

KIC 008197220

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})
008197220-01	OBS	No	0.673285	131.607463	10.4	4.416	8.2	5.1	2.13	7827	0.74	45561.36
008197220-02	OBS	No	38.662140	137.648571	262.8	3.341	8.5	10.3	2.13	7827	3.84	205.66
008197220-03	OBS	No	50.412543	137.988576	327.9	2.508	8.7	9.5	2.13	7827	4.42	144.37
008197220-04	OBS	No	133.926513	214.153146	299.2	5.325	8.5	7.4	2.13	7827	3.73	39.24
008197220-05	OBS	No	40.010239	141.630317	485.2	1.059	10.1	9.2	2.13	7827	4.99	196.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008197220-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008197220-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008197220-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV

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

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

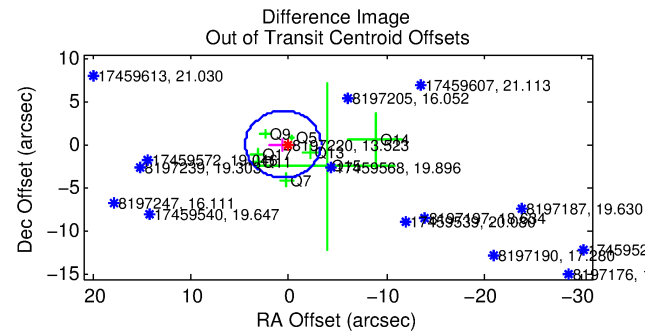
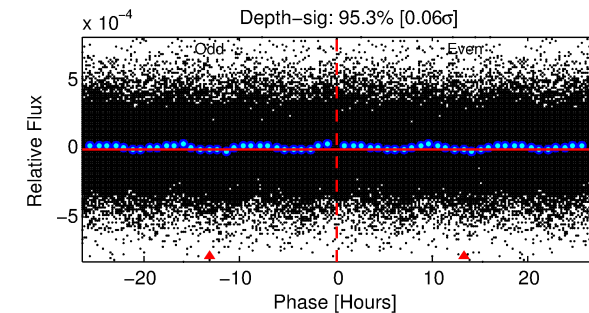
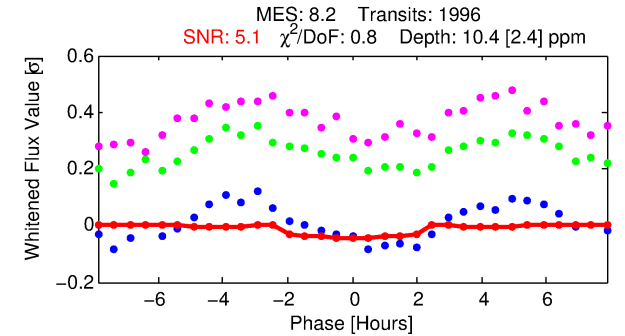
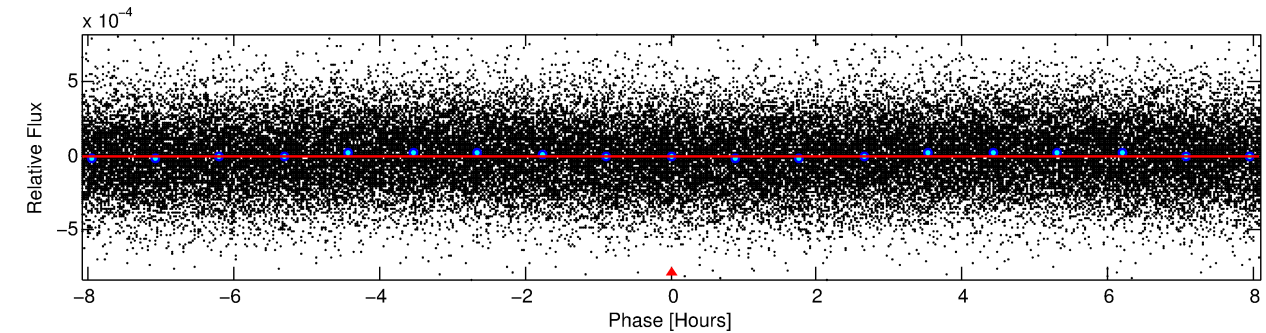
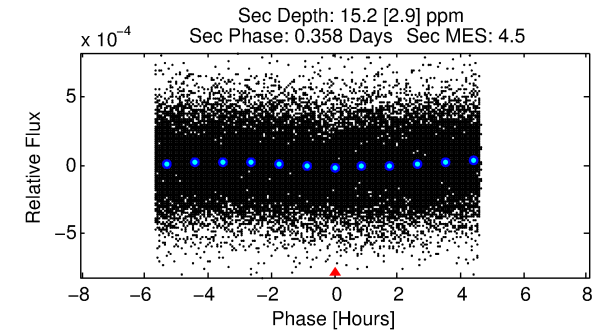
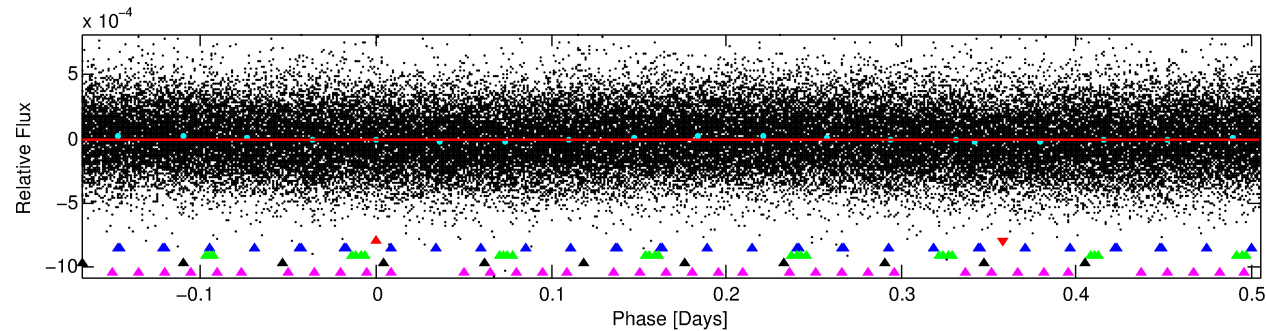
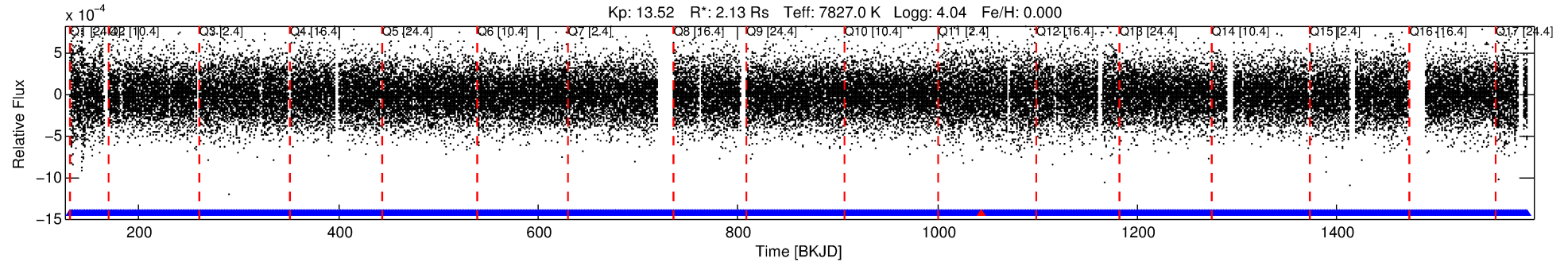
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197220-01

No Significant Match Found

DV One-Page Summary

KIC: 8197220 Candidate: 1 of 5 Period: 0.673 d



DV Fit Results:

Period = 0.67329 [0.00002] d
Epoch = 131.6075 [0.0086] BKJD
Rp/R* = 0.0032 [0.0019]
a/R* = 1.16 [1.06]
b = 0.75 [2.16]
Seff = 45561.36 [16202.08]
Teq = 3725 [331] K
Re = 0.75 [0.47] Re
a = 0.0183 [0.0039] AU
Ag = 5.04 [6.18] [0.65σ]
Teffp = 8631 [2579] K [1.89σ]

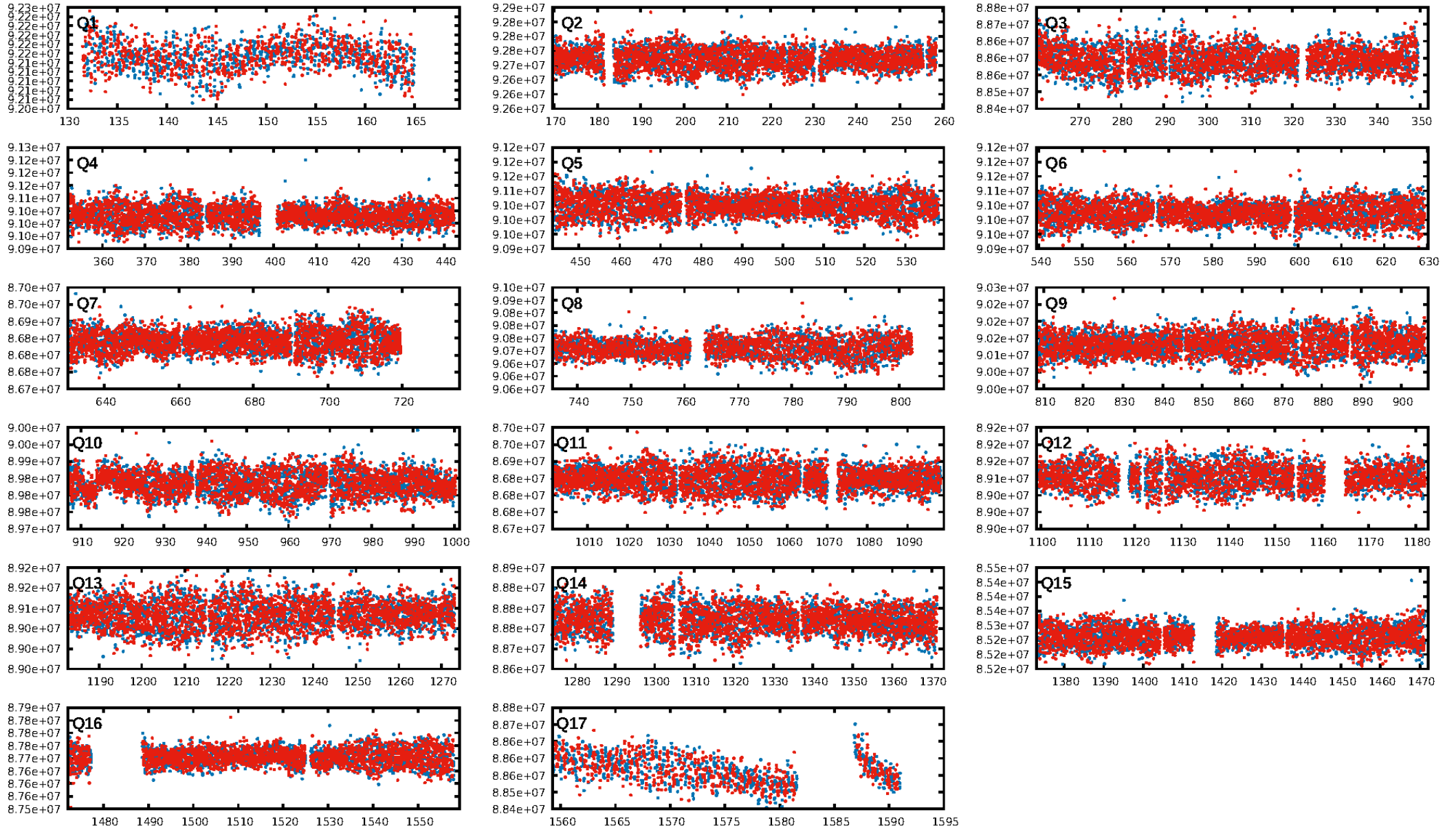
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [164.63σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.11e-08
RollingBand-fgt: 1.00 [1906/1907]
GhostDiagnostic-chr: 1.086
Centroid-sig: 13.4%
Centroid-so: 2.342 arcsec [1.05σ]
OotOffset-rm: 0.579 arcsec [0.45σ]
KicOffset-rm: 0.545 arcsec [0.48σ]
OotOffset-st: 1/3/0/4 [8]
KicOffset-st: 1/3/0/4 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 1.00 [17/17]

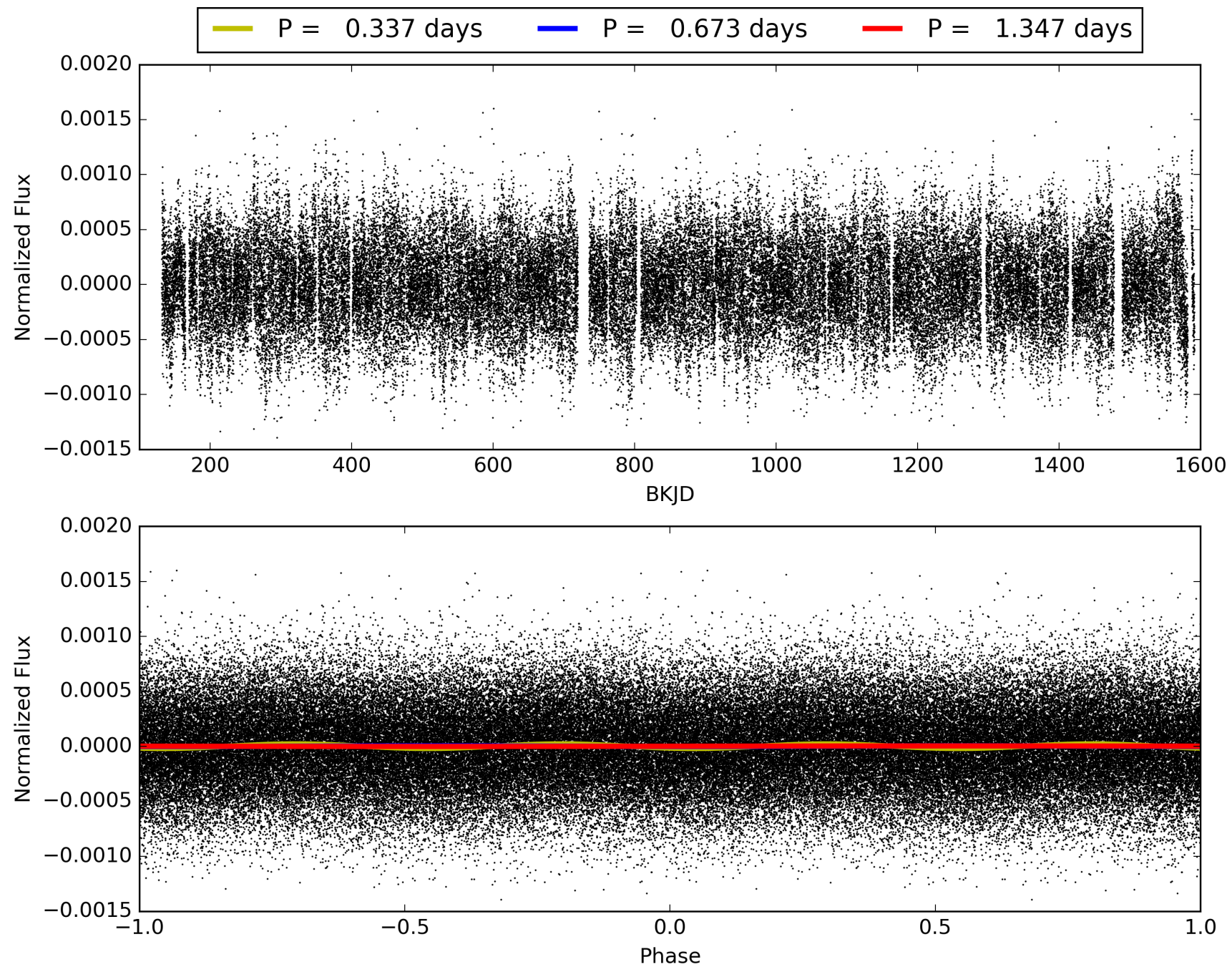
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:46:56 Z

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

TCE 008197220-01, PDC Light Curves

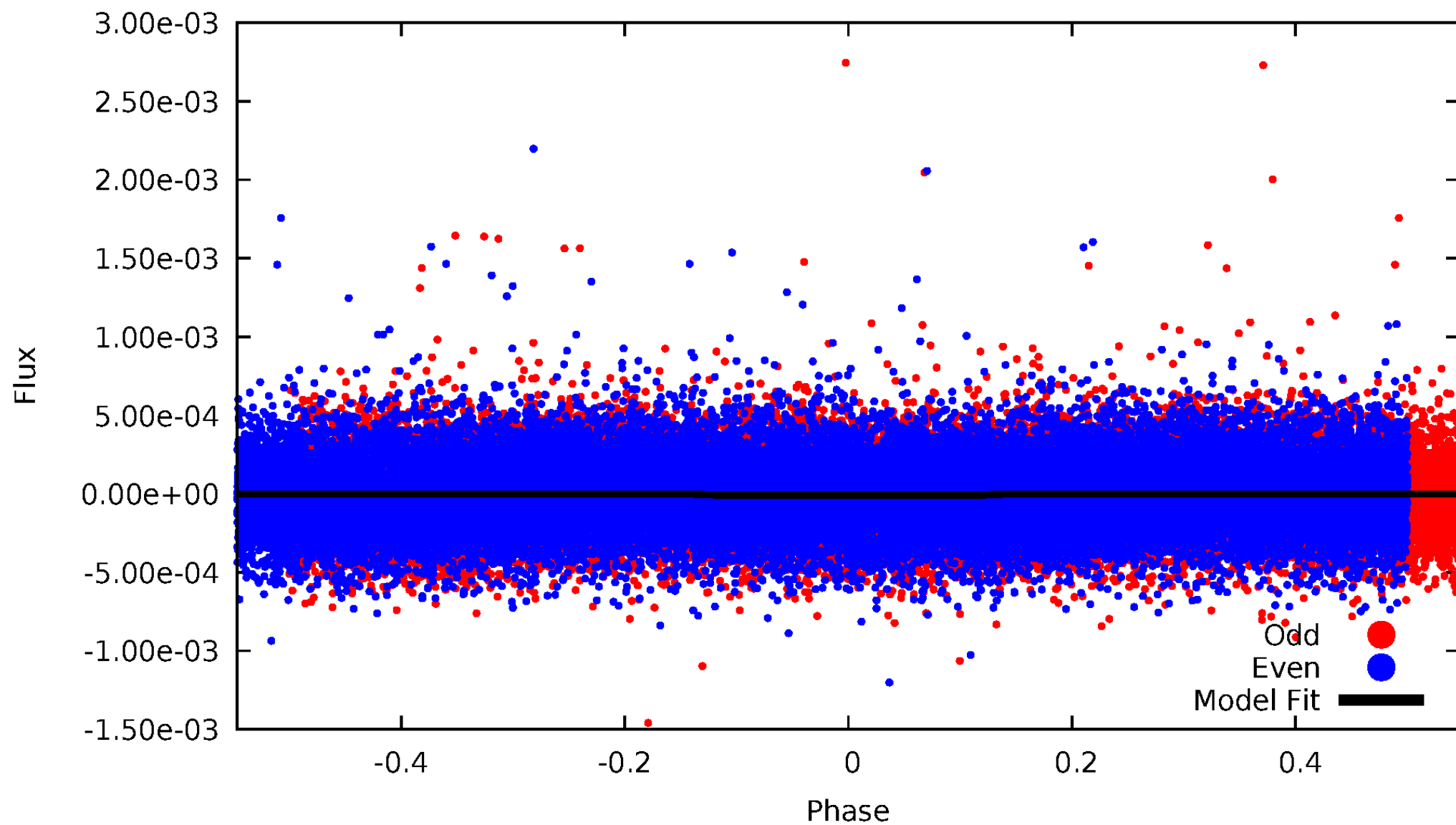


TCE 008197220-01



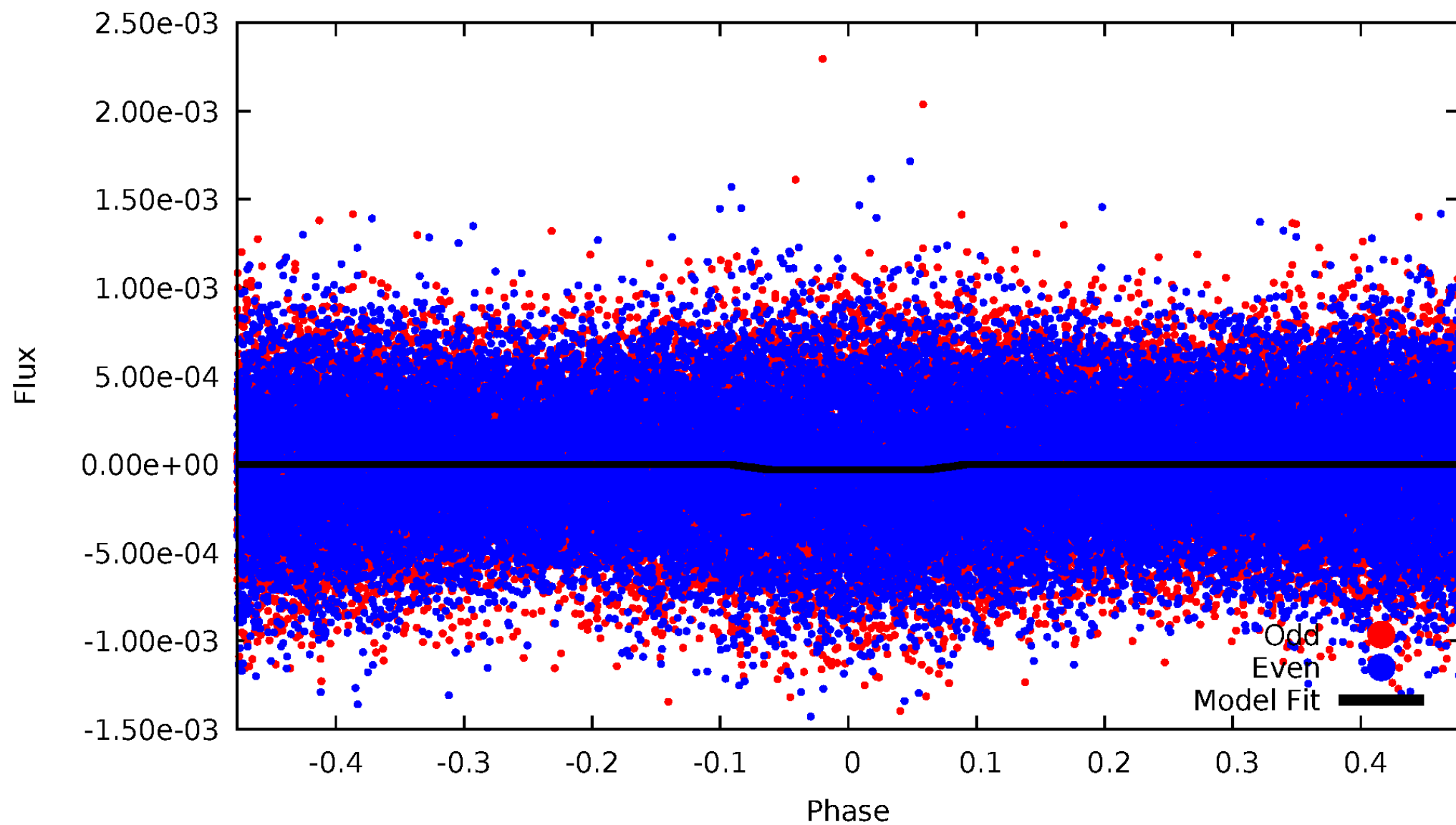
DV Odd/Even

TCE 008197220-01

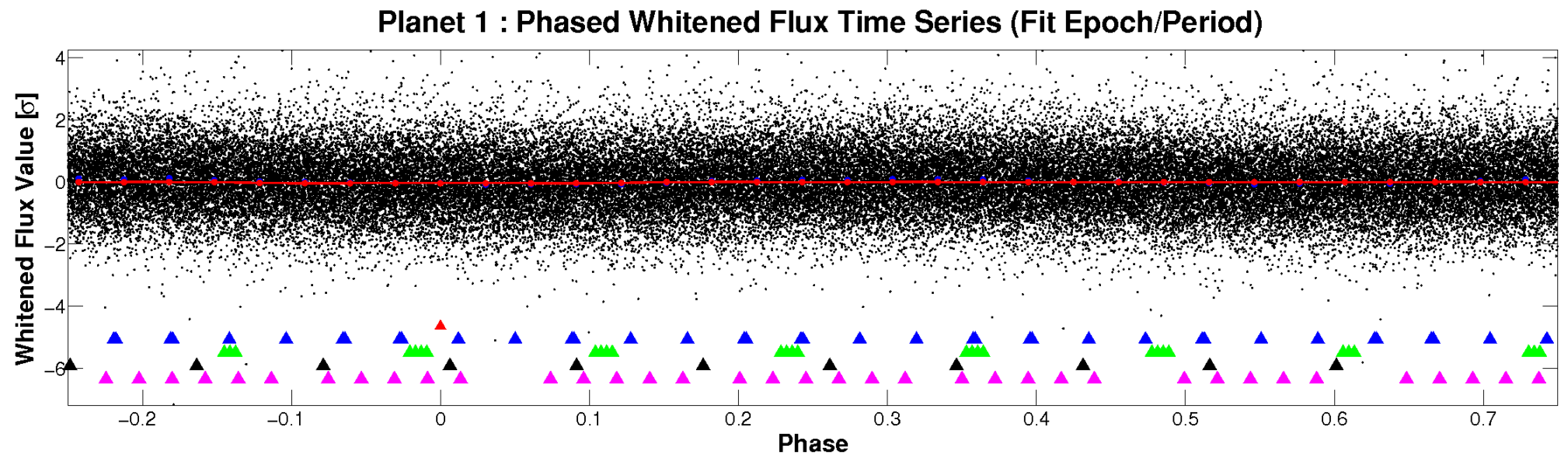
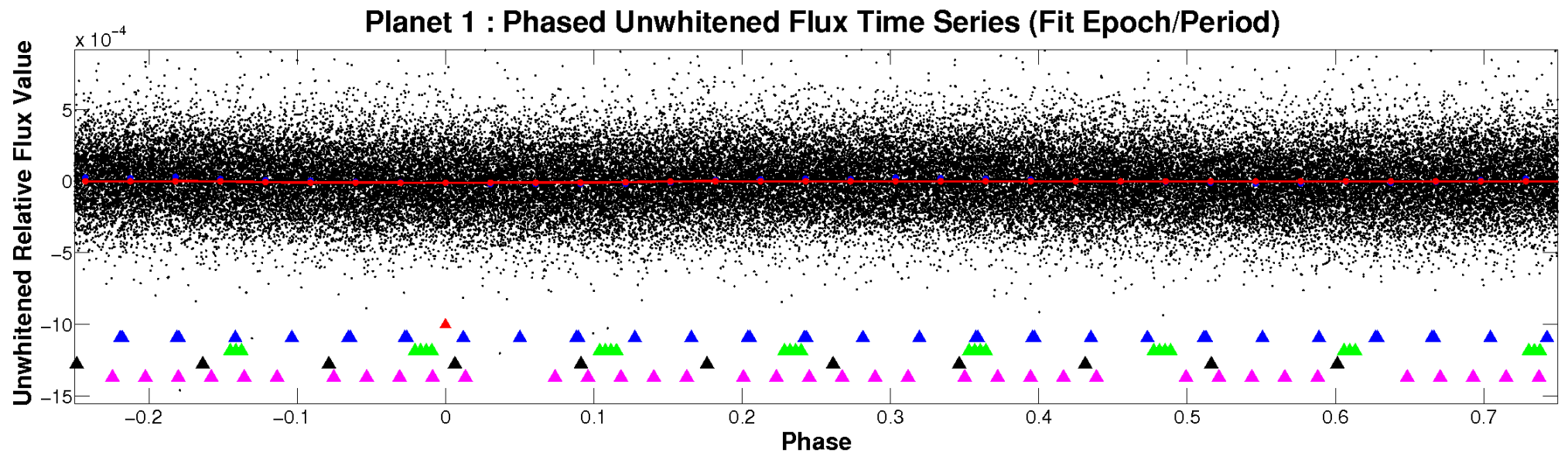


ALT Odd/Even

TCE 008197220-01

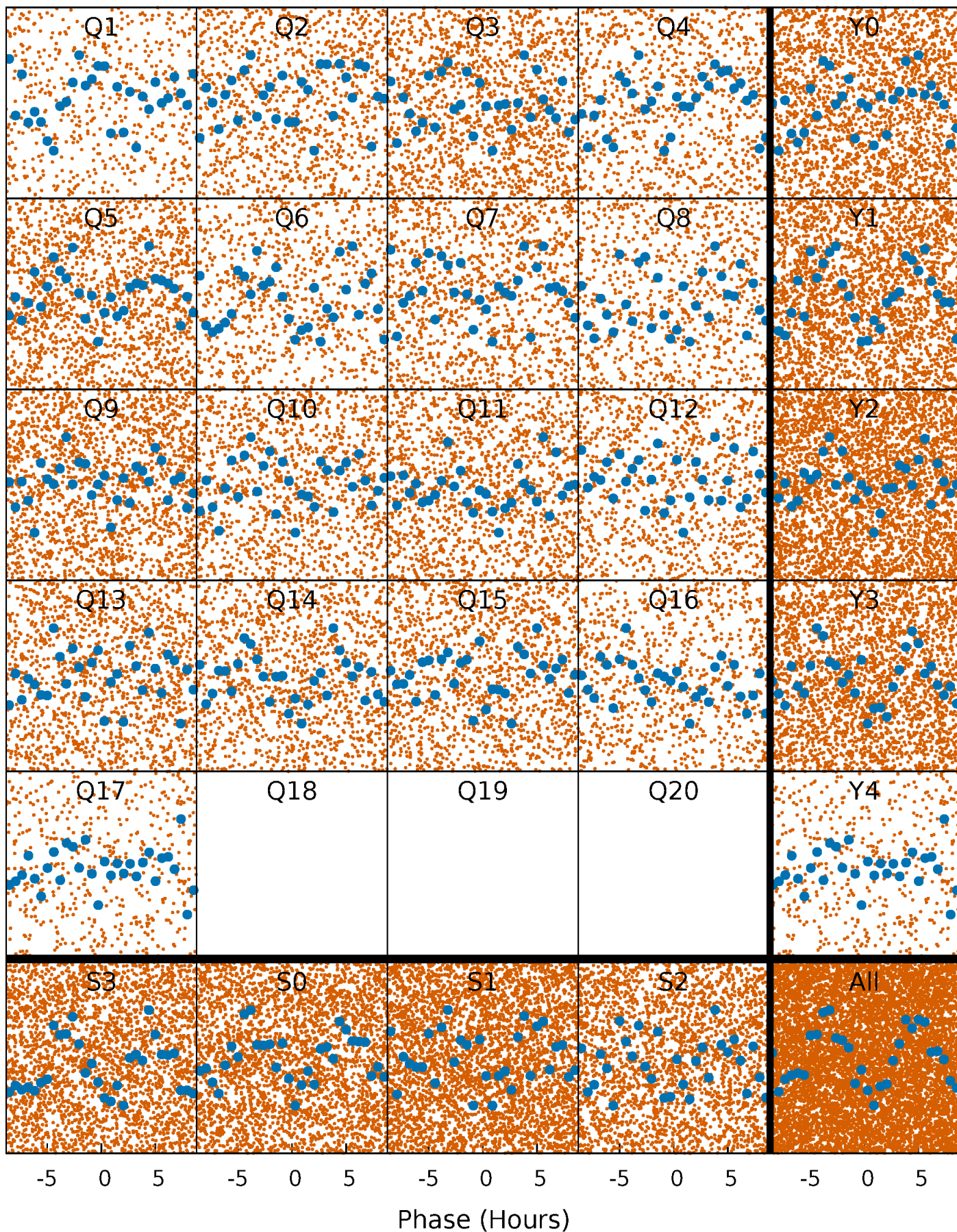


Non-Whitened Vs. Whitened Light Curve



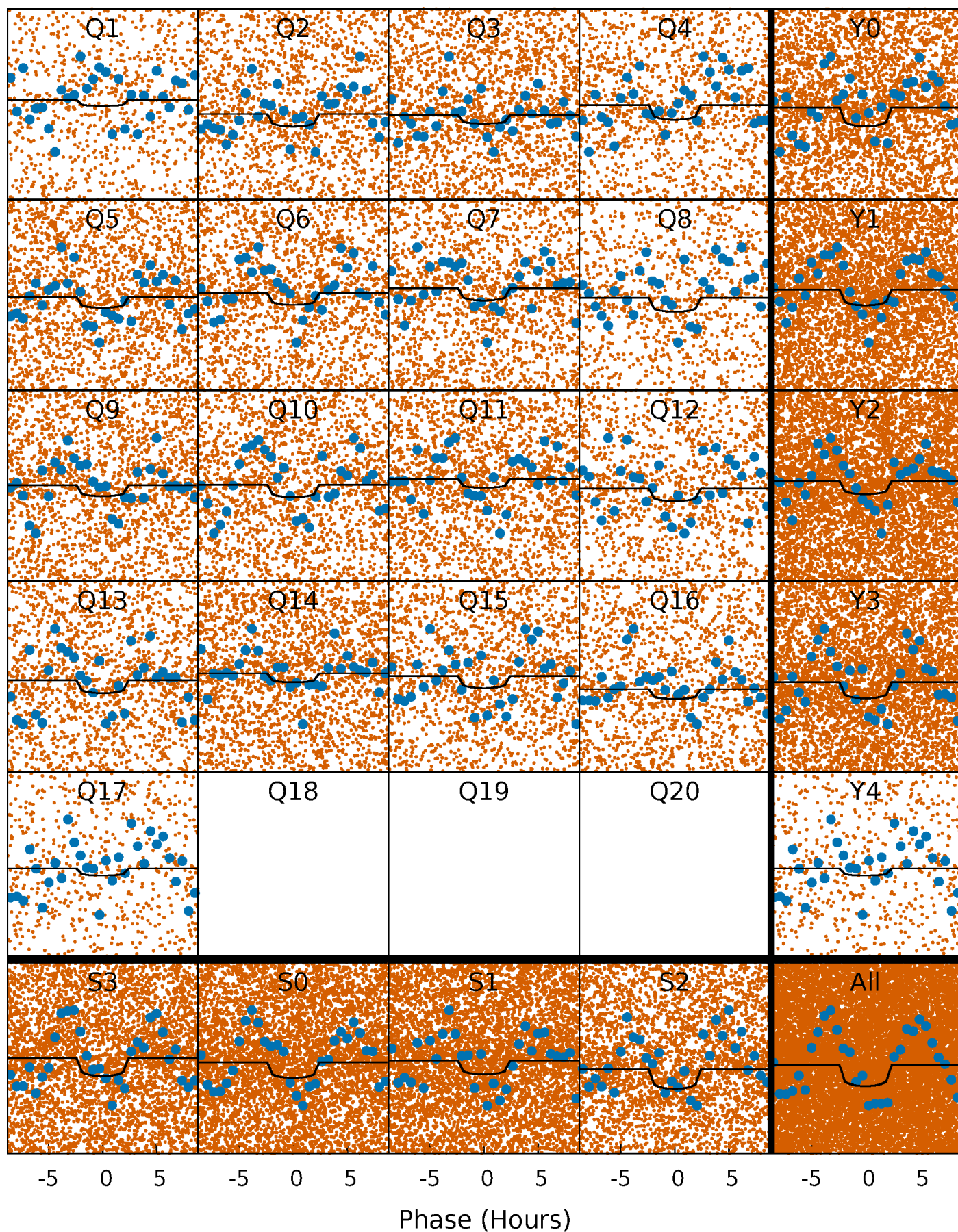
PDC Quarter-Phased Transit Curves

TCE 008197220-01 P= 0.673285 Days $T_0=131.607463$ (BKJD)



