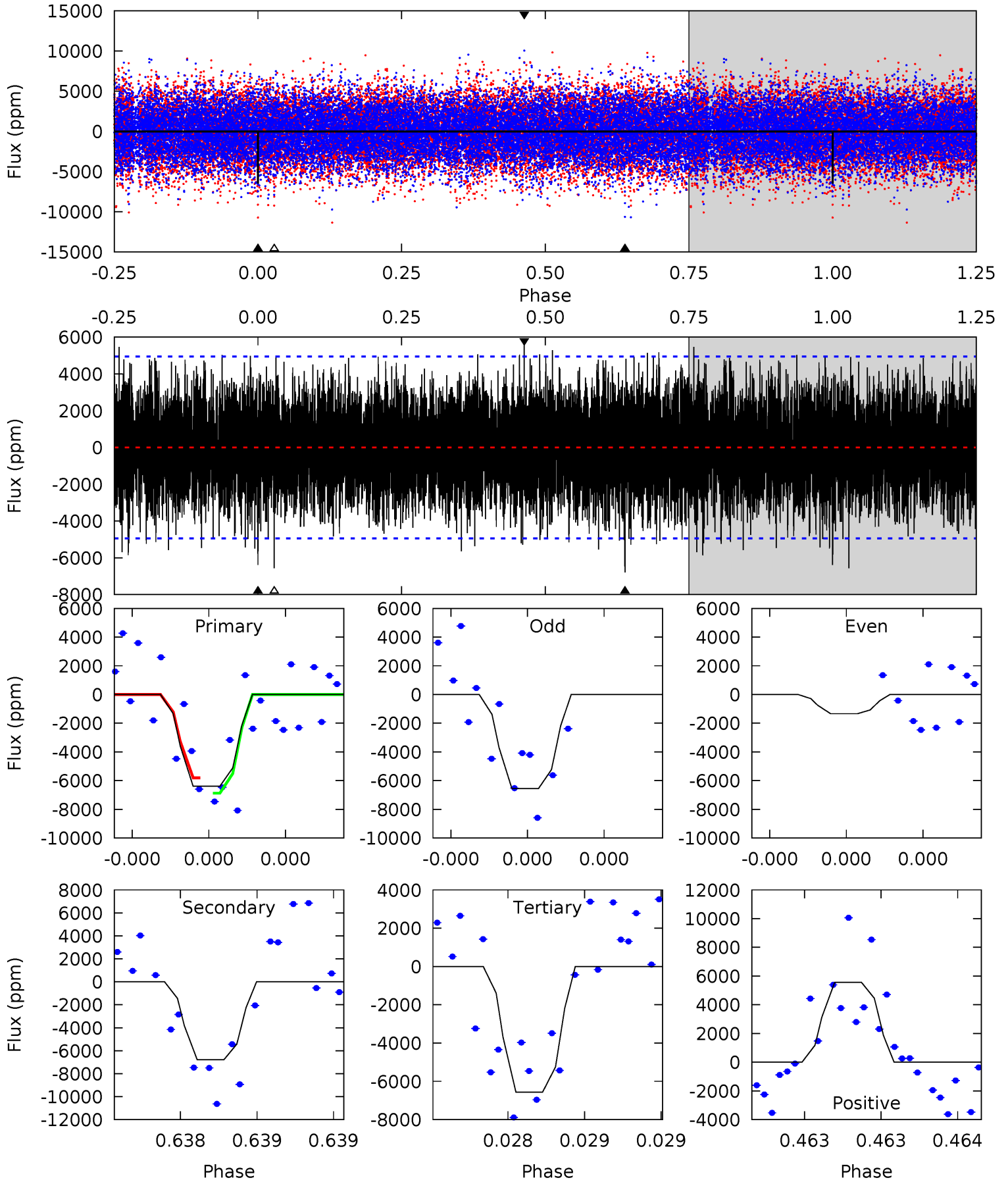
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	10.3	9.96	10.0	5.47	3.32	2.68	9.83	9.74	0.31	0.22	6.45	0.80	0.34	0.81



Alt Model-Shift Uniqueness Test

008191602-02, P = 210.014836 Days, E = 156.906220 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.27	7.71	7.46	6.32	5.62	3.56	2.29	-0.19	0.94	0.26	1.39	1.80	1.38	0.45	0.59



Stellar Parameters For KIC 008191602

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7249^{+205}_{-281}	$3.559^{+0.595}_{-0.105}$	$-0.440^{+0.300}_{-0.300}$	$3.662^{+0.384}_{-2.175}$	$1.773^{+0.177}_{-0.566}$	$0.051^{+0.428}_{-0.012}$
	+3%/-4%	+17%/-3%	+68%/-68%	+10%/-59%	+10%/-32%	+842%/-23%
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 008191602-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1794 ± 175	$61.43^{+62.83}_{-42.88}$	905^{+65}_{-127}	3850^{+2365}_{-747}	178^{+1710}_{-136}
Alt.	-6786 ± 880	$60.38^{+69.70}_{-41.71}$	916^{+59}_{-129}	5015^{+4325}_{-1143}	707^{+7211}_{-549}

