

KIC 007214090

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})
007214090-01	OBS	7583.01	0.577903	131.803072	99.1	1.392	12.1	12.6	0.91	5730	1.09	4443.89
007214090-02	OBS	No	0.577904	131.515461	78.2	1.477	9.0	10.6	0.91	5730	0.96	4443.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007214090-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
007214090-02	OBS	FP	0.00	1	0	1	0	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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.

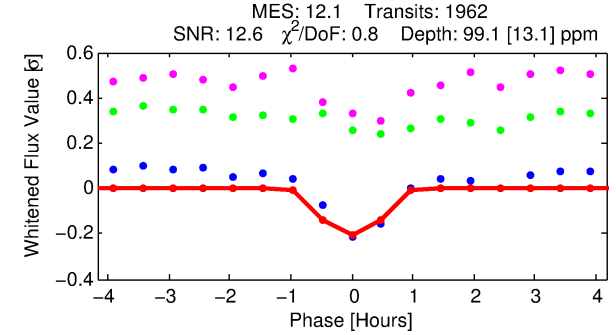
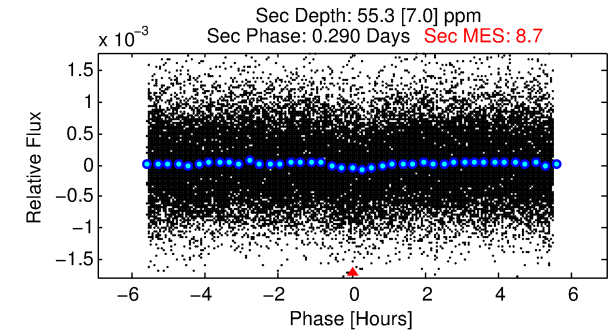
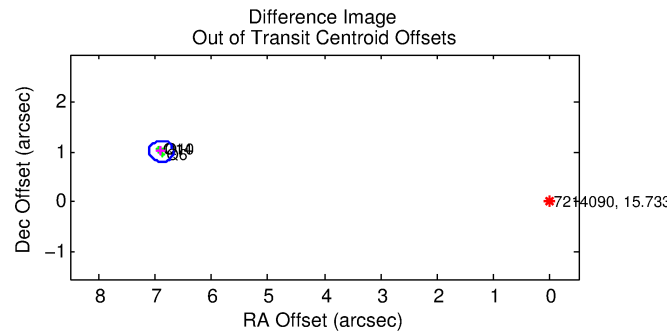
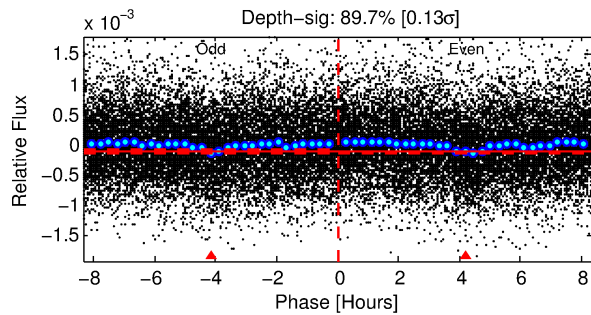
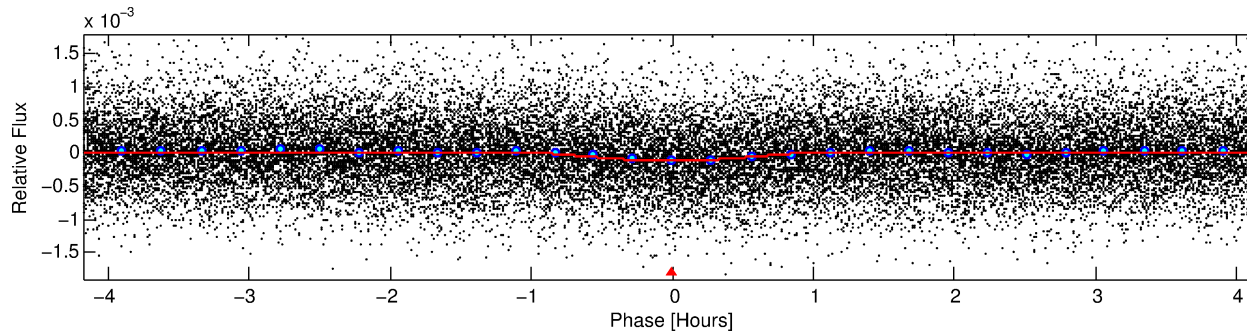
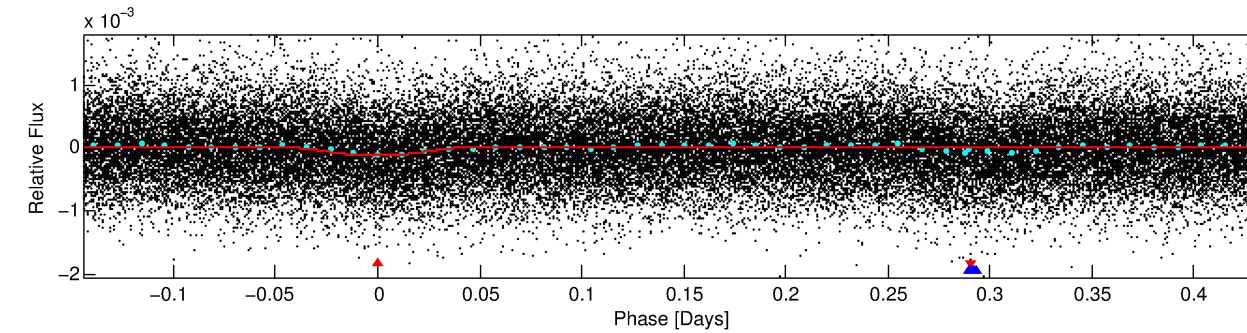
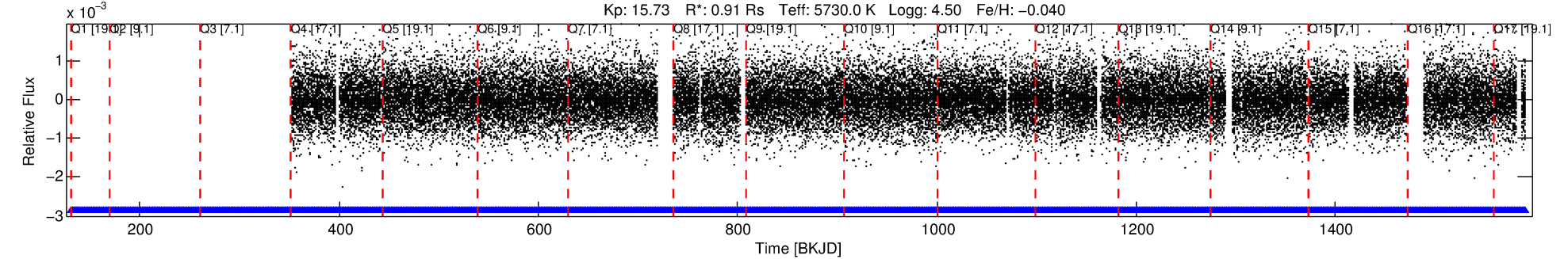
Ephemeris Match Information For 007214090-01

No Significant Match Found

DV One-Page Summary

KIC: 7214090 Candidate: 1 of 2 Period: 0.578 d
KOI: K07583.01 Corr: 0.912

Kp: 15.73 R*: 0.91 Rs Teff: 5730.0 K Logg: 4.50 Fe/H: -0.040



DV Fit Results:

Period = 0.57790 [0.00001] d
Epoch = 131.8031 [0.0017] BKJD
Rp/R* = 0.0110 [0.0064]
a/R* = 1.70 [3.11]
b = 0.91 [0.56]
Seff = 4443.89 [1732.69]
Teff = 2082 [203] K
Rp = 1.09 [0.71] Re
a = 0.0134 [0.0034] AU
Ag = 4.61 [5.66] [0.64σ]
Teffp = 4717 [1390] K [1.88σ]

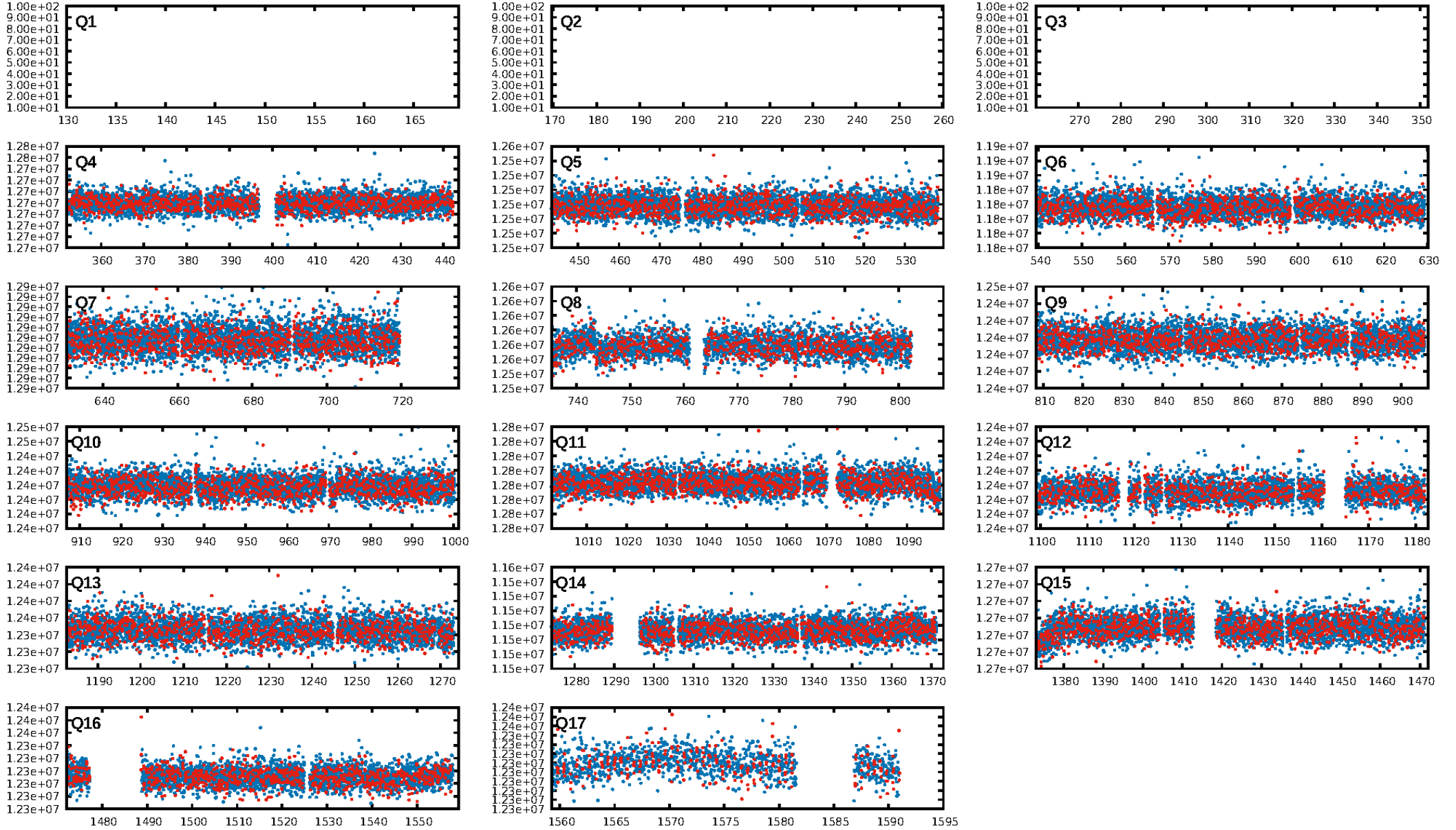
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.96e-43
RollingBand-fgt: 1.00 [1915/1915]
GhostDiagnostic-chr: -0.6331
Centroid-sig: 0.0%
Centroid-so: 24.892 arcsec [21.76σ]
OotOffset-rm: 6.959 arcsec [98.15σ]
KicOffset-rm: 7.062 arcsec [99.60σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [14/14]

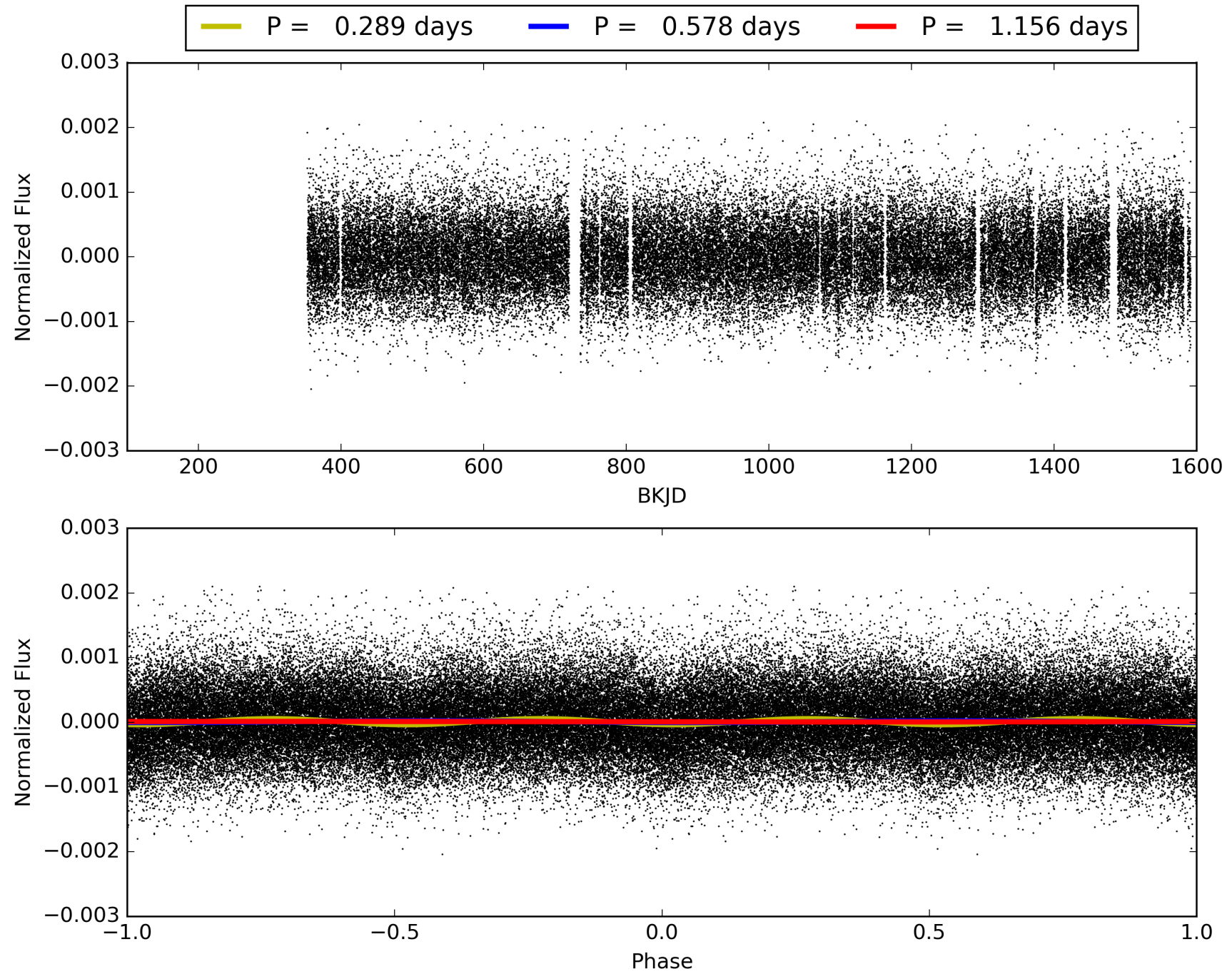
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:15:09 Z