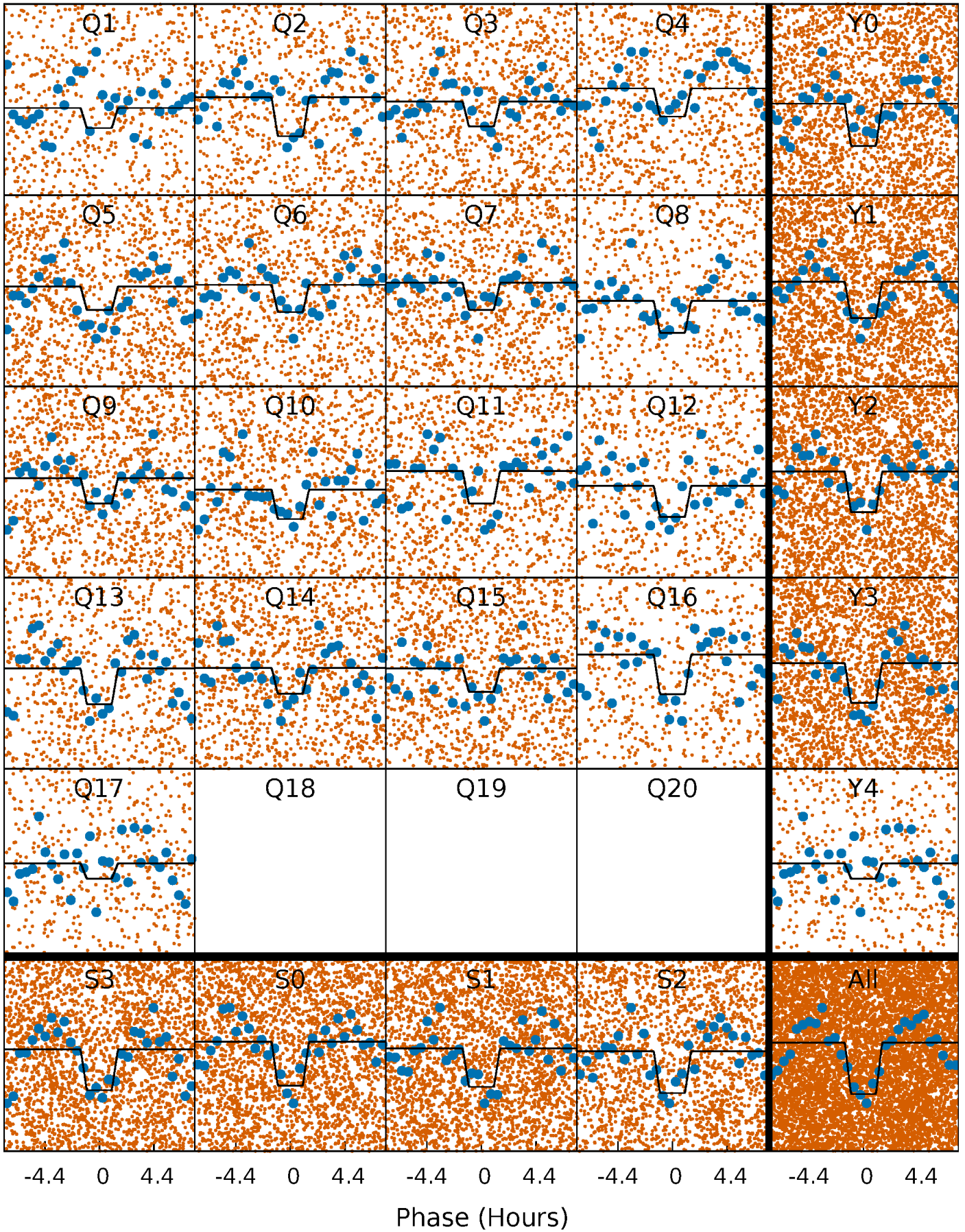
DV Quarter-Phased Transit Curves

TCE 008197220-01 P= 0.673285 Days $T_0=131.607463$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

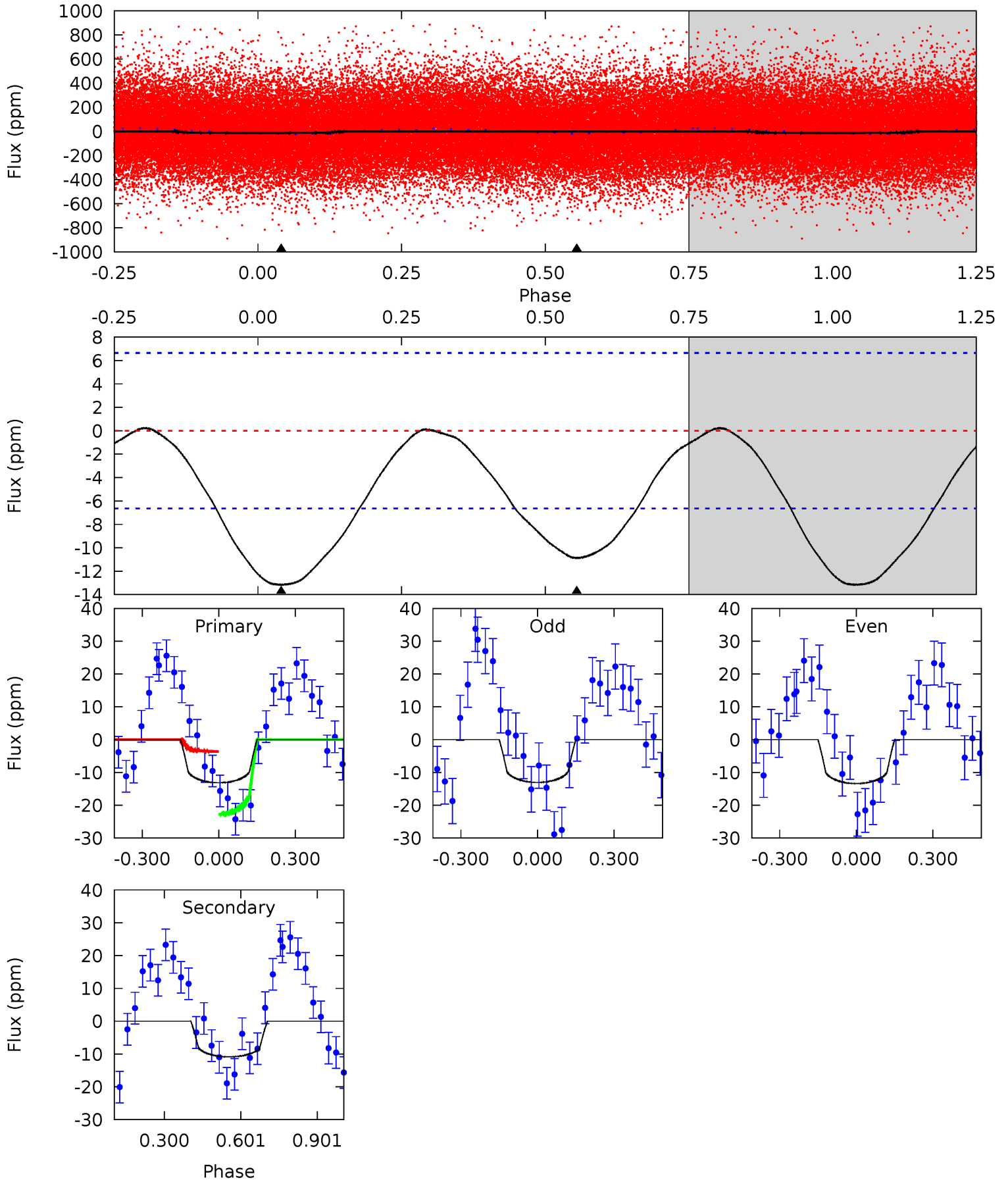
TCE 008197220-01 P= 0.673328 Days $T_0=131.592542$ (BKJD)



DV Model-Shift Uniqueness Test

008197220-01, P = 0.673285 Days, E = 130.934178 Days

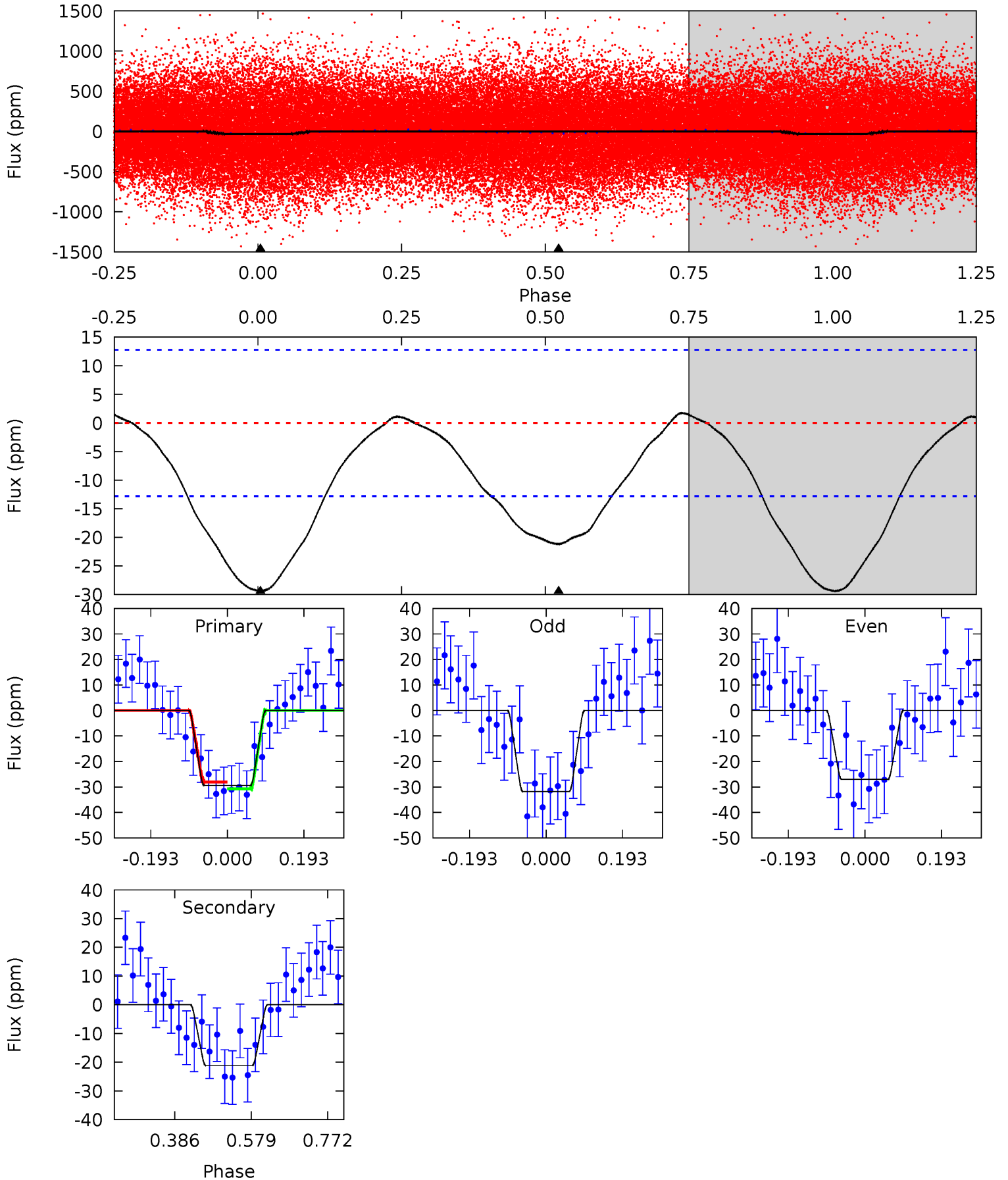
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.57	7.08	0	0	4.33	1.04	0.13	8.57	8.57	7.08	7.08	0.11	0.91	0.02	6.25



Alt Model-Shift Uniqueness Test

008197220-01, P = 0.673328 Days, E = 130.919214 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	7.33	0	0	4.42	1.30	0.43	10.2	10.2	7.33	7.33	0.82	1.22	0.06	0.46



Stellar Parameters For KIC 008197220

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7827^{+214}_{-322}	$4.037^{+0.176}_{-0.144}$	$0.000^{+0.200}_{-0.350}$	$2.130^{+0.467}_{-0.519}$	$1.799^{+0.145}_{-0.339}$	$0.262^{+0.258}_{-0.113}$
	+3%/-4%	+4%/-4%	+inf%/-inf%	+22%/-24%	+8%/-19%	+98%/-43%
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 008197220-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 2	$0.75^{+0.46}_{-0.38}$	5161^{+351}_{-351}	7539^{+5137}_{-1859}	$3.438^{+9.957}_{-2.097}$
Alt.	-21 ± 3	$1.23^{+0.49}_{-0.40}$	5166^{+374}_{-348}	6802^{+1960}_{-1212}	$2.427^{+3.150}_{-1.140}$

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 $A_{obs} \gg 1.0$

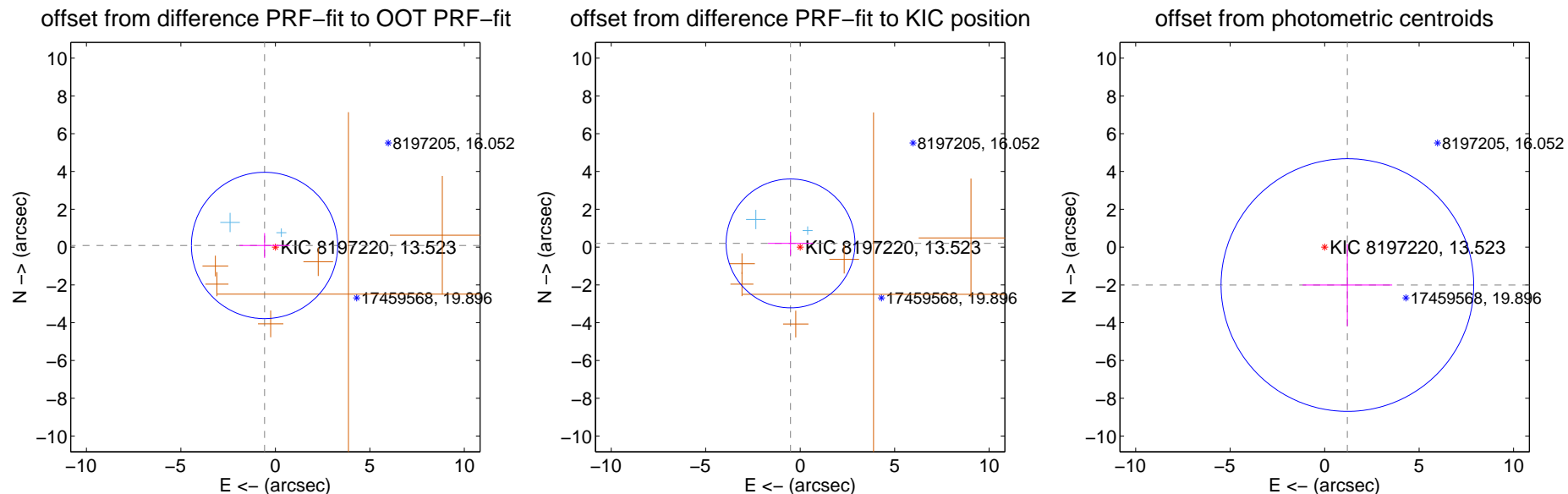
DV Centroid Data

Supplemental centroid analysis for 008197220-01. Kepler magnitude: 13.52. Transit SNR 5.11

There are 2 quarters with good PRF difference image offsets

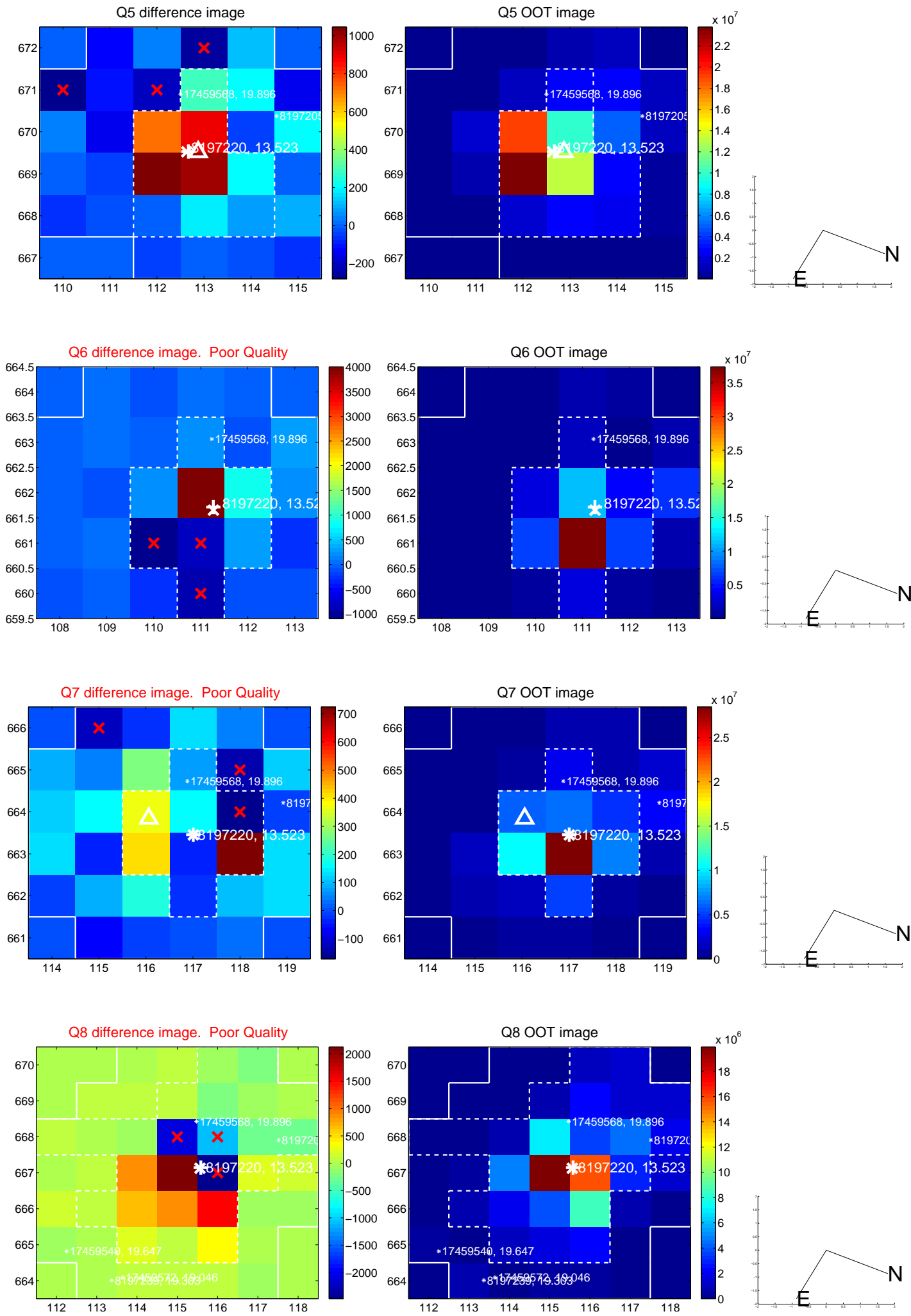
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.579 ± 1.290	0.45	0.572 ± 1.328	0.087 ± 0.656
PRF-fit source offset from KIC position	0.545 ± 1.136	0.48	0.509 ± 1.196	0.195 ± 0.619
photometric centroid source offset	2.34 ± 2.23	1.05	-1.20 ± 2.37	-2.01 ± 2.17

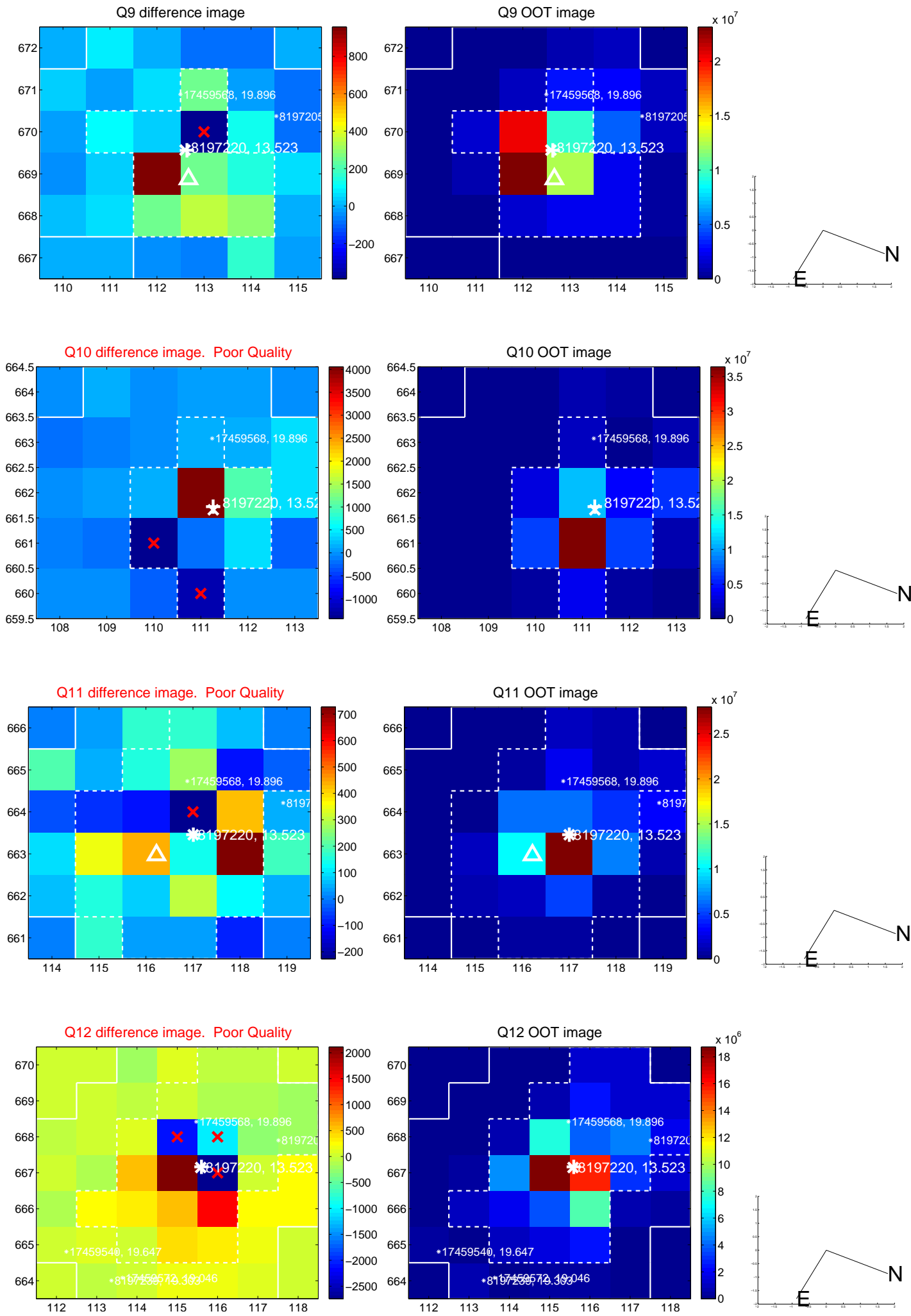


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

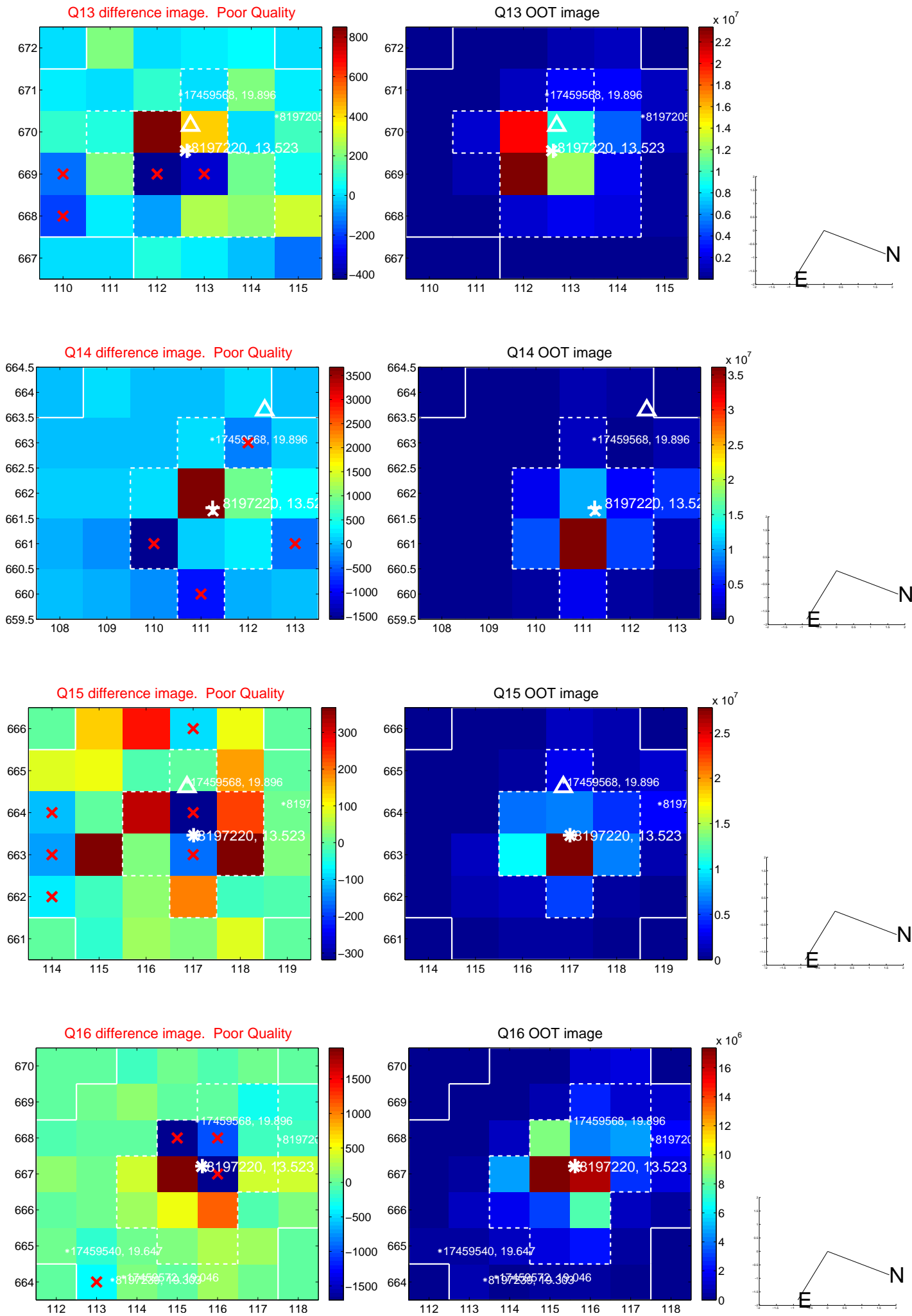
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



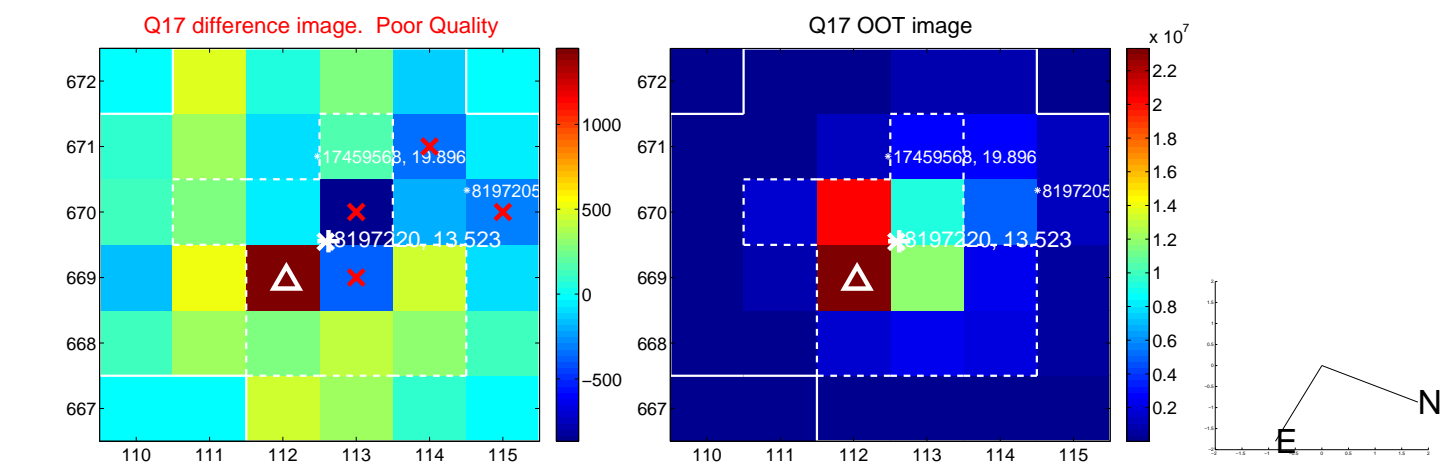
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



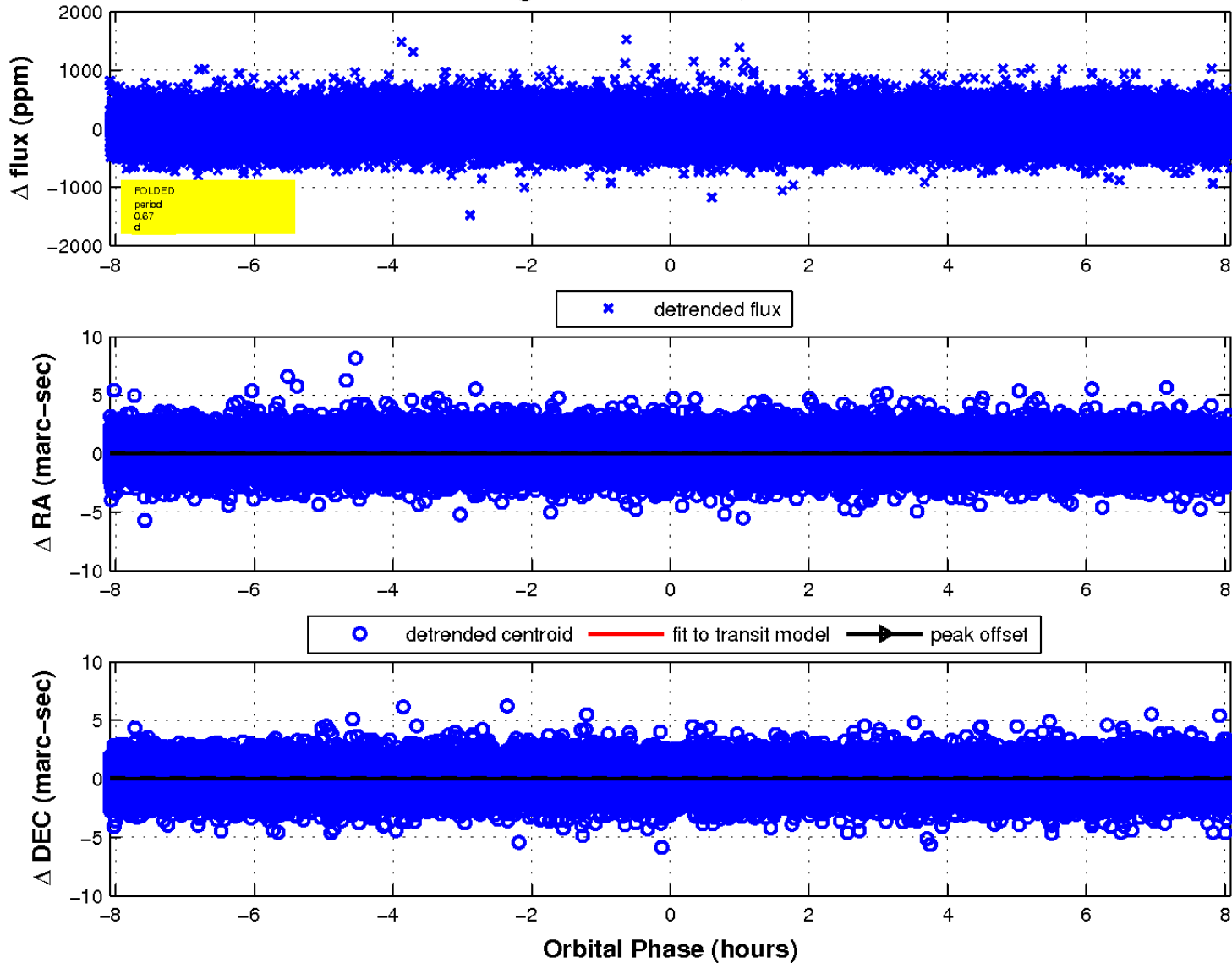
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