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 $A_{obs} \gg 1.0$

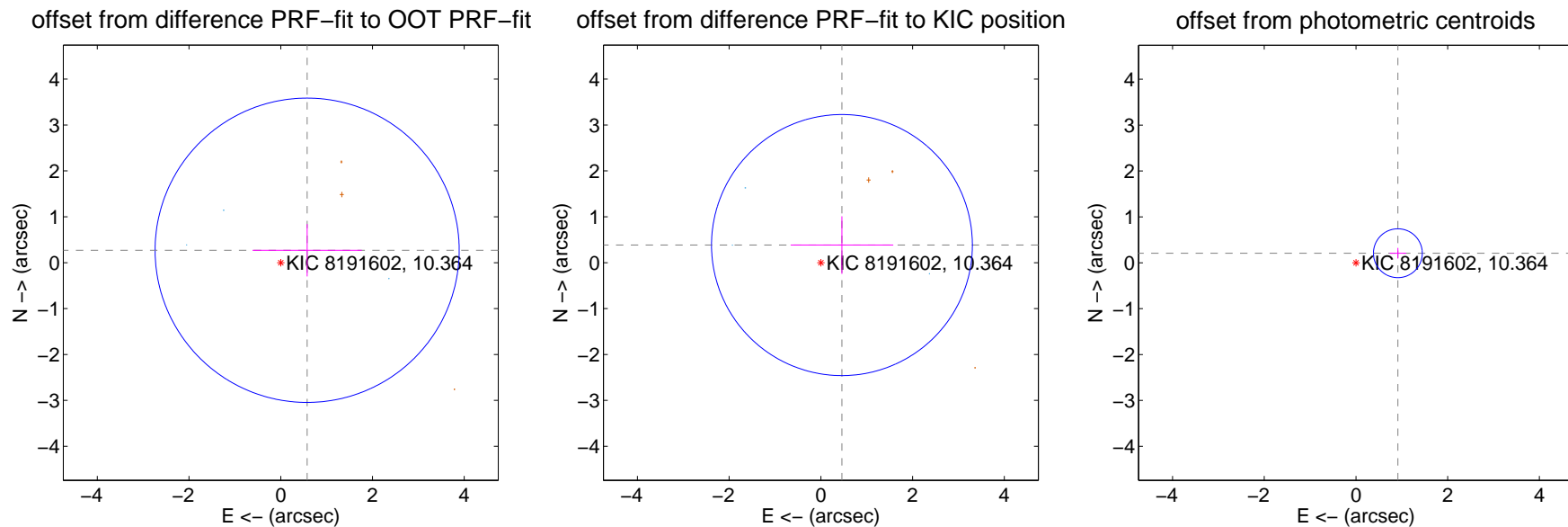
DV Centroid Data

Supplemental centroid analysis for 008191602-02. **Kepler magnitude: 10.36.** Transit SNR 9.90

There are 3 quarters with good PRF difference image offsets

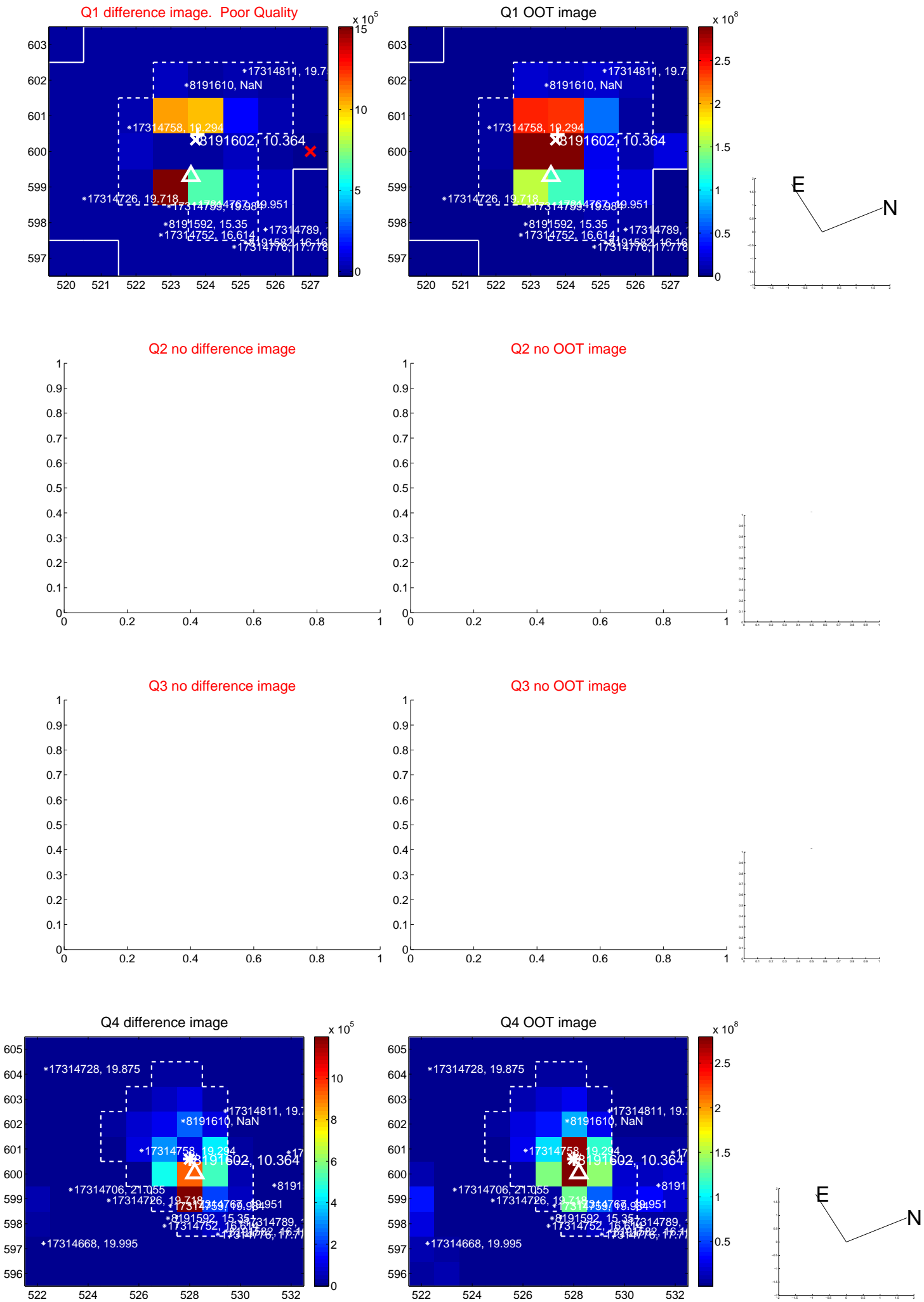
The direct PRF centroid is offset from the target star catalog position by about 0.63 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.636 ± 1.105	0.58	-0.576 ± 1.191	0.271 ± 0.569
PRF-fit source offset from KIC position	0.599 ± 0.948	0.63	-0.460 ± 1.119	0.384 ± 0.626
photometric centroid source offset	0.94 ± 0.18	5.28	-0.91 ± 0.18	0.21 ± 0.12