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

TCE 007214090-01, PDC Light Curves

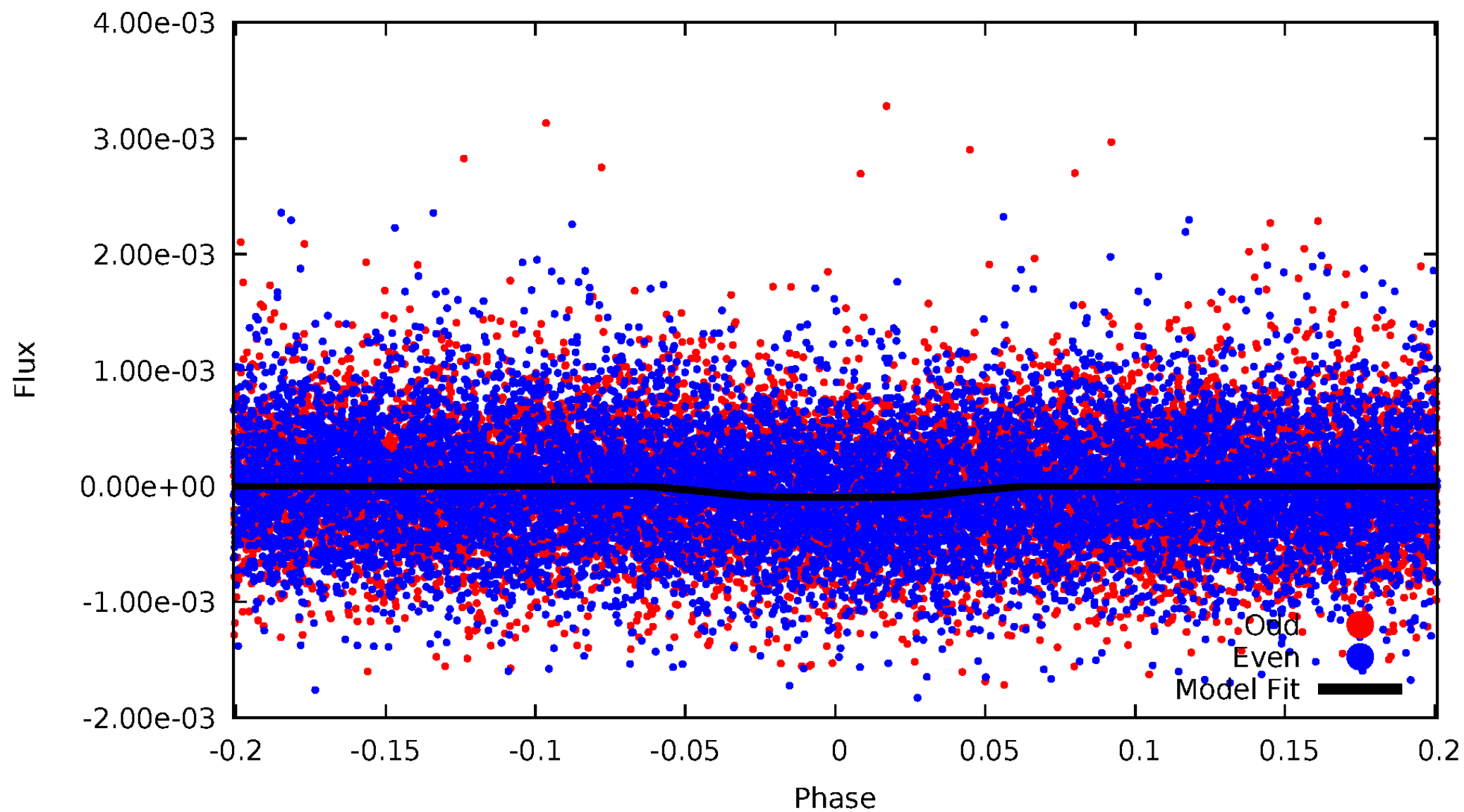


TCE 007214090-01



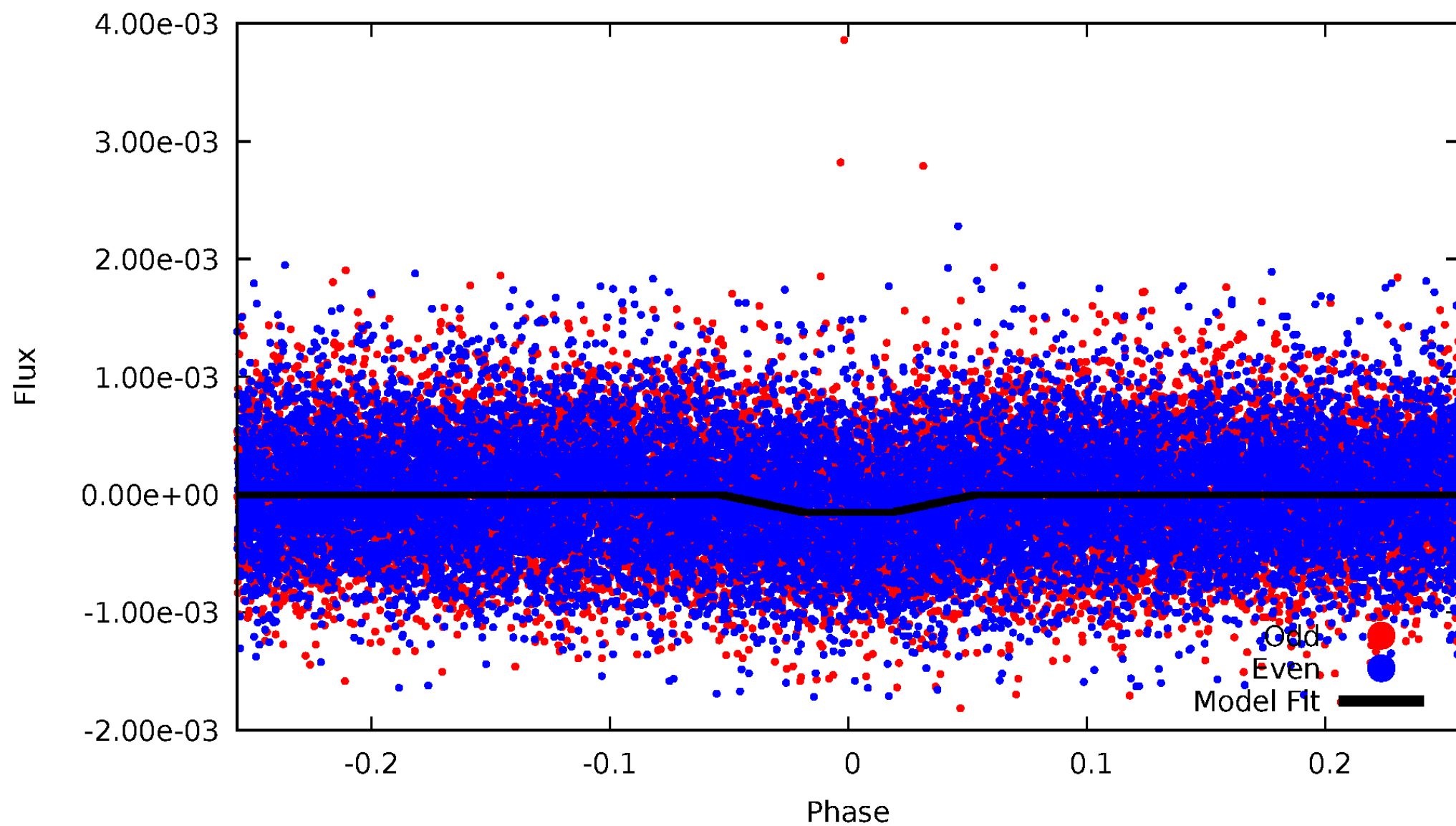
DV Odd/Even

TCE 007214090-01

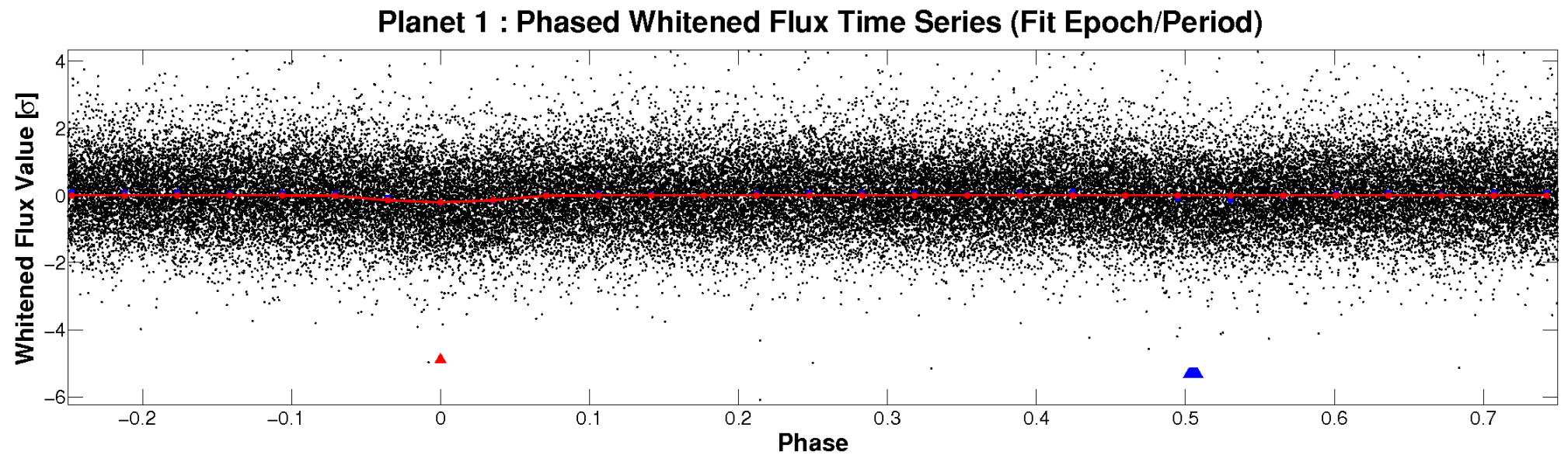
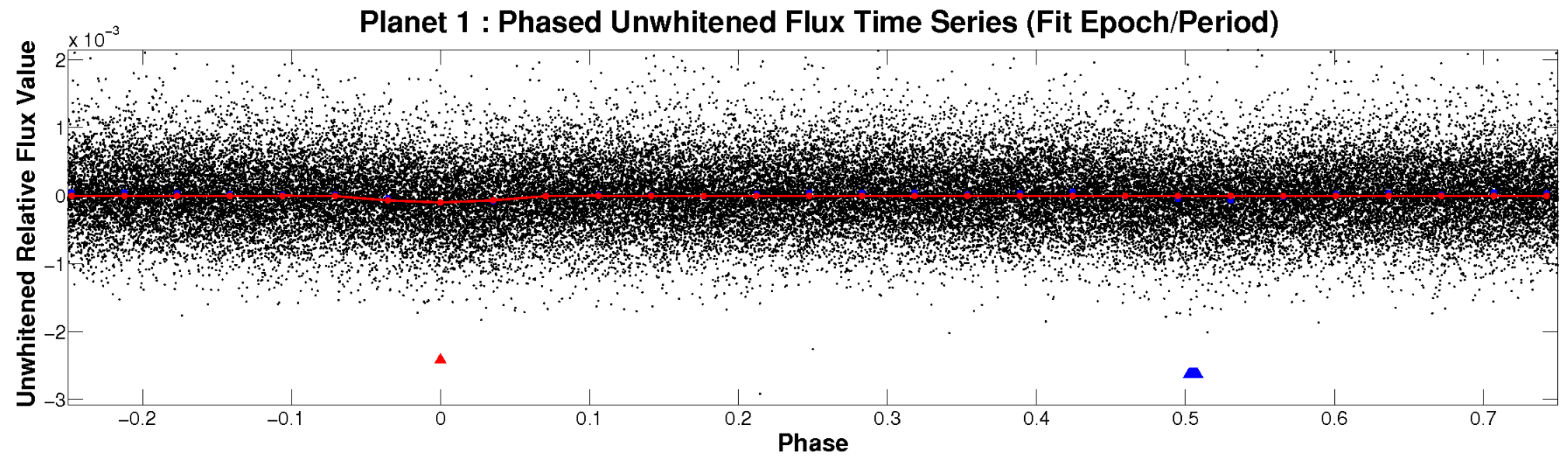


ALT Odd/Even

TCE 007214090-01

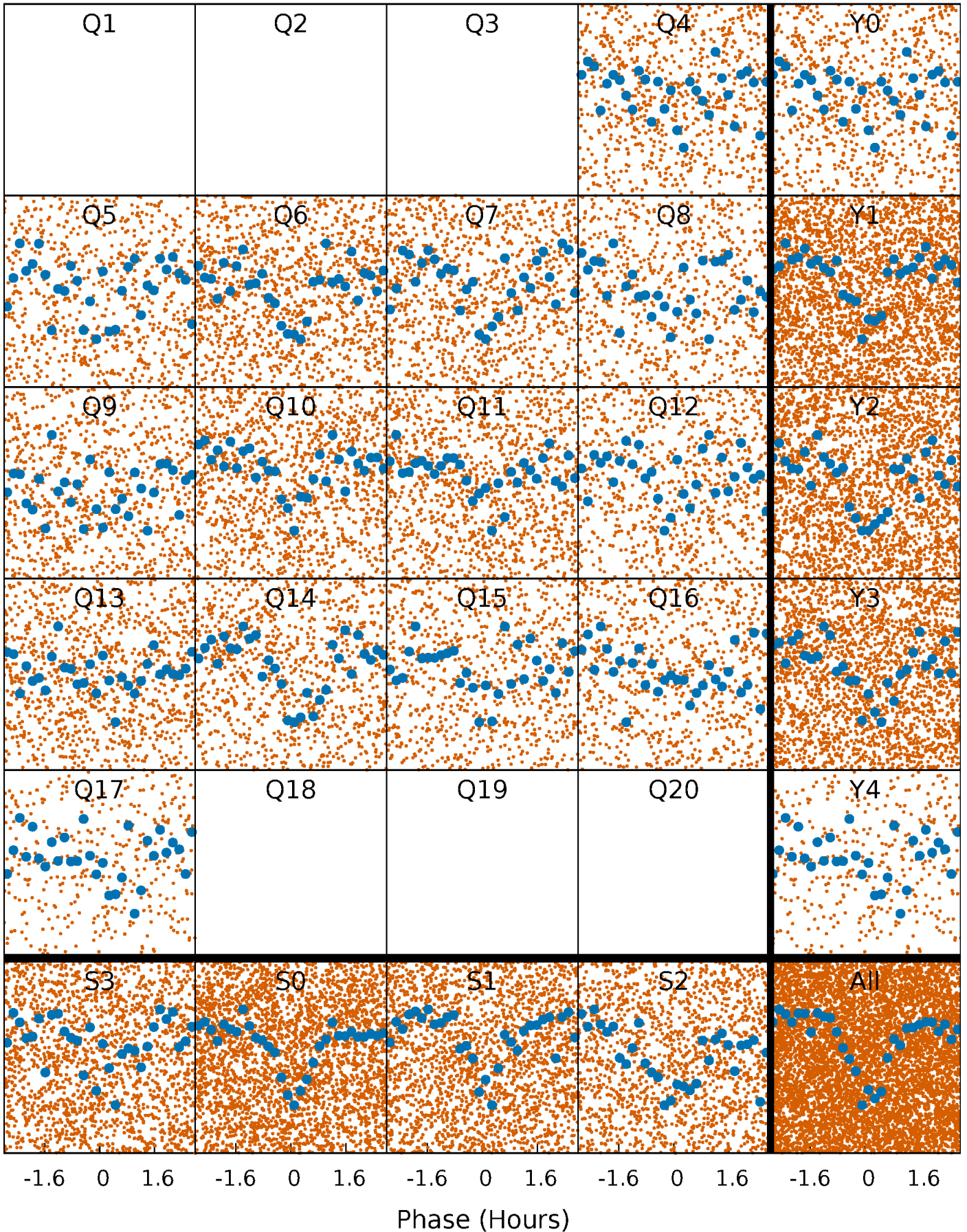


Non-Whitened Vs. Whitened Light Curve



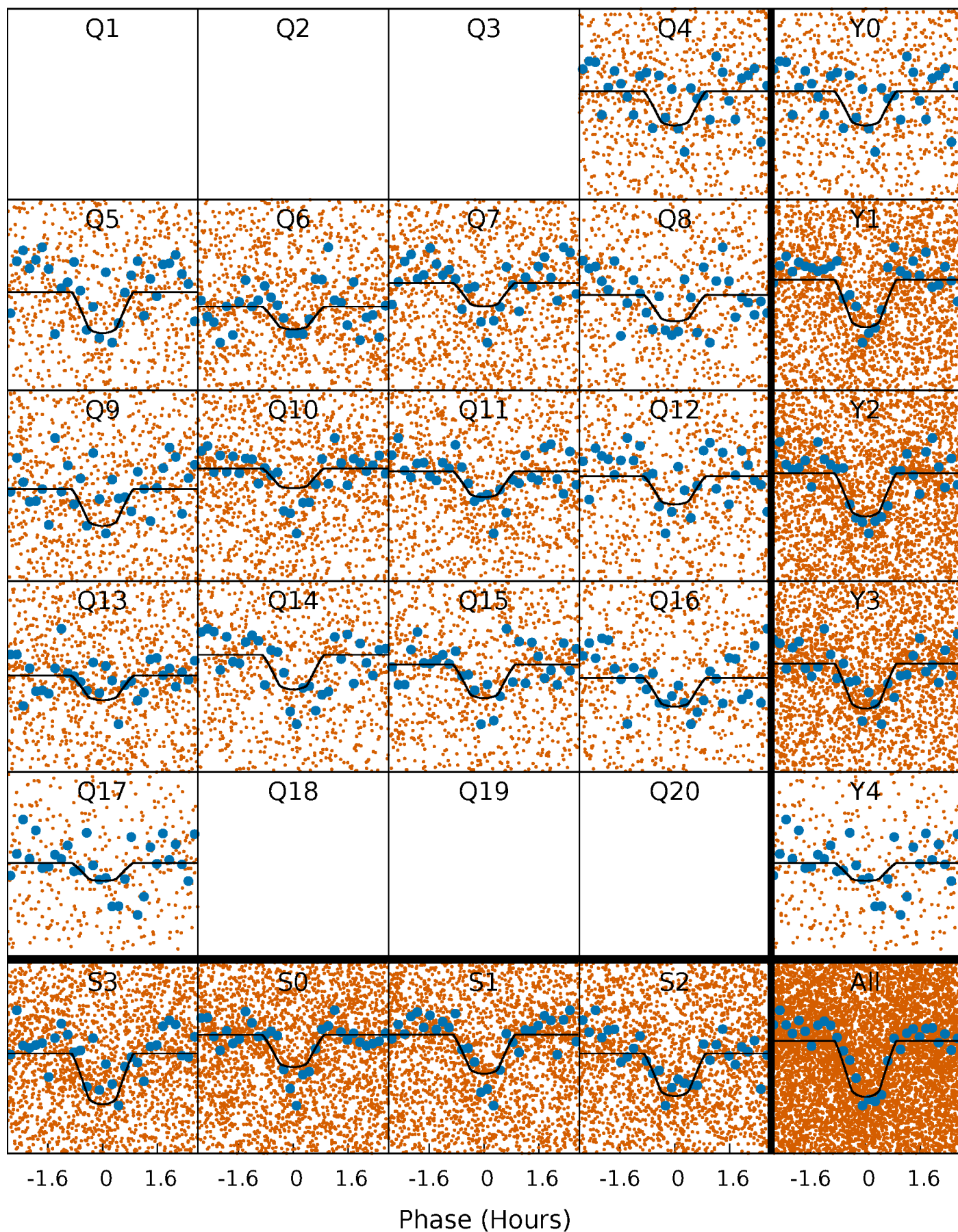
PDC Quarter-Phased Transit Curves

TCE 007214090-01 P= 0.577903 Days $T_0=131.803072$ (BKJD)



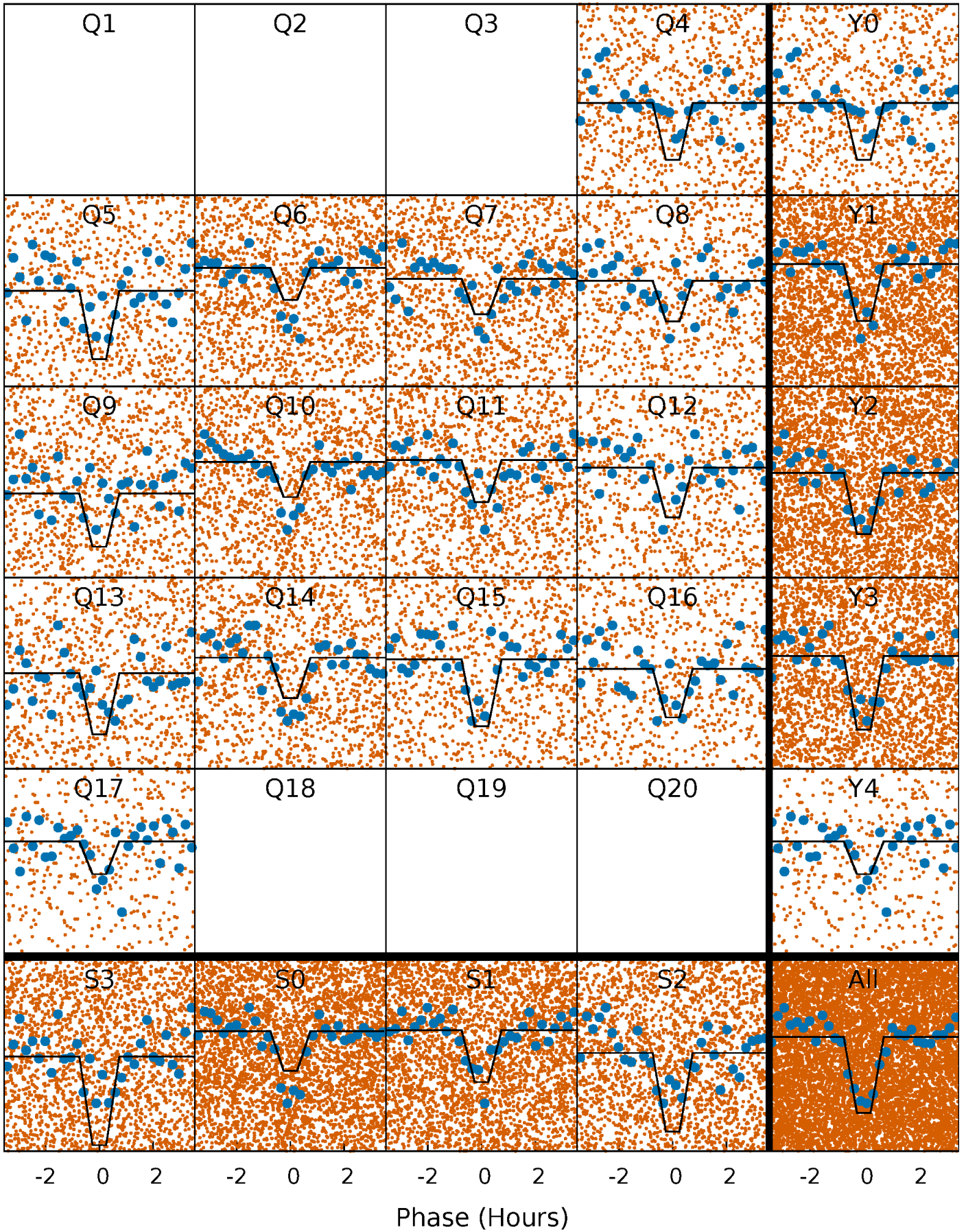
DV Quarter-Phased Transit Curves

TCE 007214090-01 P= 0.577903 Days $T_0=131.803072$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