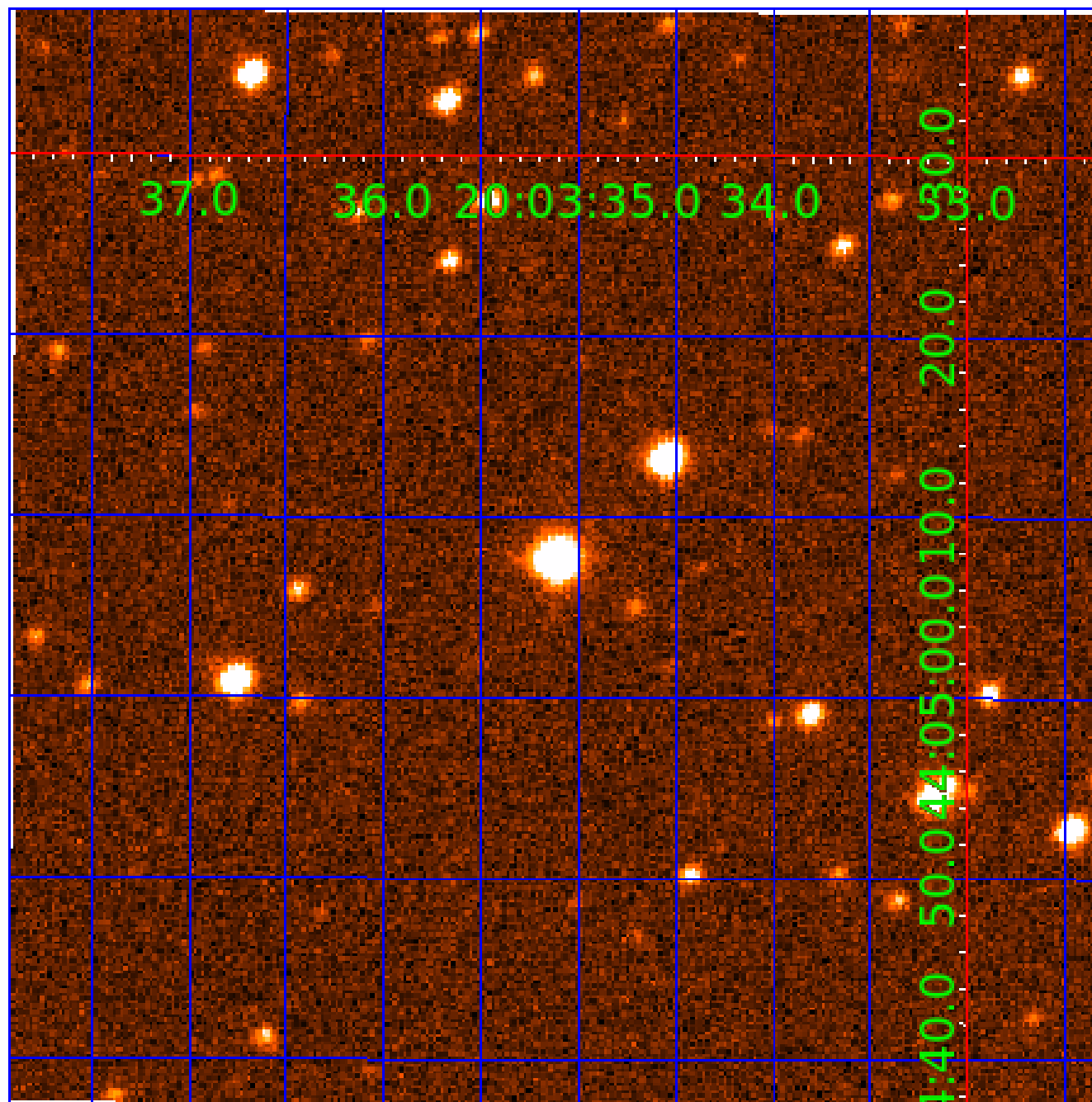


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 008197220

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})
008197220-01	OBS	No	0.673285	131.607463	10.4	4.416	8.2	5.1	2.13	7827	0.74	45561.36
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008197220-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008197220-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008197220-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV

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

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

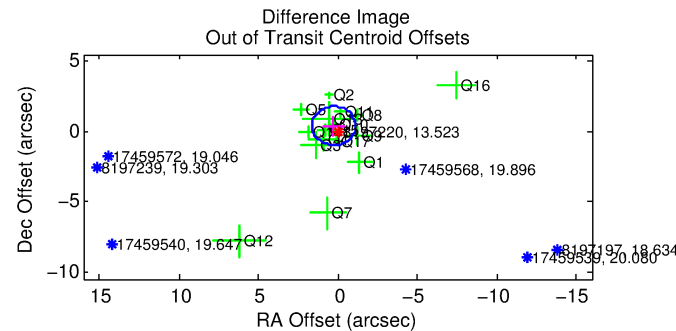
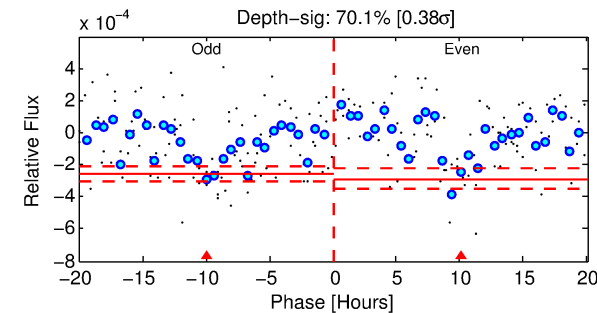
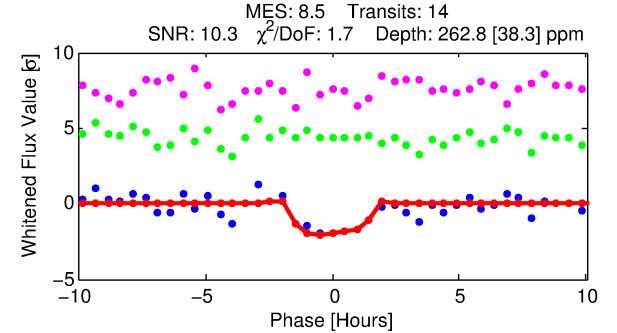
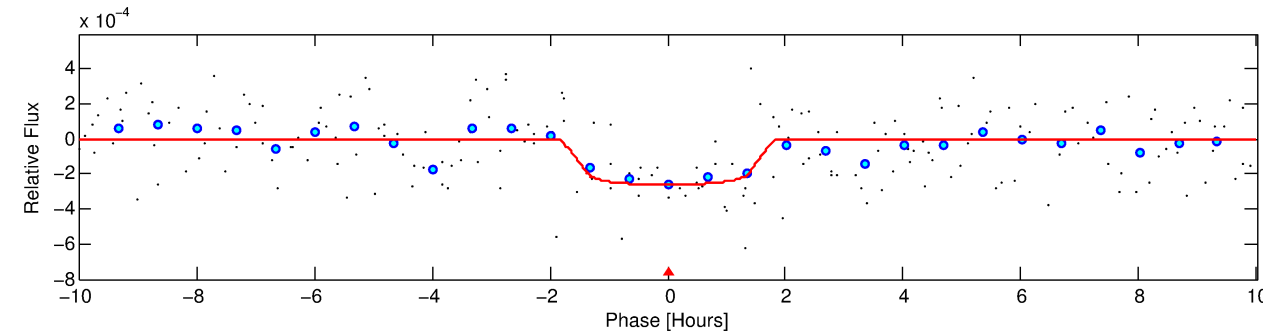
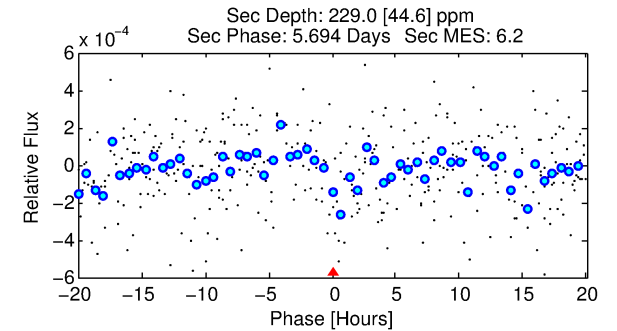
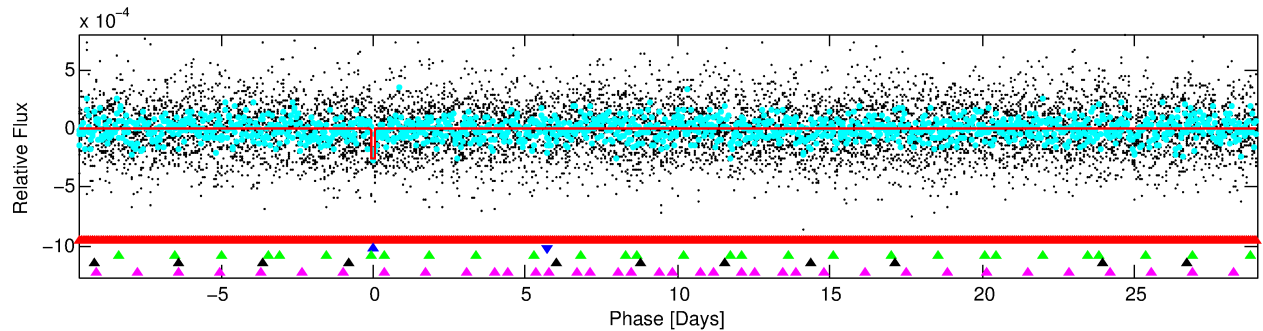
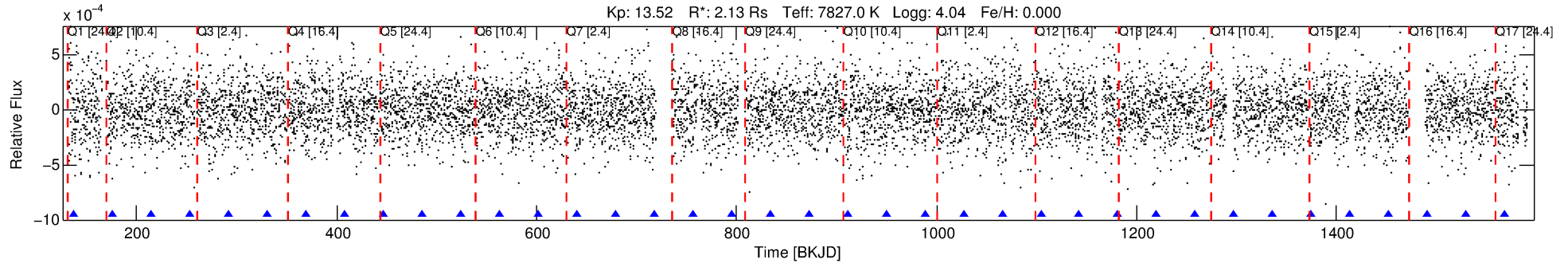
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197220-02

No Significant Match Found

DV One-Page Summary

KIC: 8197220 Candidate: 2 of 5 Period: 38.662 d



DV Fit Results:

Period = 38.66214 [0.00067] d
Epoch = 137.6486 [0.0140] BKJD
Rp/R* = 0.0165 [0.0146]
a/R* = 52.70 [289.33]
b = 0.82 [2.17]
Seff = 205.66 [73.13]
Teff = 966 [86] K
Rp = 3.84 [3.52] Re
a = 0.2724 [0.0575] AU
Ag = 633.12 [1142.25] [0.55σ]
Teffp = 7489 [3340] K [1.95σ]

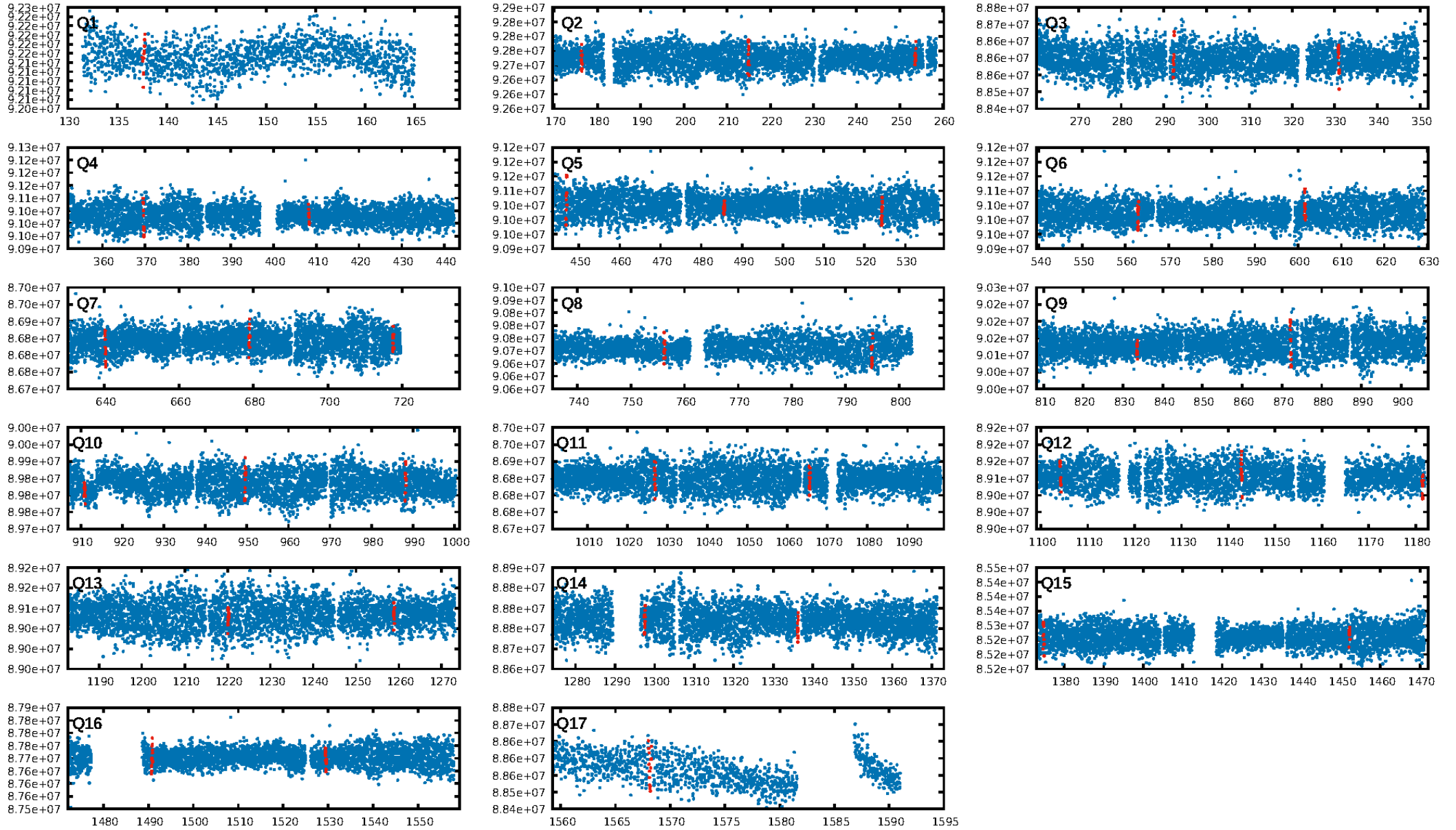
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [164.63σ]
LongPeriod-sig: 100.0% [9.23σ]
ModelChiSquare2-sig: 21.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.27e-09
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: -107.7
Centroid-sig: 1.5%
Centroid-so: 0.983 arcsec [1.30σ]
OotOffset-rm: 0.482 arcsec [1.05σ]
KicOffset-rm: 0.511 arcsec [0.86σ]
OotOffset-st: 3/4/4/5 [16]
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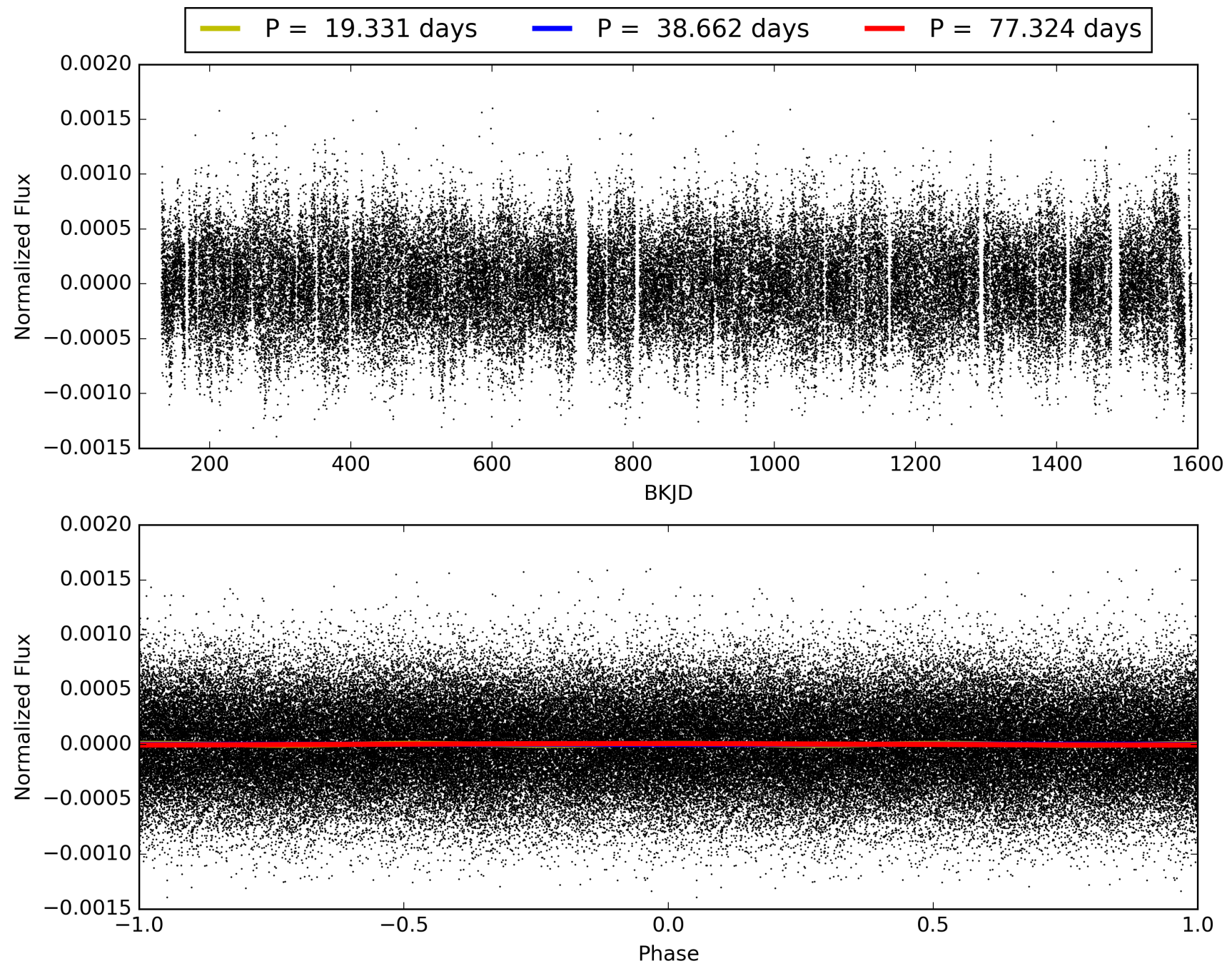
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:47:17 Z

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

TCE 008197220-02, PDC Light Curves

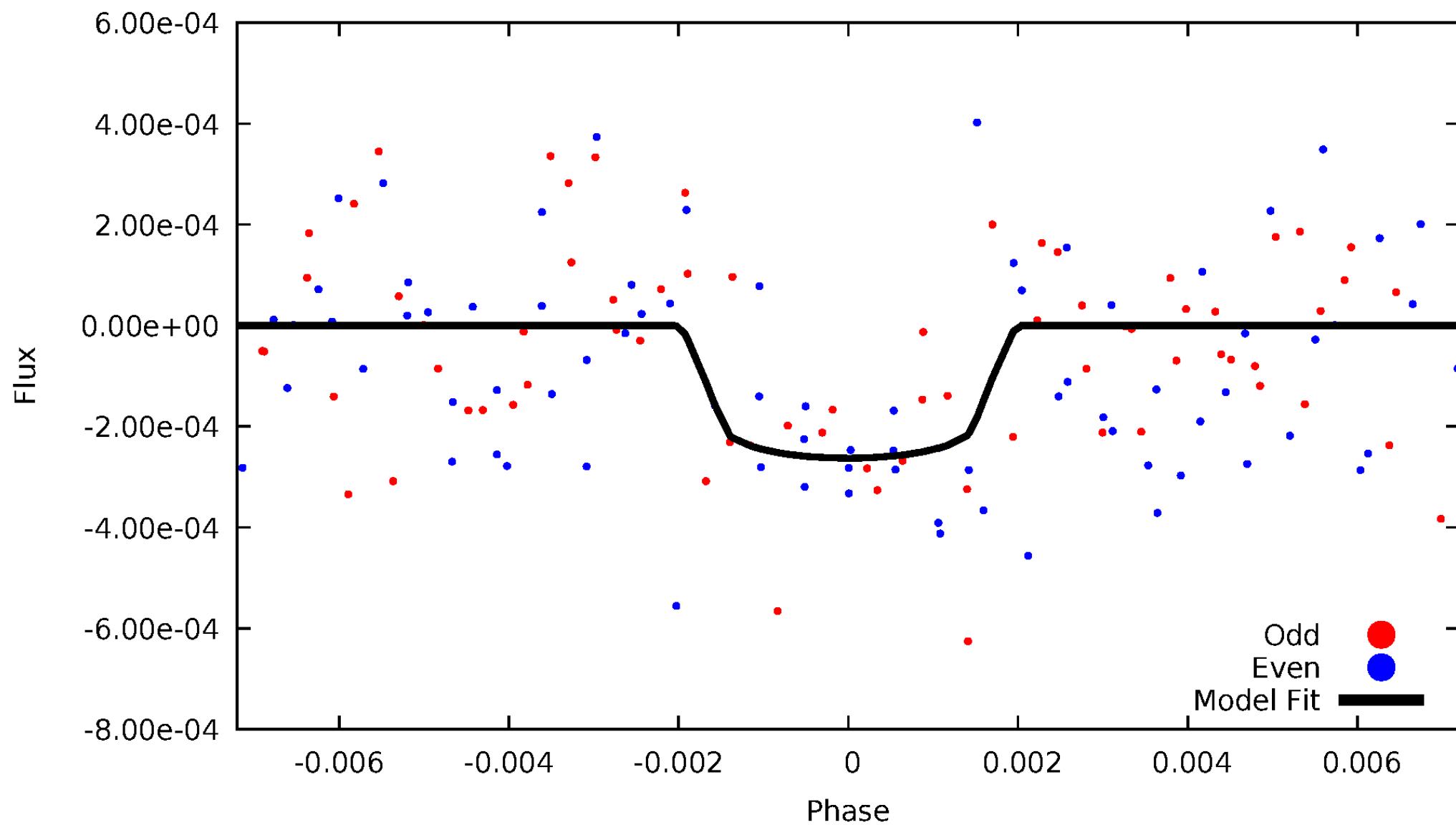


TCE 008197220-02



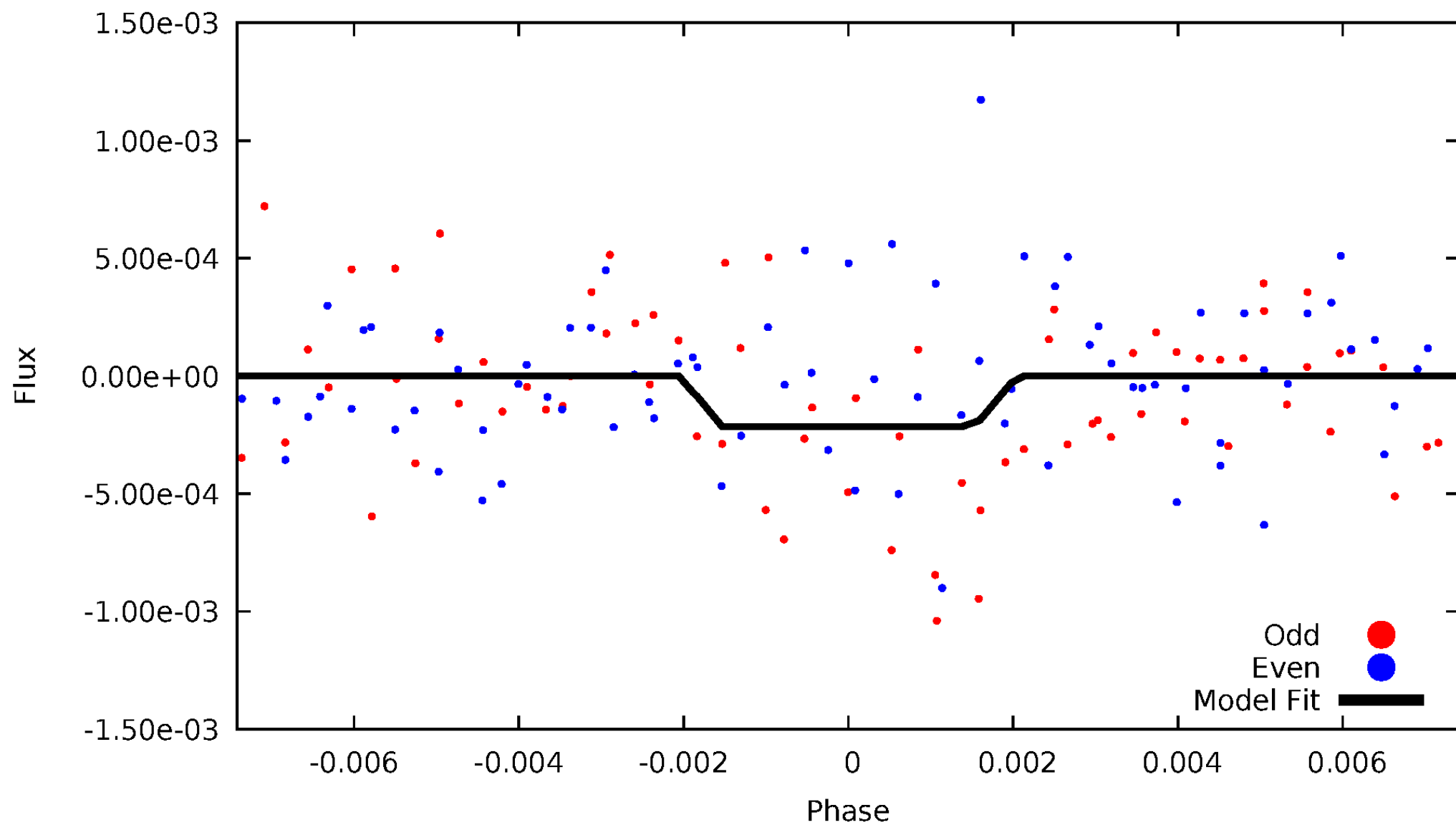
DV Odd/Even

TCE 008197220-02



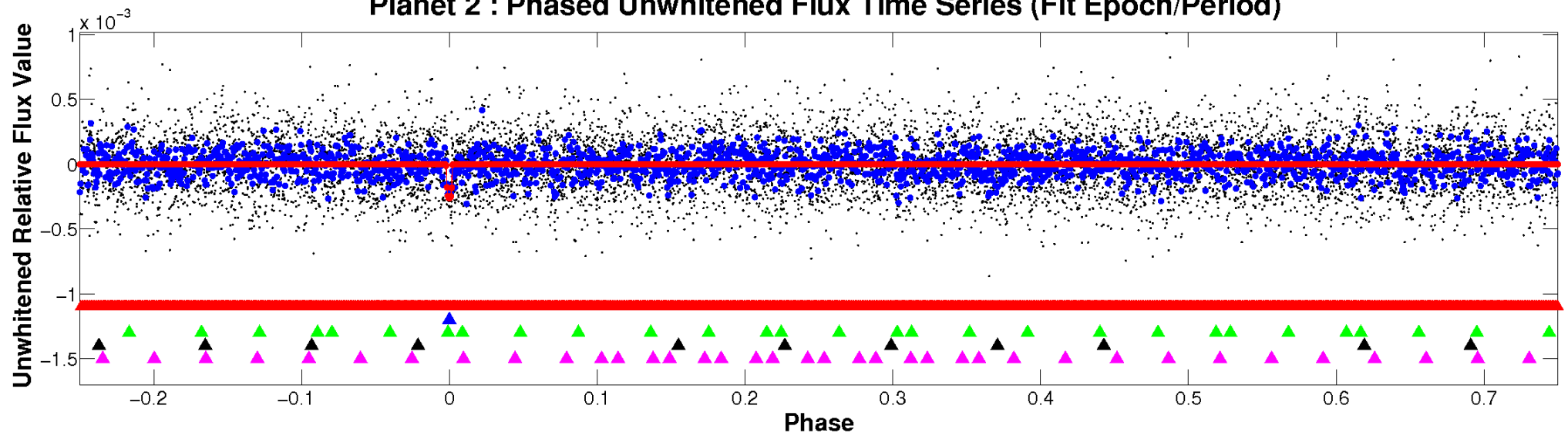
ALT Odd/Even

TCE 008197220-02

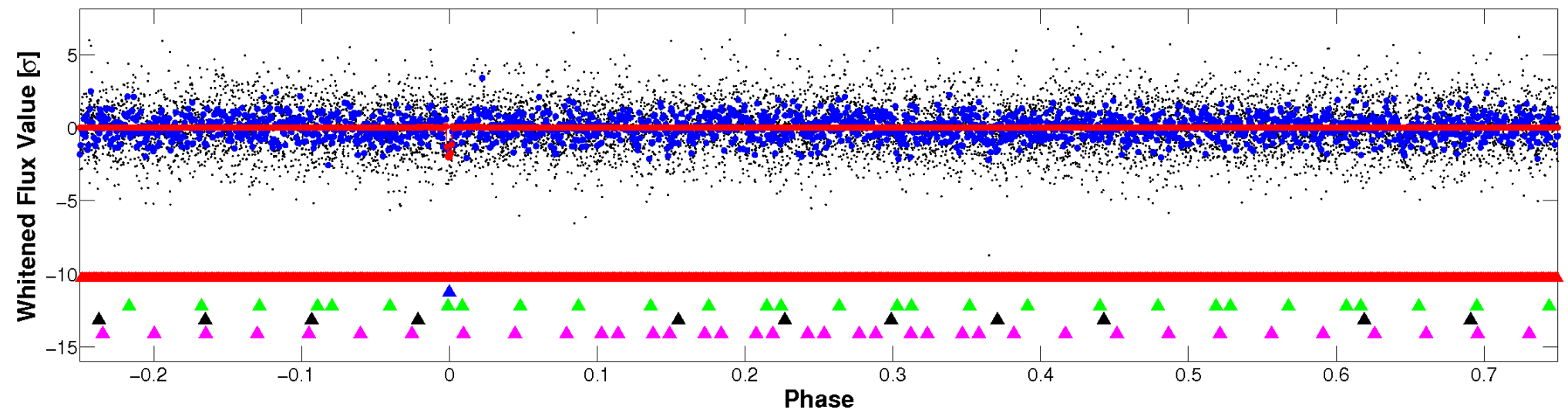


Non-Whitened Vs. Whitened Light Curve

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

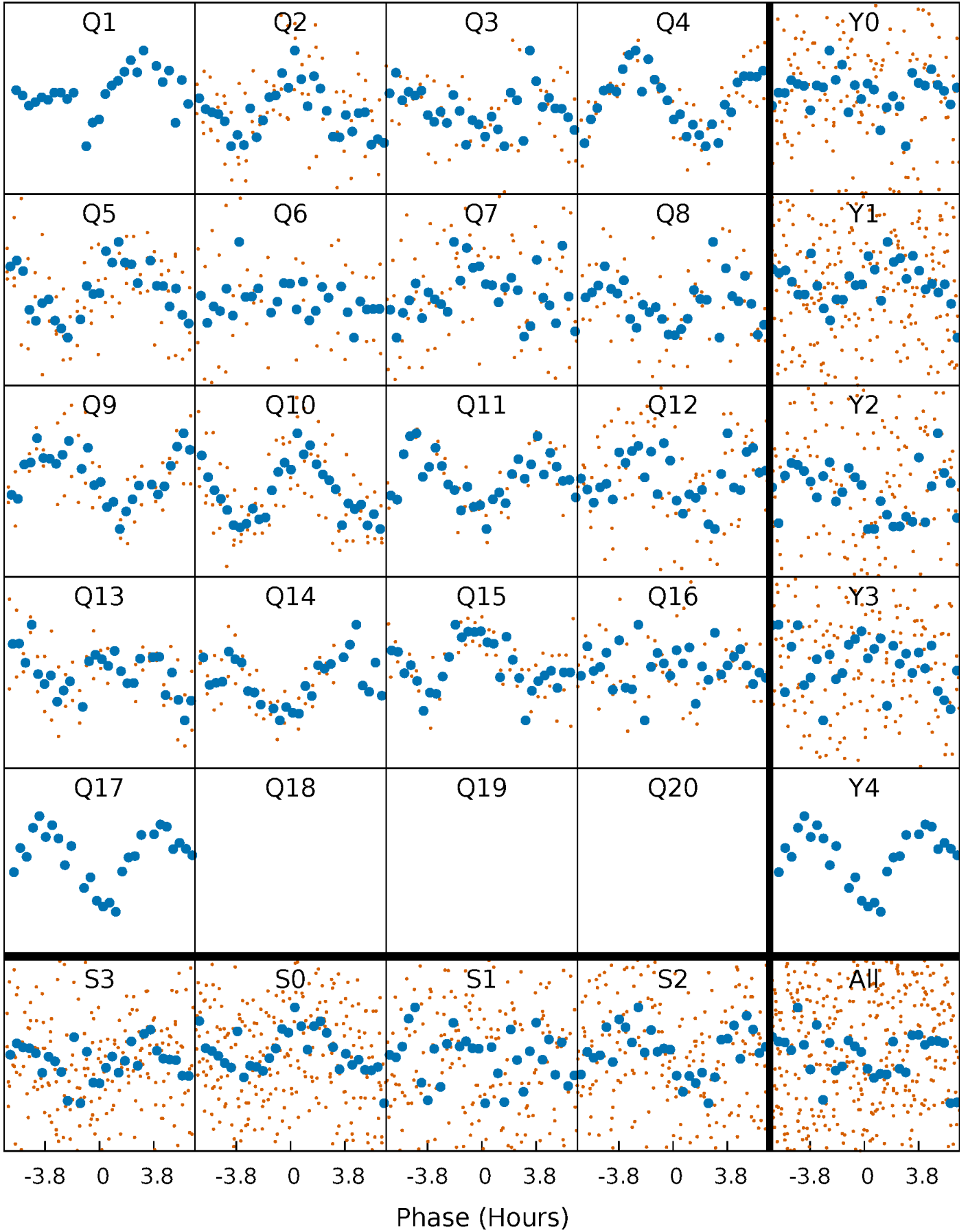


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



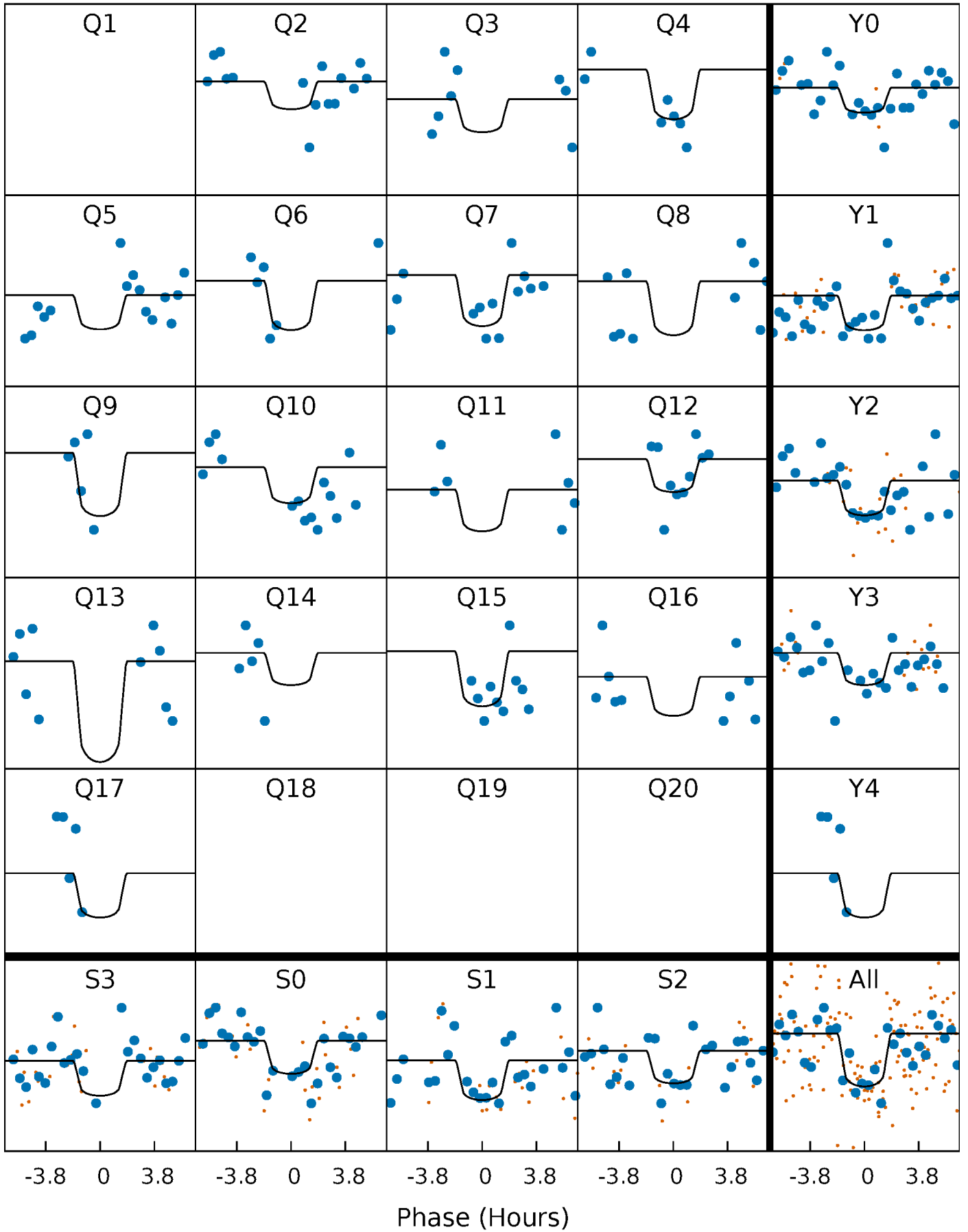
PDC Quarter-Phased Transit Curves

TCE 008197220-02 P= 38.662140 Days $T_0=137.648571$ (BKJD)