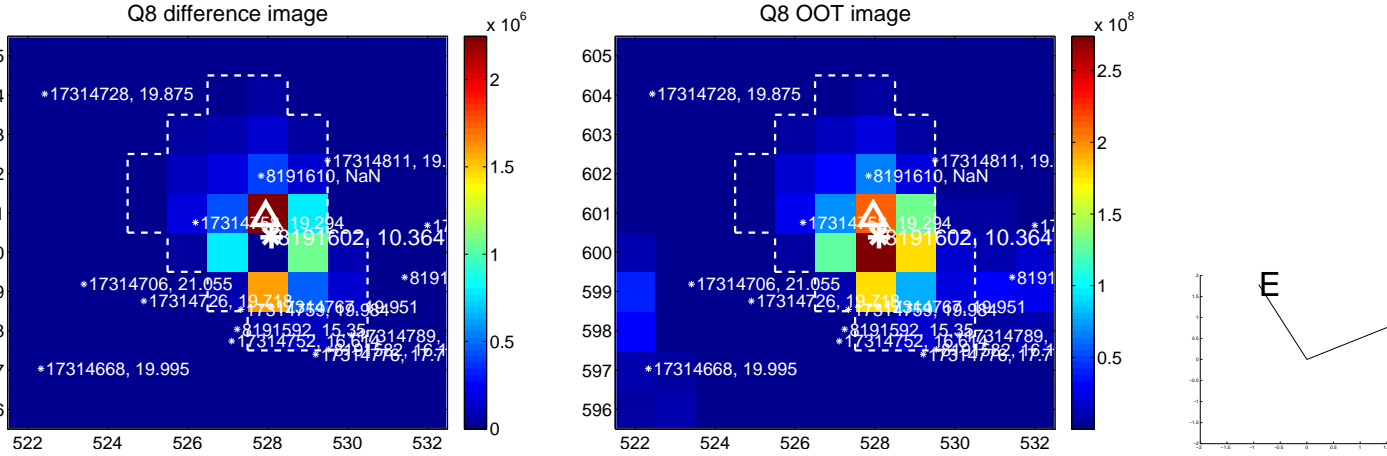
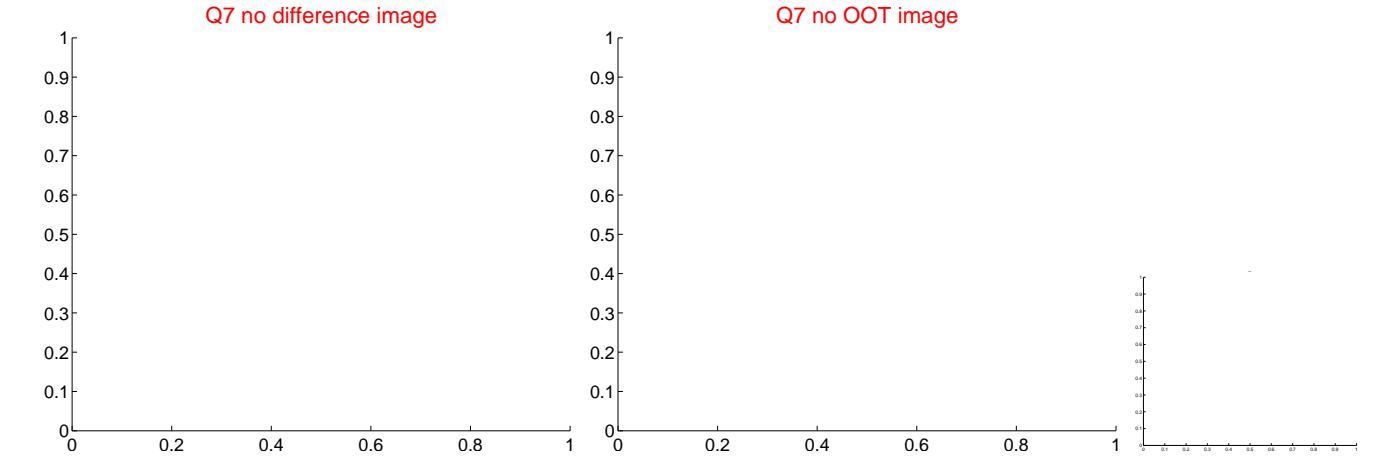