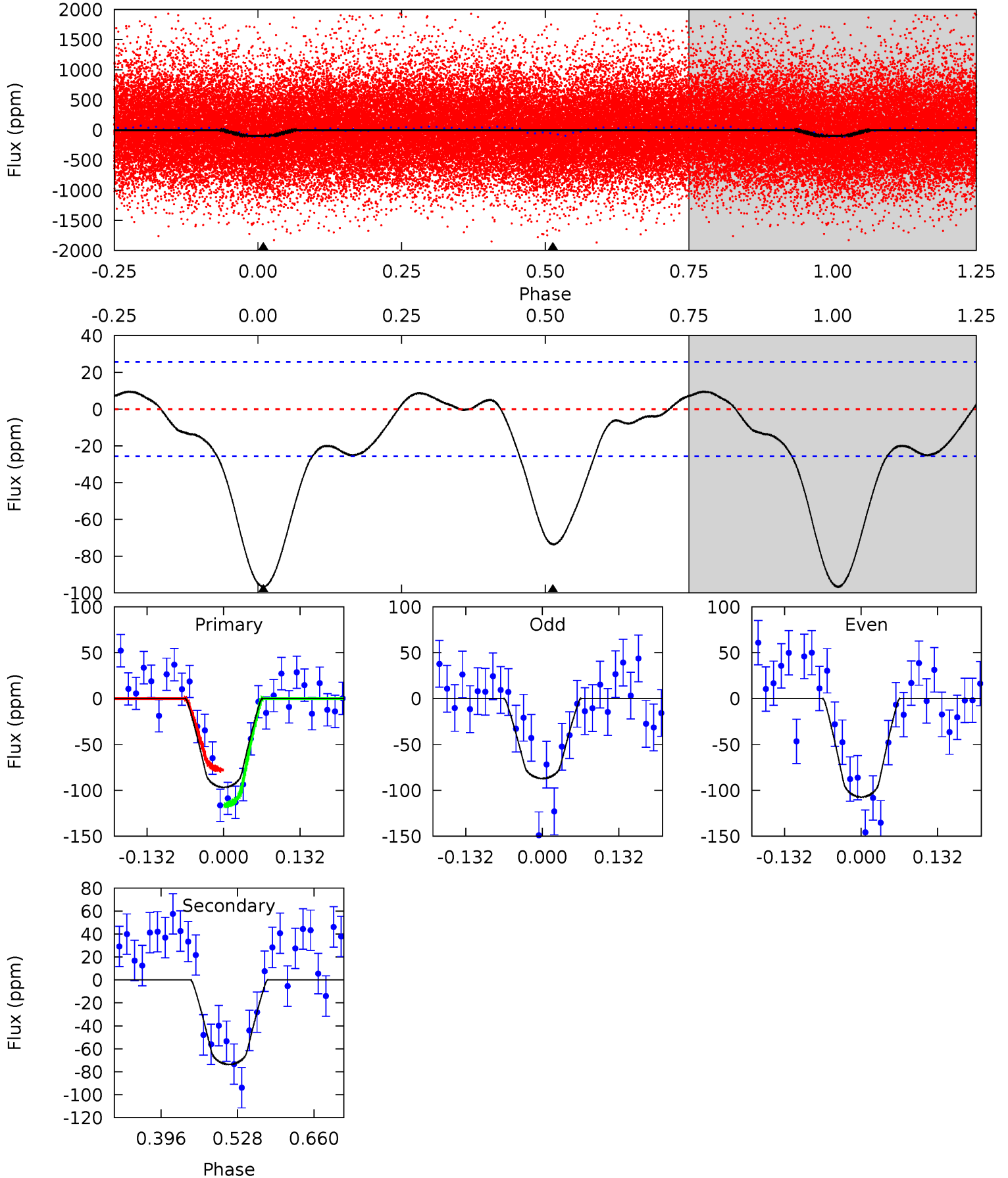
TCE 007214090-01 P= 0.577909 Days $T_0=131.801168$ (BKJD)



DV Model-Shift Uniqueness Test

007214090-01, P = 0.577903 Days, E = 131.803072 Days

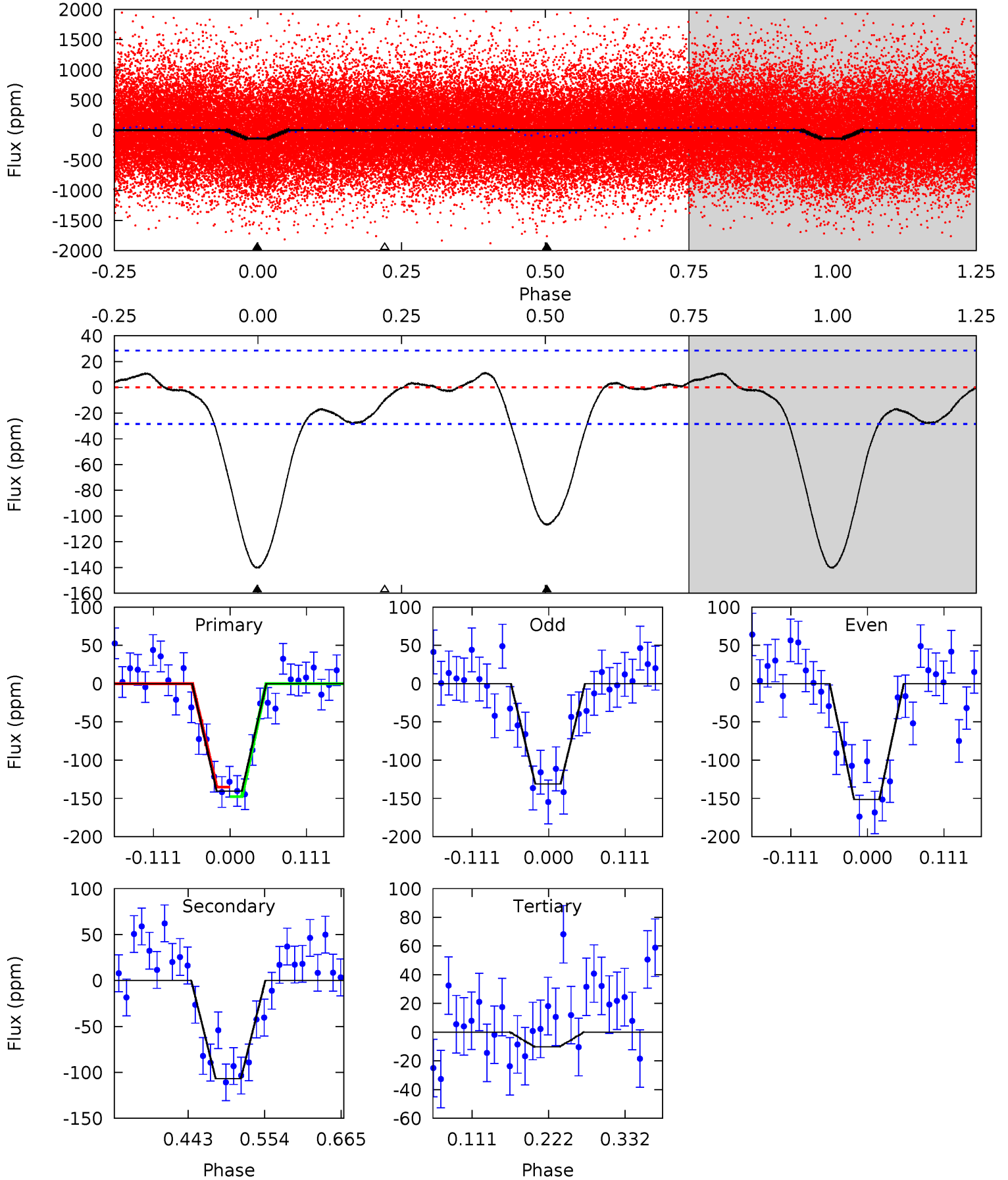
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	12.9	0	0	4.51	1.51	1.78	17.0	17.0	12.9	12.9	1.79	0.87	0.09	3.37



Alt Model-Shift Uniqueness Test

007214090-01, P = 0.577909 Days, E = 131.801168 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	17.0	1.62	0	4.54	1.59	1.63	20.8	22.4	15.4	17.0	1.62	0.88	0.07	1.01



Stellar Parameters For KIC 007214090

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5730^{+173}_{-190}	$4.503^{+0.050}_{-0.200}$	$-0.040^{+0.300}_{-0.300}$	$0.908^{+0.273}_{-0.091}$	$0.960^{+0.114}_{-0.114}$	$1.804^{+0.457}_{-0.880}$
	+3%/-3%	+1%/-4%	+750%/-750%	+30%/-10%	+12%/-12%	+25%/-49%
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 007214090-01 / KOI 7583.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-74 ± 6	$1.19^{+0.66}_{-0.61}$	2970^{+206}_{-143}	4968^{+2117}_{-837}	$5.068^{+15.958}_{-2.962}$
Alt.	-107 ± 6	$1.32^{+0.67}_{-0.66}$	2978^{+210}_{-164}	5175^{+2298}_{-846}	$6.066^{+17.644}_{-3.460}$

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 $A_{obs} \gg 1.0$

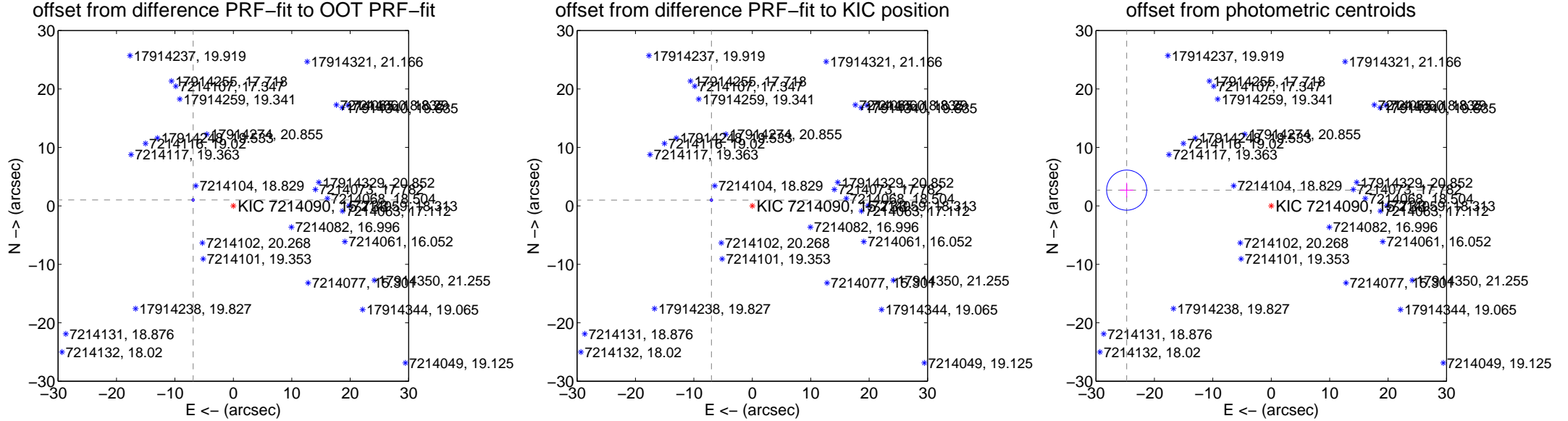
DV Centroid Data

Supplemental centroid analysis for 007214090-01. Kepler magnitude: 15.73. Transit SNR 12.59

There are 3 quarters with good PRF difference image offsets

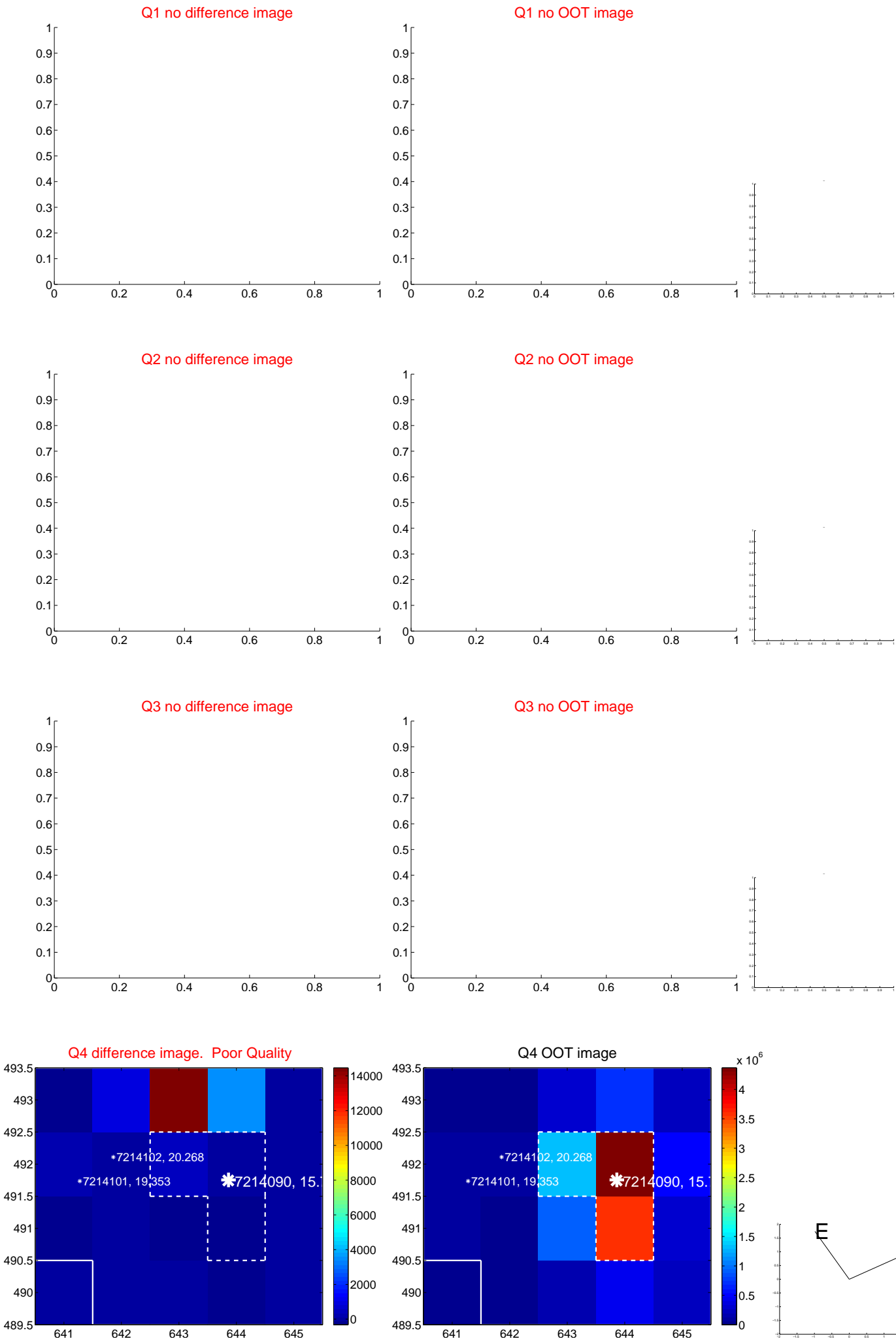
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.959 \pm 0.071	98.15	6.885 \pm 0.071	1.009 \pm 0.070
PRF-fit source offset from KIC position	7.062 \pm 0.071	99.60	6.992 \pm 0.071	0.988 \pm 0.070
photometric centroid source offset	24.89 \pm 1.14	21.76	24.75 \pm 1.14	2.69 \pm 1.27