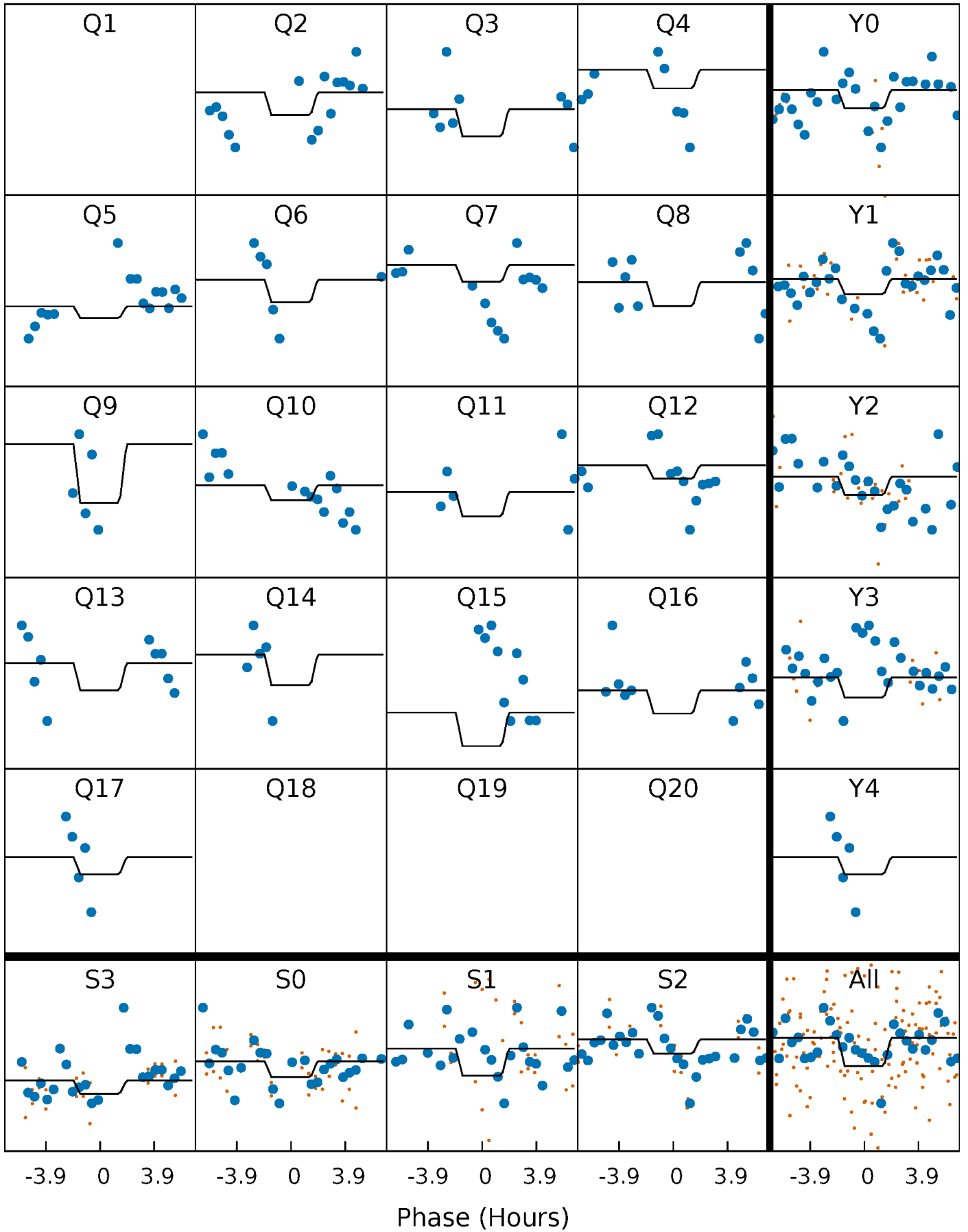
DV Quarter-Phased Transit Curves

TCE 008197220-02 P= 38.662140 Days $T_0=137.648571$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

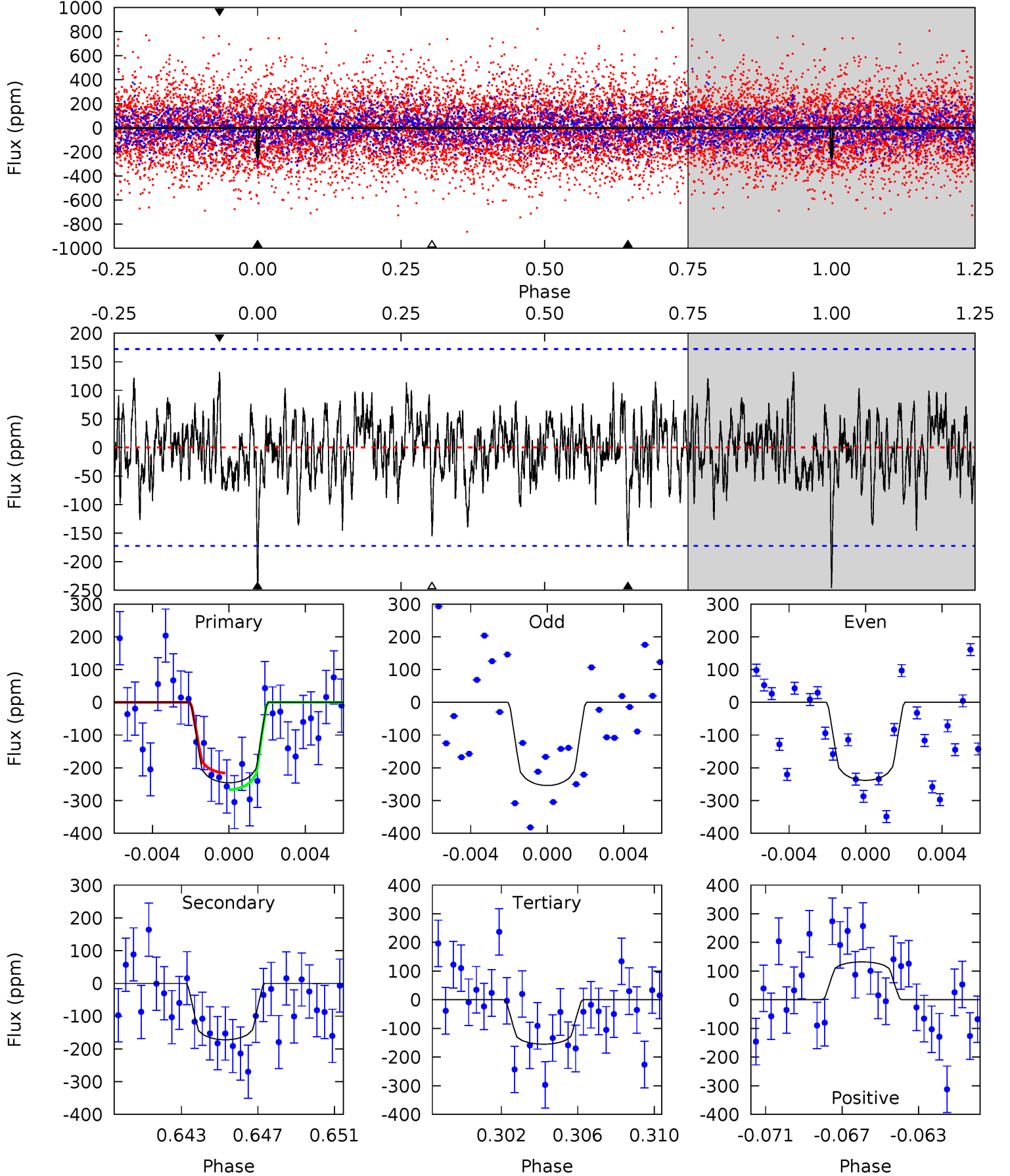
TCE 008197220-02 P= 38.661443 Days $T_0=137.650598$ (BKJD)



DV Model-Shift Uniqueness Test

008197220-02, P = 38.662140 Days, E = 98.986431 Days

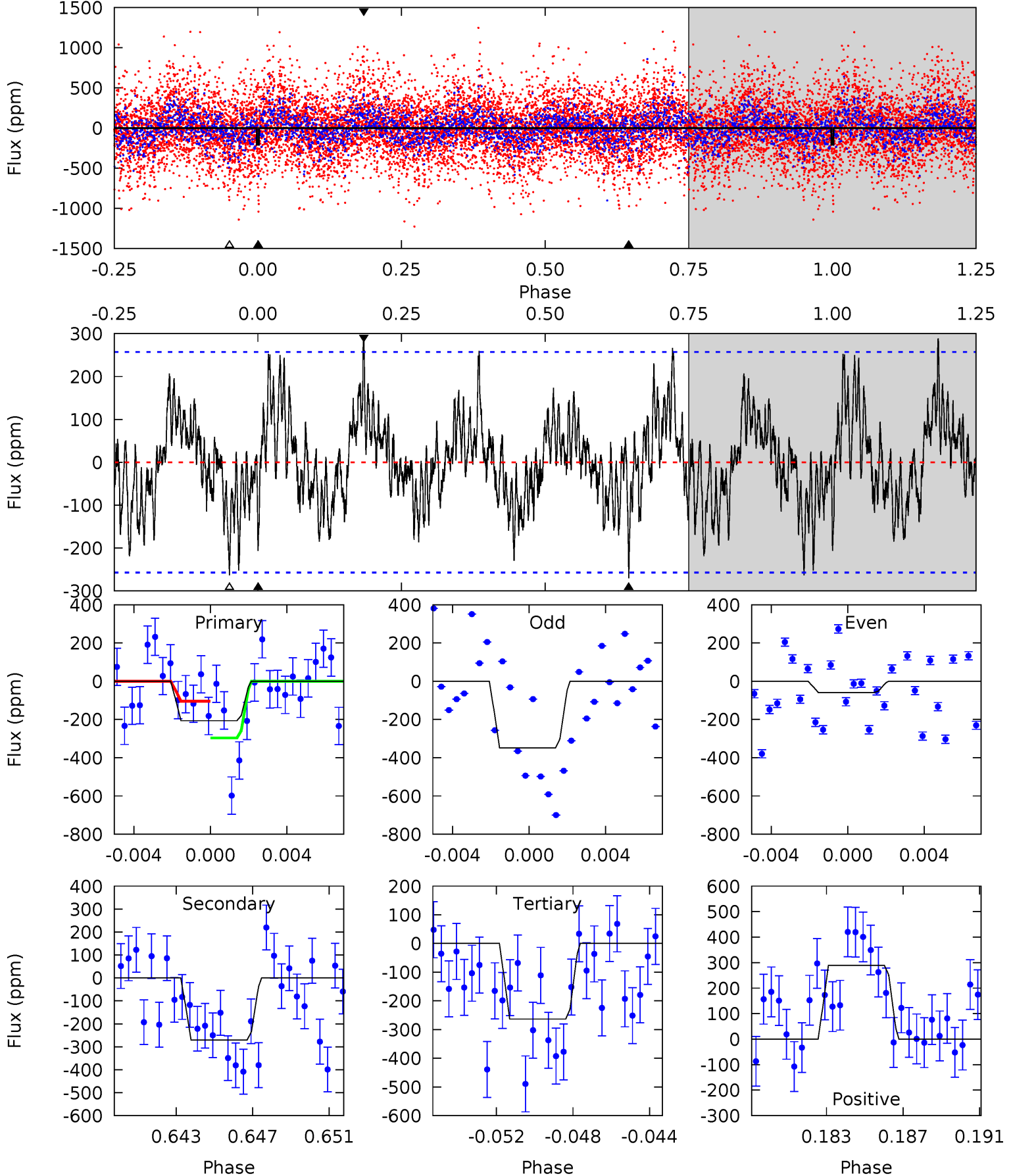
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.42	5.20	4.68	3.99	5.20	2.88	1.33	2.74	3.44	0.52	1.21	0.24	1.04	0.35	0.75



Alt Model-Shift Uniqueness Test

008197220-02, P = 38.661443 Days, E = 98.989155 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.17	5.46	5.33	5.84	5.20	2.88	1.84	-1.15	-1.67	0.14	-0.38	2.93	0.99	0.52	1.94



Stellar Parameters For KIC 008197220

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7827^{+214}_{-322}	$4.037^{+0.176}_{-0.144}$	$0.000^{+0.200}_{-0.350}$	$2.130^{+0.467}_{-0.519}$	$1.799^{+0.145}_{-0.339}$	$0.262^{+0.258}_{-0.113}$
	+3%/-4%	+4%/-4%	+inf%/-inf%	+22%/-24%	+8%/-19%	+98%/-43%
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 008197220-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-172 ± 33	$4.21^{+3.17}_{-2.69}$	1337^{+95}_{-88}	6311^{+5950}_{-1397}	365^{+2617}_{-237}
Alt.	-270 ± 49	$3.89^{+3.12}_{-2.40}$	1340^{+88}_{-91}	7535^{+8645}_{-1987}	711^{+4113}_{-504}

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

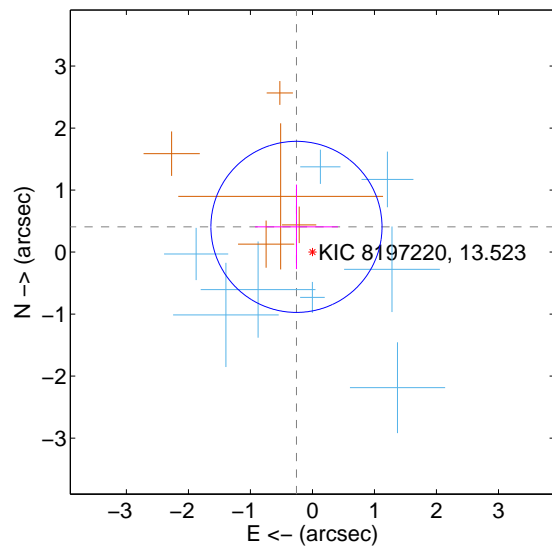
Supplemental centroid analysis for 008197220-02. Kepler magnitude: 13.52. Transit SNR 10.28

There are 8 quarters with good PRF difference image offsets

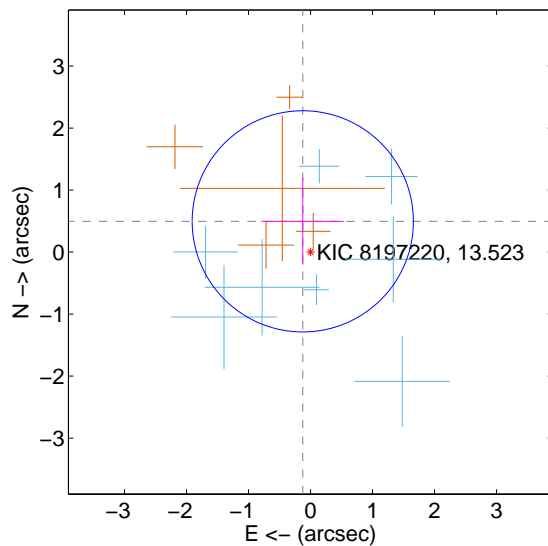
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.482 ± 0.460	1.05	0.258 ± 0.668	0.407 ± 0.682
PRF-fit source offset from KIC position	0.511 ± 0.595	0.86	0.125 ± 0.667	0.496 ± 0.698
photometric centroid source offset	0.98 ± 0.76	1.30	-0.45 ± 0.81	-0.88 ± 0.74

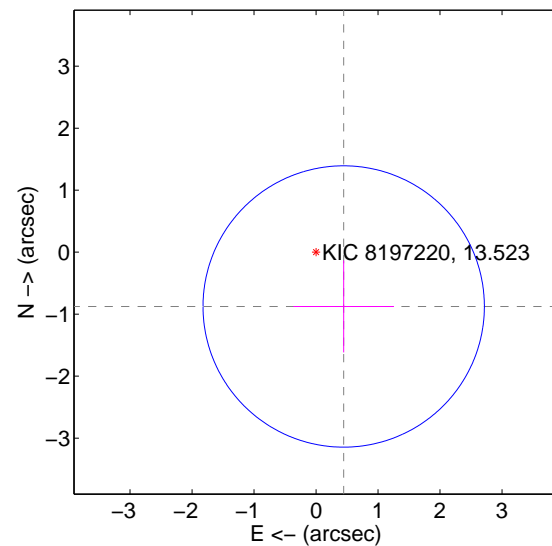
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

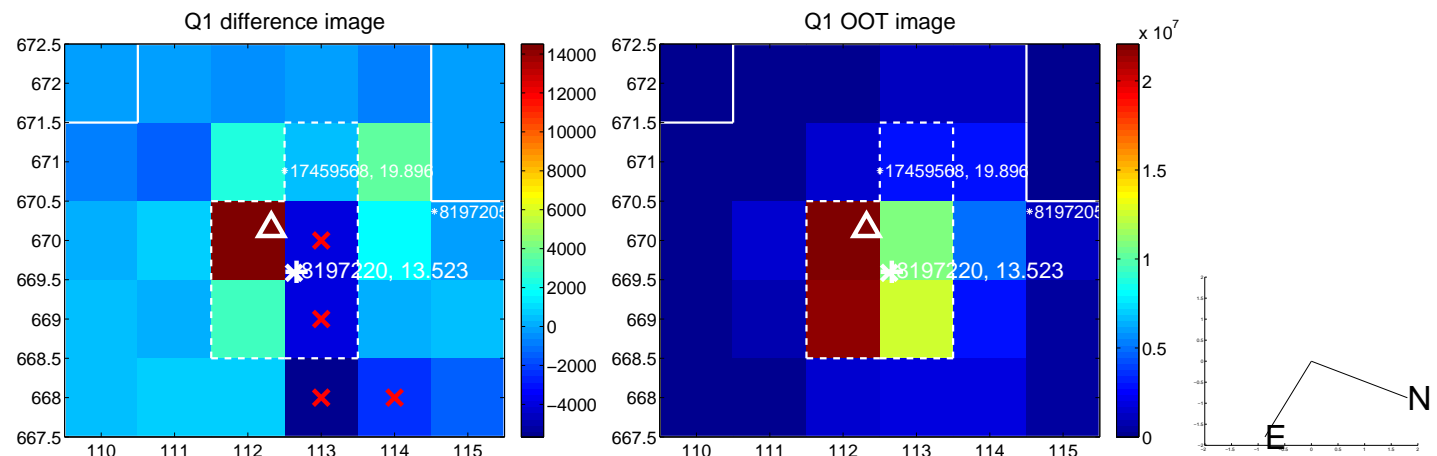


offset from photometric centroids

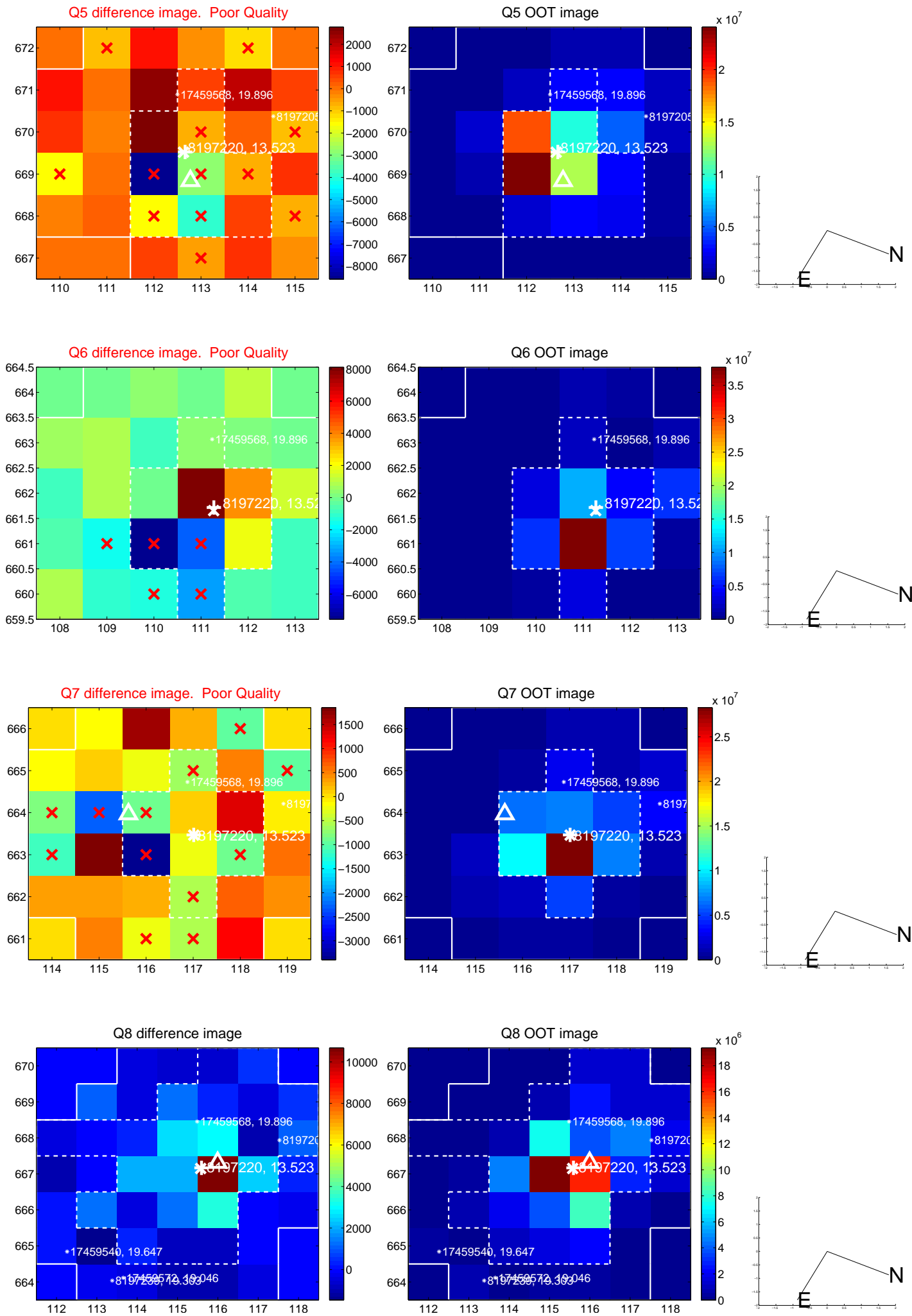


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

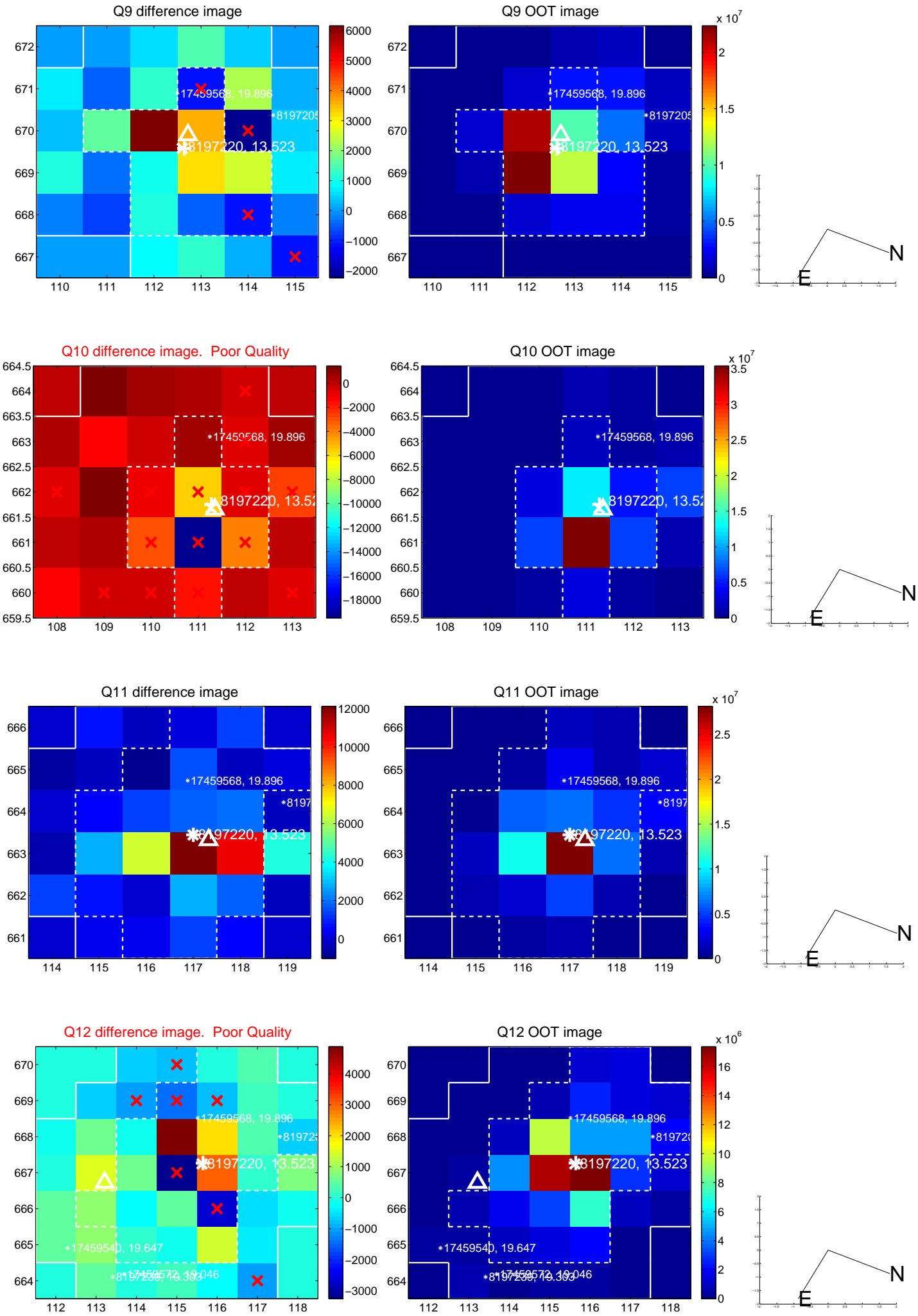
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



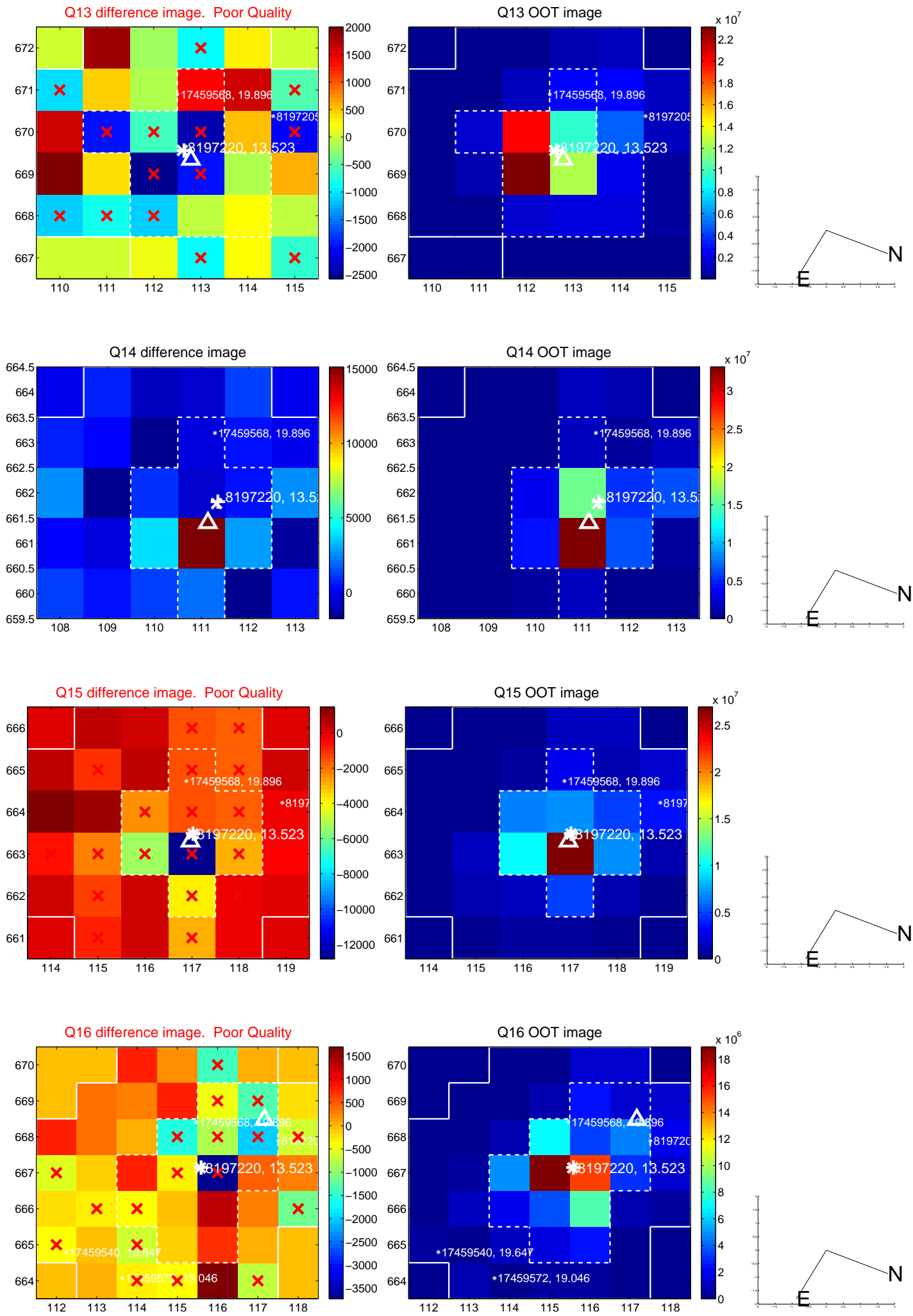
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



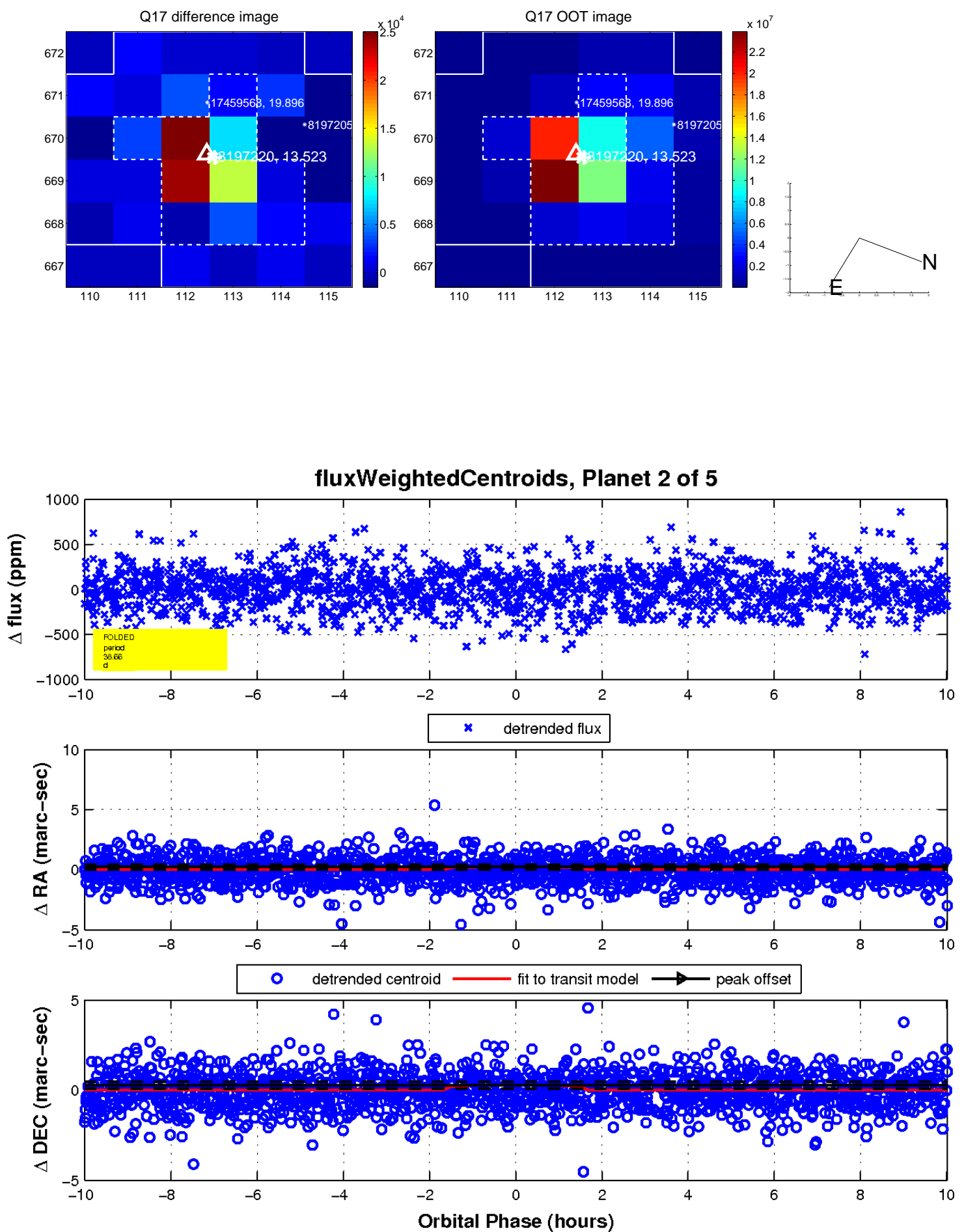
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