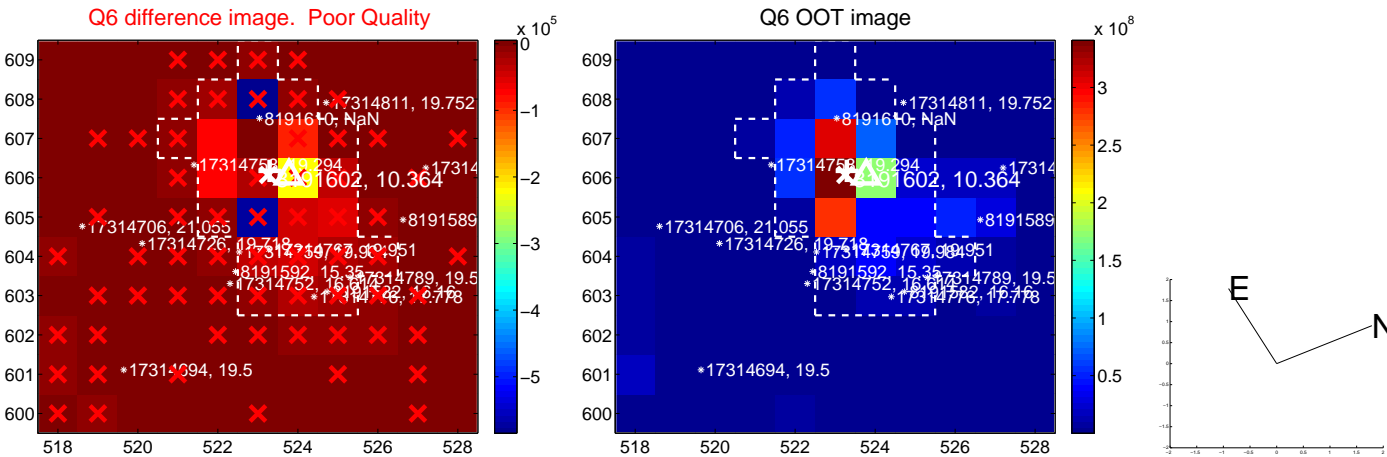
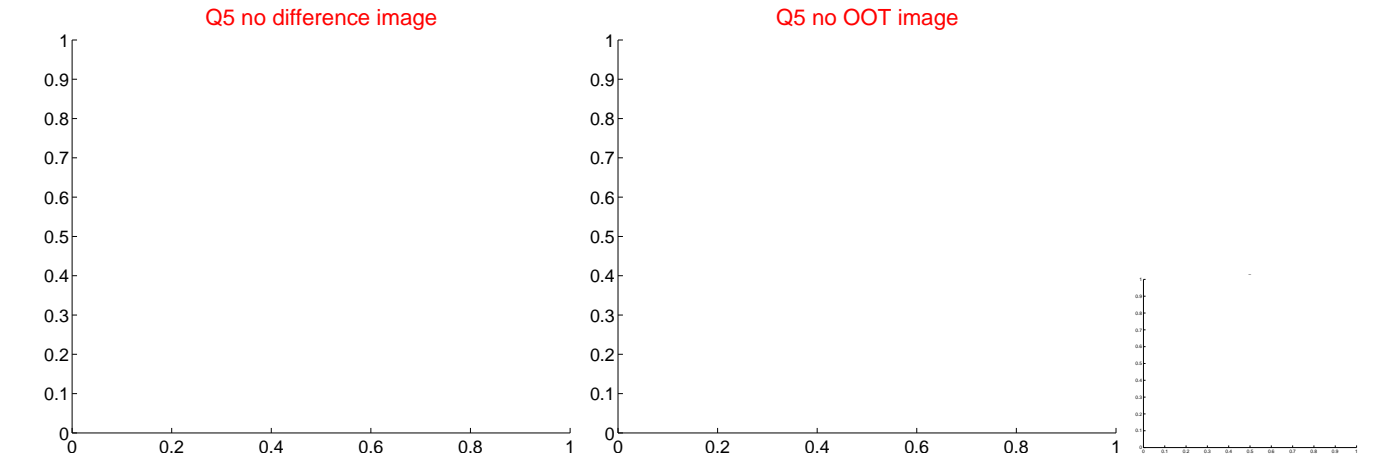