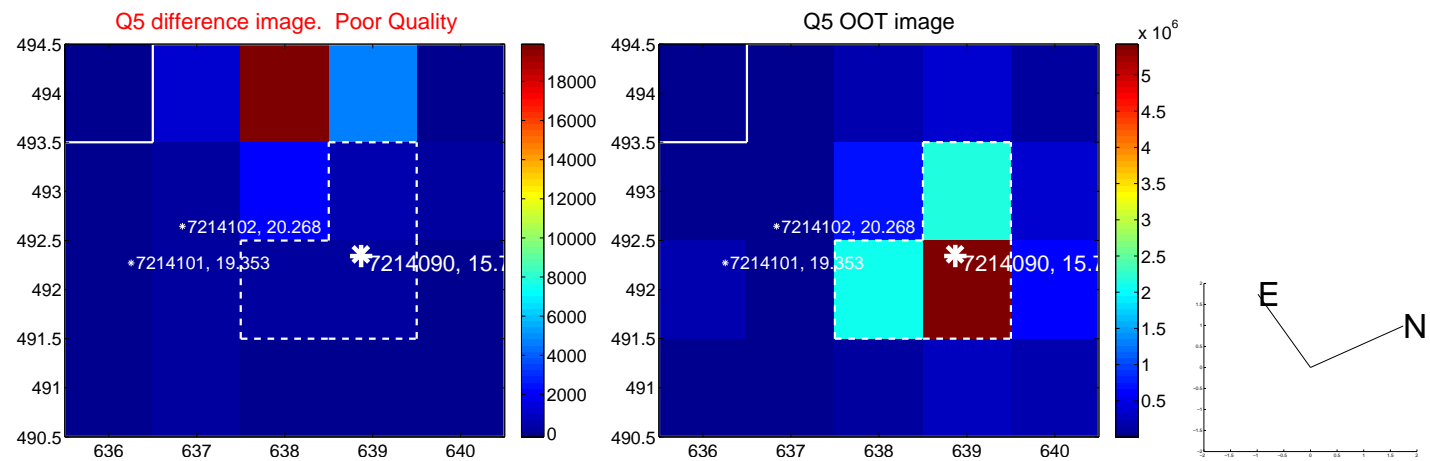


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

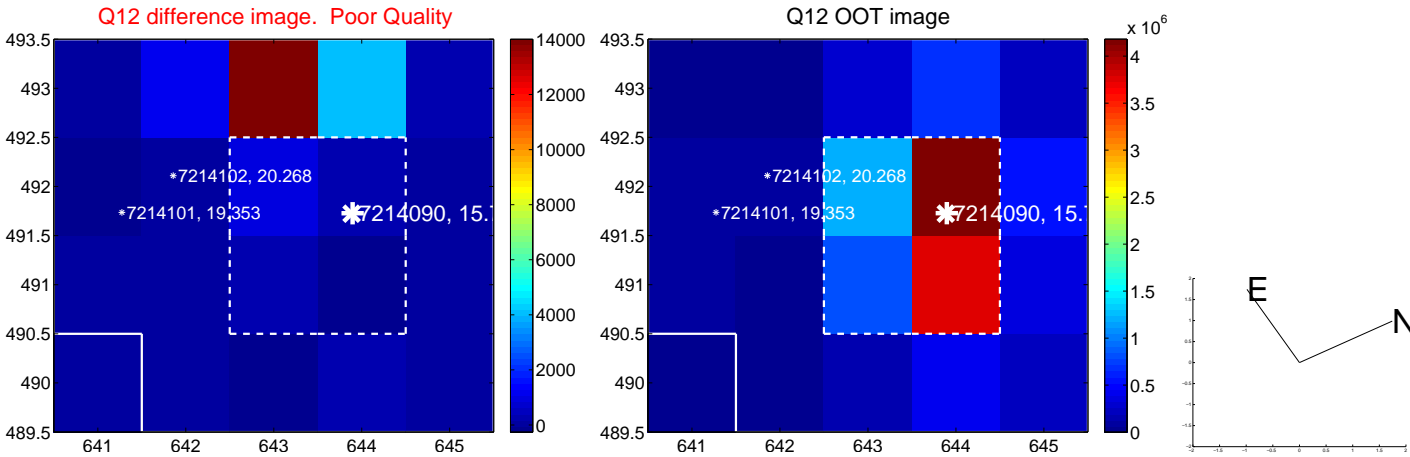
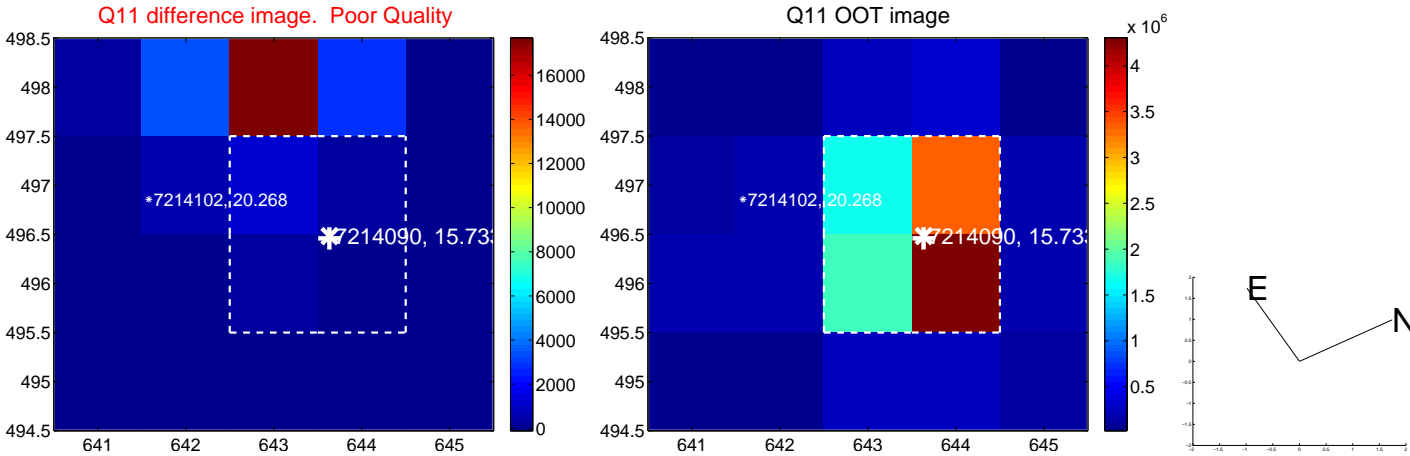
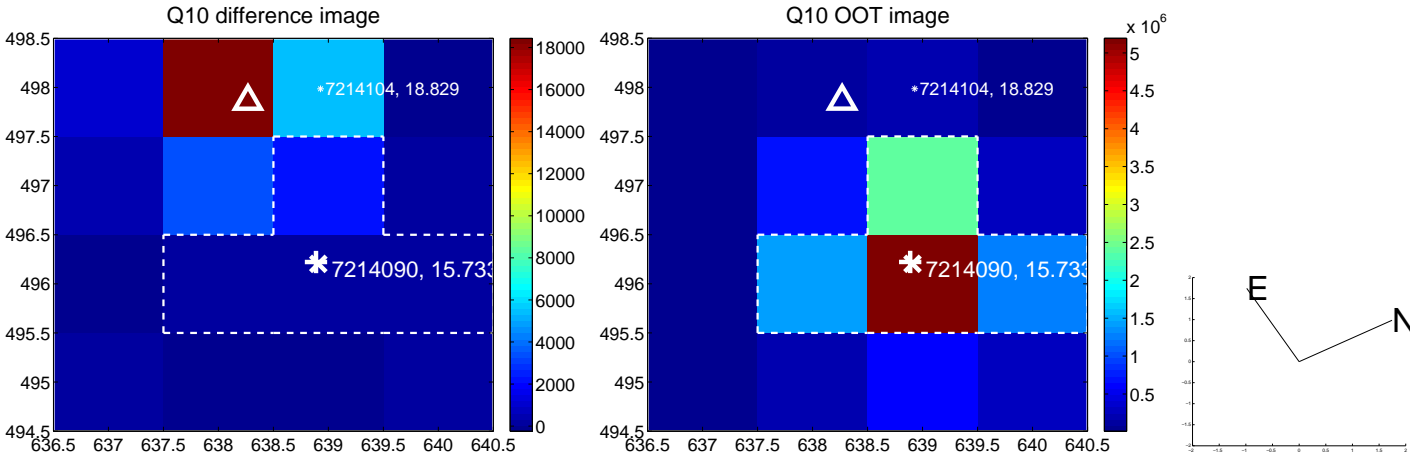
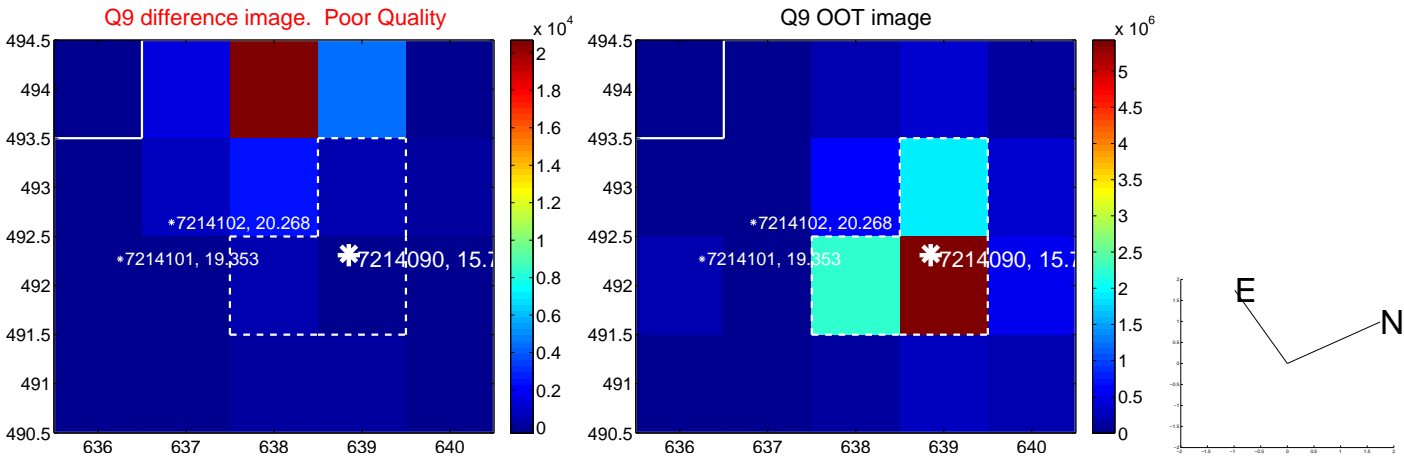
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



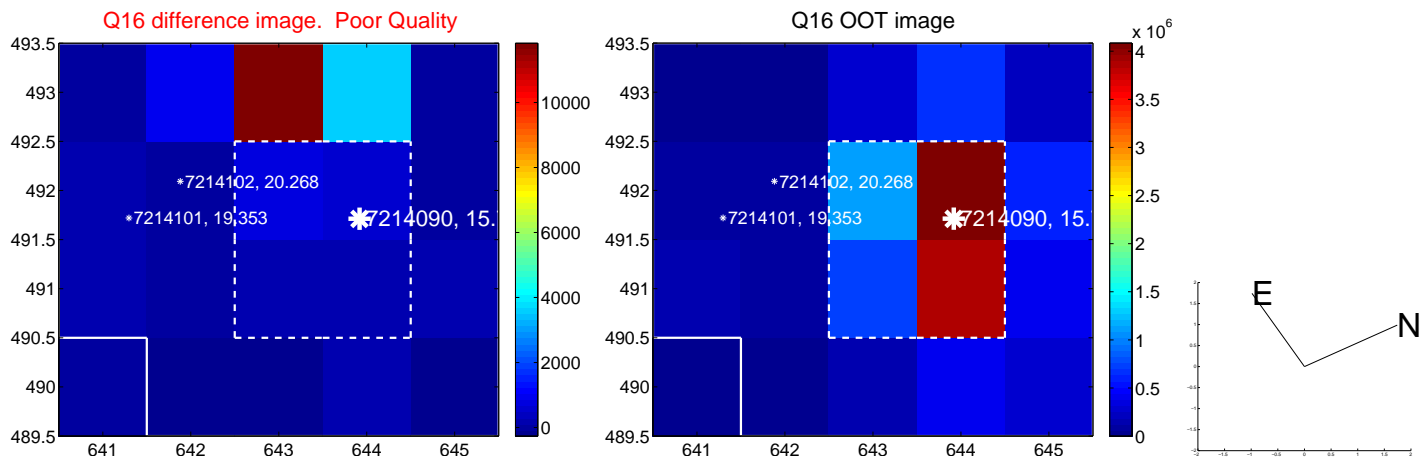
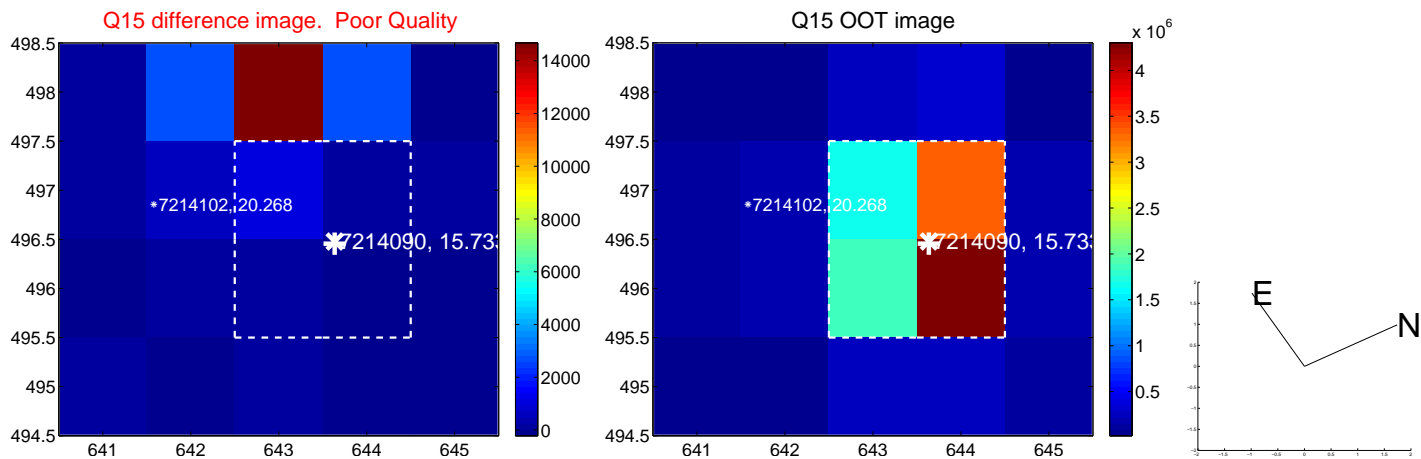
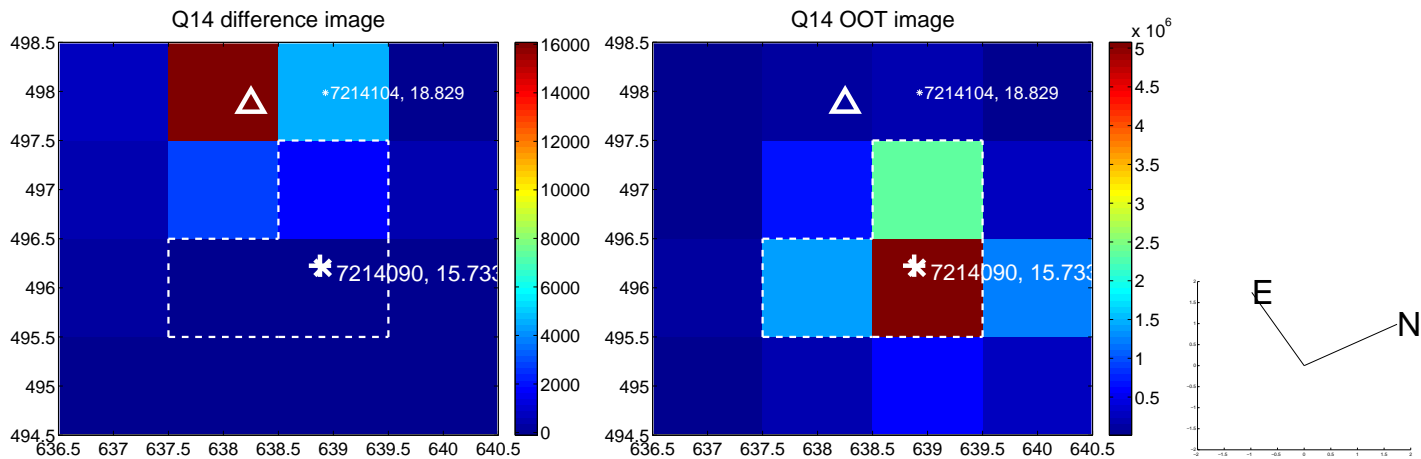
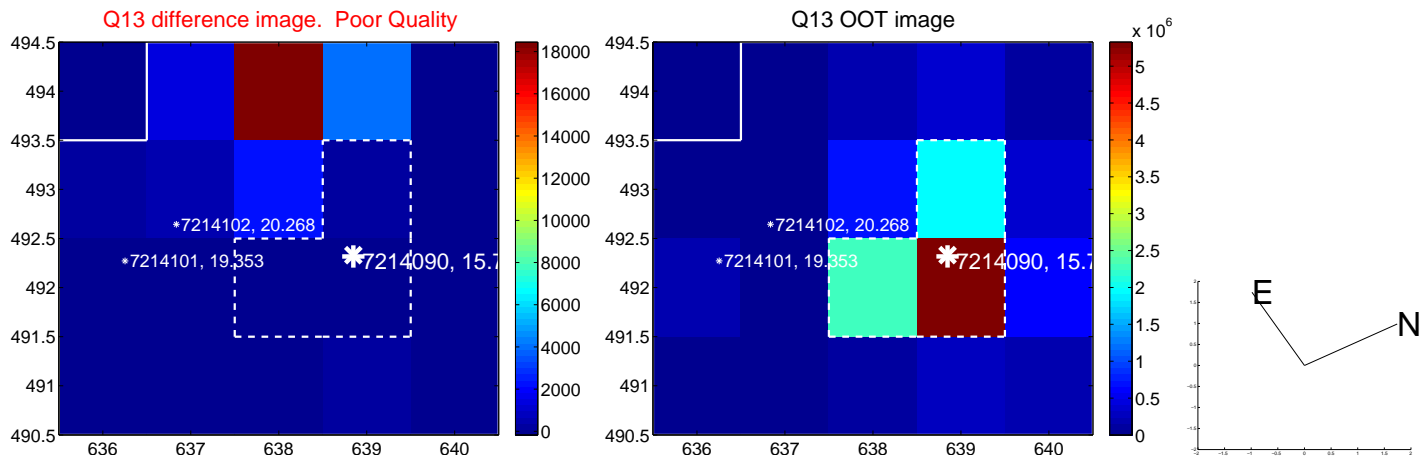
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



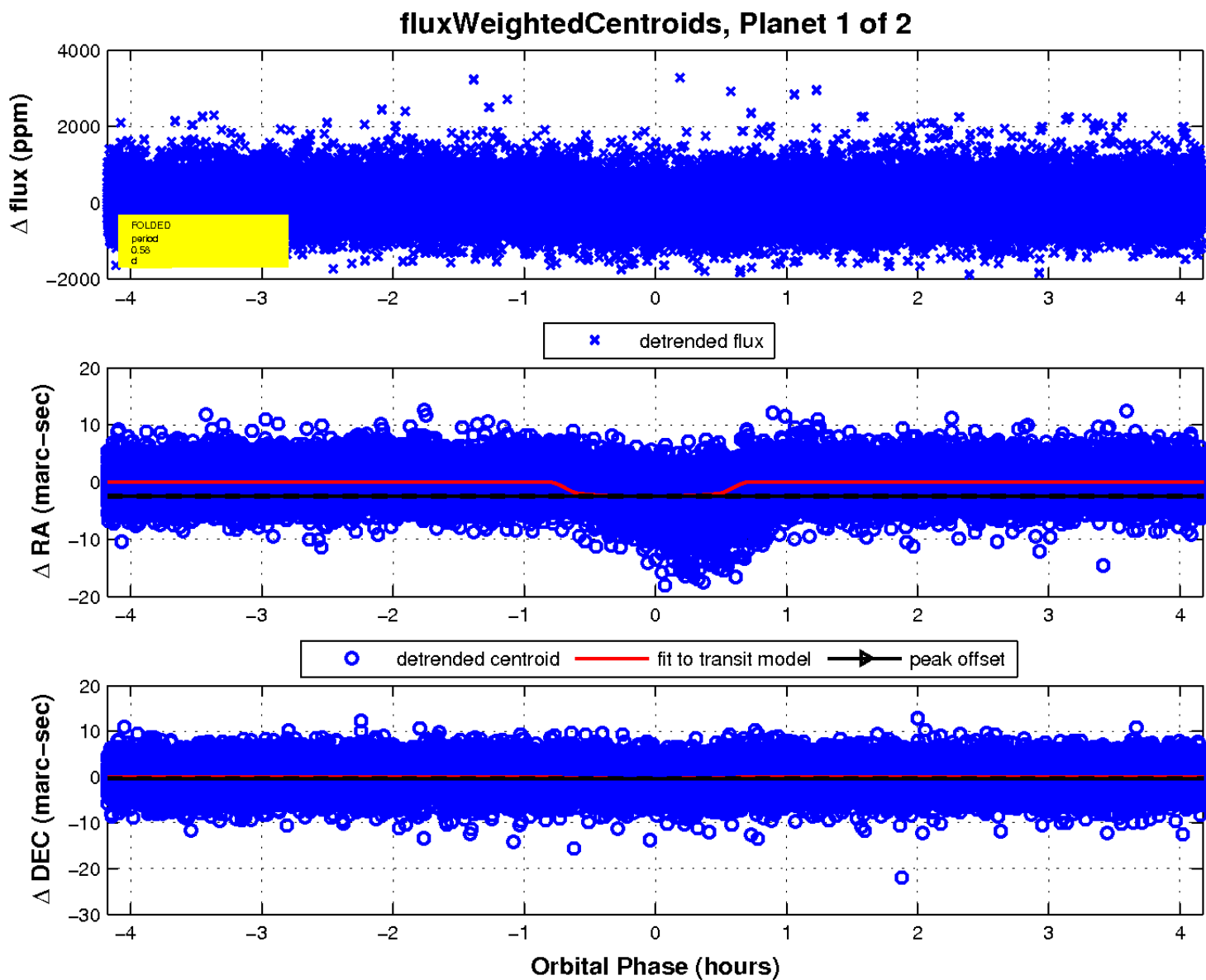
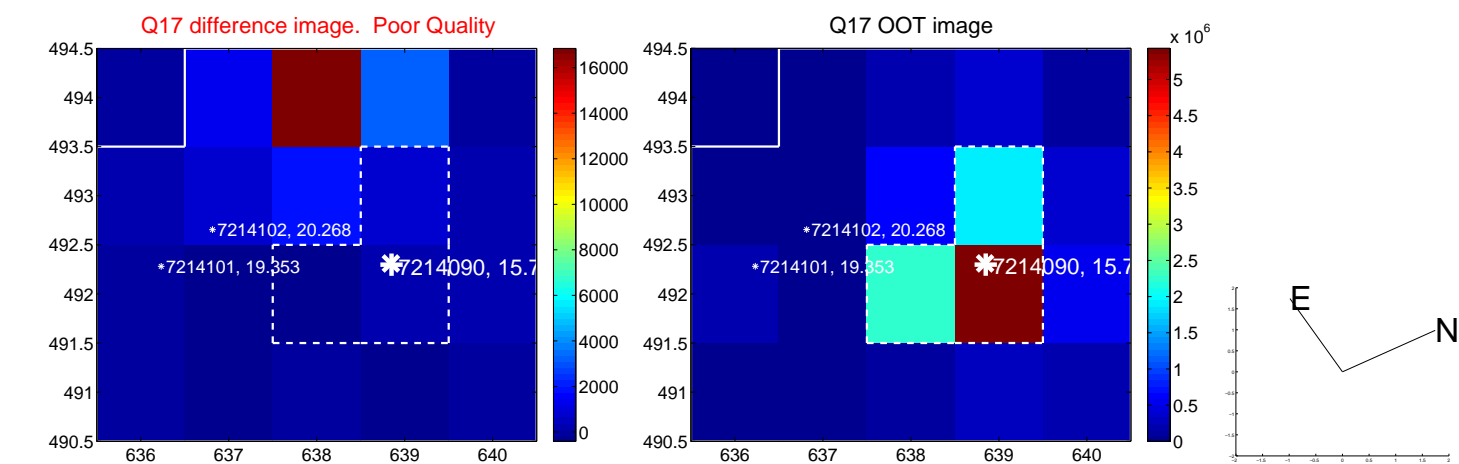
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