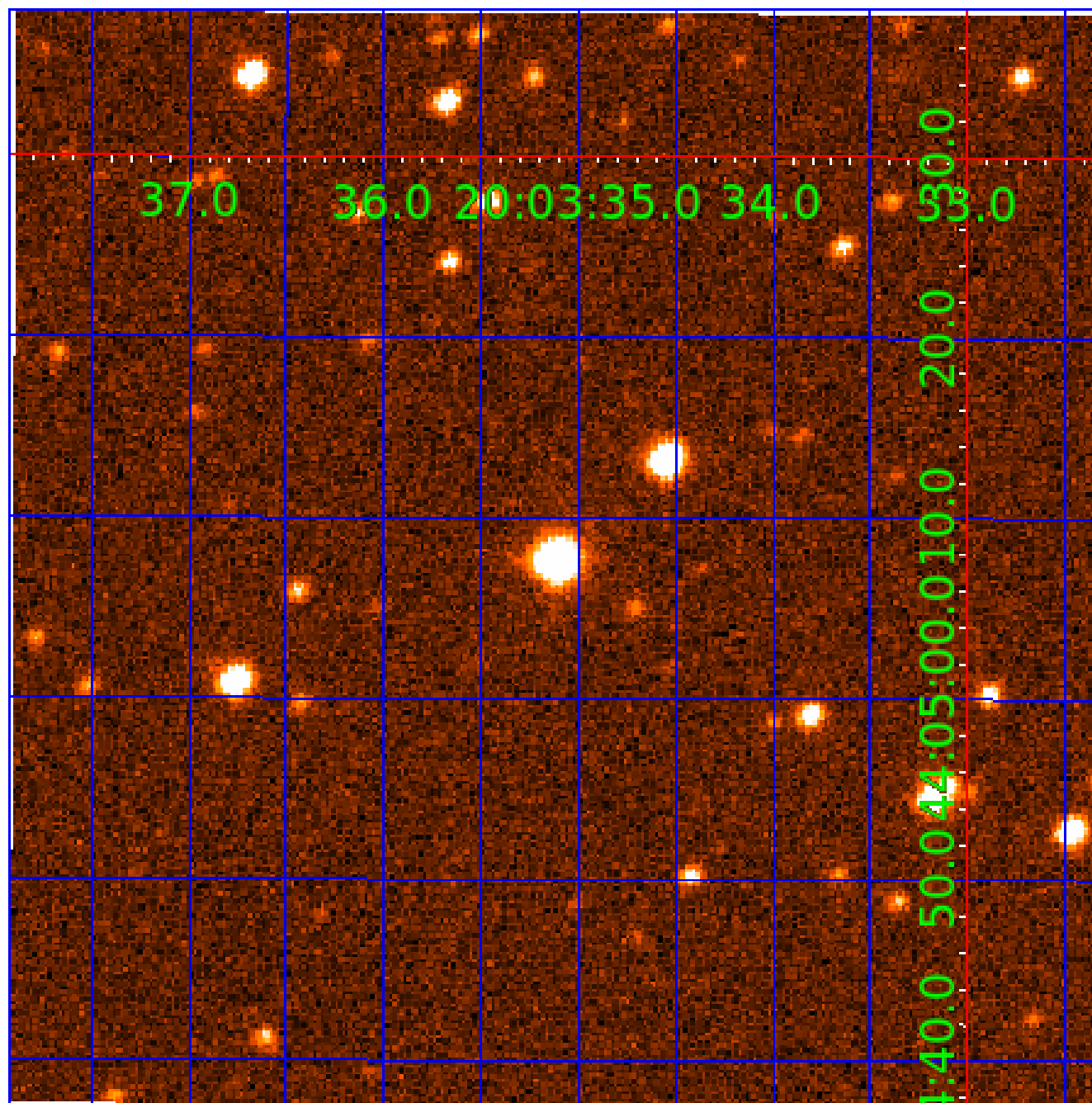


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008197220

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})
008197220-01	OBS	No	0.673285	131.607463	10.4	4.416	8.2	5.1	2.13	7827	0.74	45561.36
008197220-02	OBS	No	38.662140	137.648571	262.8	3.341	8.5	10.3	2.13	7827	3.84	205.66
008197220-03	OBS	No	50.412543	137.988576	327.9	2.508	8.7	9.5	2.13	7827	4.42	144.37
008197220-04	OBS	No	133.926513	214.153146	299.2	5.325	8.5	7.4	2.13	7827	3.73	39.24
008197220-05	OBS	No	40.010239	141.630317	485.2	1.059	10.1	9.2	2.13	7827	4.99	196.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008197220-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008197220-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008197220-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV

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

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

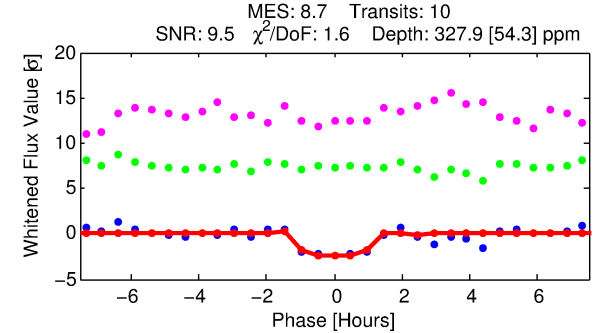
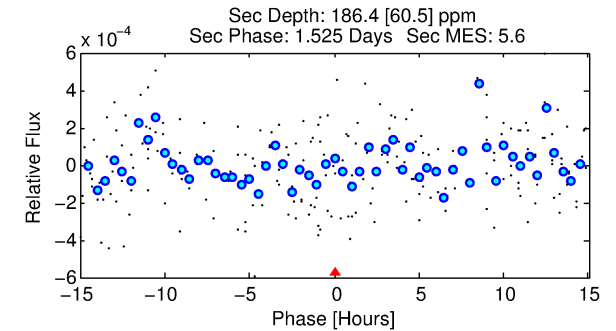
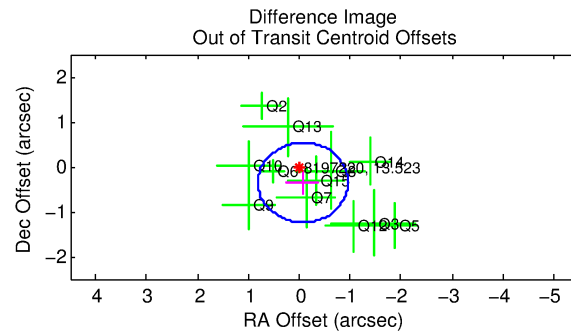
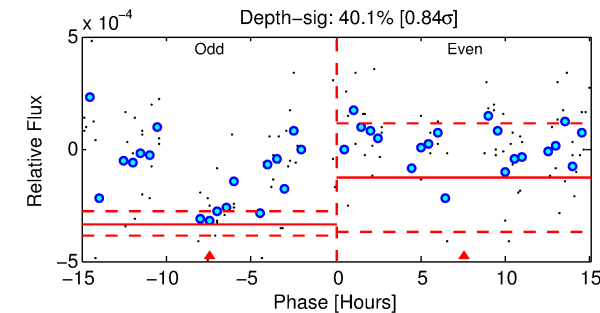
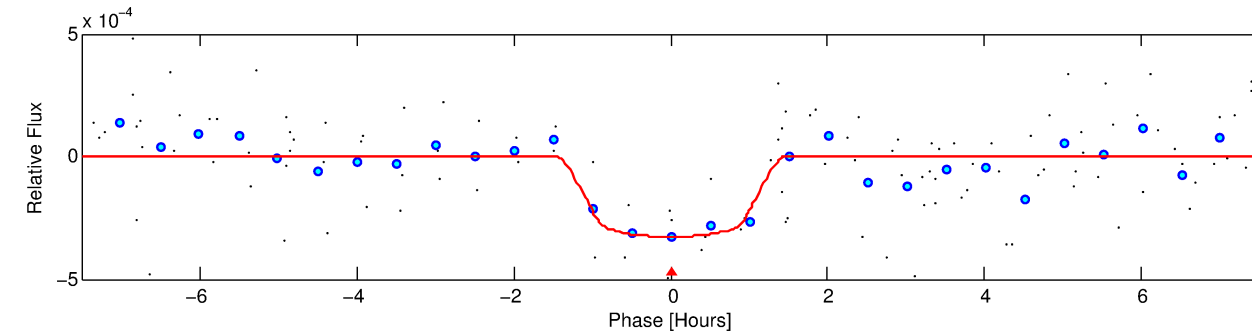
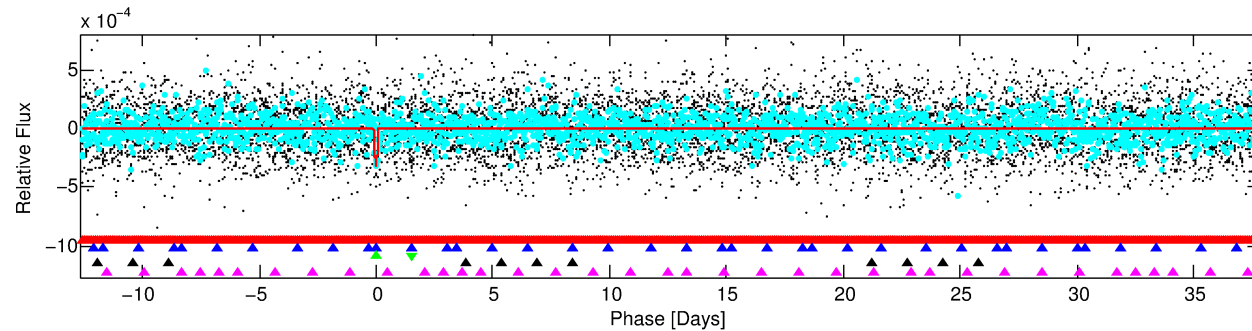
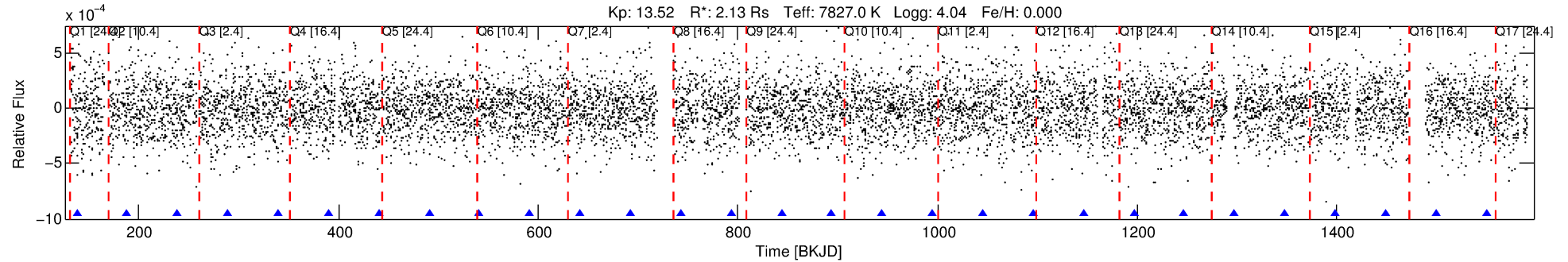
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197220-03

No Significant Match Found

DV One-Page Summary

KIC: 8197220 Candidate: 3 of 5 Period: 50.413 d



DV Fit Results:

Period = 50.41254 [0.00064] d
Epoch = 137.9886 [0.0102] BKJD
Rp/R* = 0.0190 [0.0084]
a/R* = 78.59 [212.77]
b = 0.88 [0.69]
Seff = 144.37 [51.34]
Teq = 884 [79] K
Rp = 4.42 [2.23] Re
a = 0.3251 [0.0687] AU
Ag = 555.43 [551.46] [1.01 σ]
Teffp = 6634 [1585] K [3.62 σ]

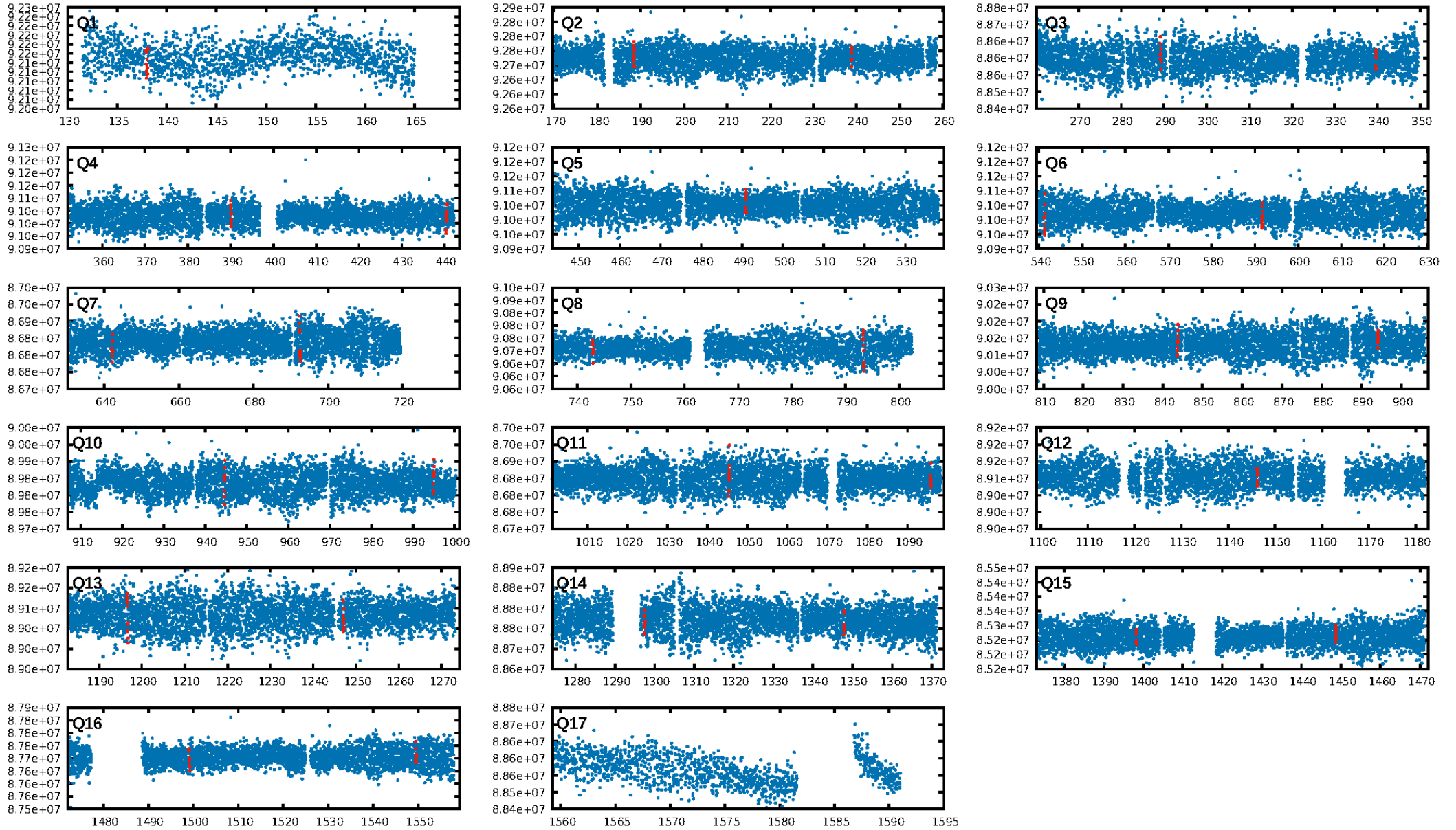
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [91.71 σ]
LongPeriod-sig: 100.0% [340.54 σ]
ModelChiSquare2-sig: 23.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.80e-09
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 5.089
Centroid-sig: 6.8%
Centroid-so: 1.110 arcsec [1.38 σ]
OotOffset-rm: 0.361 arcsec [1.22 σ]
KicOffset-rm: 0.449 arcsec [1.38 σ]
OotOffset-st: 4/3/2/3 [12]
KicOffset-st: 4/3/2/3 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.00 [0/15]

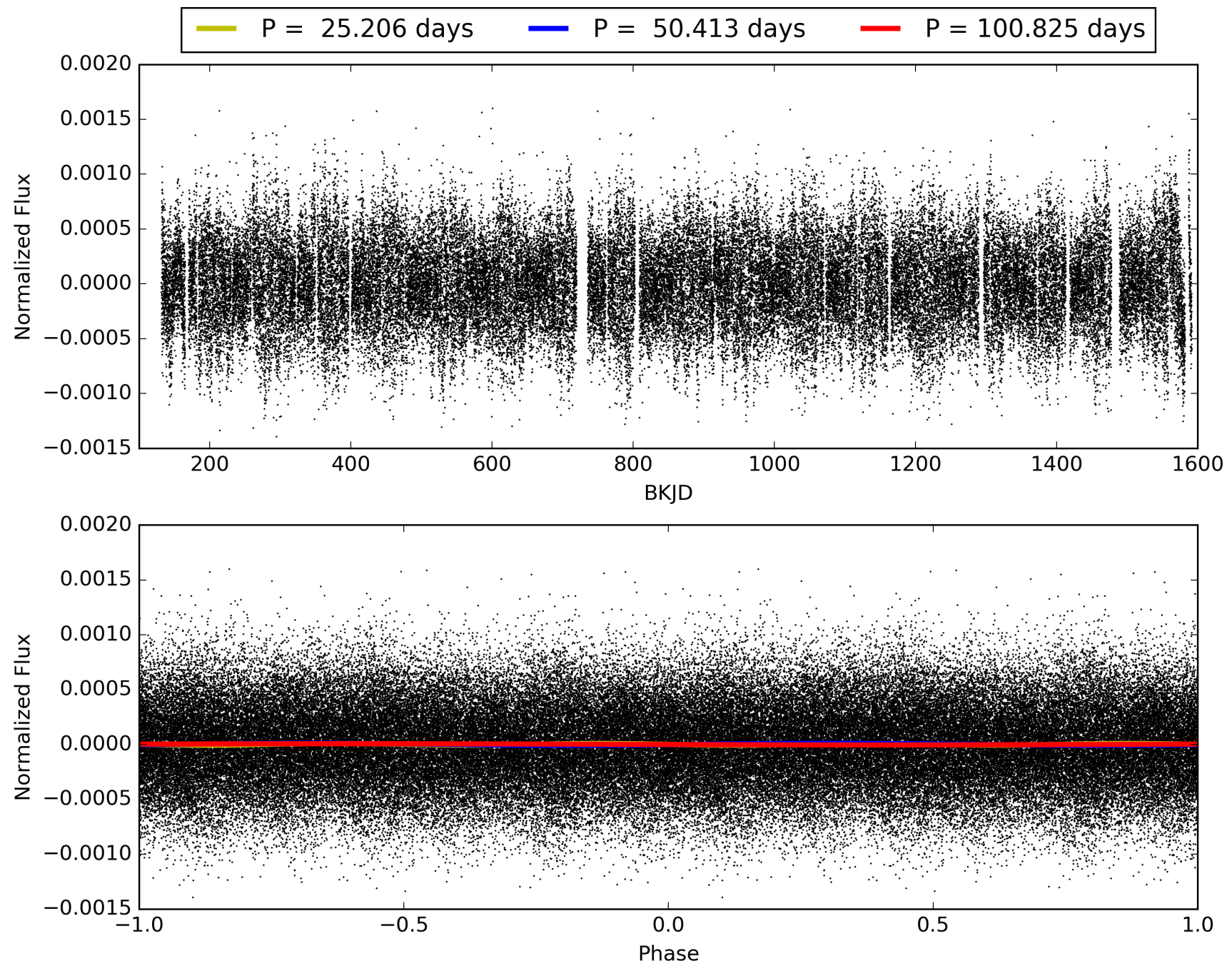
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:47:21 Z

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

TCE 008197220-03, PDC Light Curves

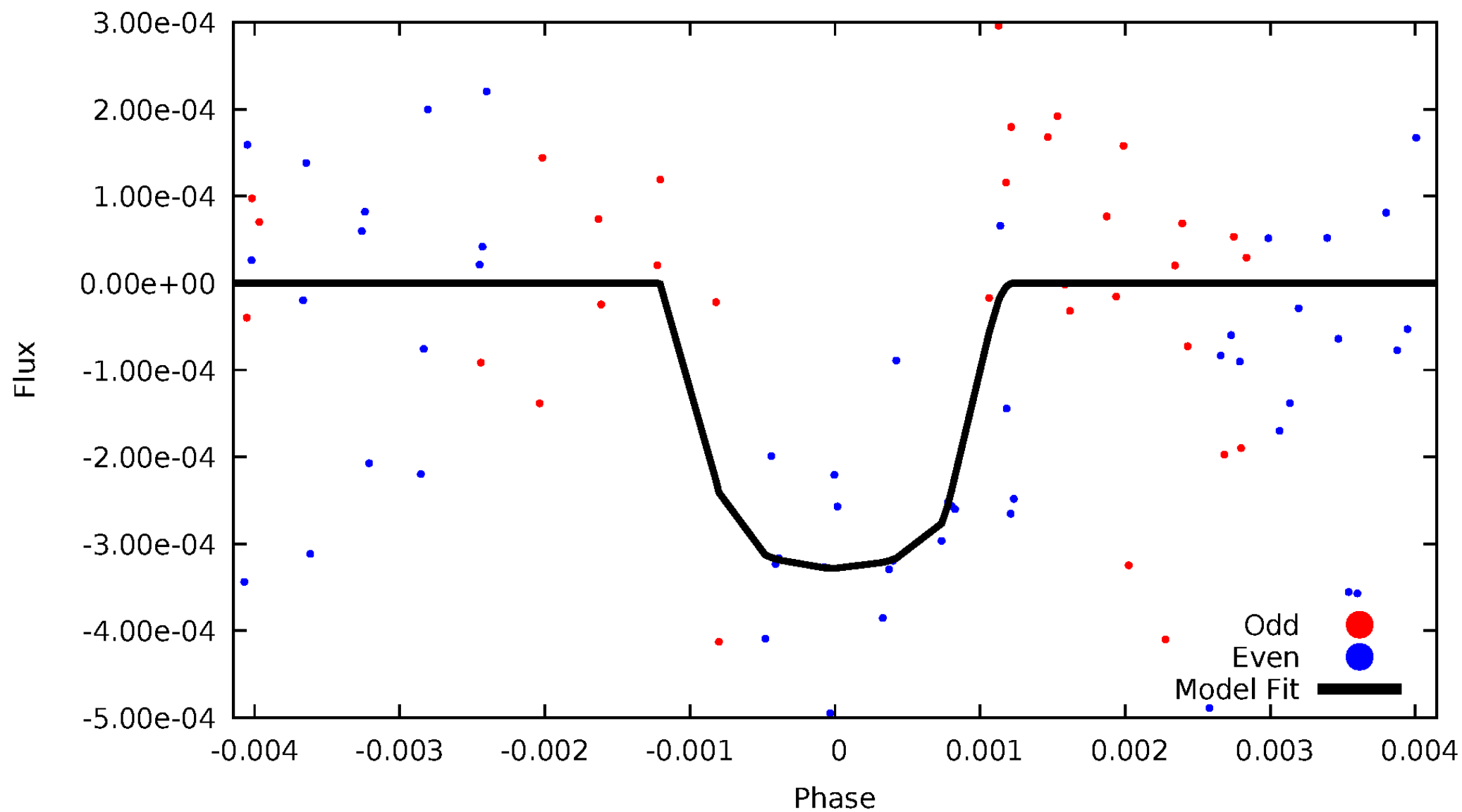


TCE 008197220-03



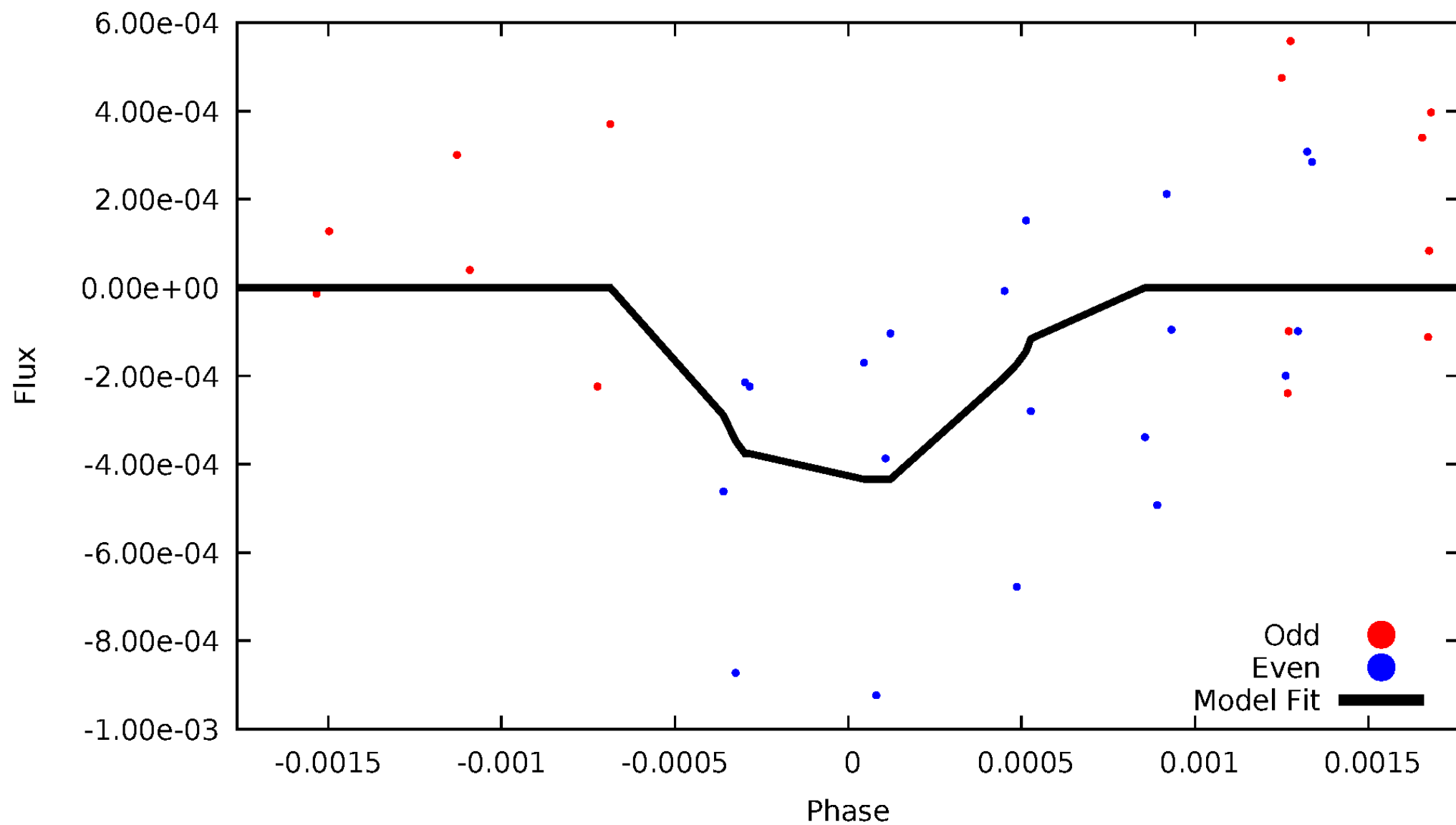
DV Odd/Even

TCE 008197220-03



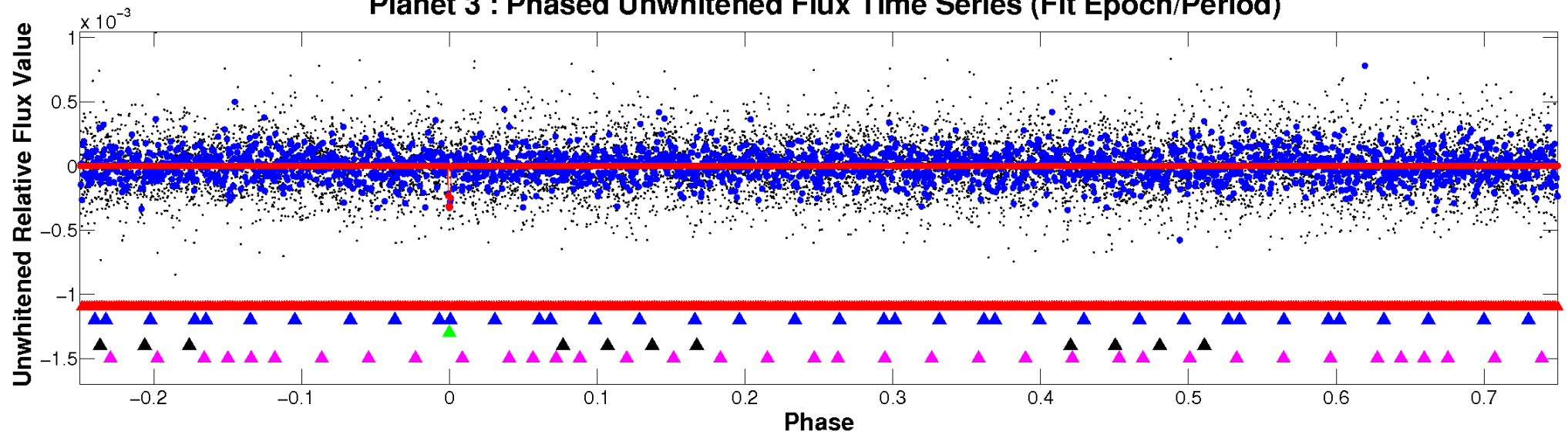
ALT Odd/Even

TCE 008197220-03

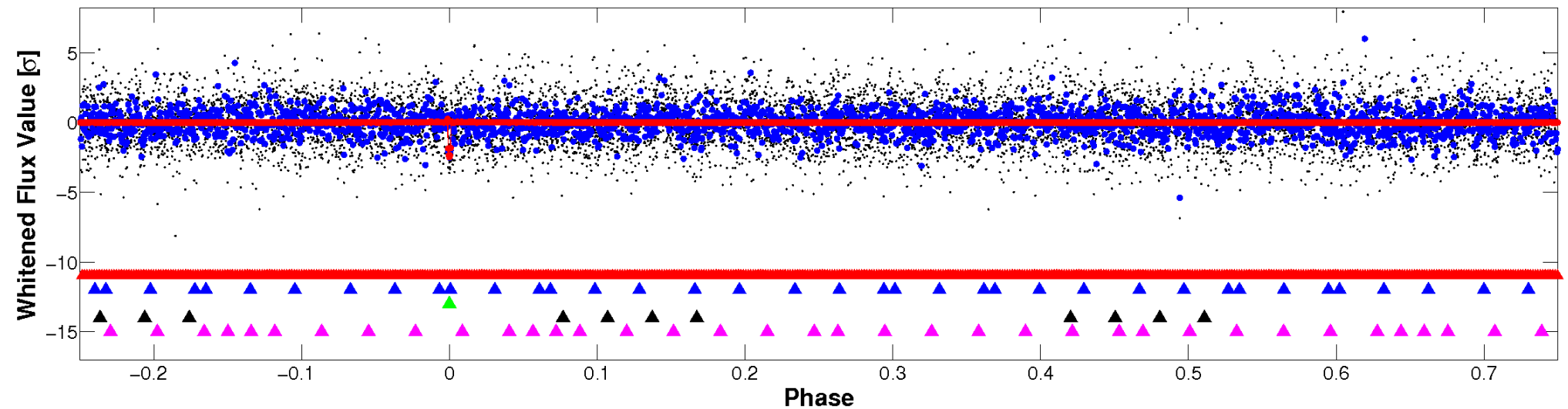


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

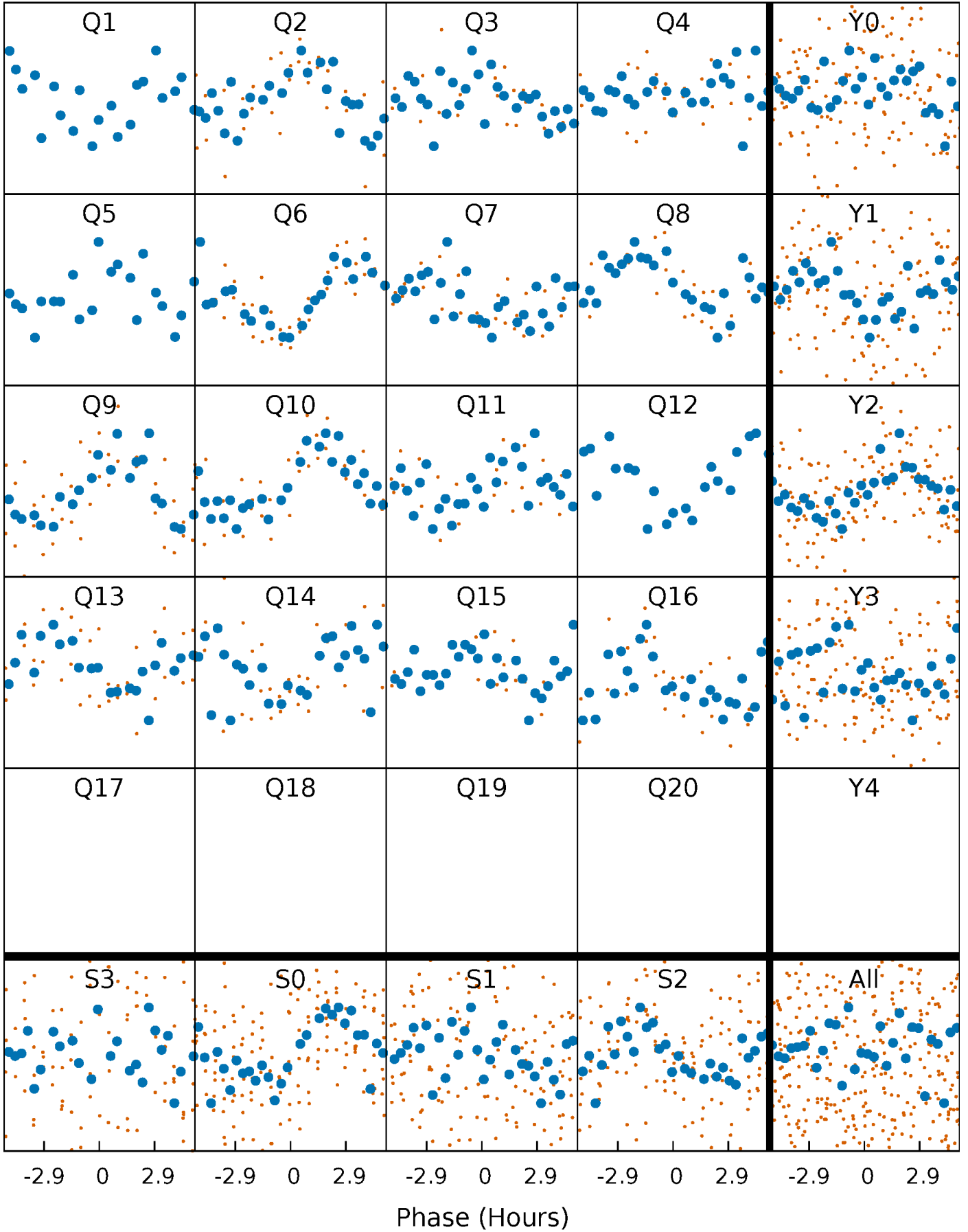


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



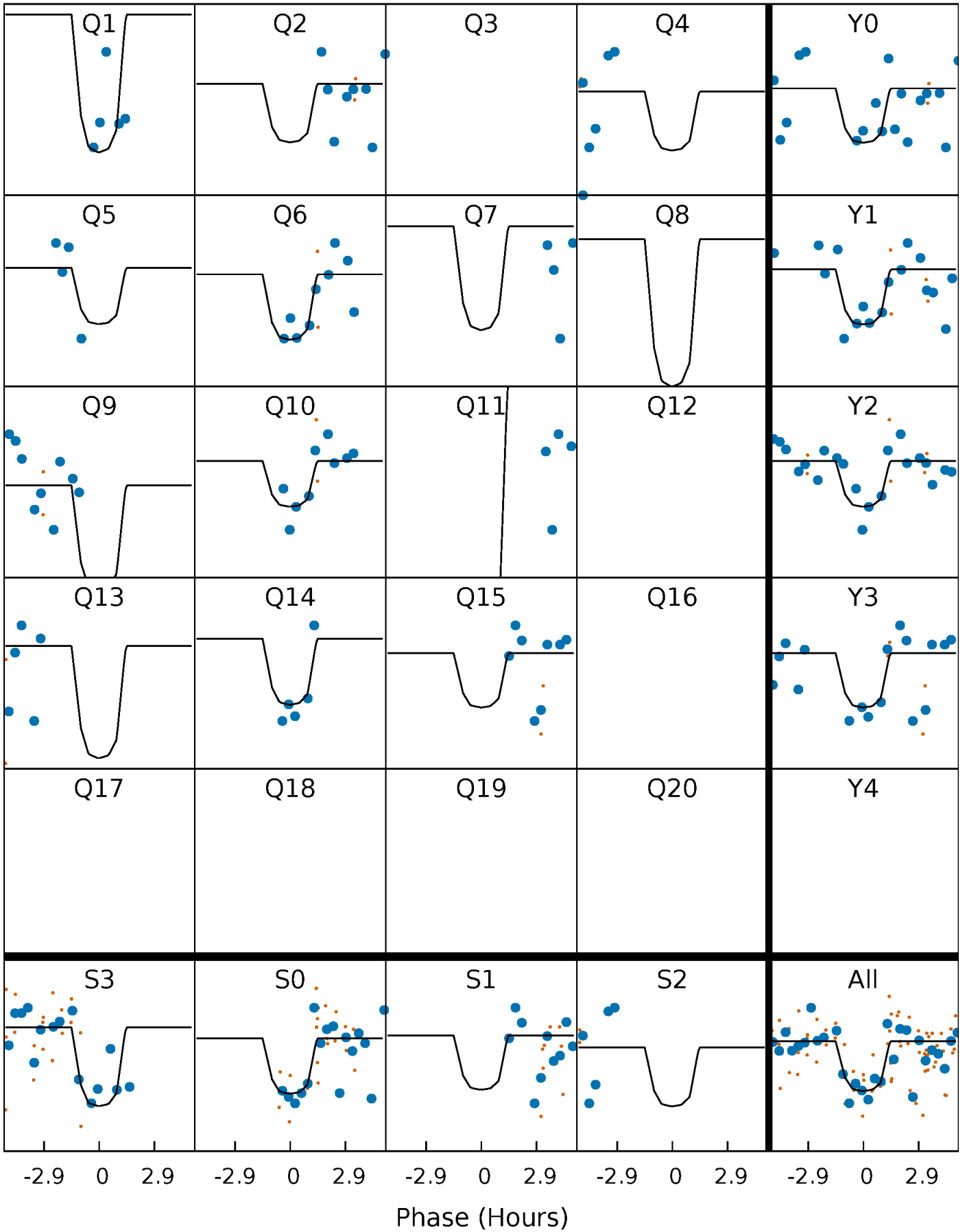
PDC Quarter-Phased Transit Curves

TCE 008197220-03 P= 50.412543 Days $T_0=137.988576$ (BKJD)