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

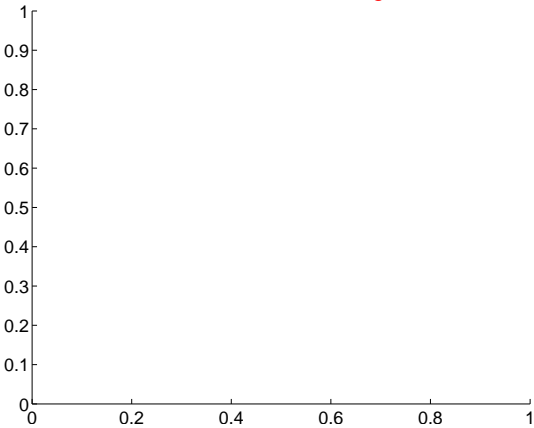


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

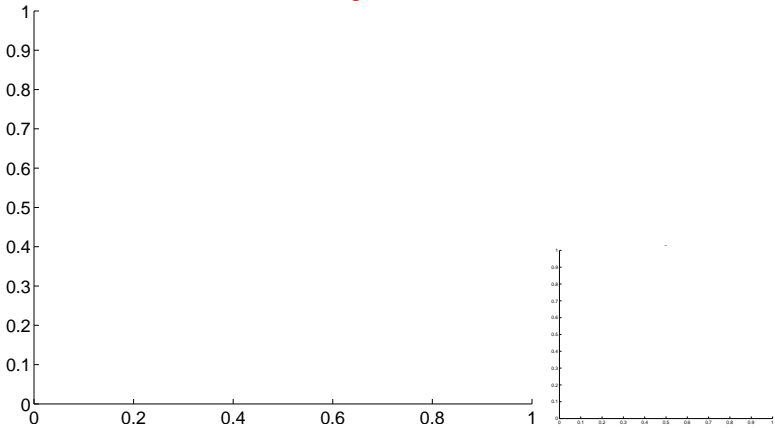


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

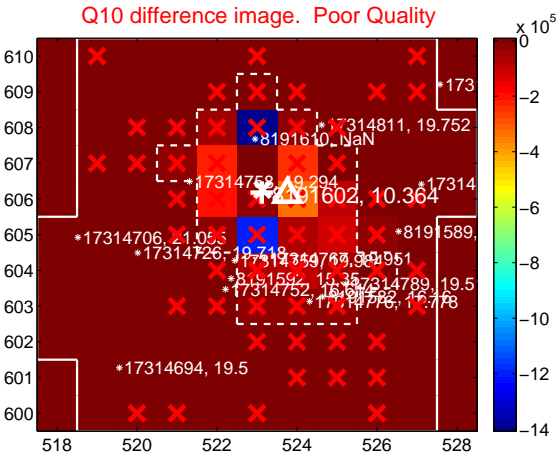
Q9 no difference image



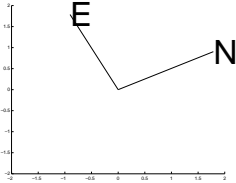
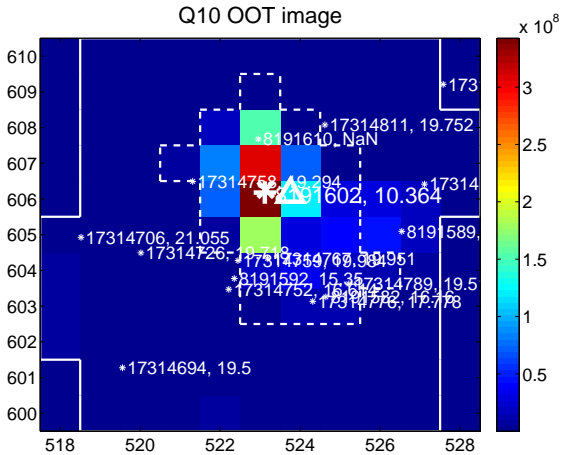
Q9 no OOT image