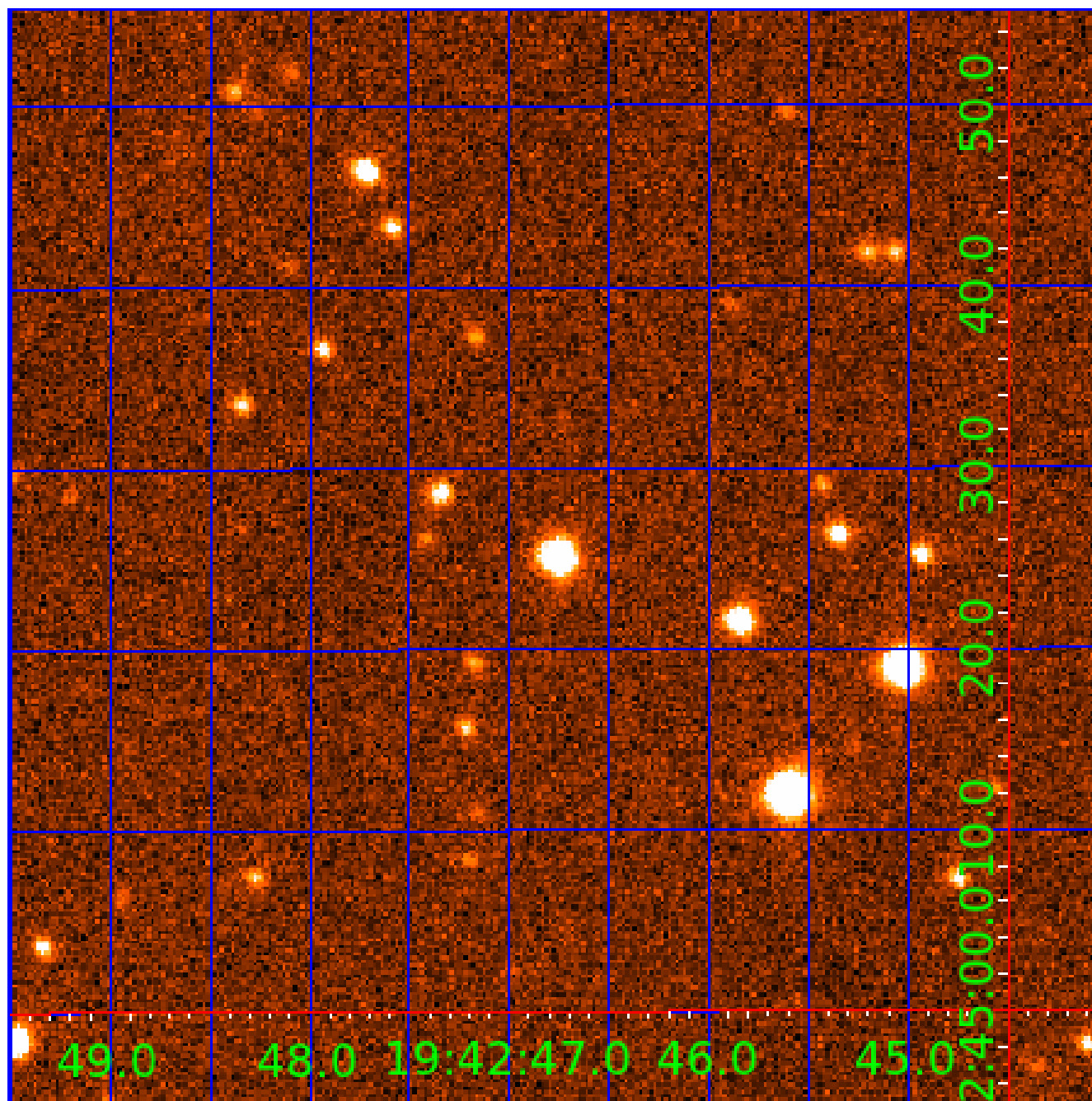


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007214090

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})
007214090-01	OBS	7583.01	0.577903	131.803072	99.1	1.392	12.1	12.6	0.91	5730	1.09	4443.89
007214090-02	OBS	No	0.577904	131.515461	78.2	1.477	9.0	10.6	0.91	5730	0.96	4443.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007214090-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
007214090-02	OBS	FP	0.00	1	0	1	0	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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 007214090-02

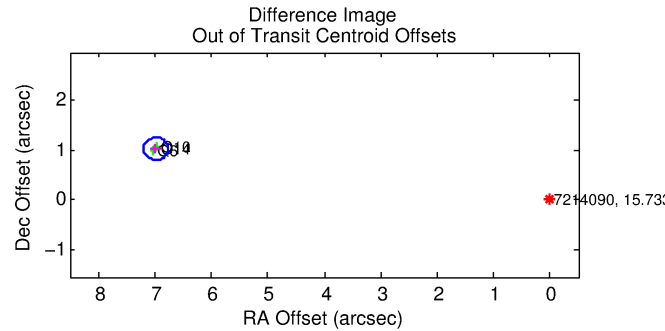
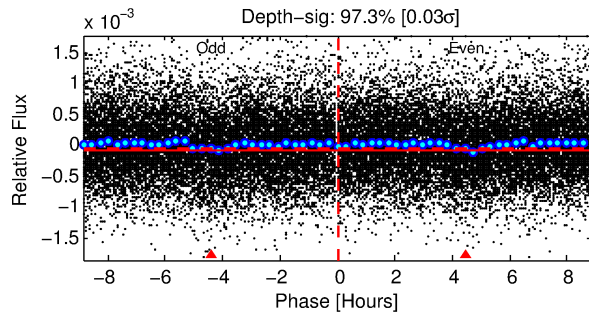
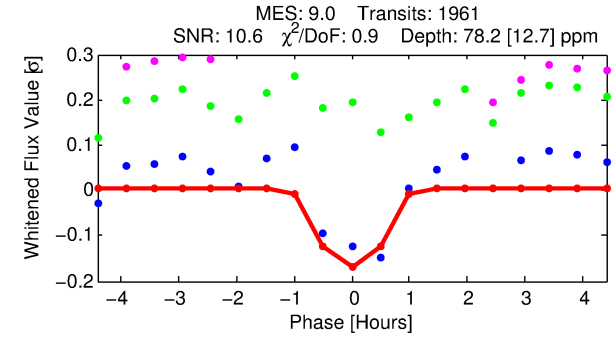
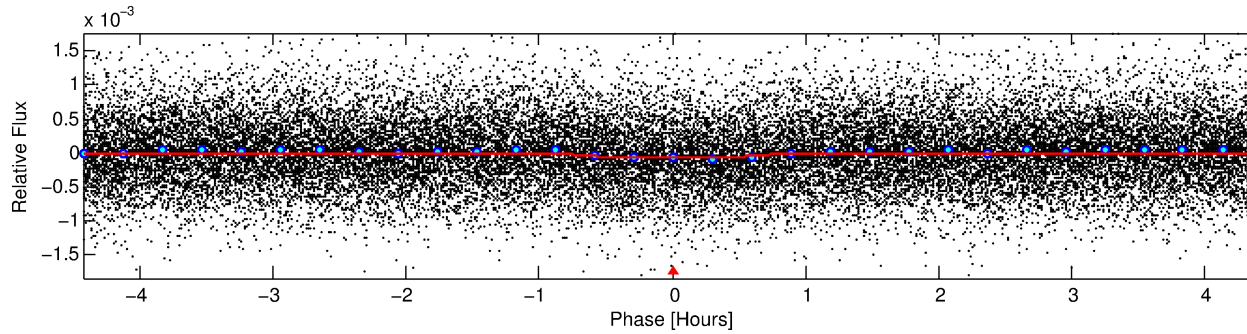
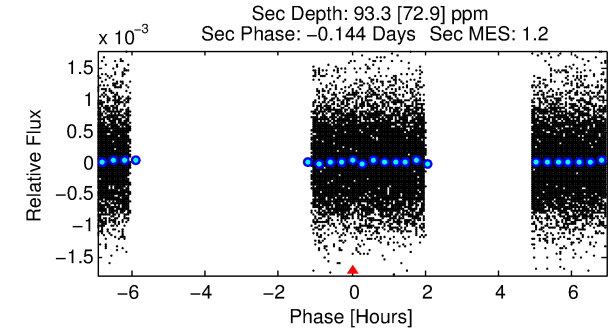
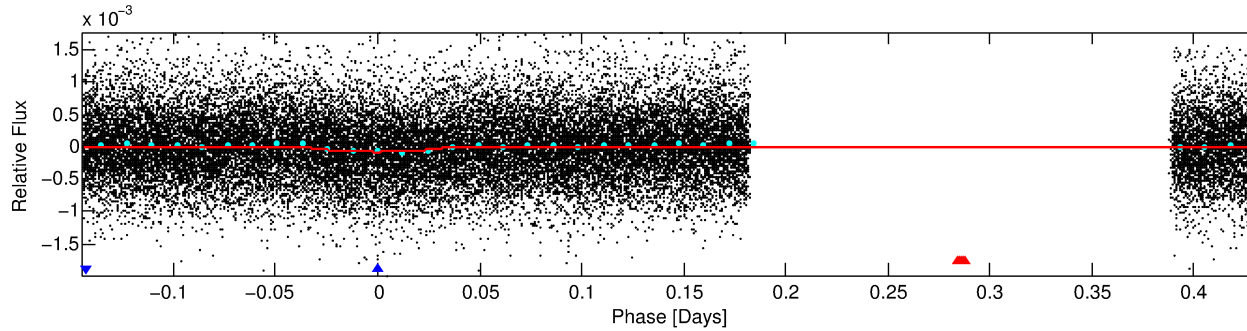
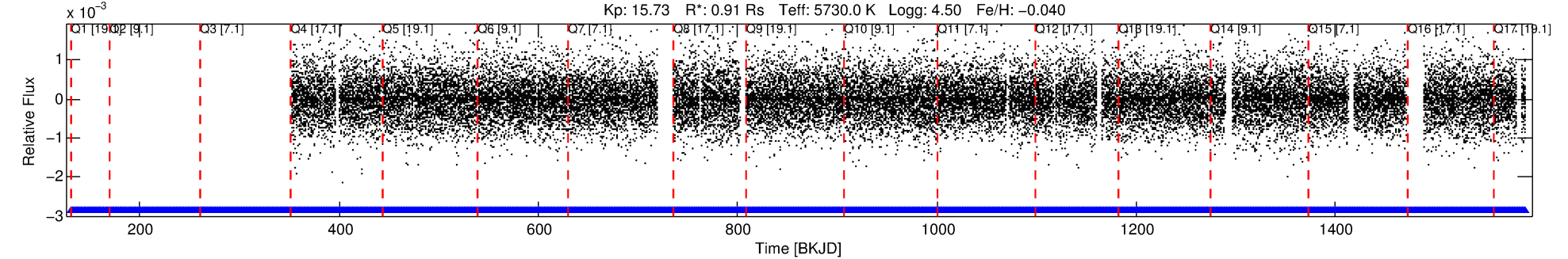
No Significant Match Found

DV One-Page Summary

KIC: 7214090 Candidate: 2 of 2 Period: 0.578 d

KOI: K07583 Corr: No Ephemeris Match

Kp: 15.73 R*: 0.91 Rs Teff: 5730.0 K Logg: 4.50 Fe/H: -0.040



DV Fit Results:

Period = 0.57790 [0.00001] d
Epoch = 131.5155 [0.0022] BKJD
Rp/R* = 0.0097 [0.0077]
a/R* = 1.65 [3.94]
b = 0.90 [0.80]
Seff = 4443.88 [1732.68]
Teq = 2082 [203] K
Rp = 0.96 [0.82] Re
a = 0.0134 [0.0034] AU
Ag = 9.94 [17.99] [0.50σ]
Teffp = 5716 [2538] K [1.43σ]

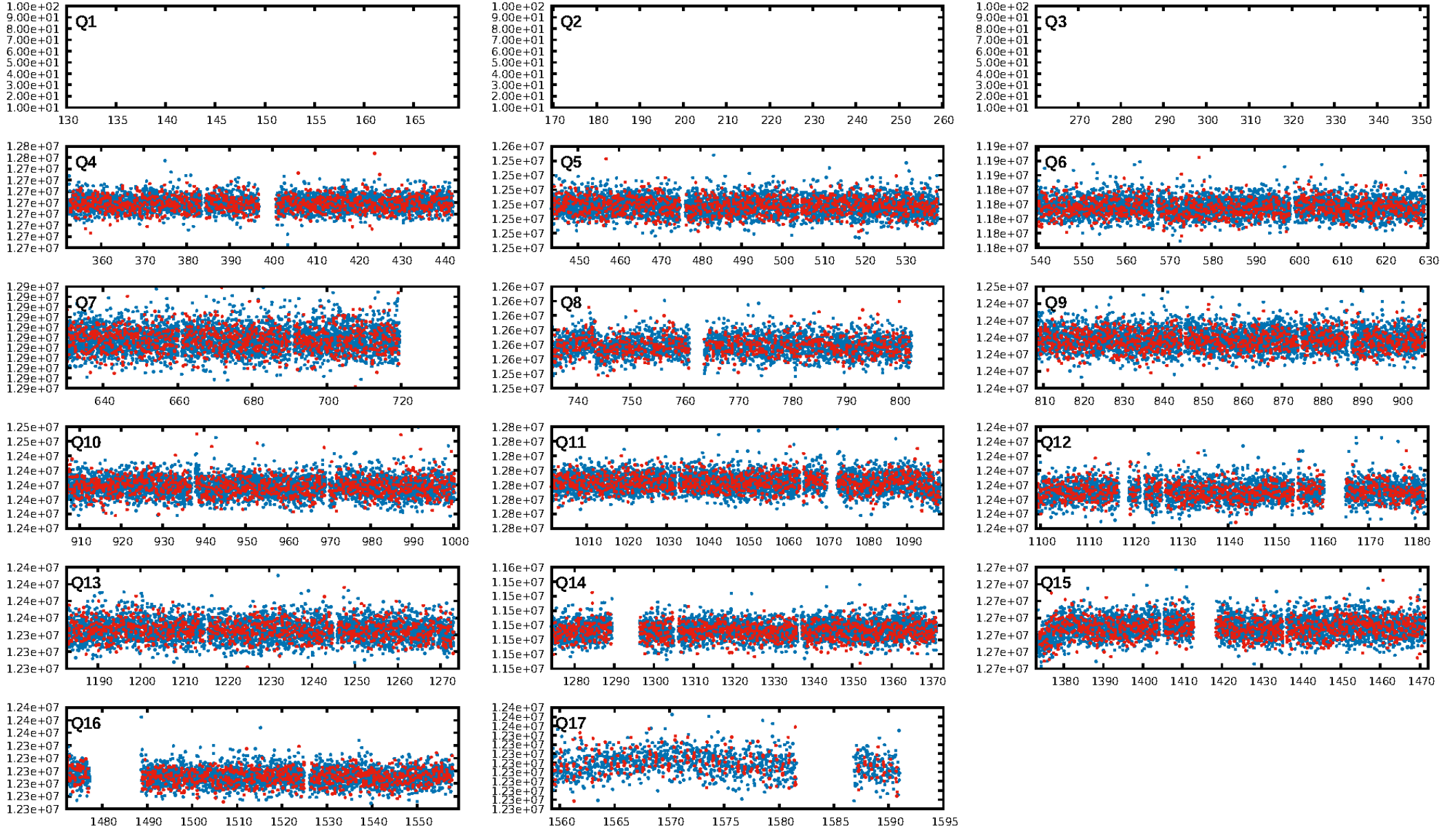
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.63e-28
RollingBand-figt: 1.00 [1915/1915]
GhostDiagnostic-chr: 1.042
Centroid-sig: 0.0%
Centroid-so: 6.860 arcsec [4.60σ]
OotOffset-rm: 7.058 arcsec [94.56σ]
KicOffset-rm: 7.160 arcsec [95.93σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
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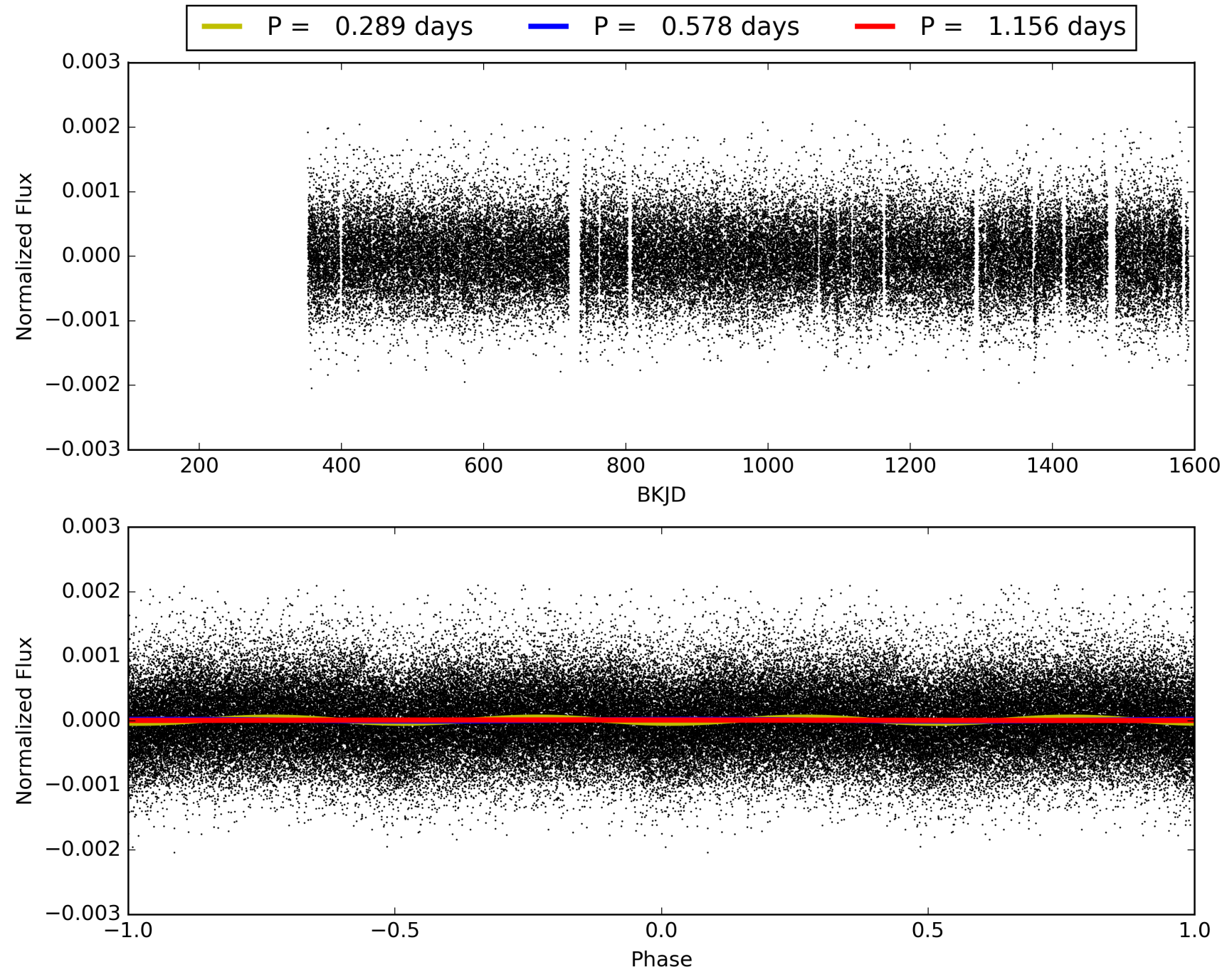
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007214090-02, PDC Light Curves