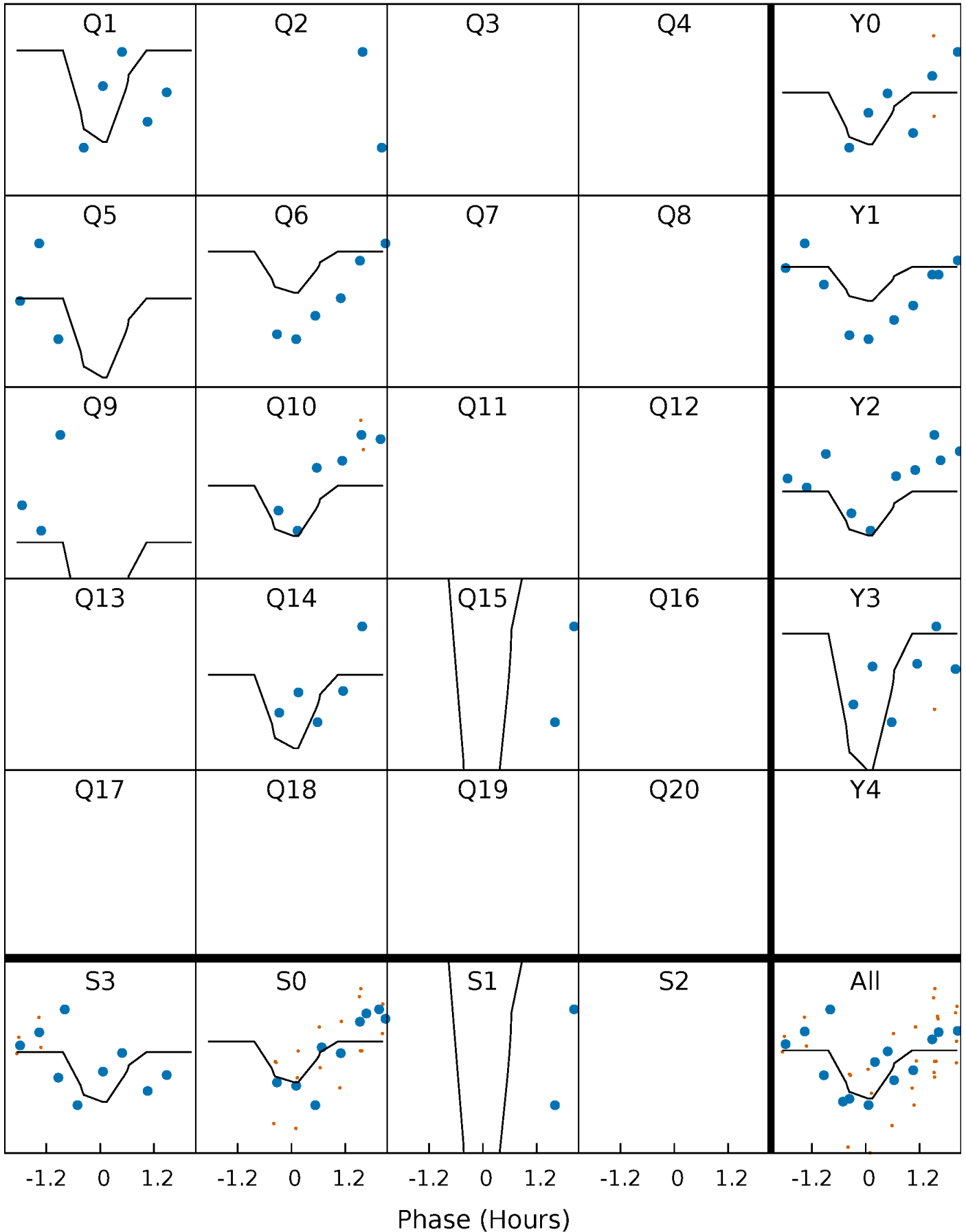
DV Quarter-Phased Transit Curves

TCE 008197220-03 P= 50.412543 Days $T_0=137.988576$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

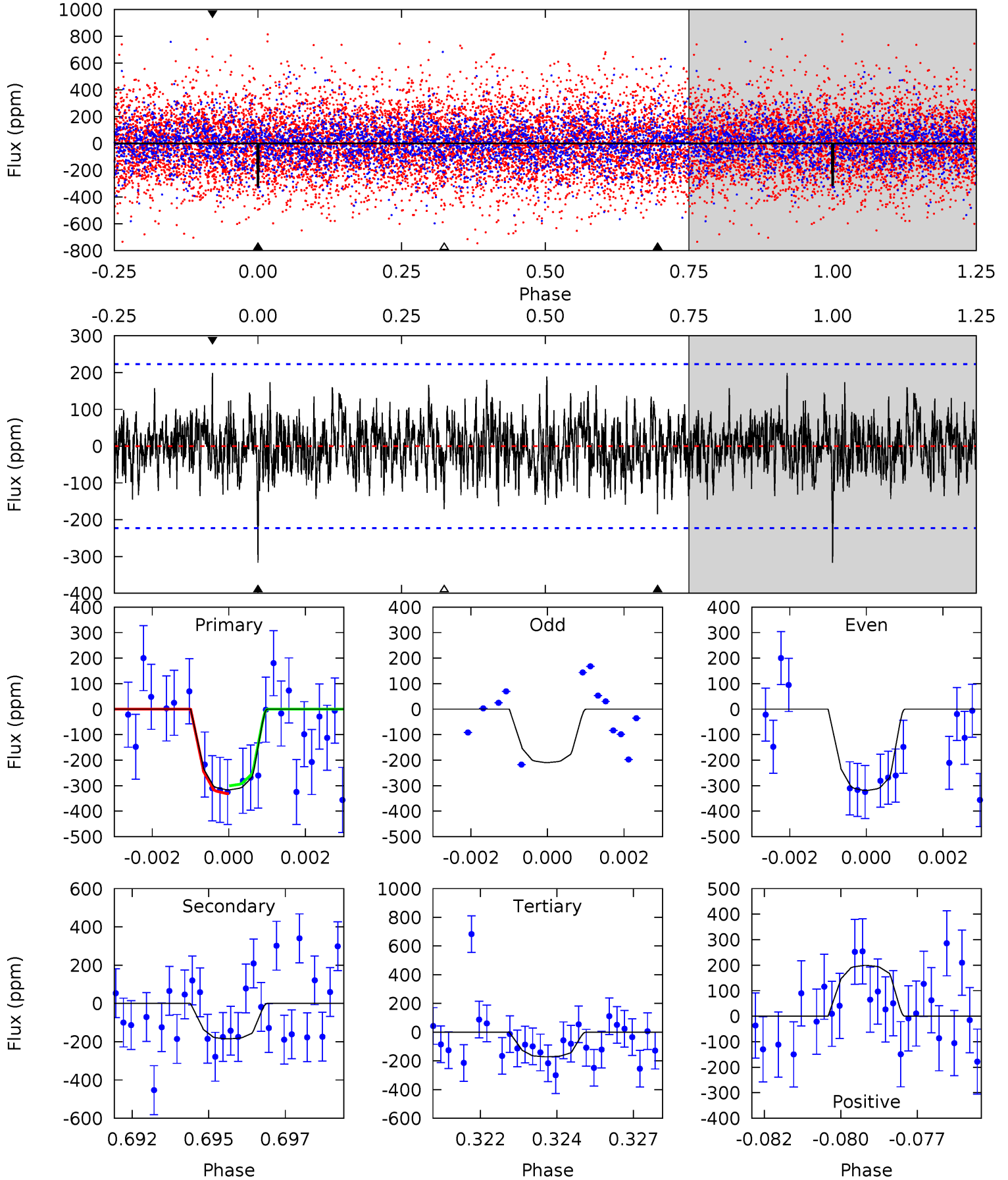
TCE 008197220-03 P= 50.412188 Days $T_0=137.987145$ (BKJD)



DV Model-Shift Uniqueness Test

008197220-03, P = 50.412543 Days, E = 87.576033 Days

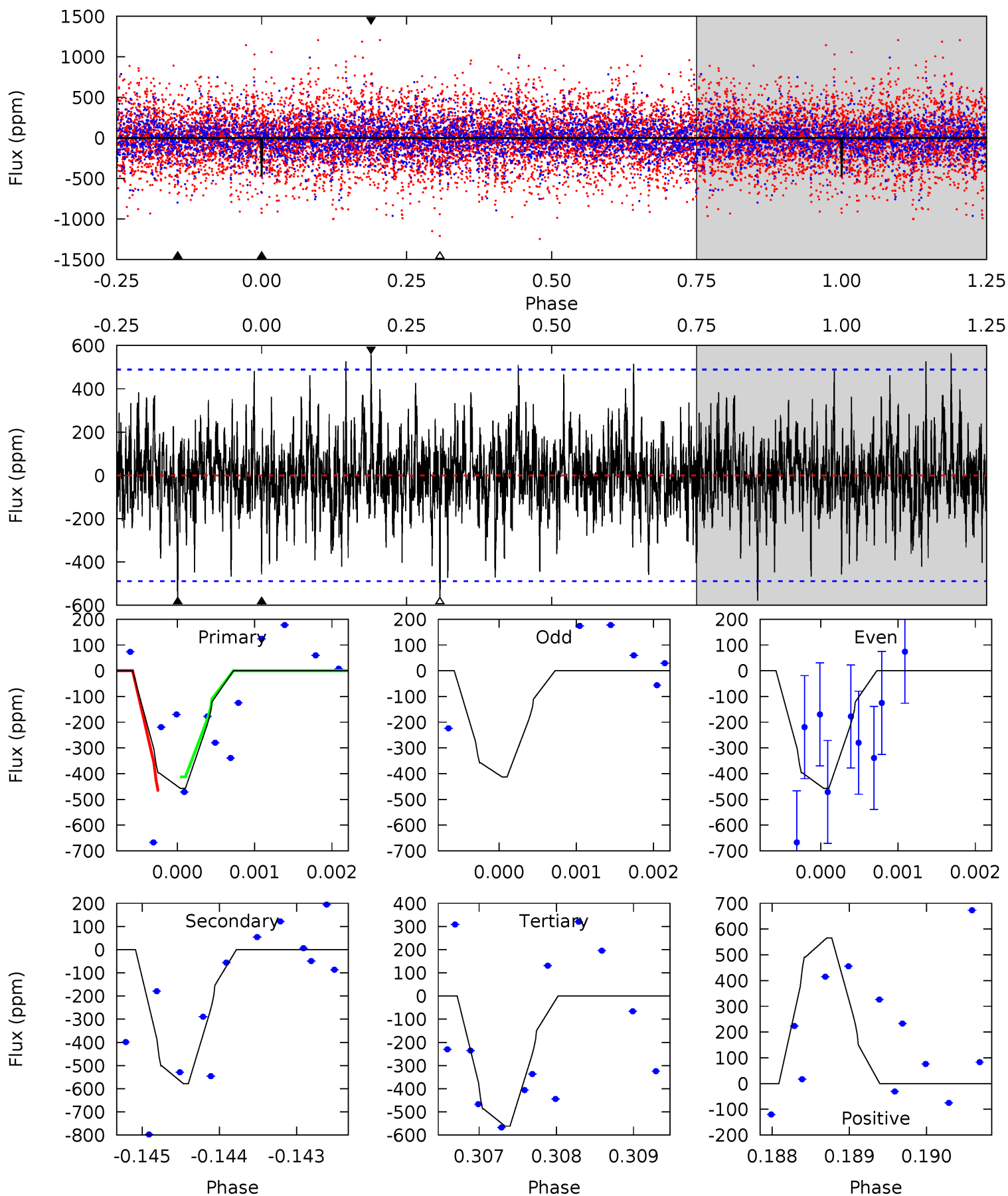
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.52	4.39	4.07	4.73	5.29	3.03	1.36	3.45	2.79	0.32	-0.34	1.06	1.06	0.39	0.35



Alt Model-Shift Uniqueness Test

008197220-03, P = 50.412188 Days, E = 87.574957 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.07	6.42	6.23	6.28	5.42	3.24	1.53	-1.16	-1.20	0.19	0.14	0.33	1.60	0.49	0.23



Stellar Parameters For KIC 008197220

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7827^{+214}_{-322}	$4.037^{+0.176}_{-0.144}$	$0.000^{+0.200}_{-0.350}$	$2.130^{+0.467}_{-0.519}$	$1.799^{+0.145}_{-0.339}$	$0.262^{+0.258}_{-0.113}$
	+3%/-4%	+4%/-4%	+inf%/-inf%	+22%/-24%	+8%/-19%	+98%/-43%
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 008197220-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-185 ± 42	$4.31^{+2.15}_{-1.86}$	1224^{+90}_{-89}	6361^{+2624}_{-1111}	538^{+1313}_{-305}
Alt.	-578 ± 90	$4.64^{+2.12}_{-1.86}$	1226^{+82}_{-80}	8632^{+3940}_{-1697}	1536^{+2818}_{-796}

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

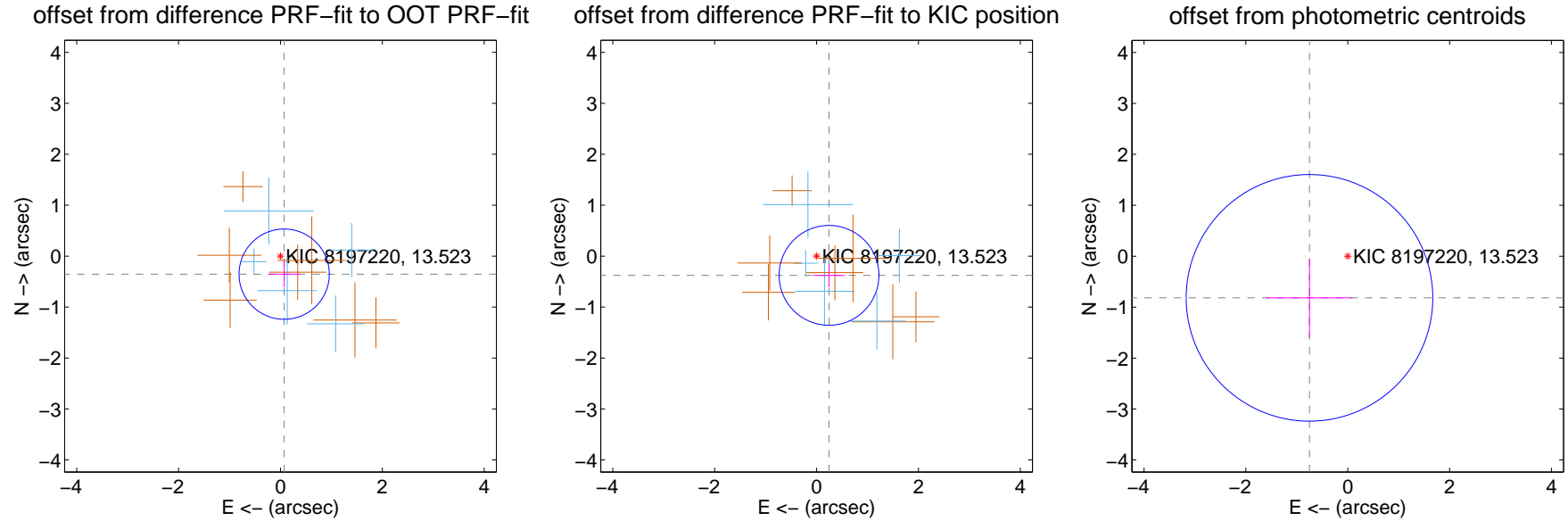
DV Centroid Data

Supplemental centroid analysis for 008197220-03. Kepler magnitude: 13.52. Transit SNR 9.53

There are 5 quarters with good PRF difference image offsets

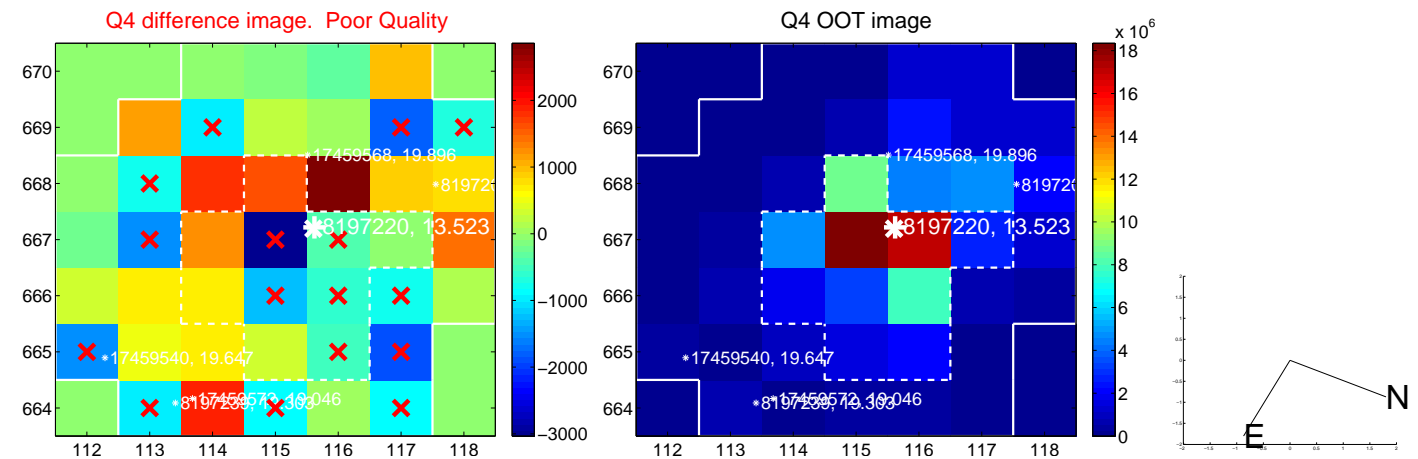
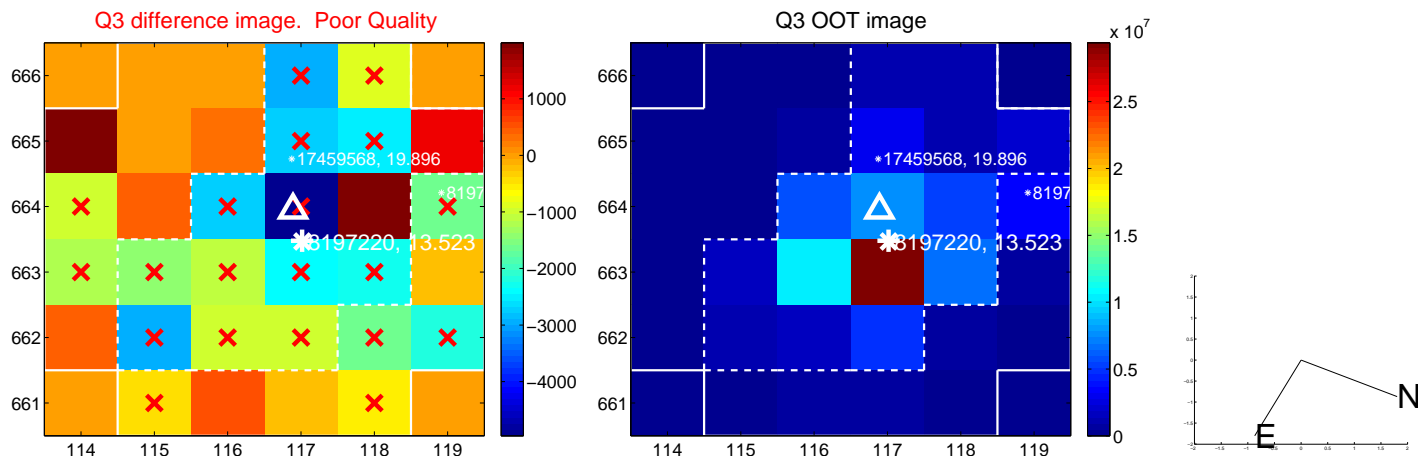
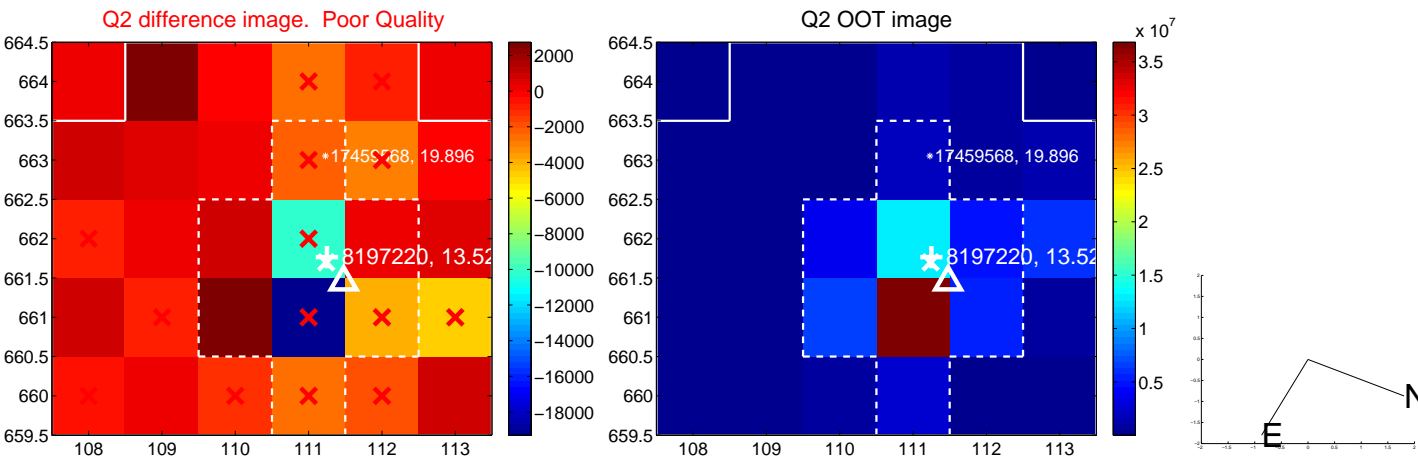
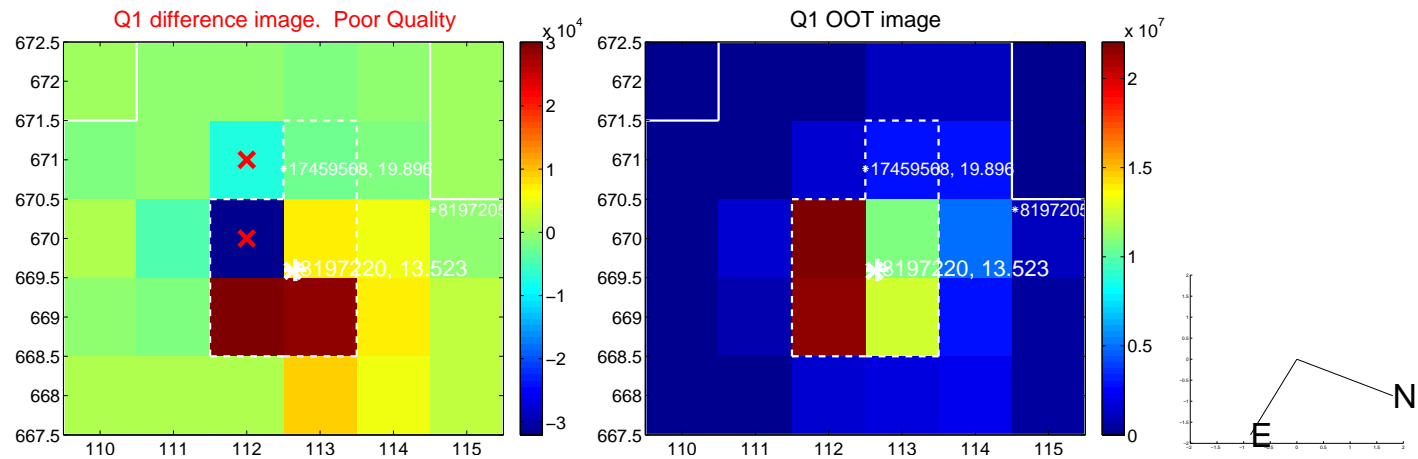
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.361 ± 0.295	1.22	-0.073 ± 0.313	-0.354 ± 0.260
PRF-fit source offset from KIC position	0.449 ± 0.327	1.38	-0.244 ± 0.315	-0.378 ± 0.233
photometric centroid source offset	1.11 ± 0.81	1.38	0.75 ± 0.84	-0.82 ± 0.77

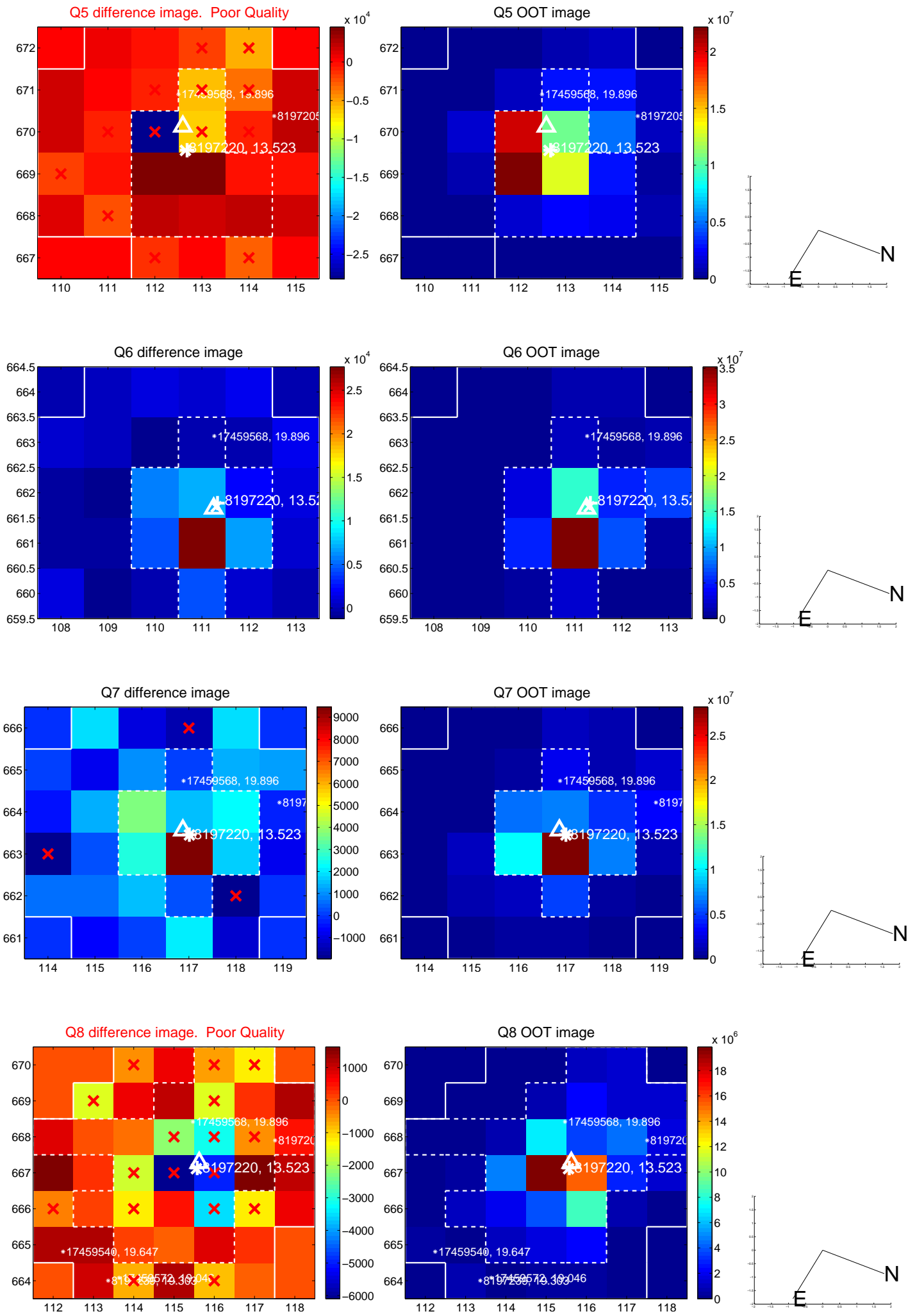


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

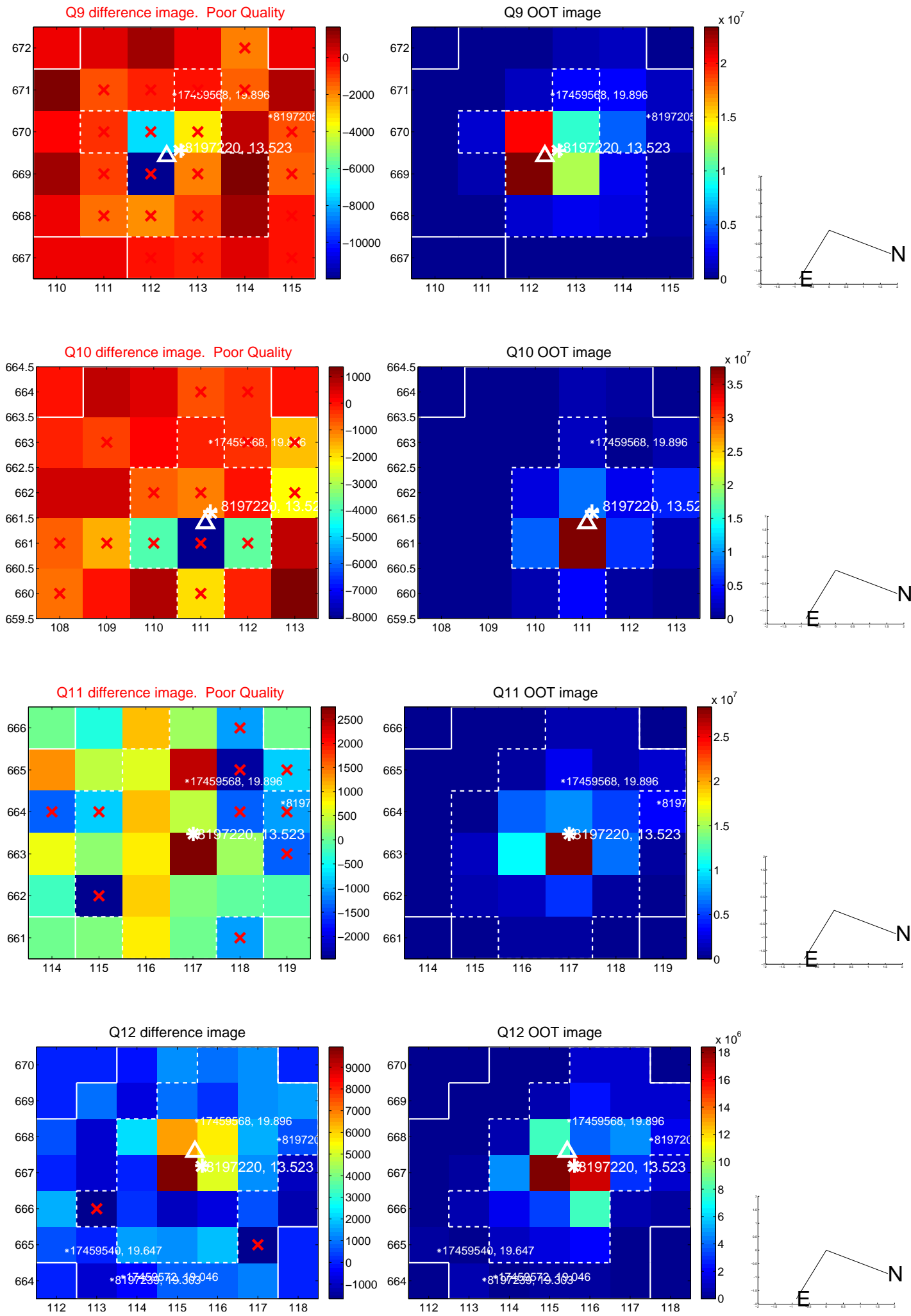
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