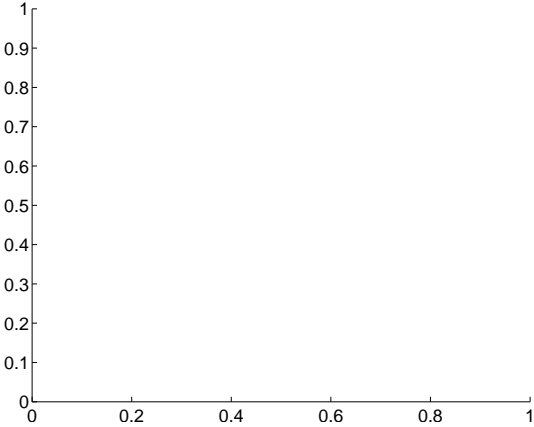
Q10 difference image. Poor Quality



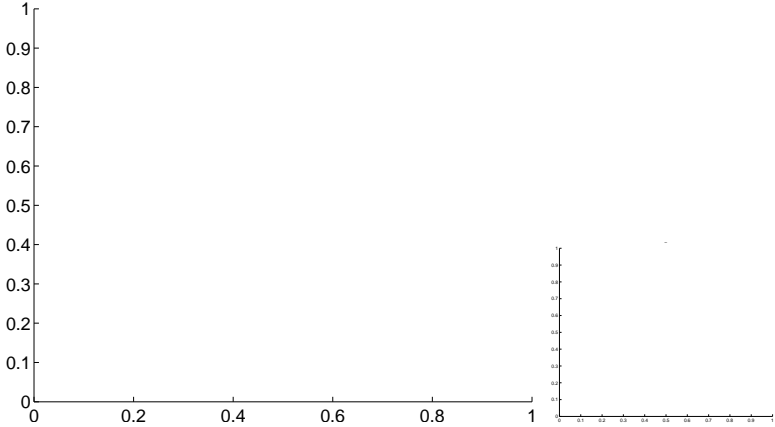
Q10 OOT image



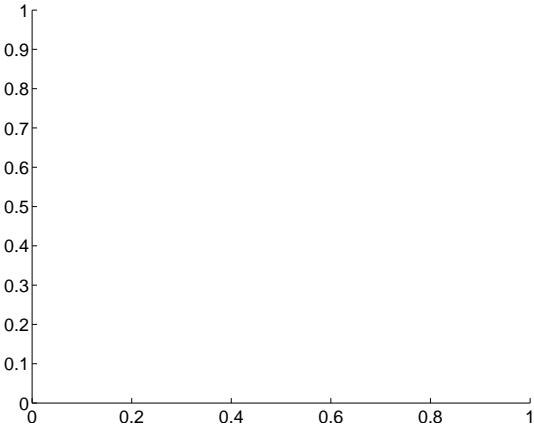
Q11 no difference image



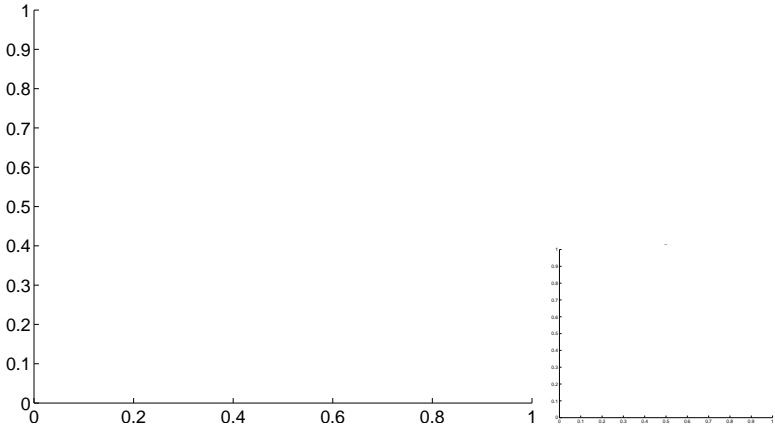