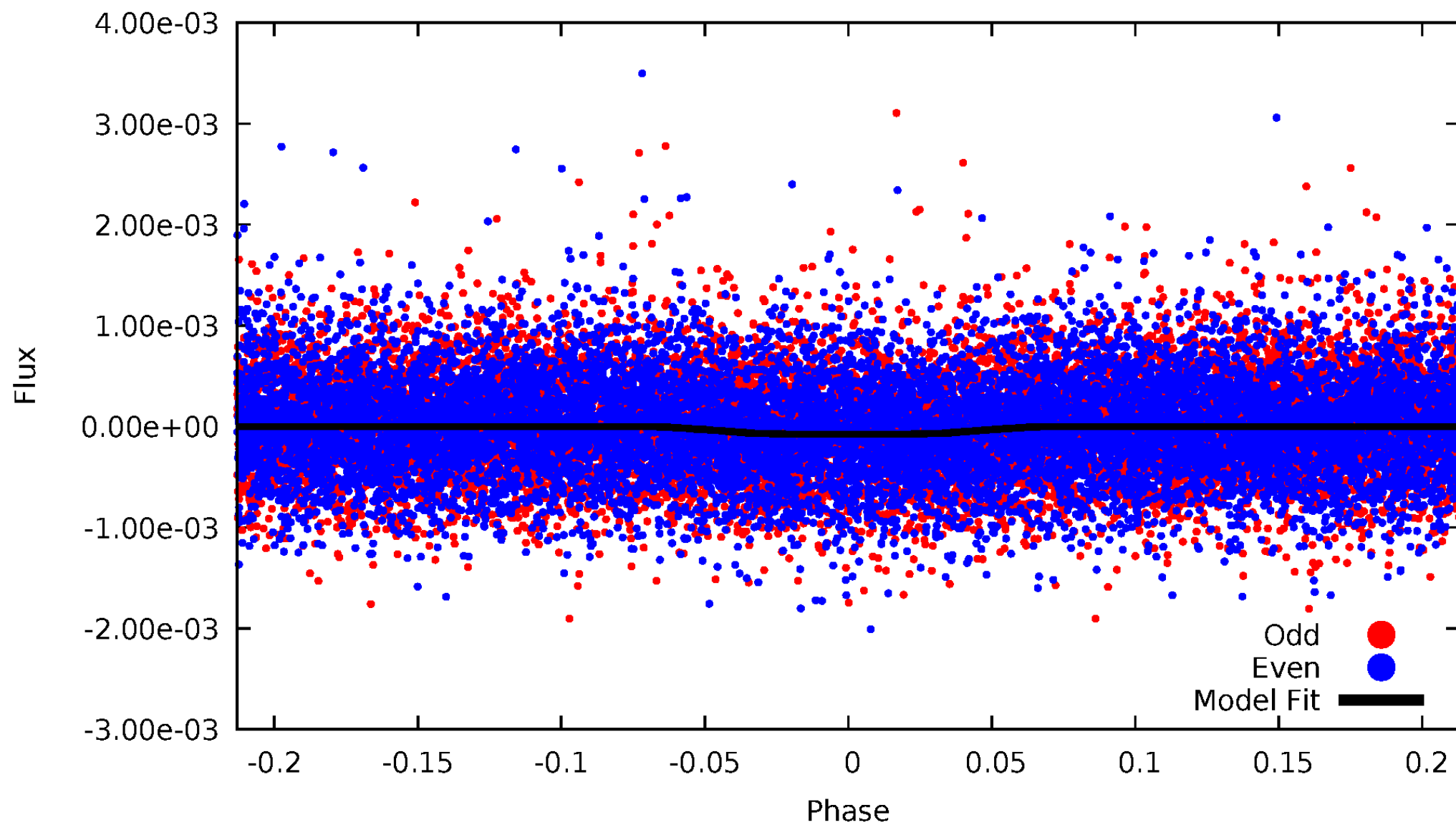


TCE 007214090-02



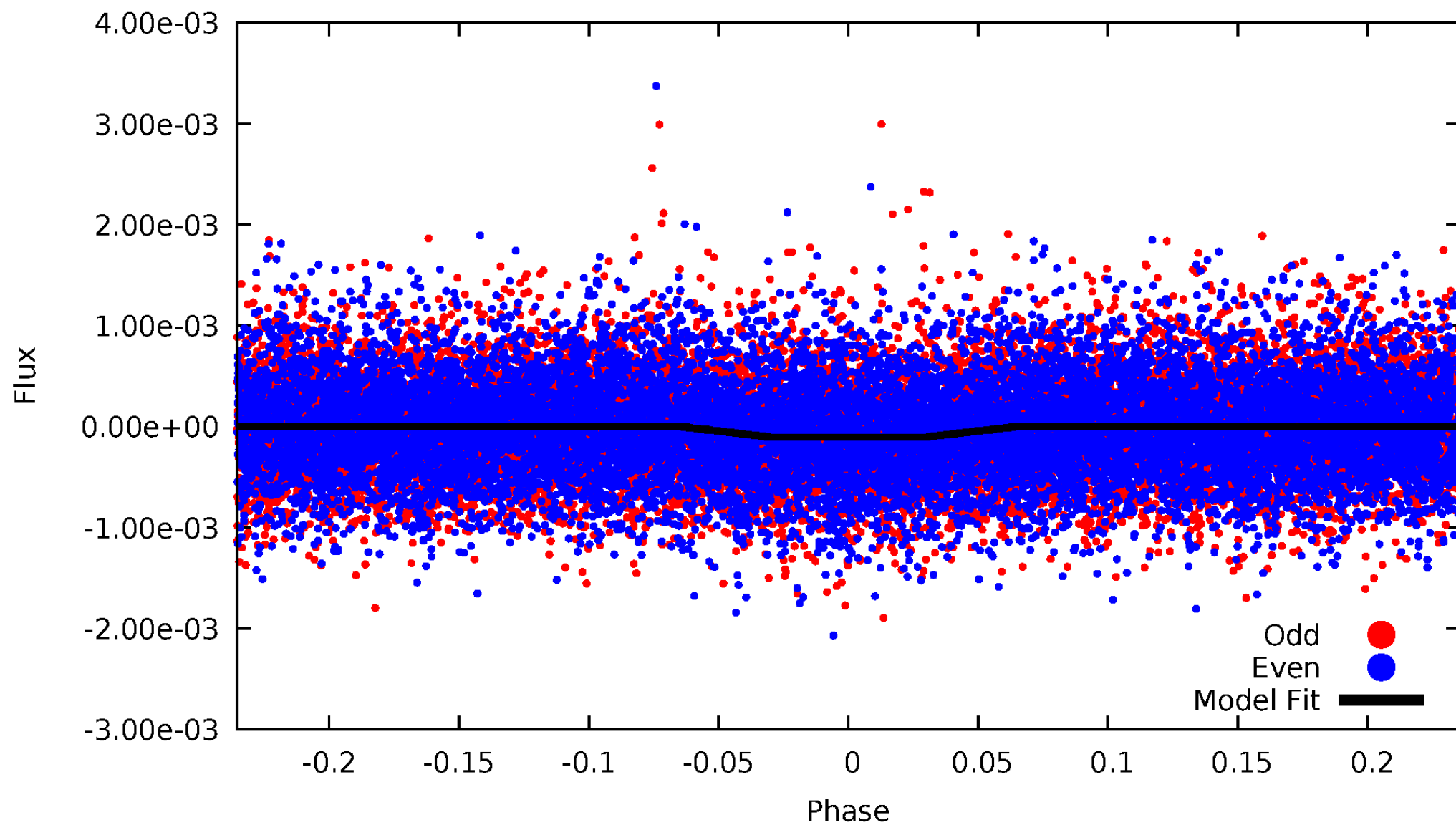
DV Odd/Even

TCE 007214090-02



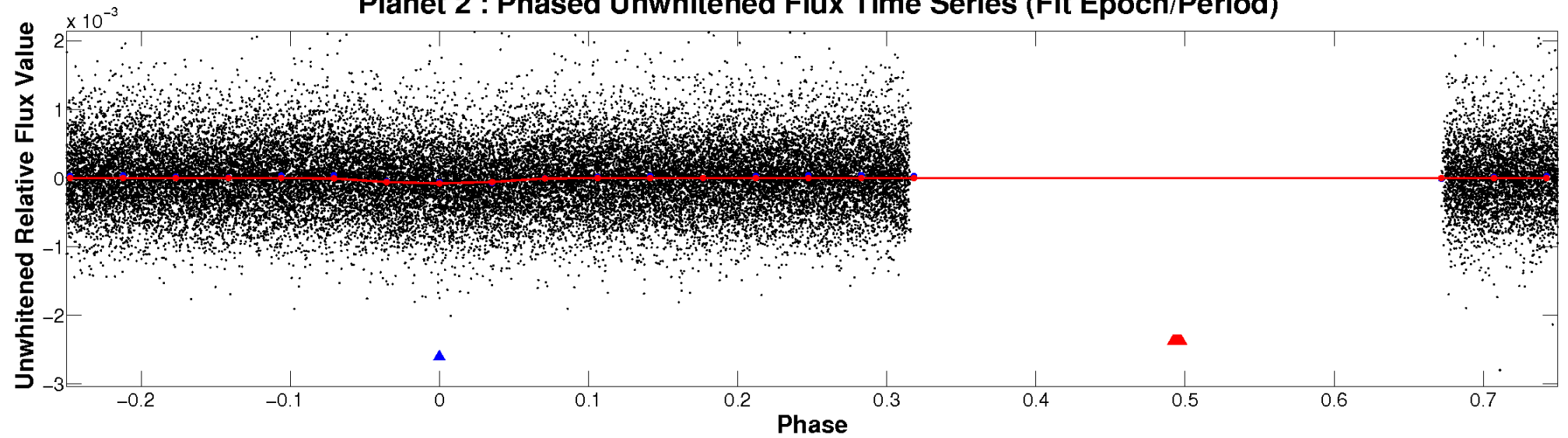
ALT Odd/Even

TCE 007214090-02

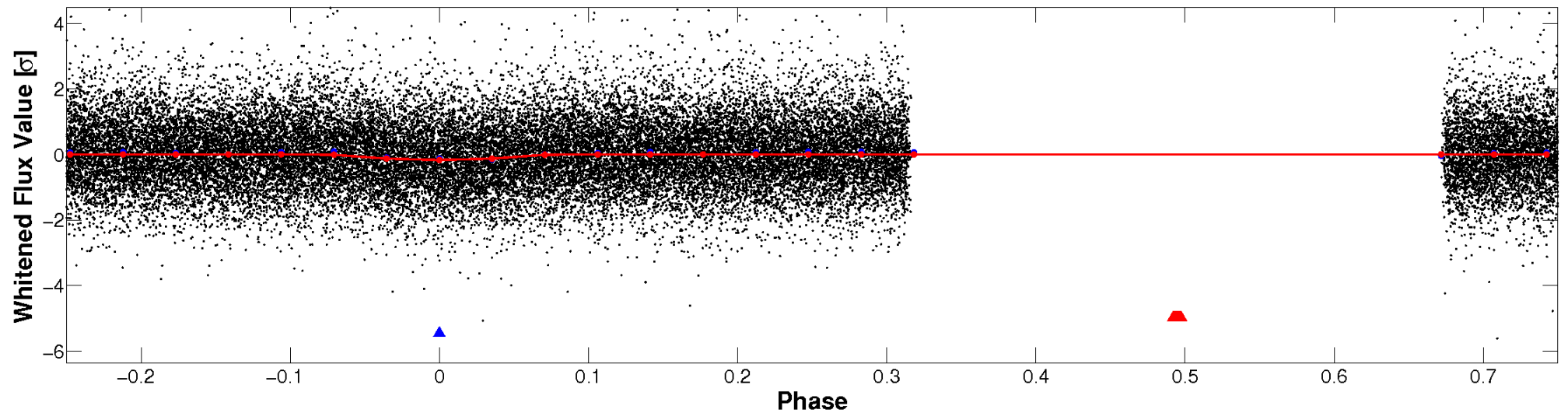


Non-Whitened Vs. Whitened Light Curve

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

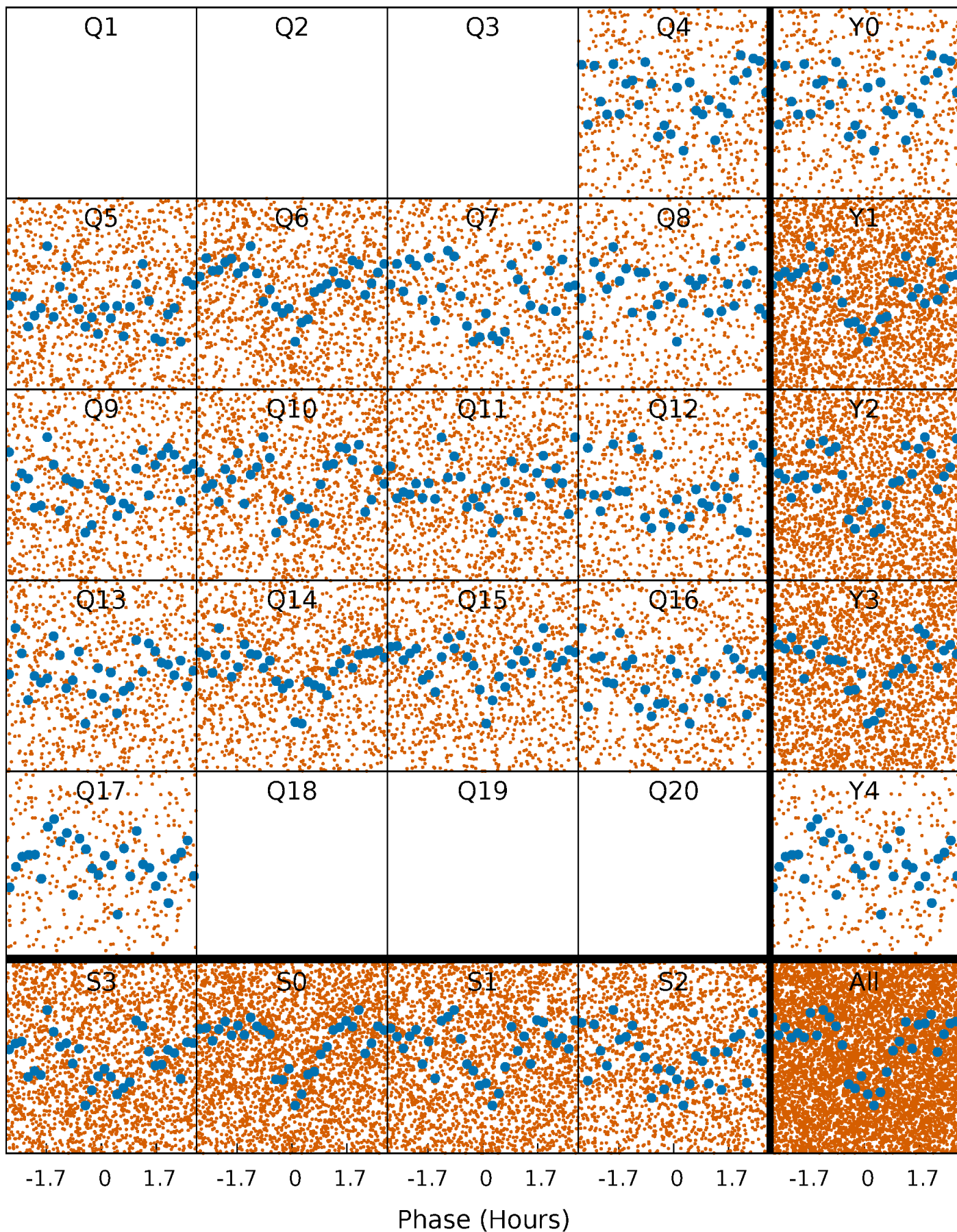


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



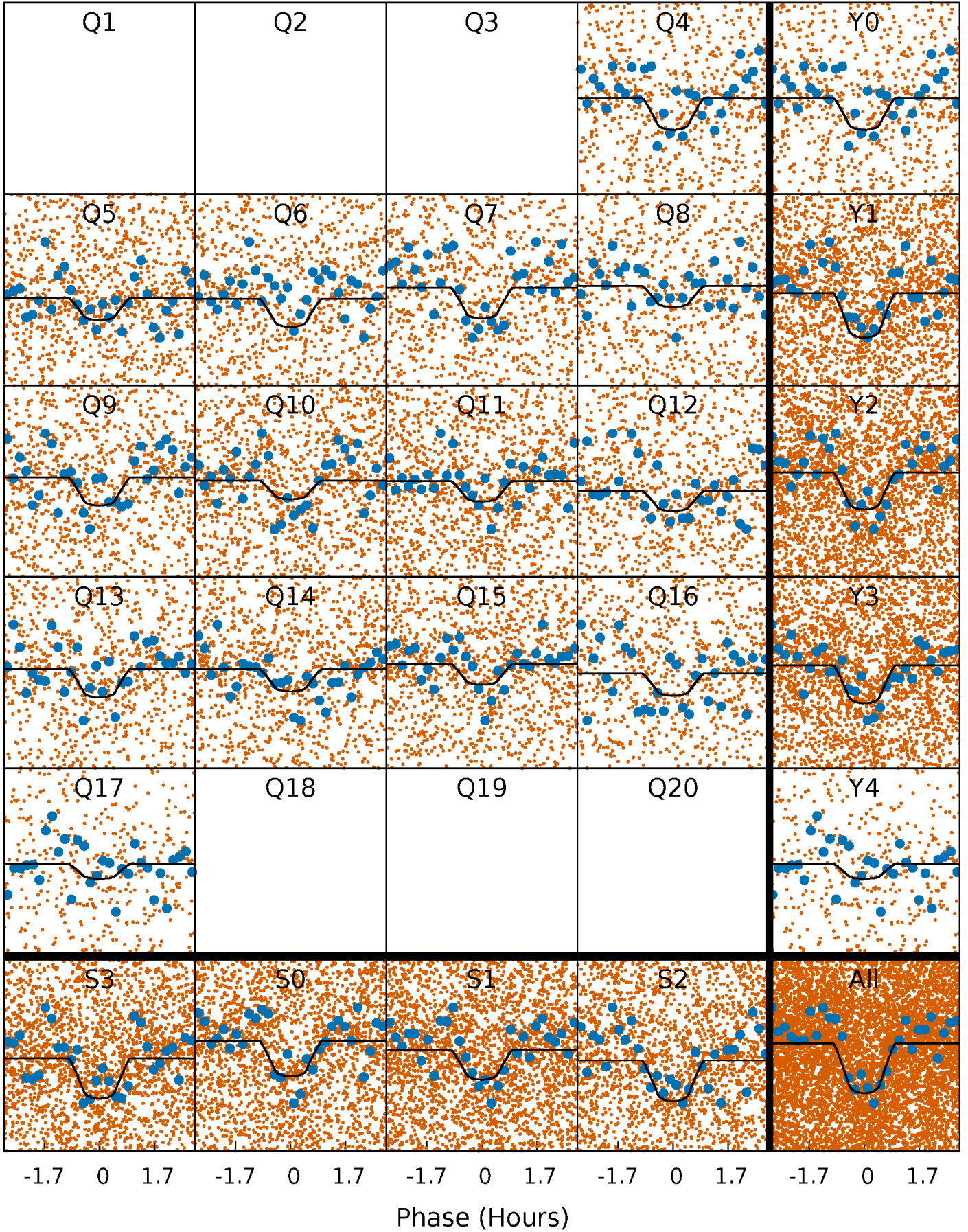
PDC Quarter-Phased Transit Curves

TCE 007214090-02 P= 0.577904 Days $T_0=131.515461$ (BKJD)



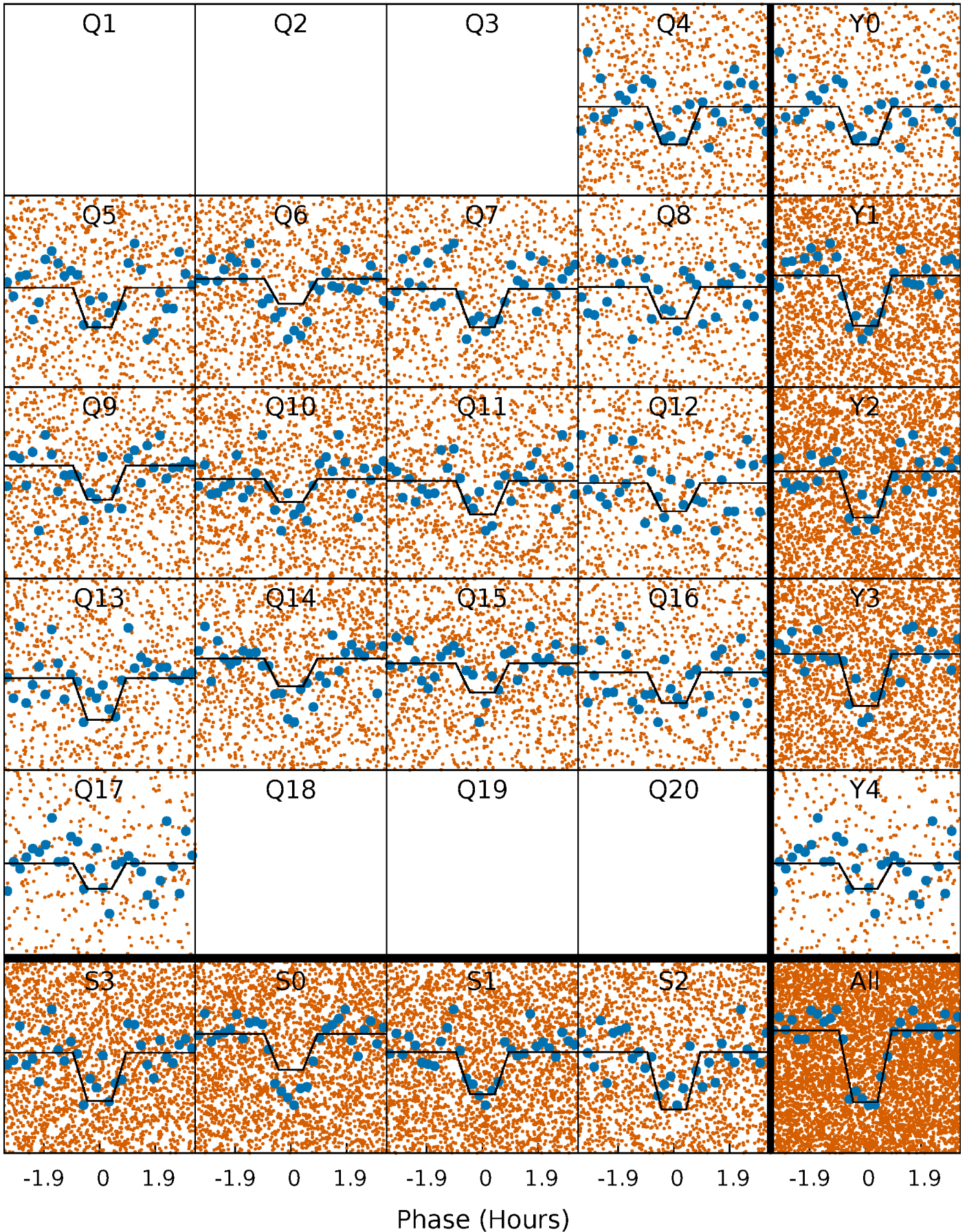
DV Quarter-Phased Transit Curves

TCE 007214090-02 $P = 0.577904$ Days $T_0 = 131.515461$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