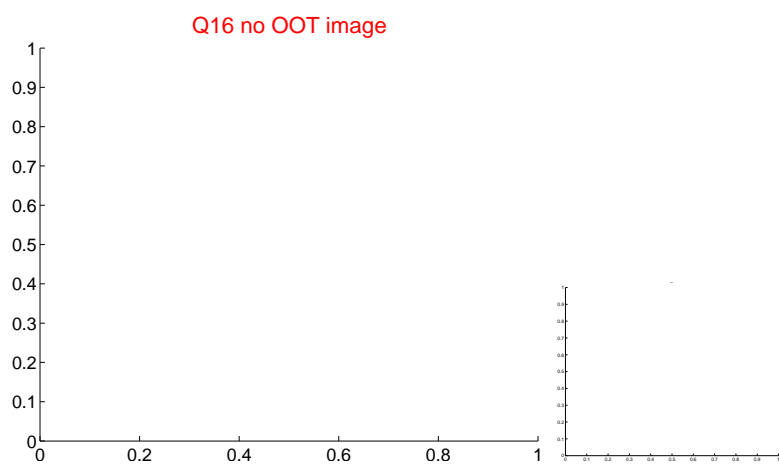
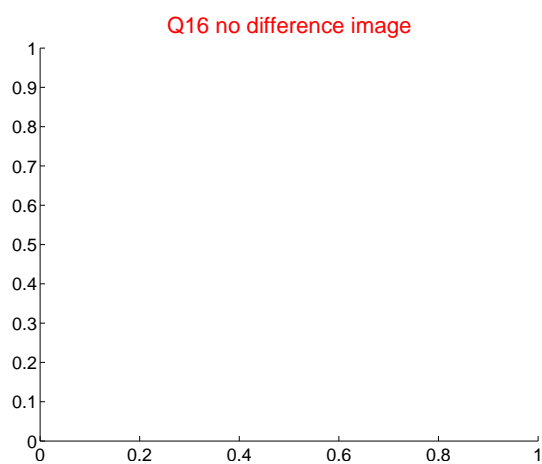
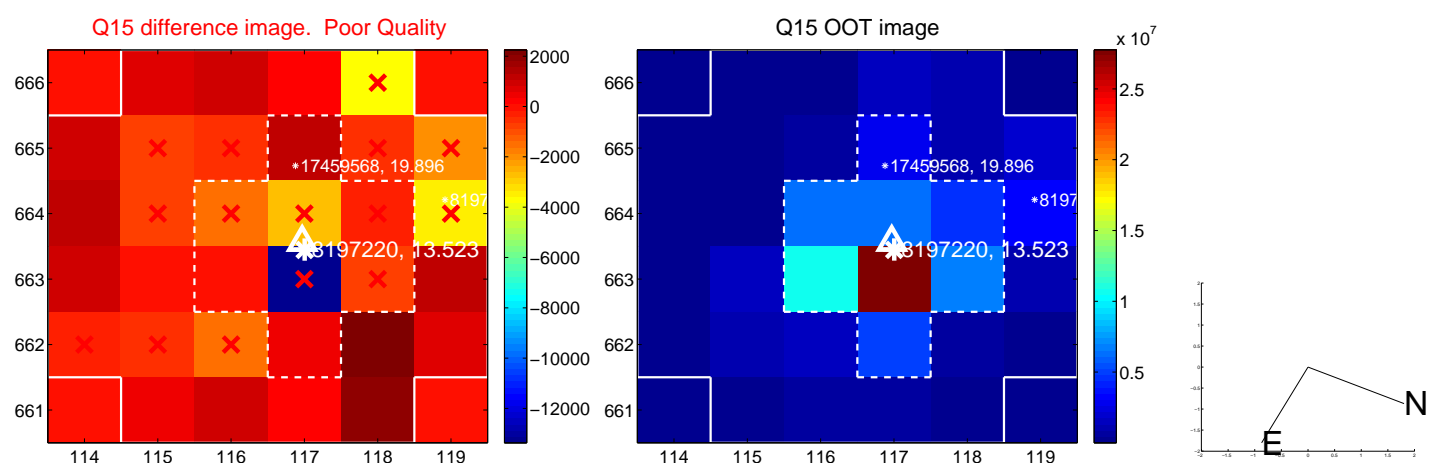
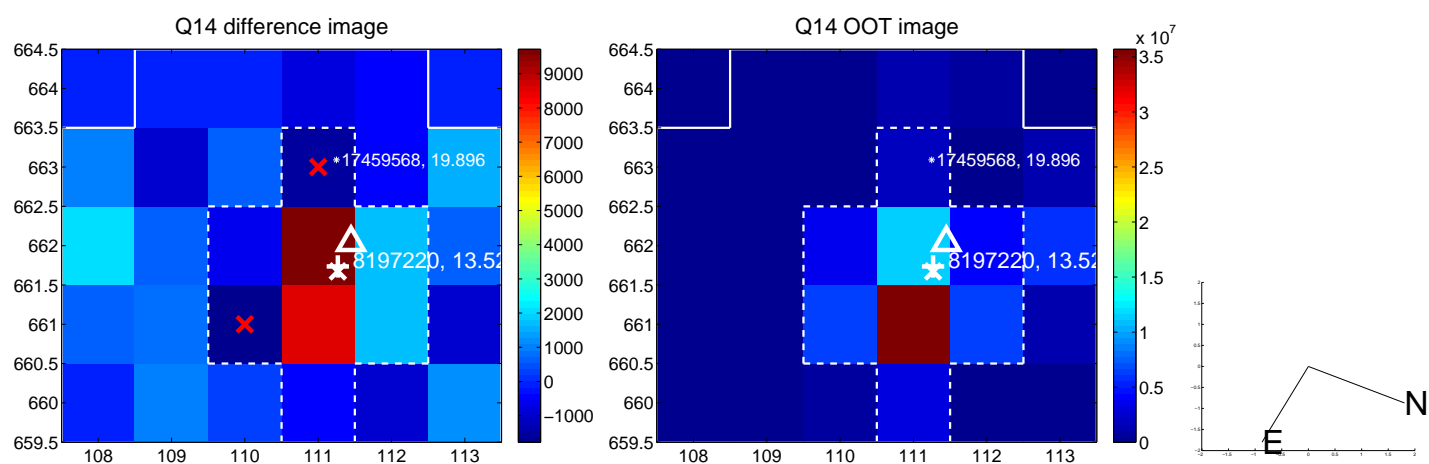
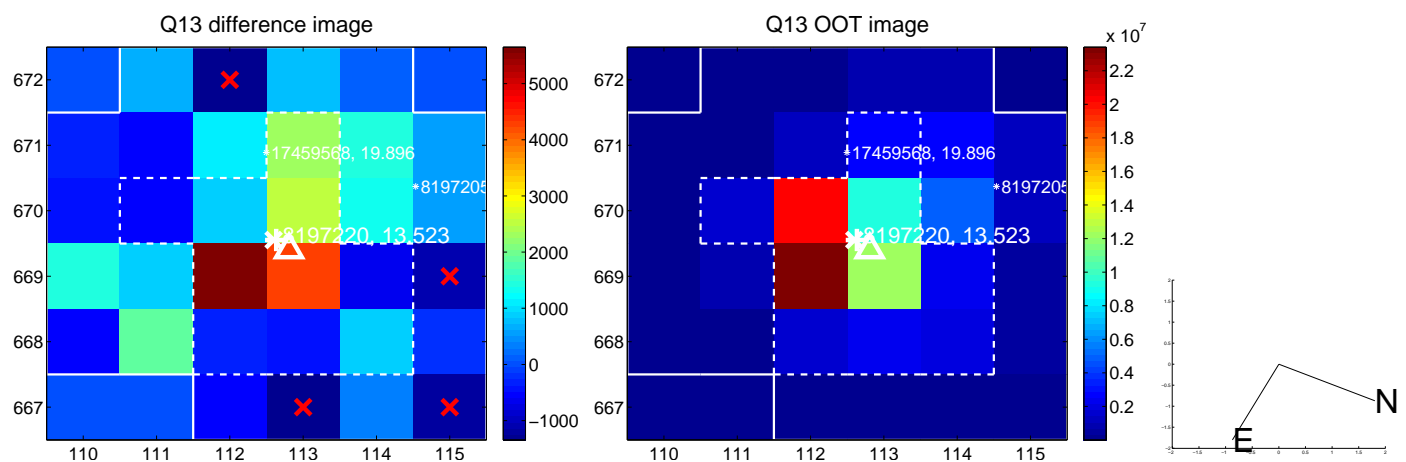
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



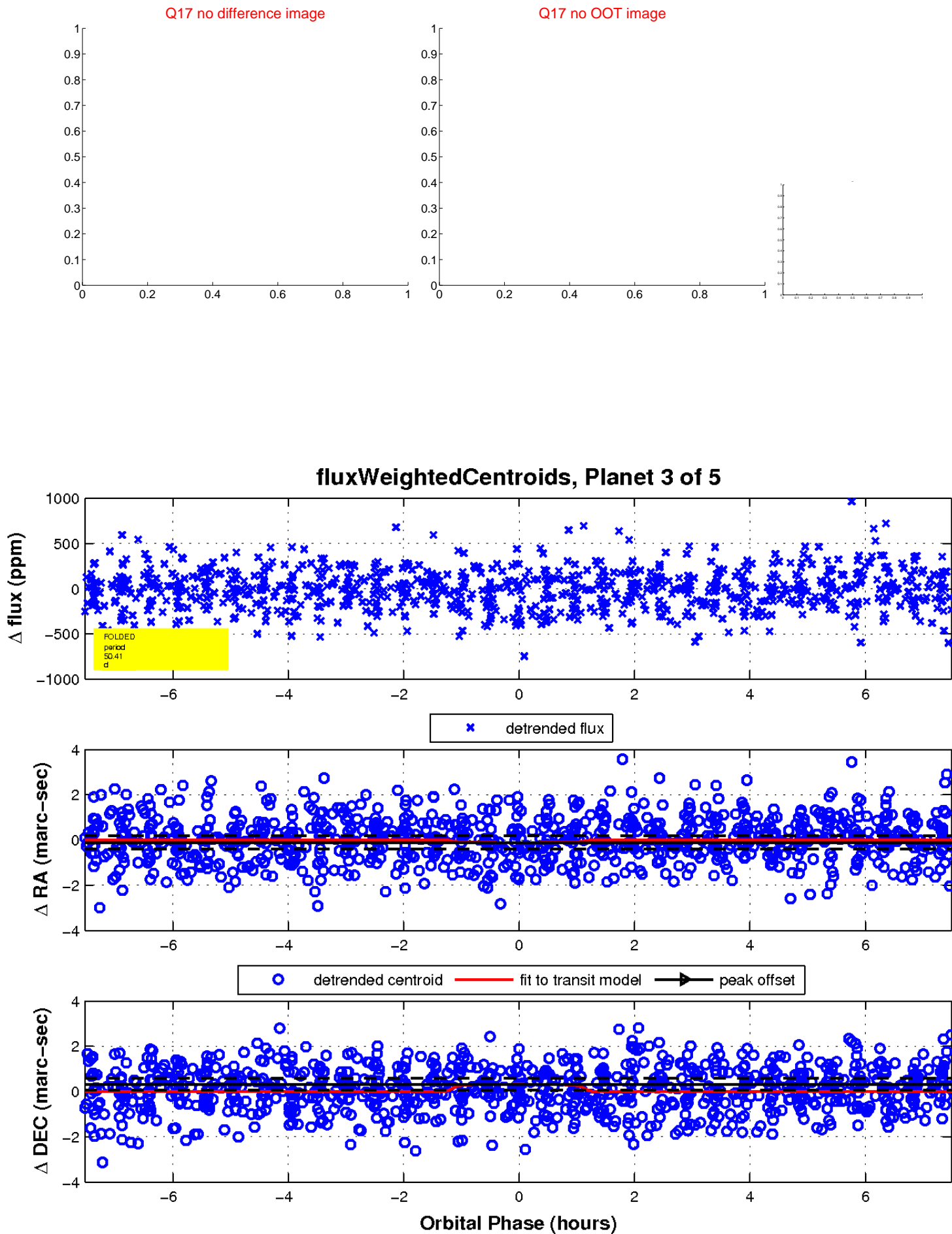
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

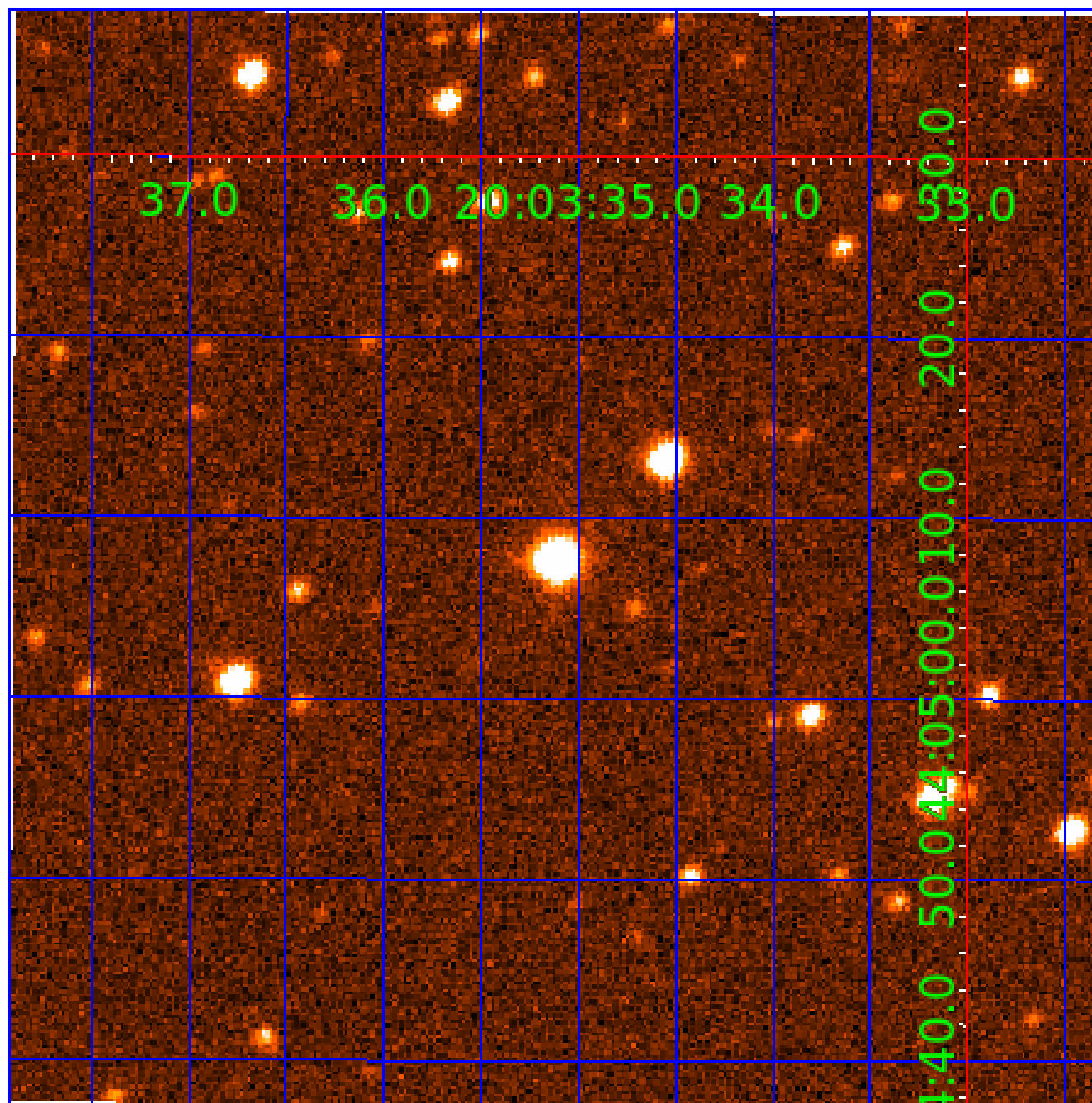


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008197220

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})
008197220-01	OBS	No	0.673285	131.607463	10.4	4.416	8.2	5.1	2.13	7827	0.74	45561.36
008197220-02	OBS	No	38.662140	137.648571	262.8	3.341	8.5	10.3	2.13	7827	3.84	205.66
008197220-03	OBS	No	50.412543	137.988576	327.9	2.508	8.7	9.5	2.13	7827	4.42	144.37
008197220-04	OBS	No	133.926513	214.153146	299.2	5.325	8.5	7.4	2.13	7827	3.73	39.24
008197220-05	OBS	No	40.010239	141.630317	485.2	1.059	10.1	9.2	2.13	7827	4.99	196.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008197220-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008197220-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008197220-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV

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

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

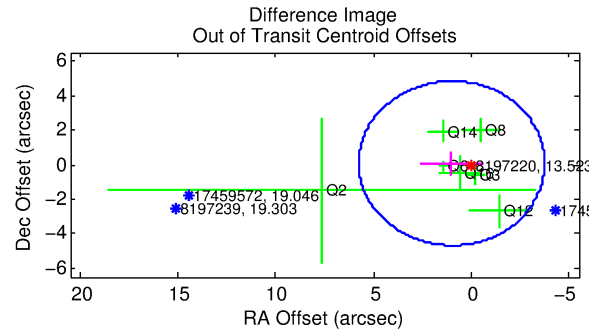
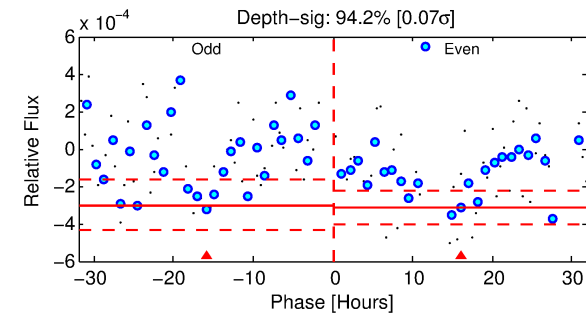
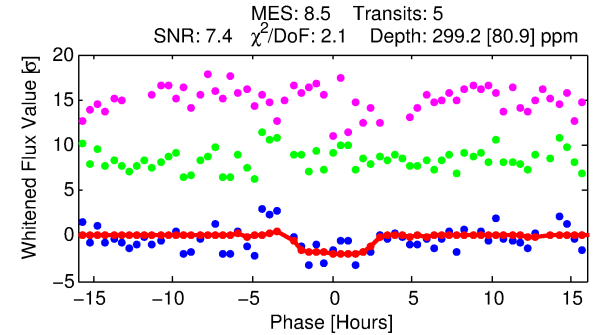
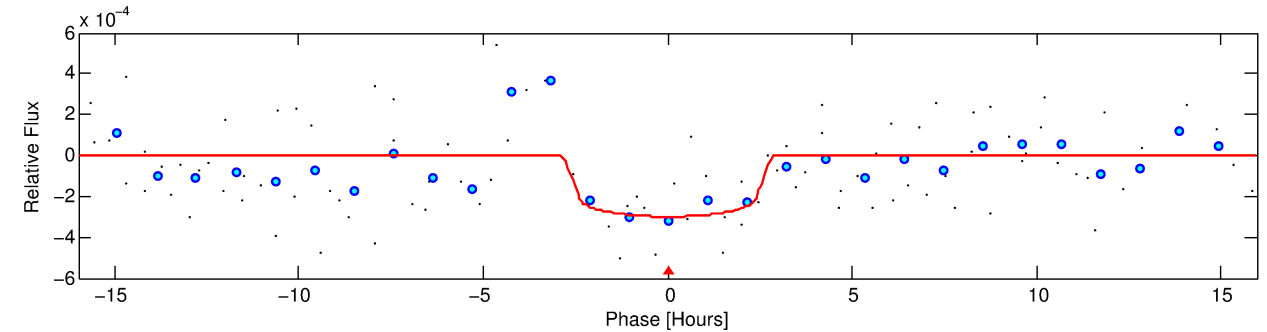
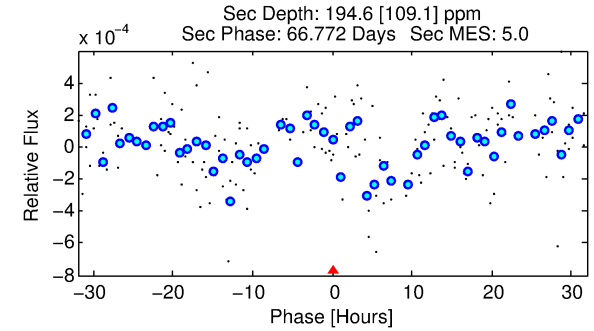
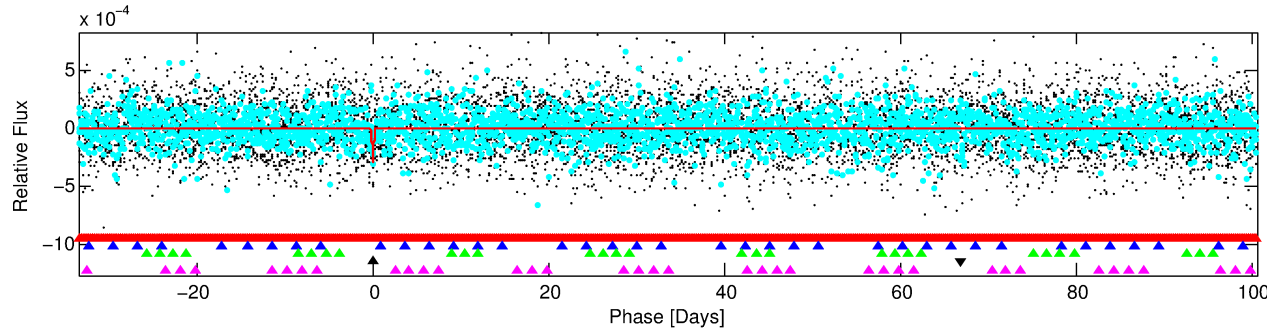
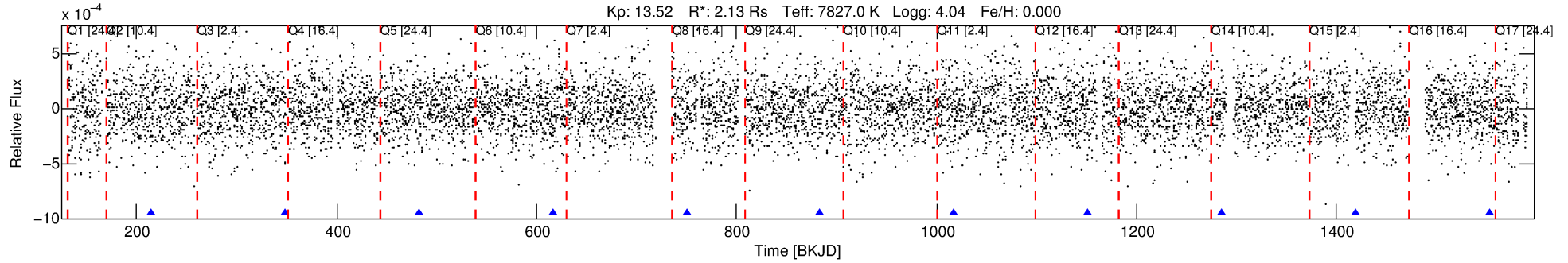
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197220-04

No Significant Match Found

DV One-Page Summary

KIC: 8197220 Candidate: 4 of 5 Period: 133.927 d



DV Fit Results:

Period = 133.92651 [0.01601] d
Epoch = 214.1531 [0.0296] BKJD
Rp/R* = 0.0161 [0.0728]
a/R* = 195.23 [5245.67]
b = 0.00 [17139.57]
Seff = 39.24 [13.95]
Teq = 638 [57] K
Rp = 3.73 [16.95] Re
a = 0.6235 [0.1317] AU
Ag = 2983.72 [27104.59] [0.11σ]
Teffp = 7293 [16555] K [0.40σ]

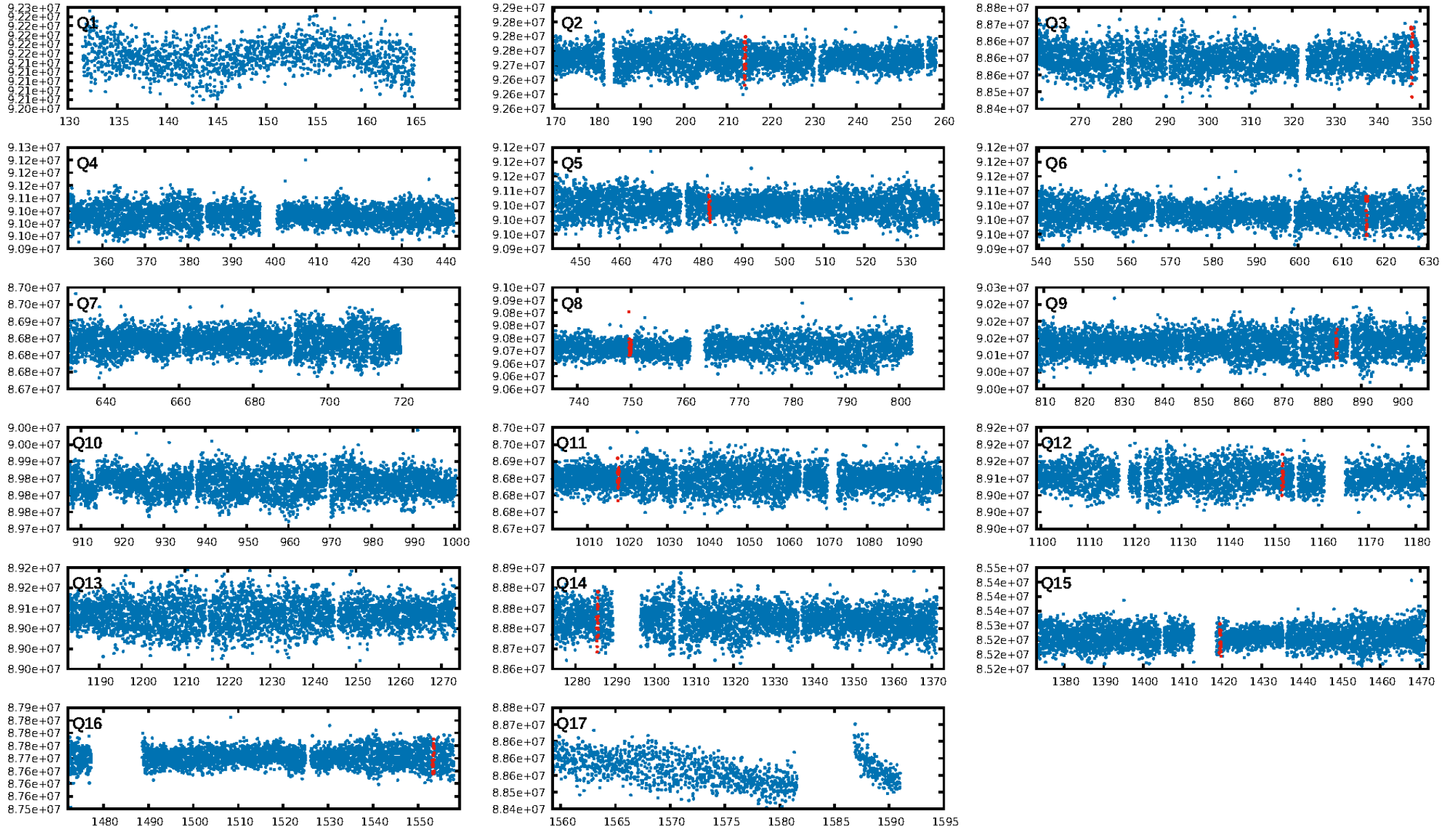
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [340.54σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 28.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.72e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -1.701
Centroid-sig: 45.9%
Centroid-so: 0.709 arcsec [0.72σ]
OotOffset-rm: 1.010 arcsec [0.64σ]
KicOffset-rm: 1.019 arcsec [0.64σ]
OotOffset-st: 3/1/3/0 [7]
KicOffset-st: 3/1/3/0 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.00 [0/10]

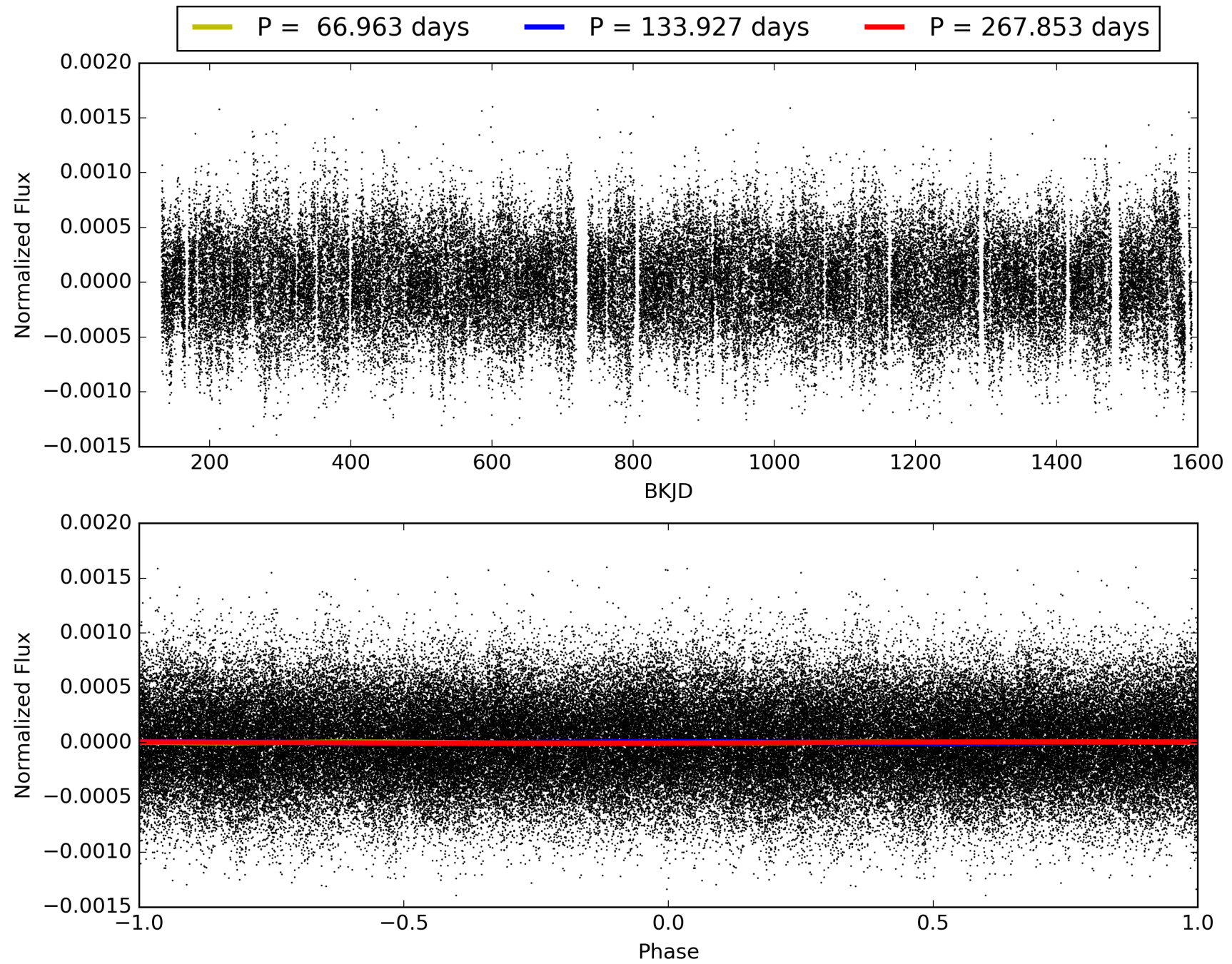
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:47:26 Z