Q11 no OOT image



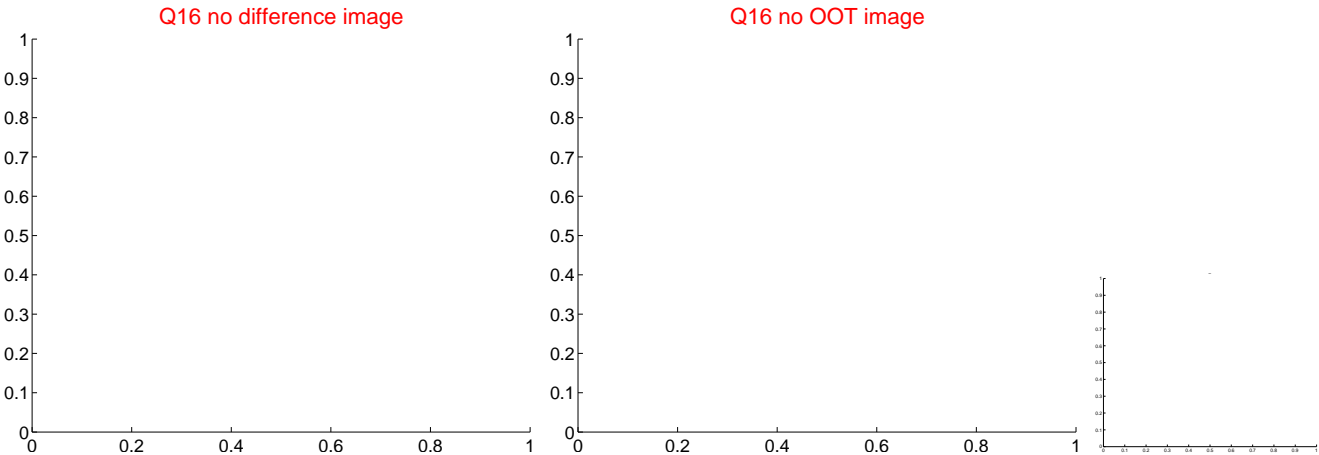
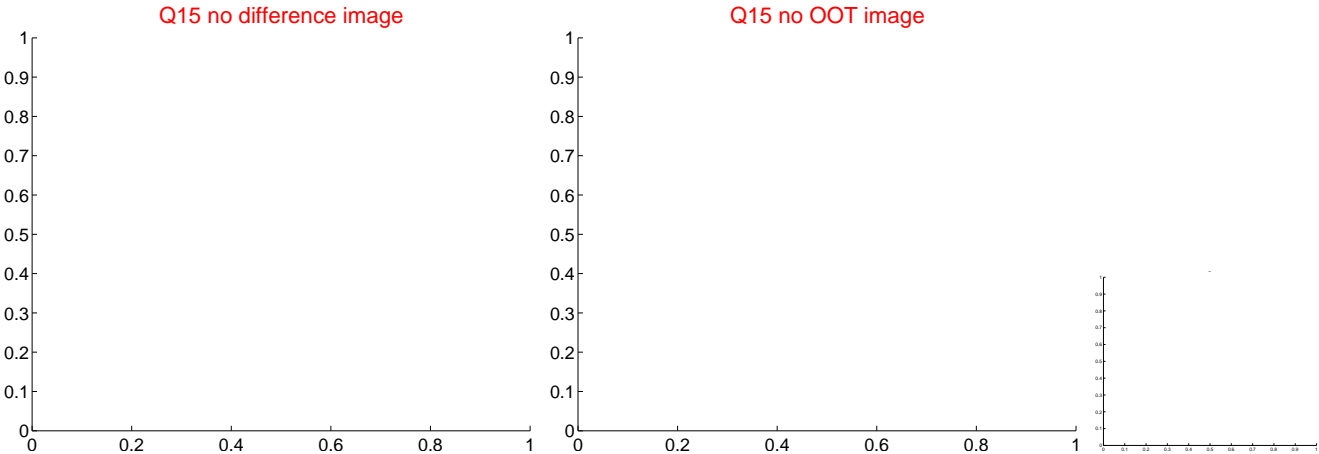
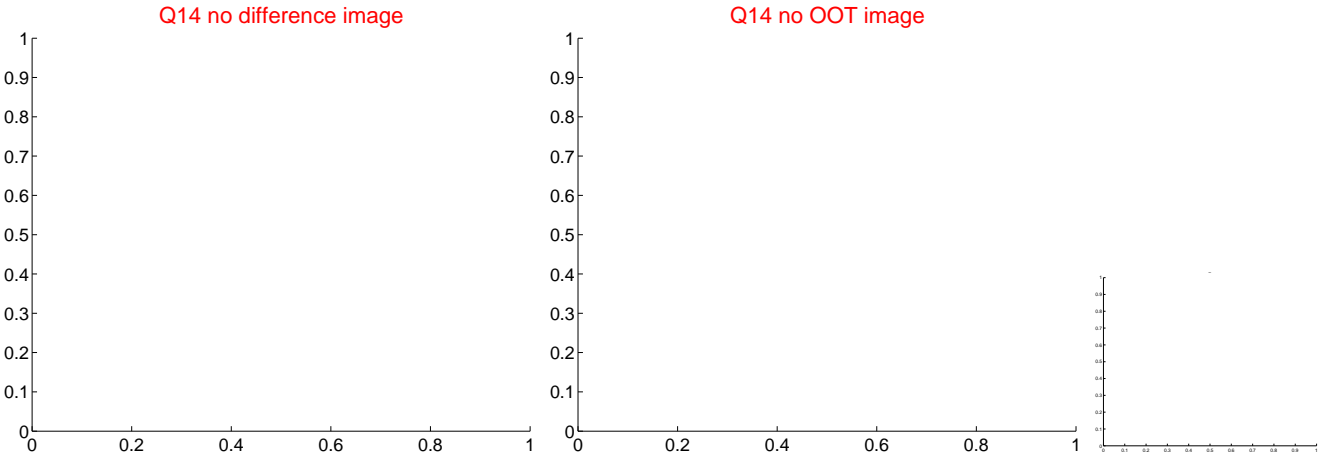
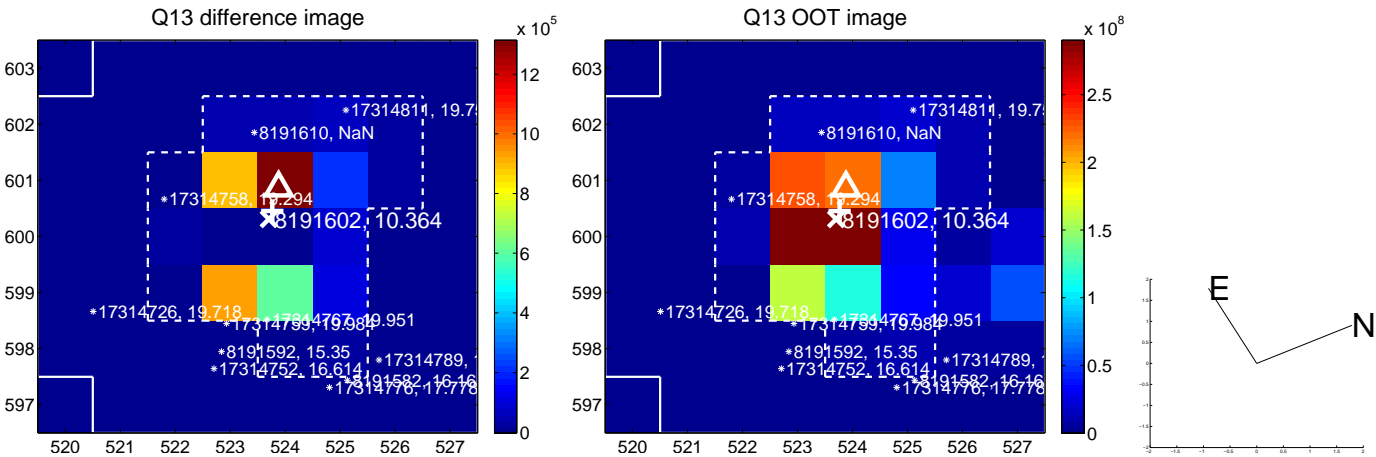
Q12 no difference image