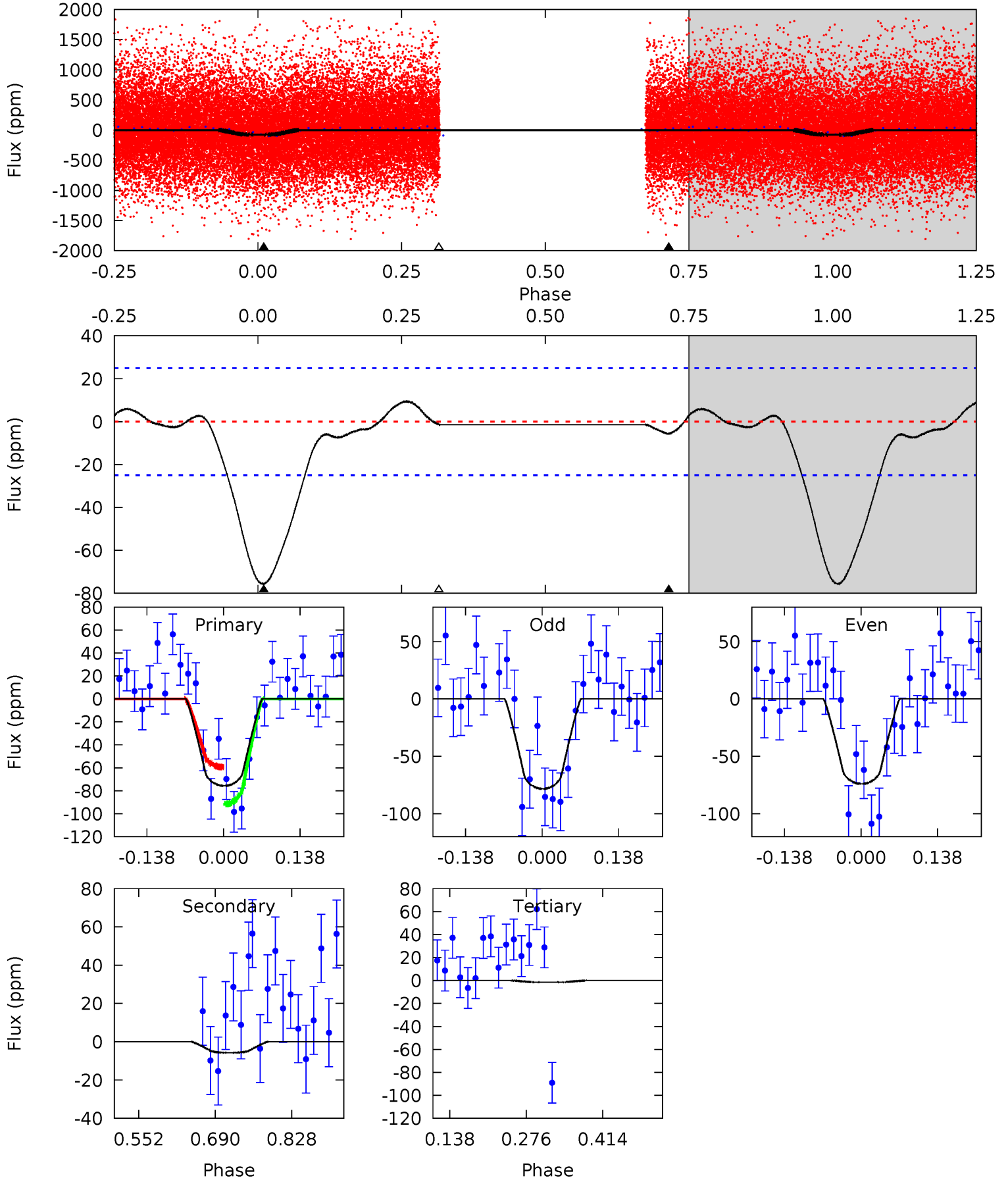
TCE 007214090-02 P= 0.577909 Days $T_0=131.514620$ (BKJD)



DV Model-Shift Uniqueness Test

007214090-02, P = 0.577904 Days, E = 131.515461 Days

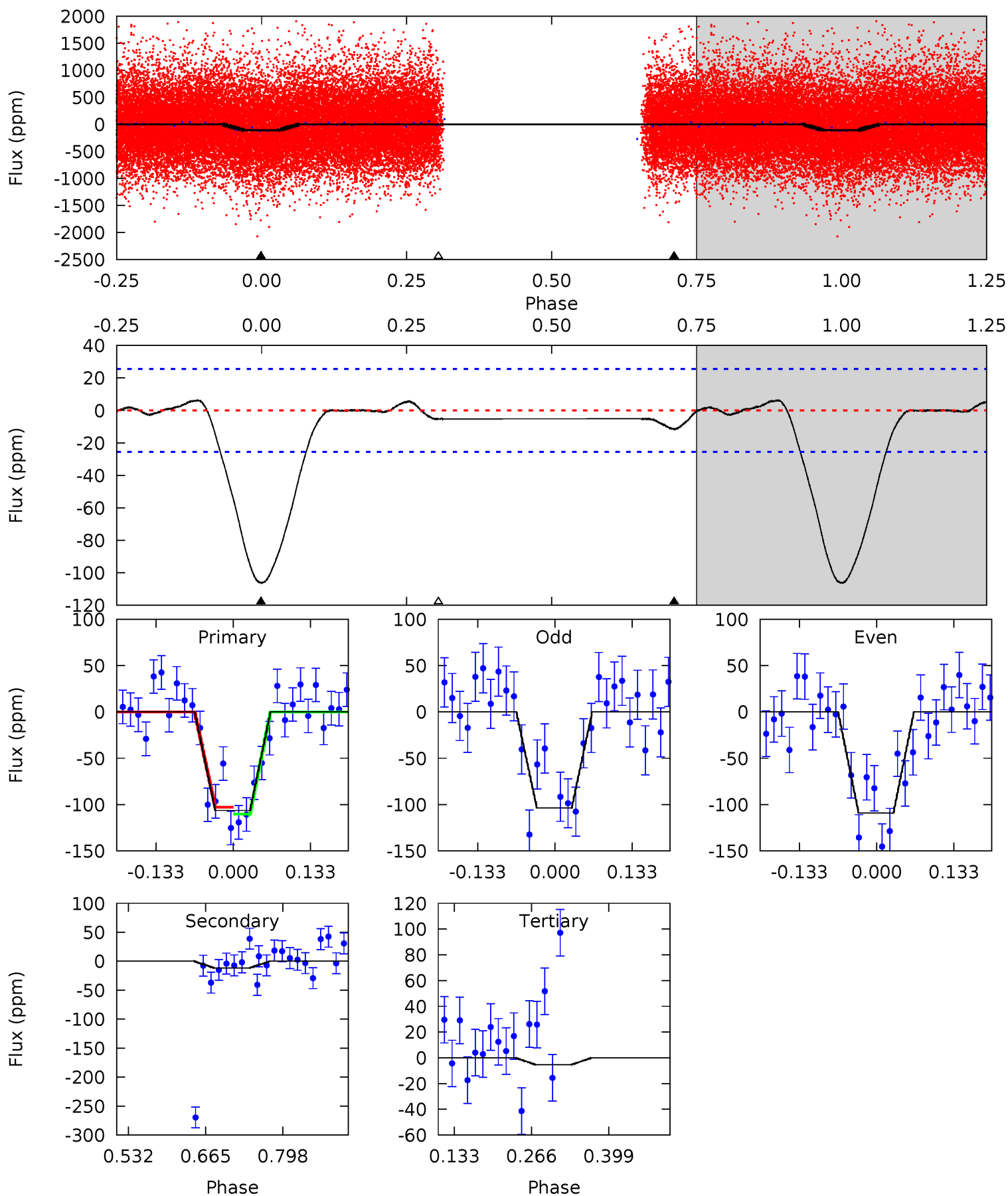
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	1.04	0.27	0	4.50	1.48	0.90	13.4	13.7	0.77	1.04	0.39	0.94	0.11	2.91



Alt Model-Shift Uniqueness Test

007214090-02, P = 0.577909 Days, E = 131.514620 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	2.07	0.97	0	4.50	1.50	0.45	17.8	18.8	1.11	2.07	0.47	0.94	0.06	0.65



Stellar Parameters For KIC 007214090

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5730^{+173}_{-190}	$4.503^{+0.050}_{-0.200}$	$-0.040^{+0.300}_{-0.300}$	$0.908^{+0.273}_{-0.091}$	$0.960^{+0.114}_{-0.114}$	$1.804^{+0.457}_{-0.880}$
	+3%/-3%	+1%/-4%	+750%/-750%	+30%/-10%	+12%/-12%	+25%/-49%
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 007214090-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-6 ± 6	$1.11^{+0.78}_{-0.64}$	2967^{+206}_{-150}	2487^{+1808}_{-5566}	$0.363^{+2.194}_{-0.349}$
Alt.	-12 ± 6	$1.16^{+0.80}_{-0.62}$	2980^{+208}_{-158}	3365^{+1430}_{-5905}	$0.841^{+3.373}_{-0.600}$

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 $A_{obs} \gg 1.0$

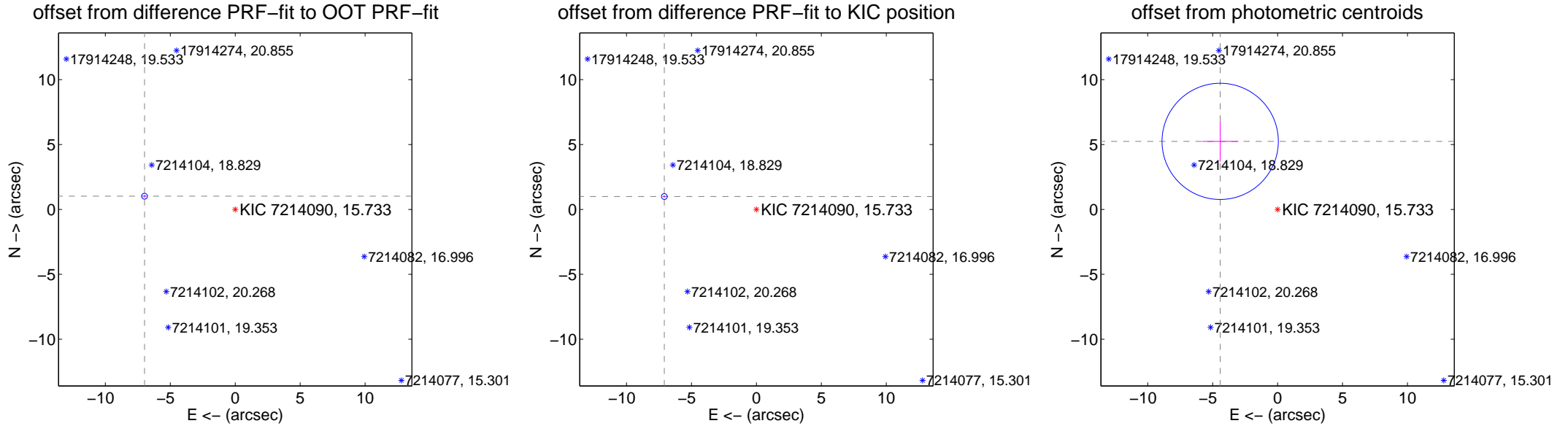
DV Centroid Data

Supplemental centroid analysis for 007214090-02. Kepler magnitude: 15.73. Transit SNR 10.64

There are 3 quarters with good PRF difference image offsets

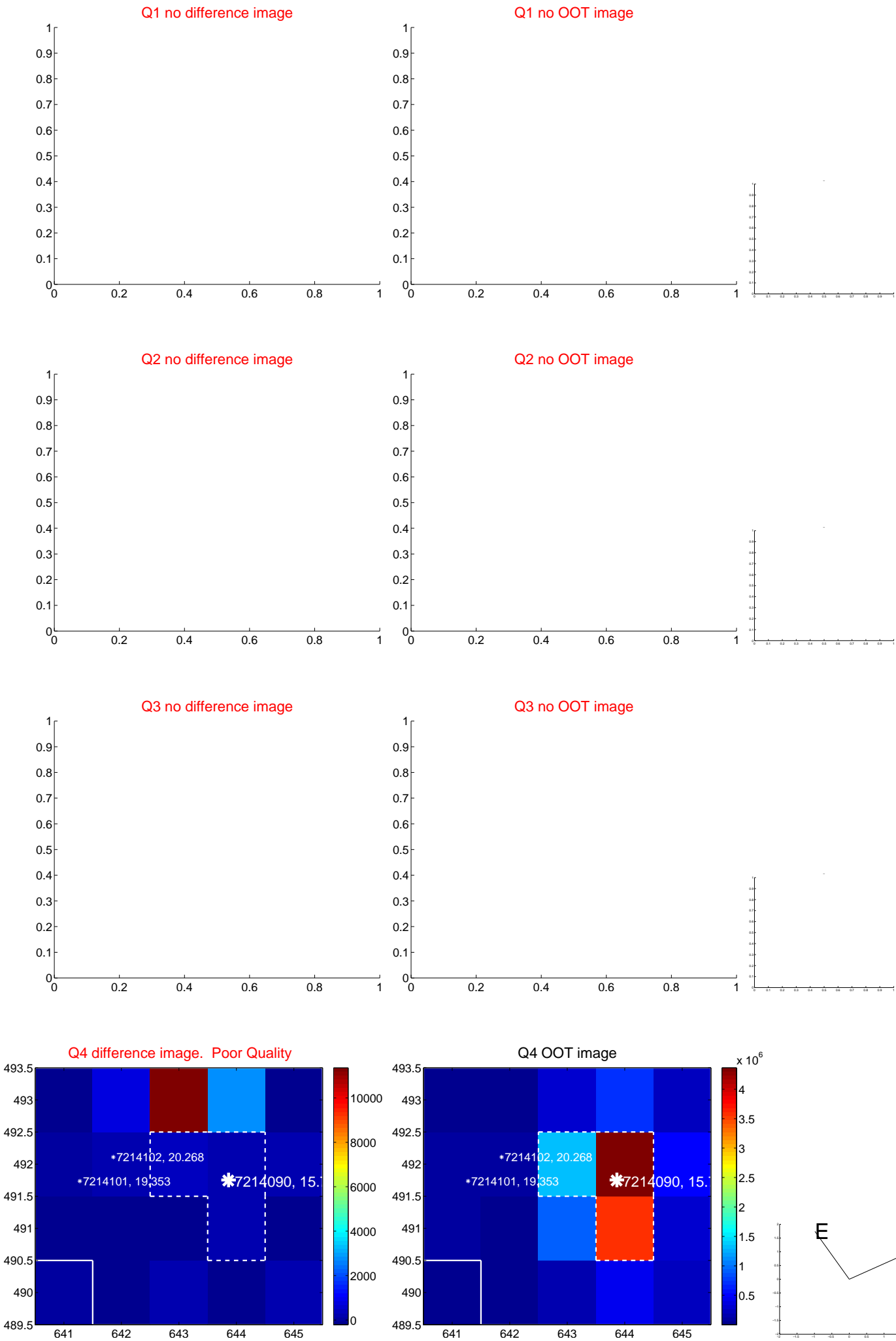
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.058 ± 0.075	94.56	6.984 ± 0.075	1.017 ± 0.073
PRF-fit source offset from KIC position	7.160 ± 0.075	95.93	7.091 ± 0.075	0.996 ± 0.073
photometric centroid source offset	6.86 ± 1.49	4.60	4.42 ± 1.40	5.25 ± 1.55

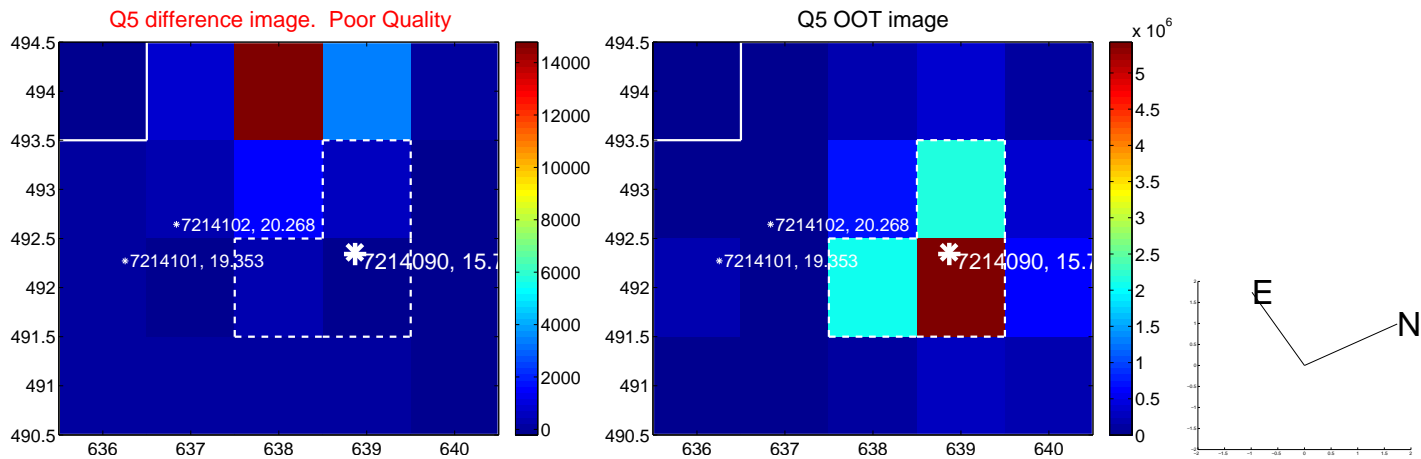


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

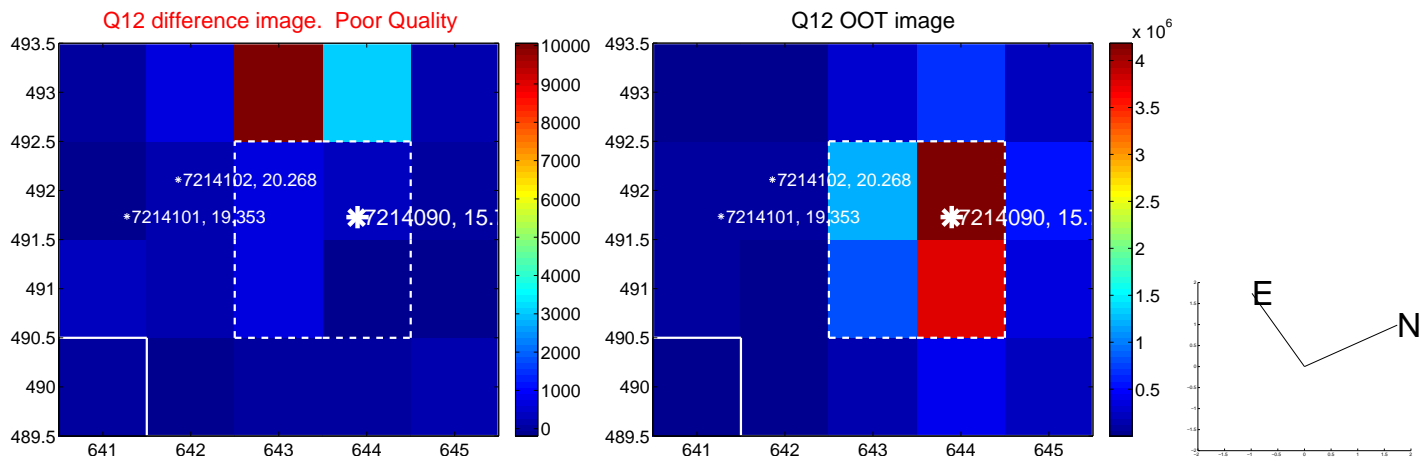
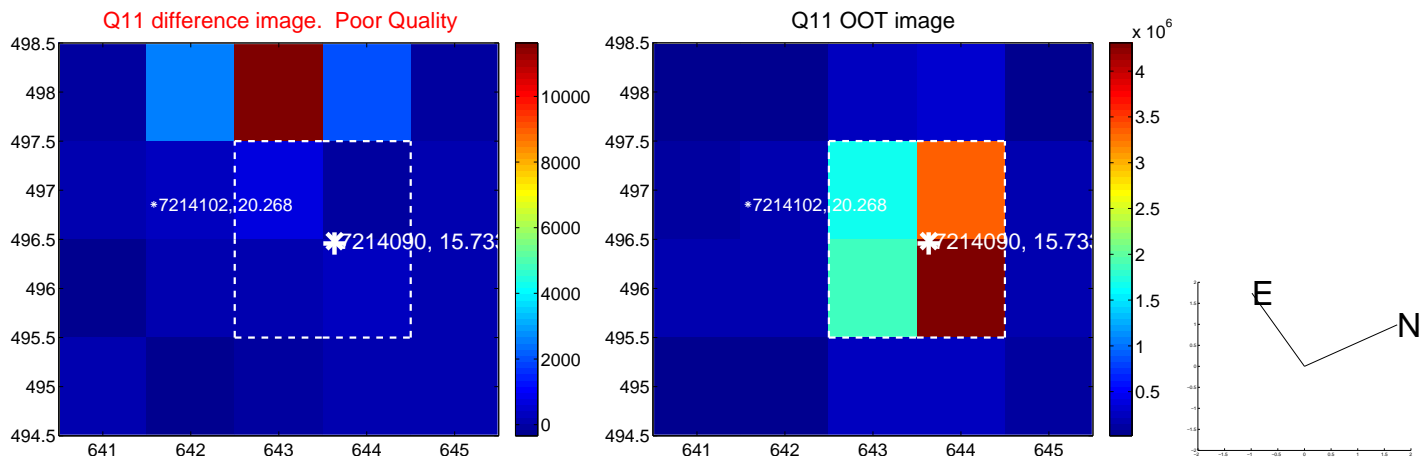
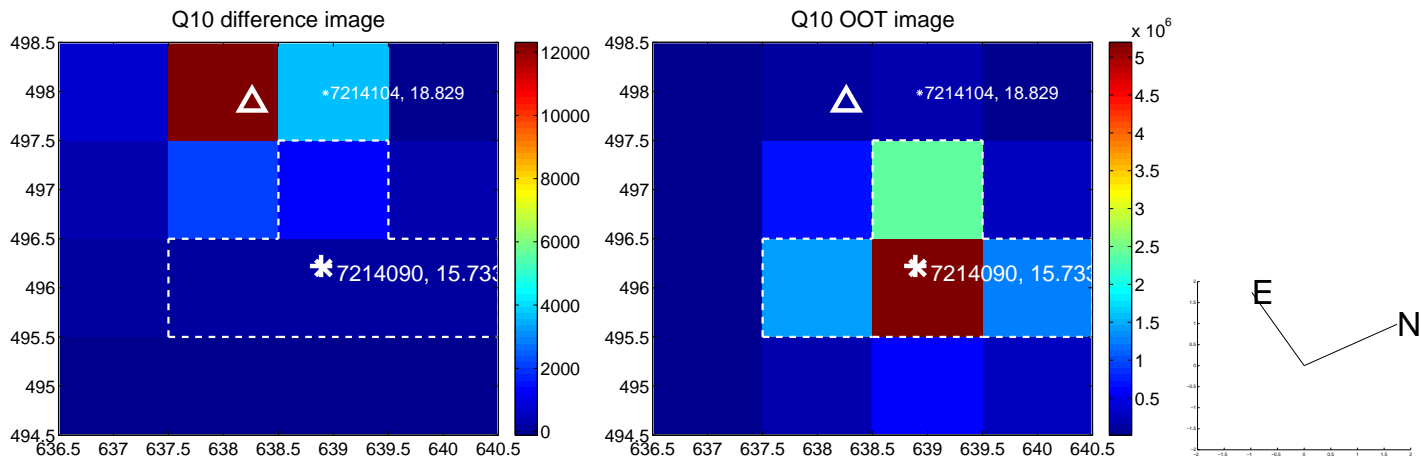
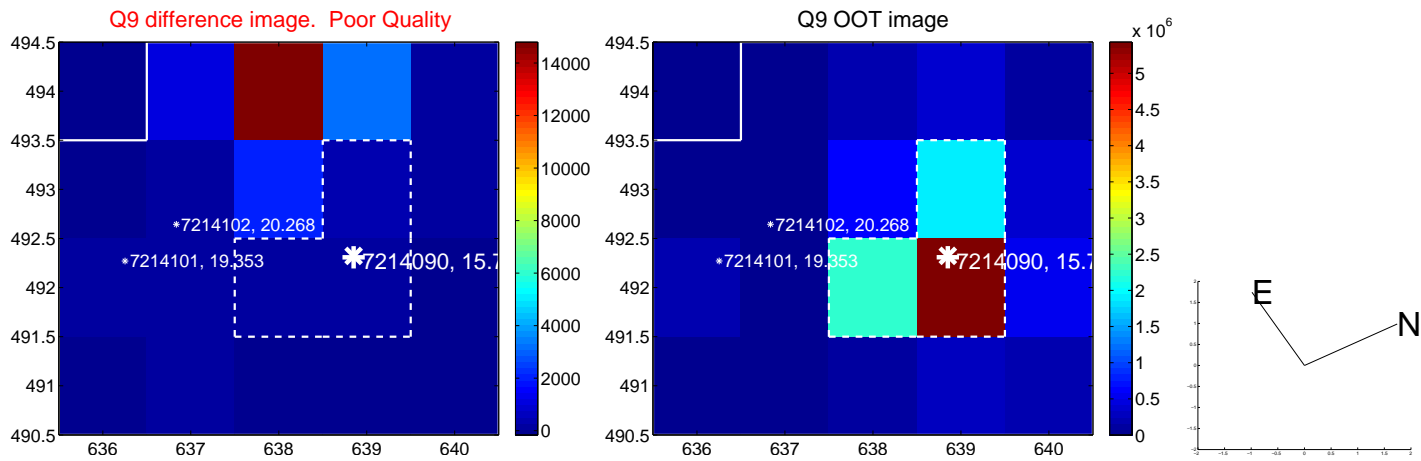
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



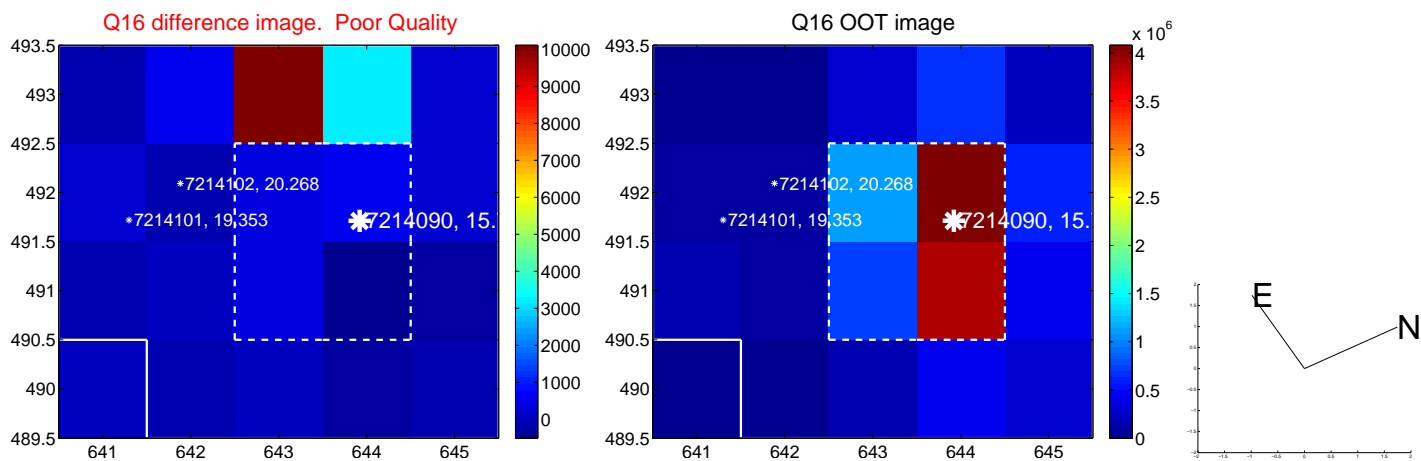
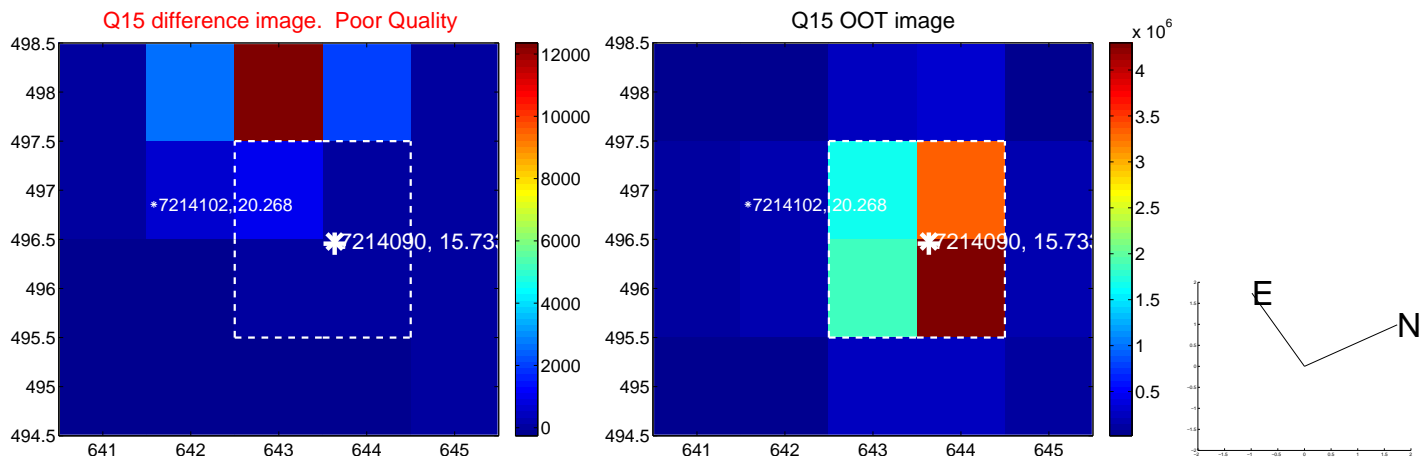
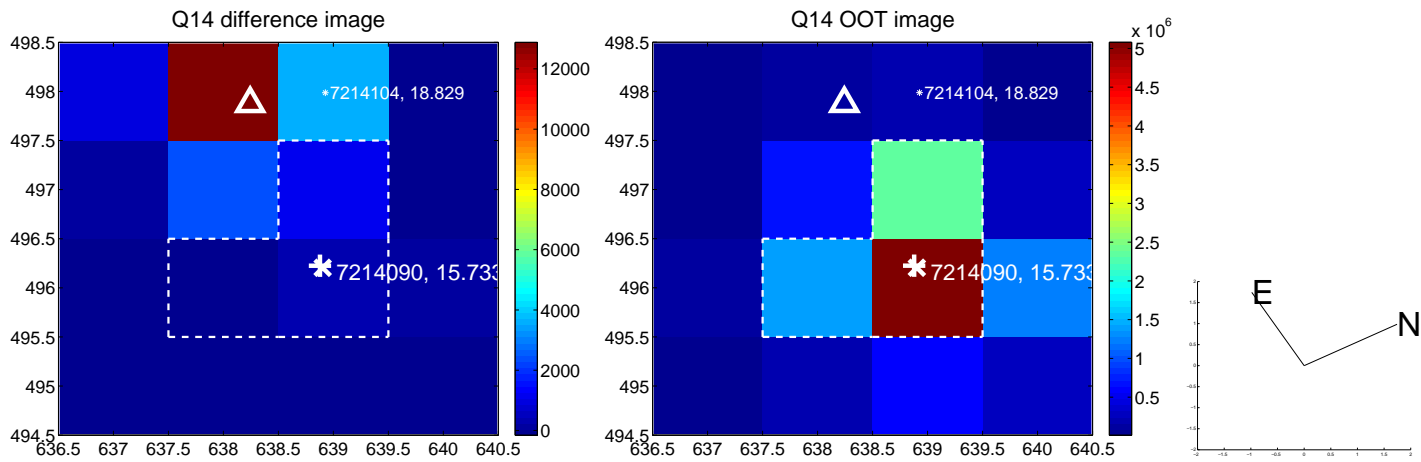
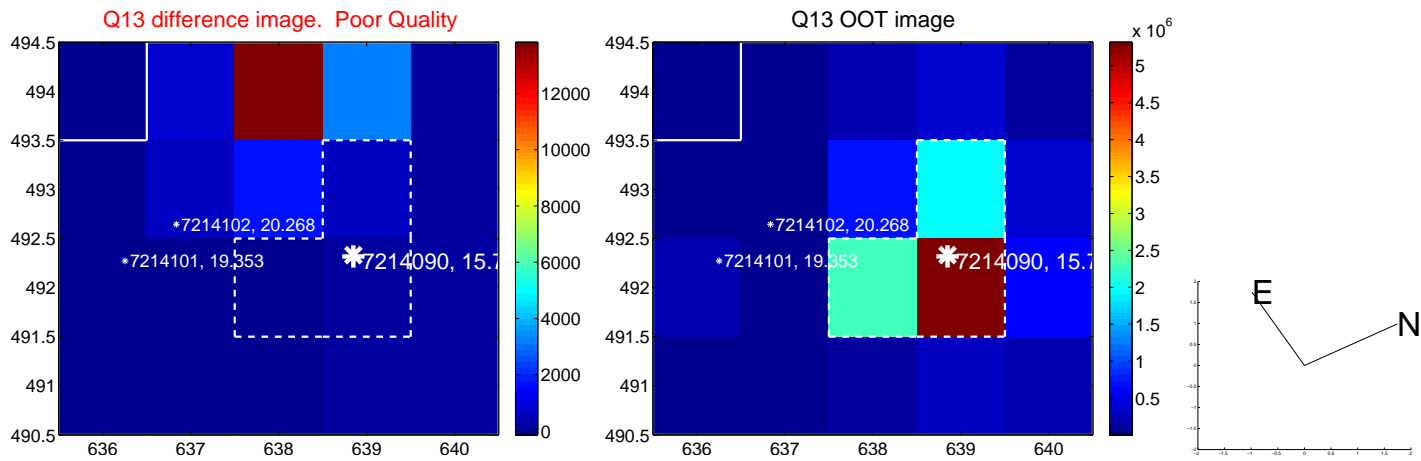
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



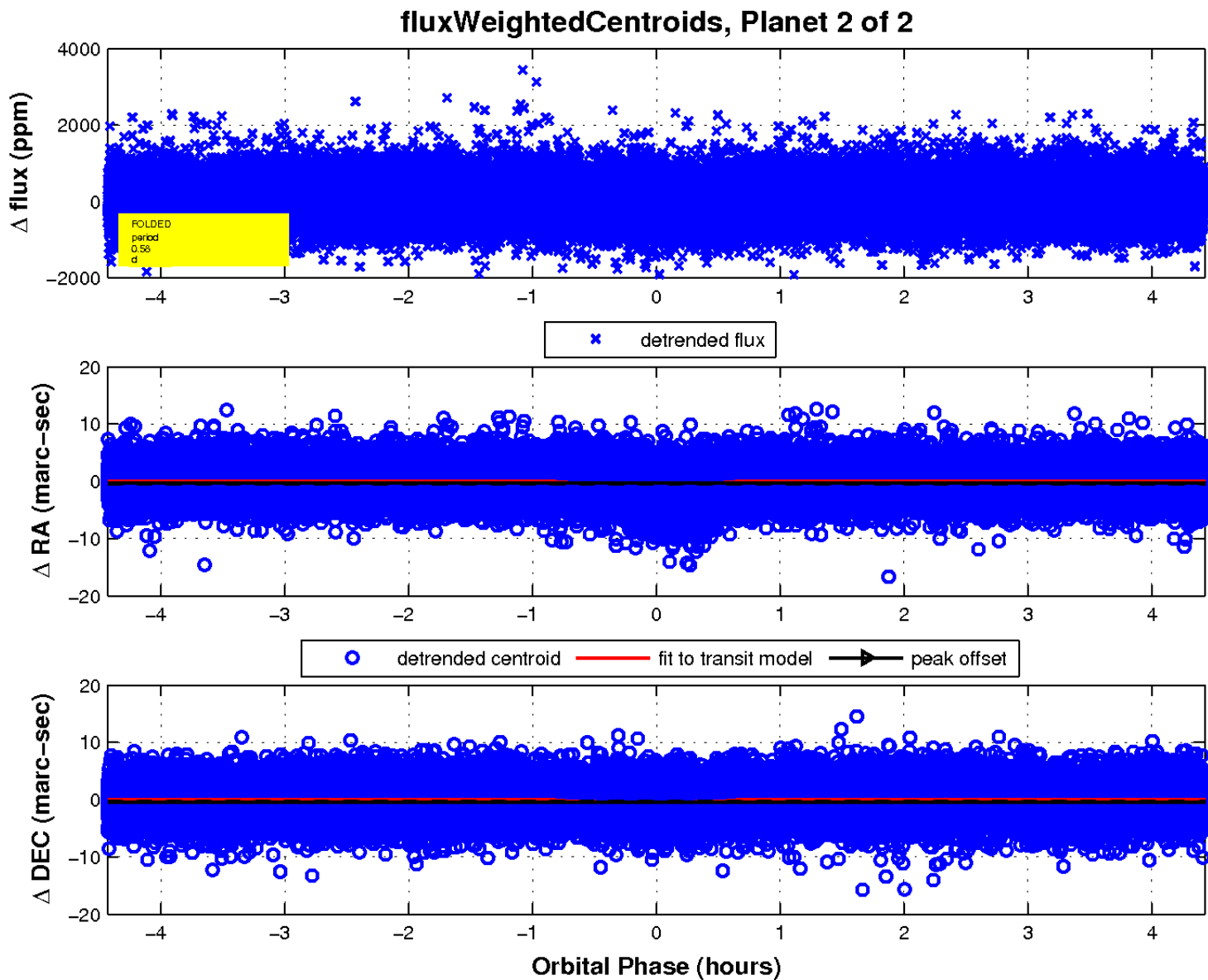
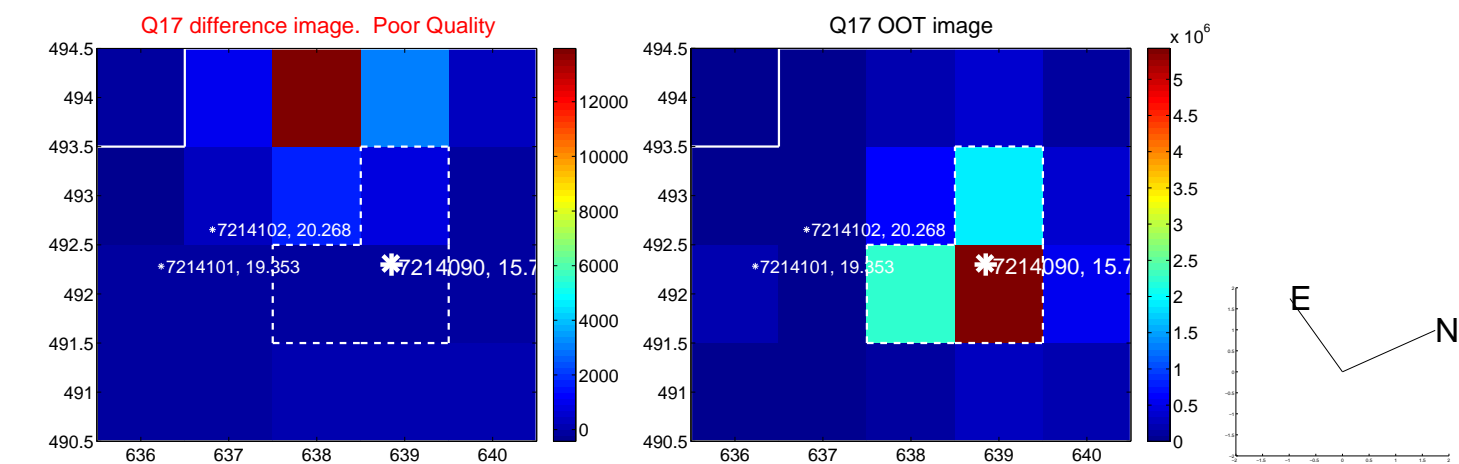
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