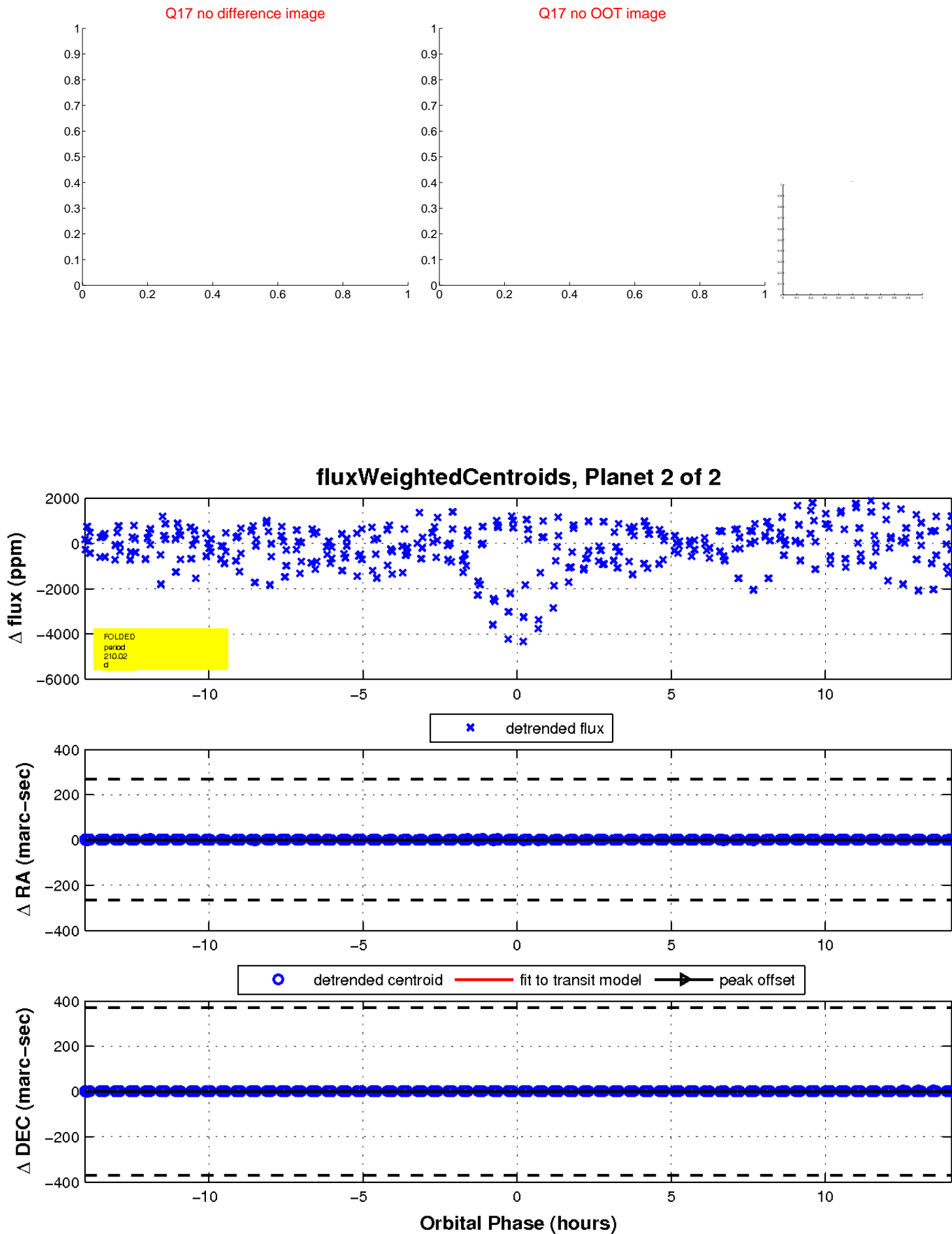
Q12 no OOT image



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.



UKIRT Image