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

TCE 008197220-04, PDC Light Curves

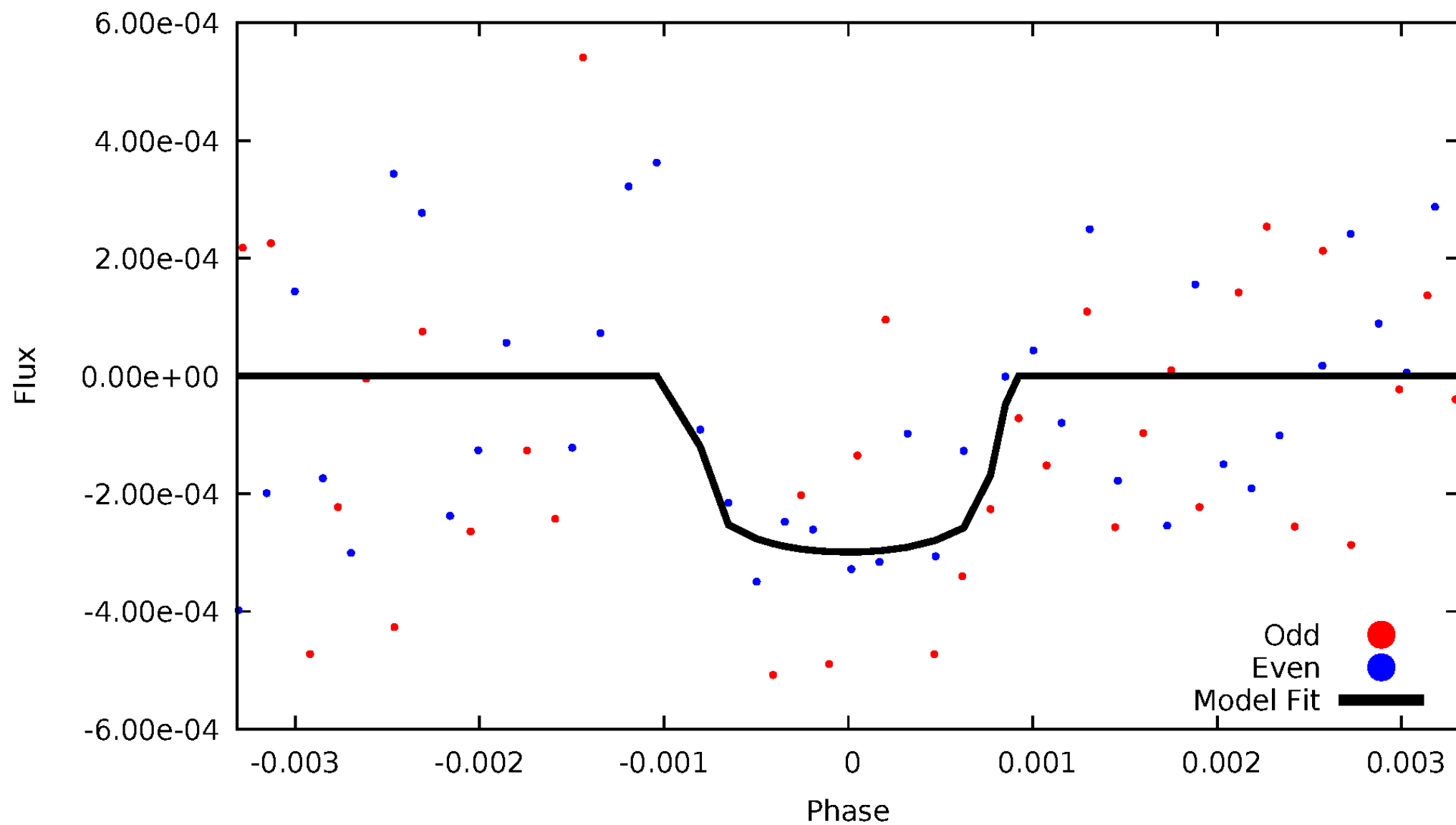


TCE 008197220-04



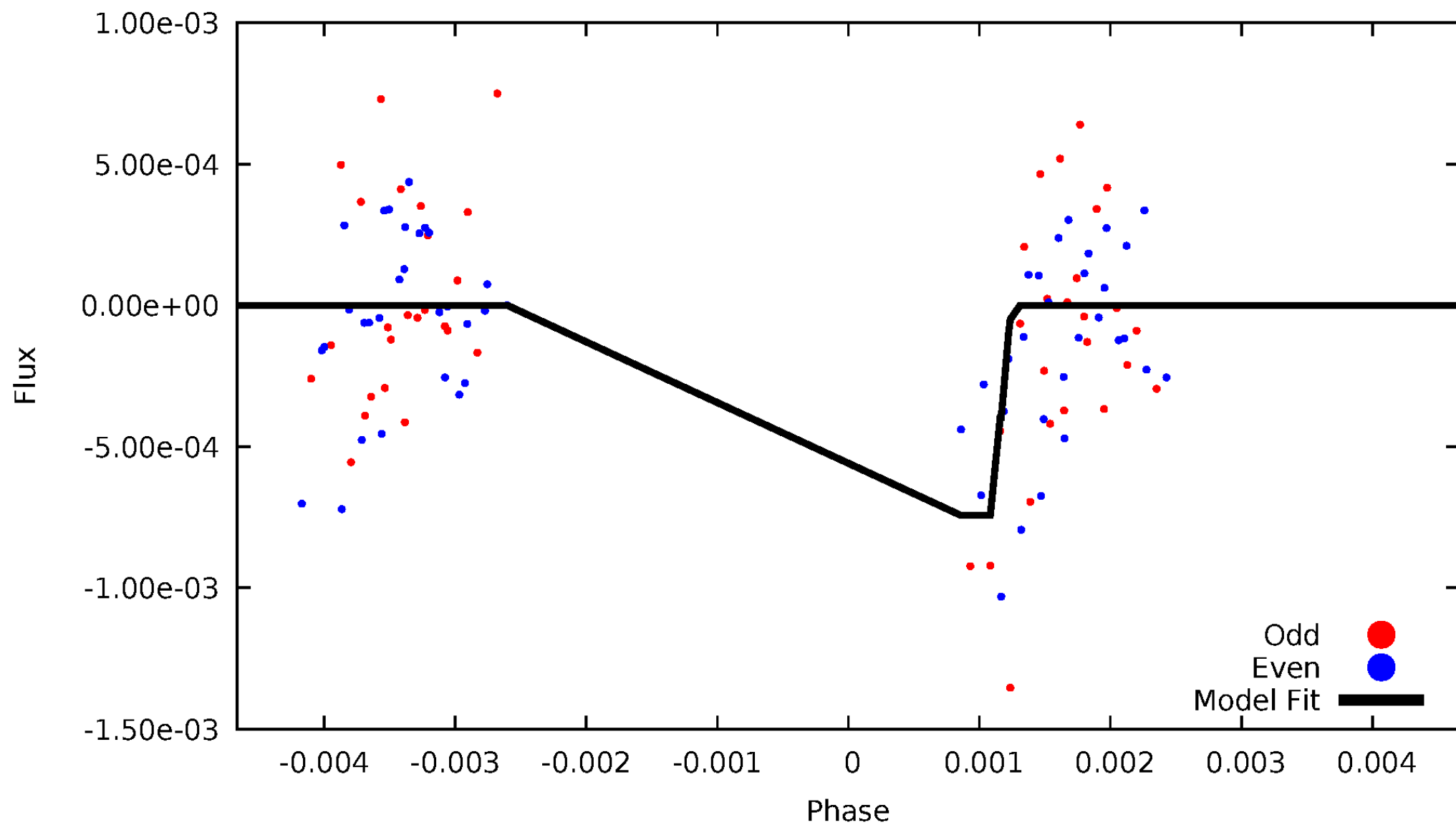
DV Odd/Even

TCE 008197220-04



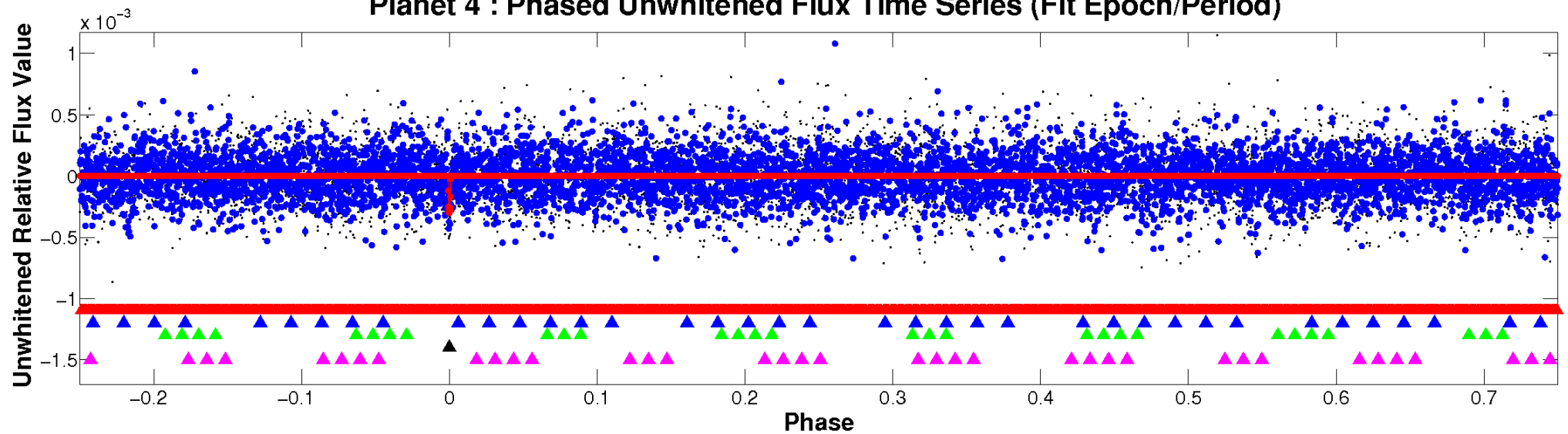
ALT Odd/Even

TCE 008197220-04

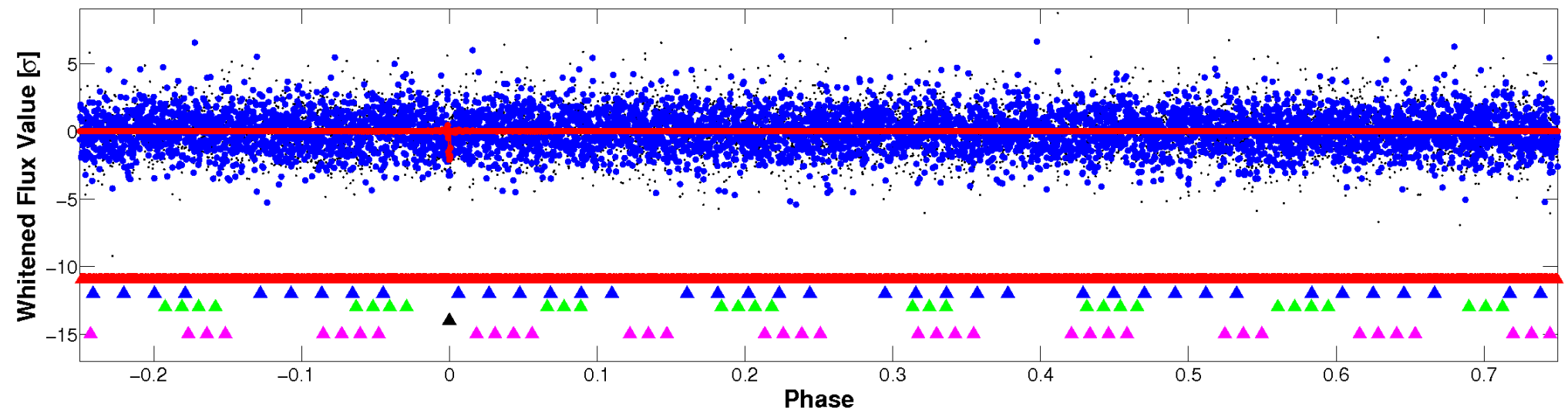


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

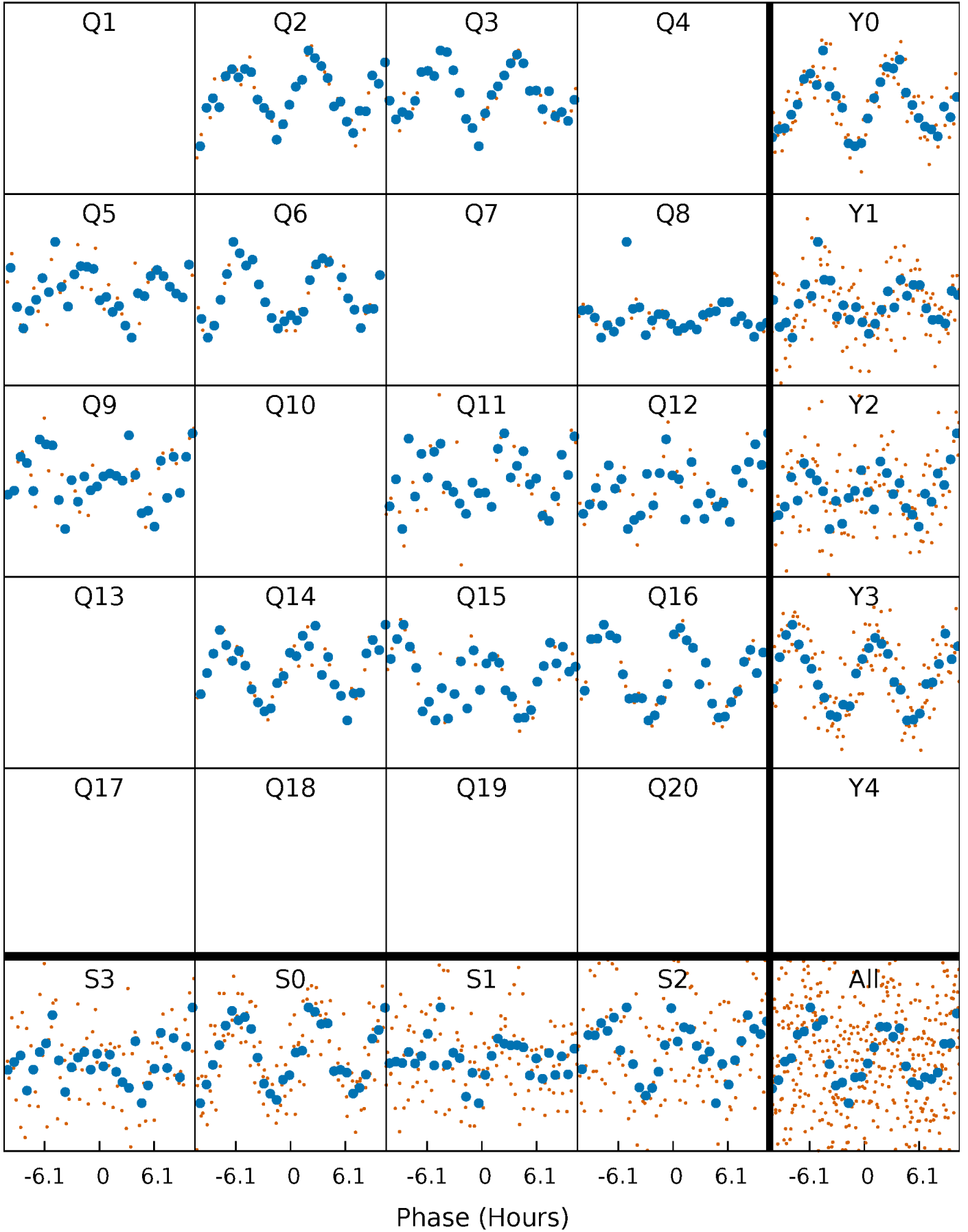


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



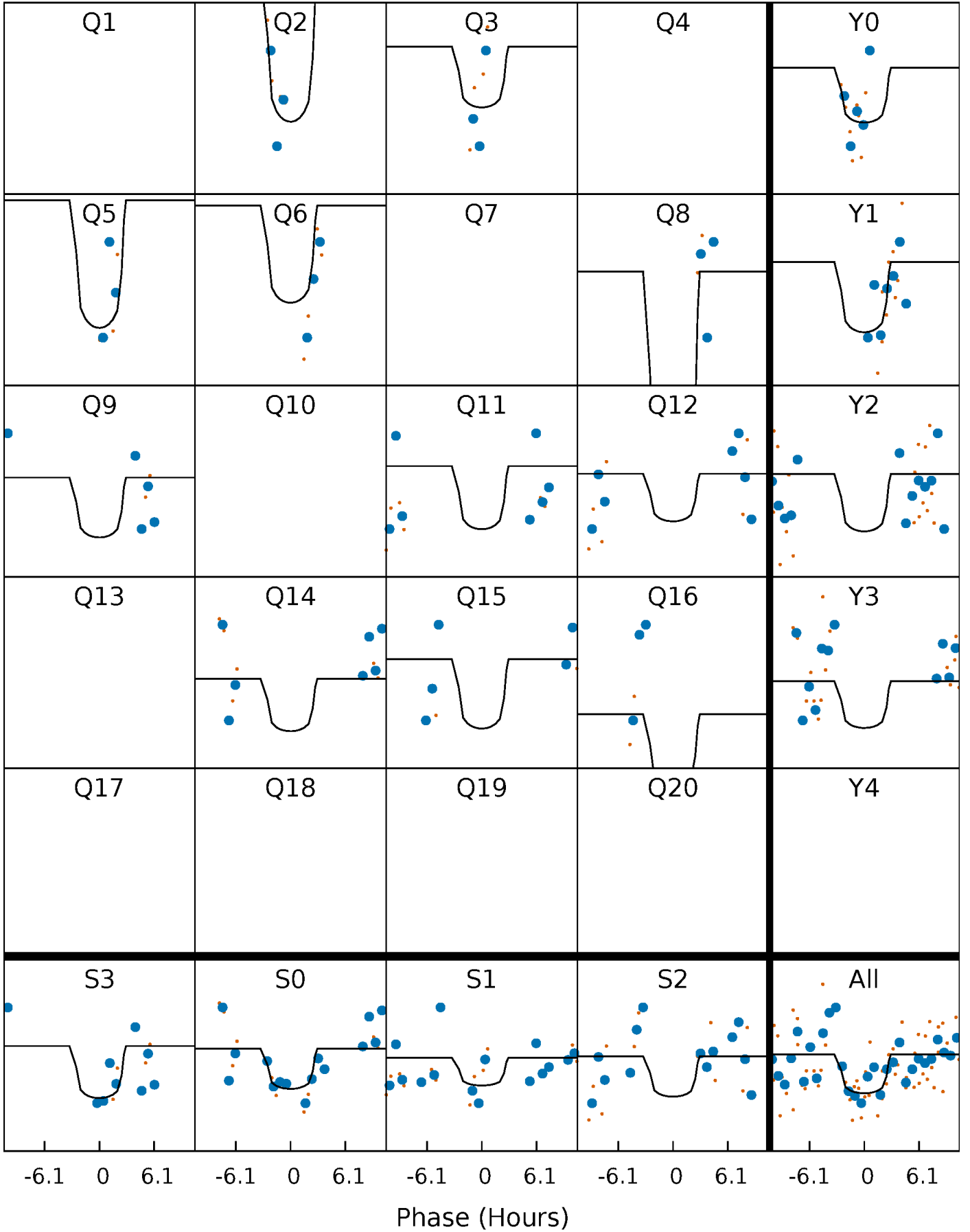
PDC Quarter-Phased Transit Curves

TCE 008197220-04 P=133.926513 Days $T_0=214.153146$ (BKJD)



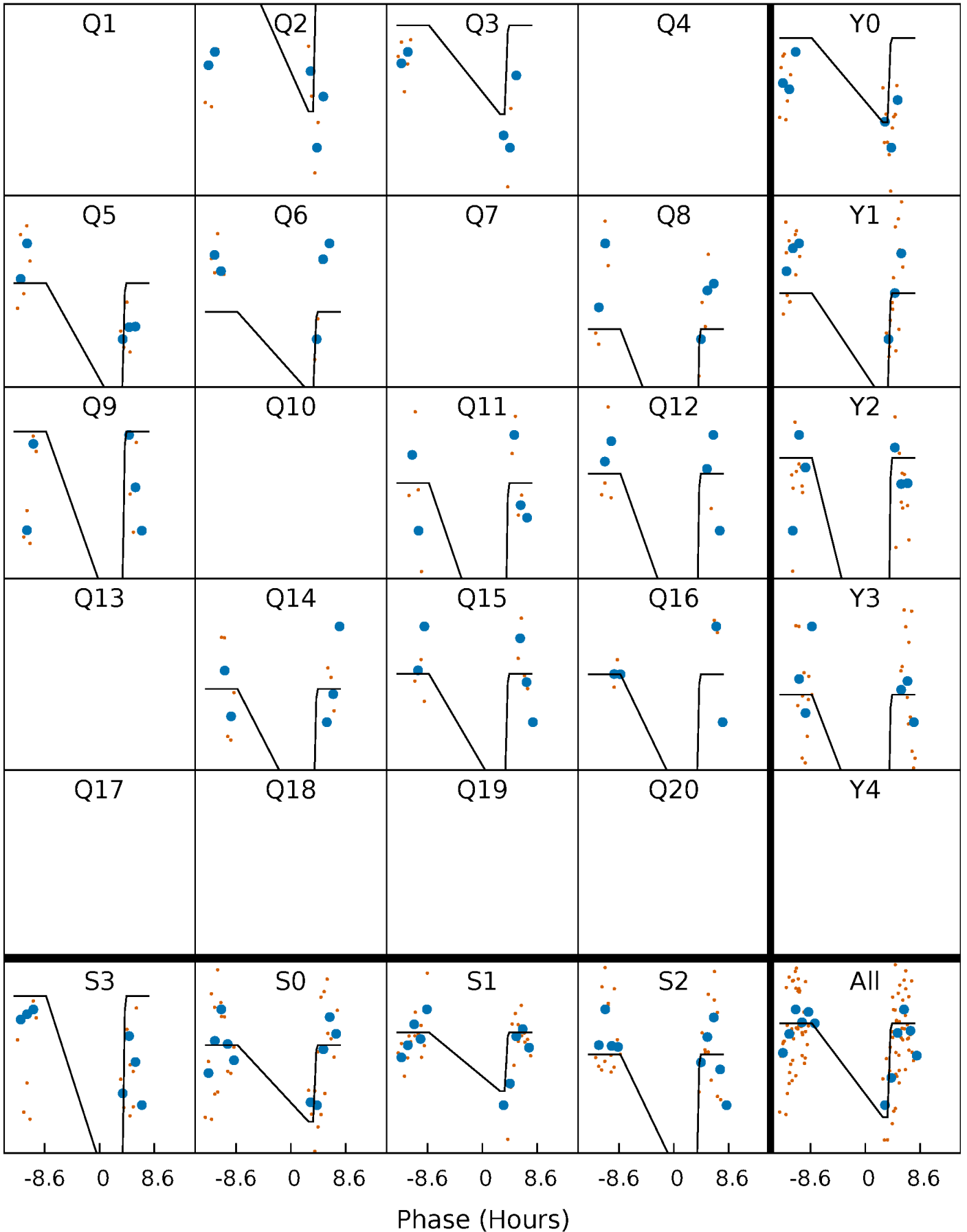
DV Quarter-Phased Transit Curves

TCE 008197220-04 P=133.926513 Days $T_0=214.153146$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

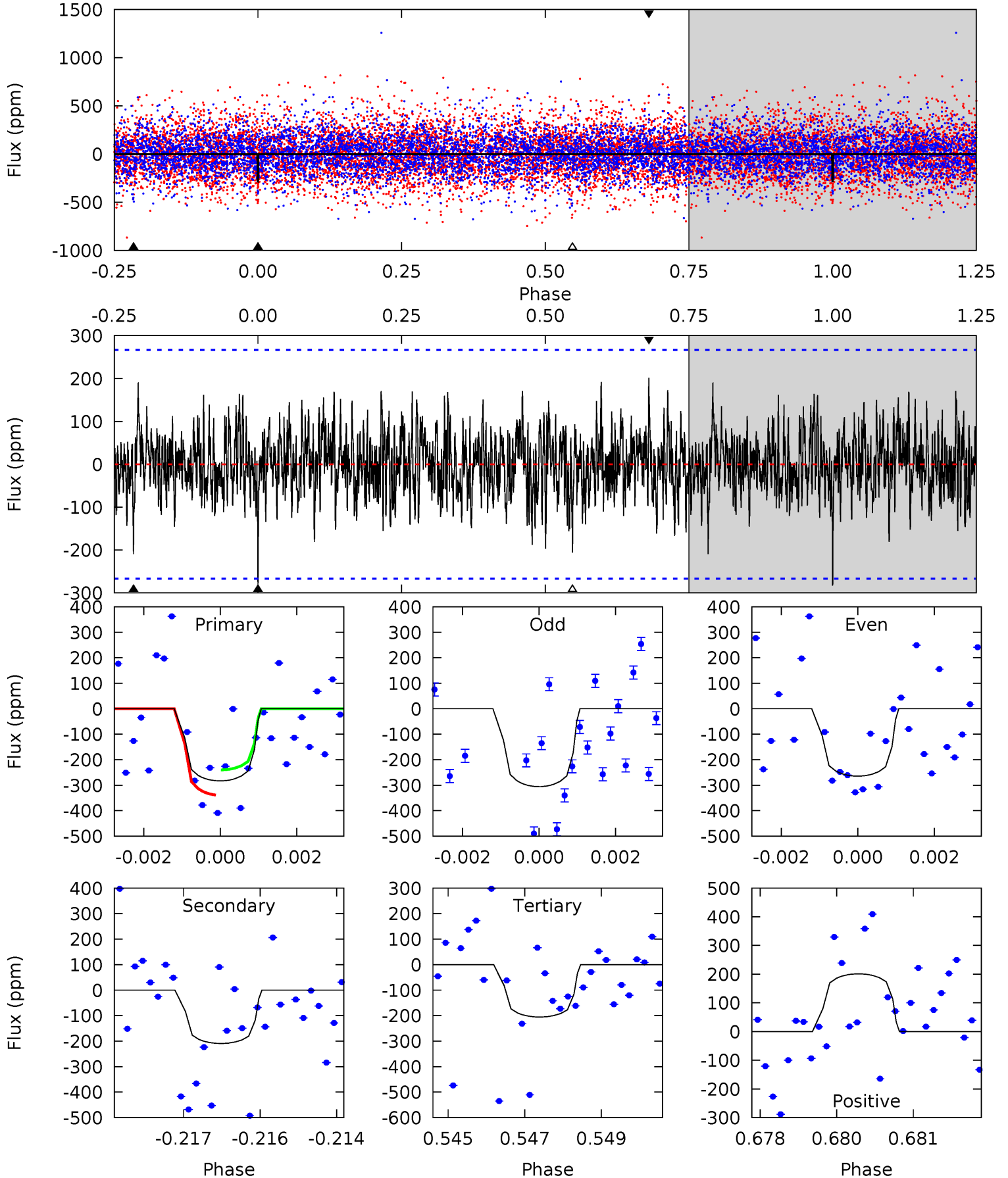
TCE 008197220-04 P=133.969769 Days $T_0=213.930329$ (BKJD)



DV Model-Shift Uniqueness Test

008197220-04, P = 133.926513 Days, E = 80.226633 Days

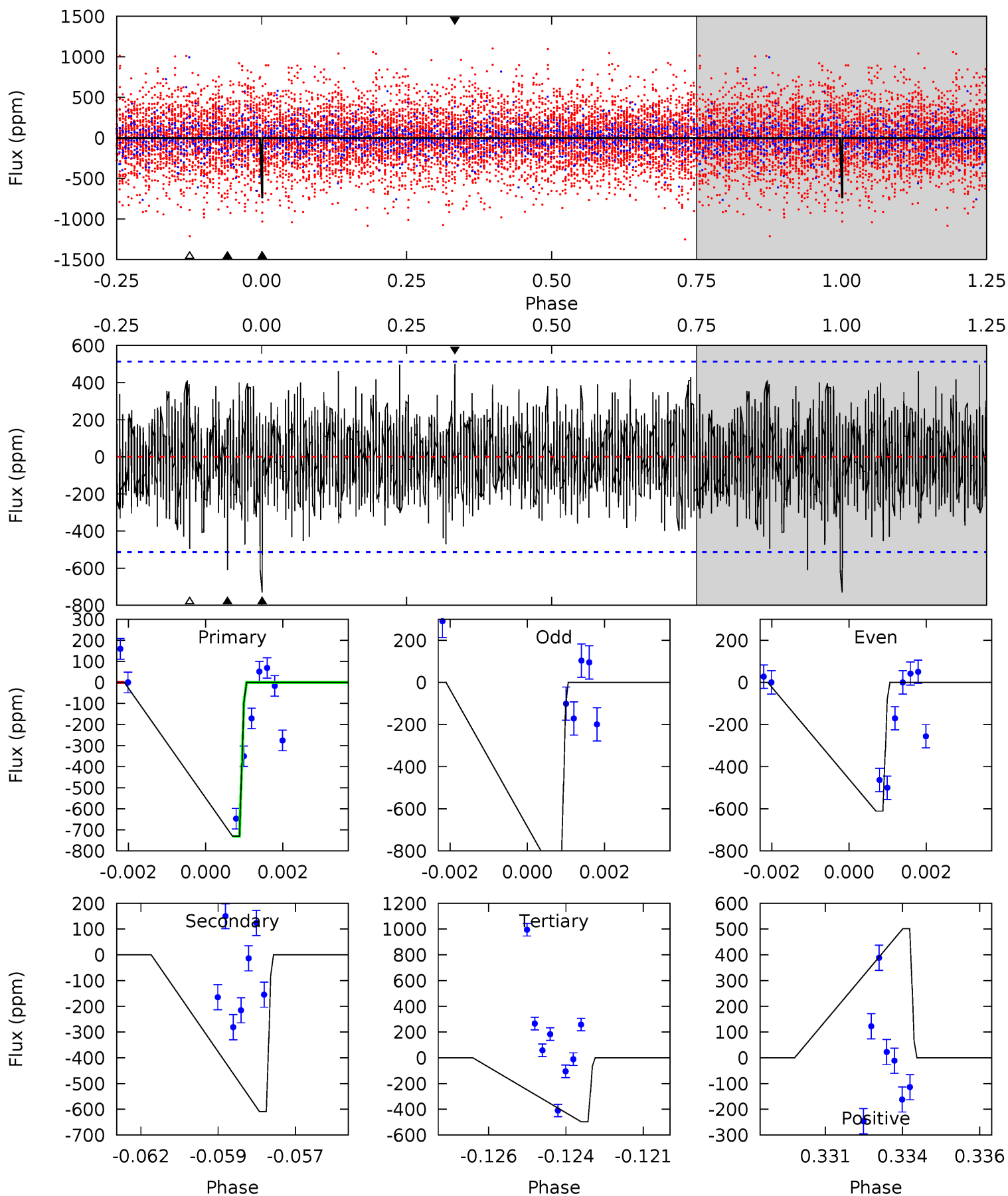
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.69	4.20	4.13	4.04	5.35	3.13	1.25	1.56	1.65	0.07	0.16	0.42	1.15	0.42	0.97



Alt Model-Shift Uniqueness Test

008197220-04, $P = 133.969769$ Days, $E = 79.960560$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.52	6.27	5.11	5.16	5.29	3.03	1.44	2.41	2.36	1.16	1.11	1.47	0.95	0.41	0



Stellar Parameters For KIC 008197220

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7827^{+214}_{-322}	$4.037^{+0.176}_{-0.144}$	$0.000^{+0.200}_{-0.350}$	$2.130^{+0.467}_{-0.519}$	$1.799^{+0.145}_{-0.339}$	$0.262^{+0.258}_{-0.113}$
	+3%/-4%	+4%/-4%	+inf%/-inf%	+22%/-24%	+8%/-19%	+98%/-43%
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 008197220-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-209 ± 50	$11.56^{+12.92}_{-8.09}$	886^{+64}_{-60}	4265^{+3410}_{-975}	300^{+3340}_{-231}
Alt.	-609 ± 97	$13.23^{+14.19}_{-8.69}$	884^{+58}_{-60}	4998^{+4162}_{-1188}	717^{+5703}_{-553}

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 $A_{obs} \gg 1.0$

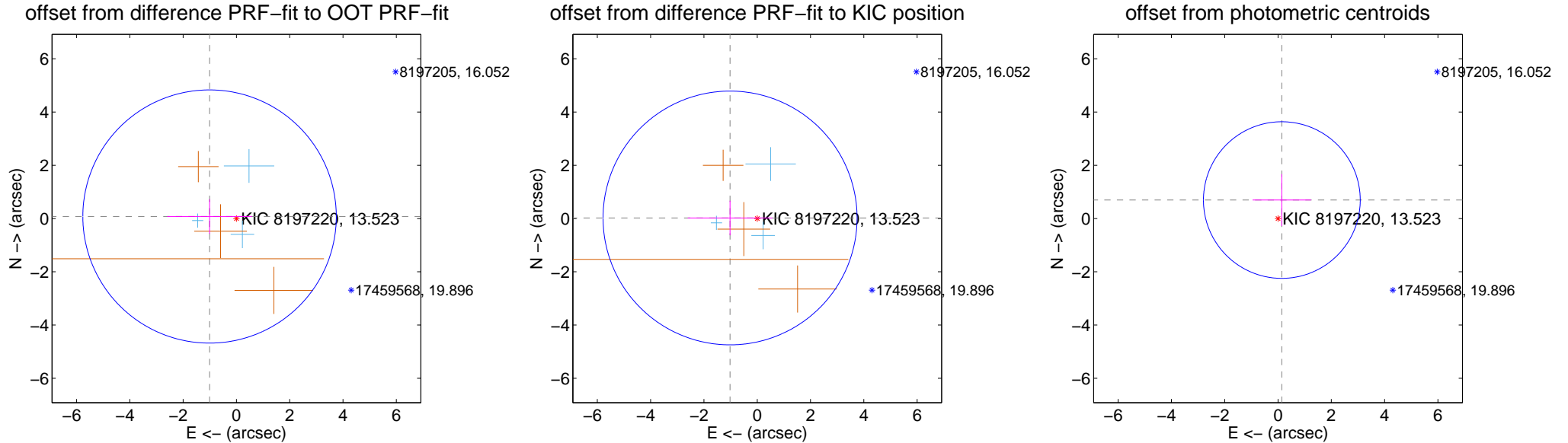
DV Centroid Data

Supplemental centroid analysis for 008197220-04. Kepler magnitude: 13.52. Transit SNR 7.41

There are 3 quarters with good PRF difference image offsets

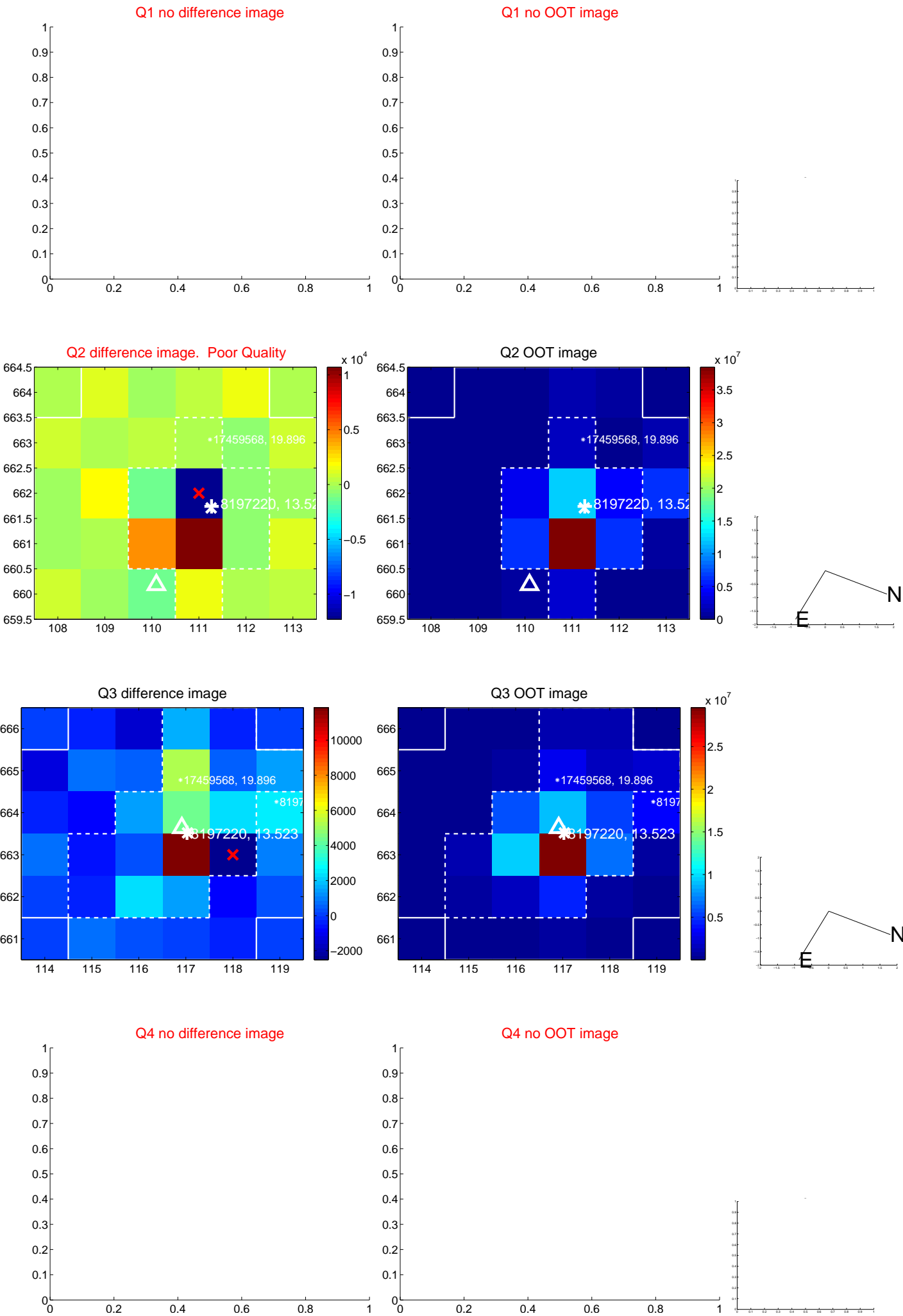
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.010 ± 1.585	0.64	1.008 ± 1.589	0.076 ± 0.649
PRF-fit source offset from KIC position	1.019 ± 1.588	0.64	1.019 ± 1.589	0.021 ± 0.649
photometric centroid source offset	0.71 ± 0.98	0.72	-0.14 ± 1.10	0.69 ± 0.98

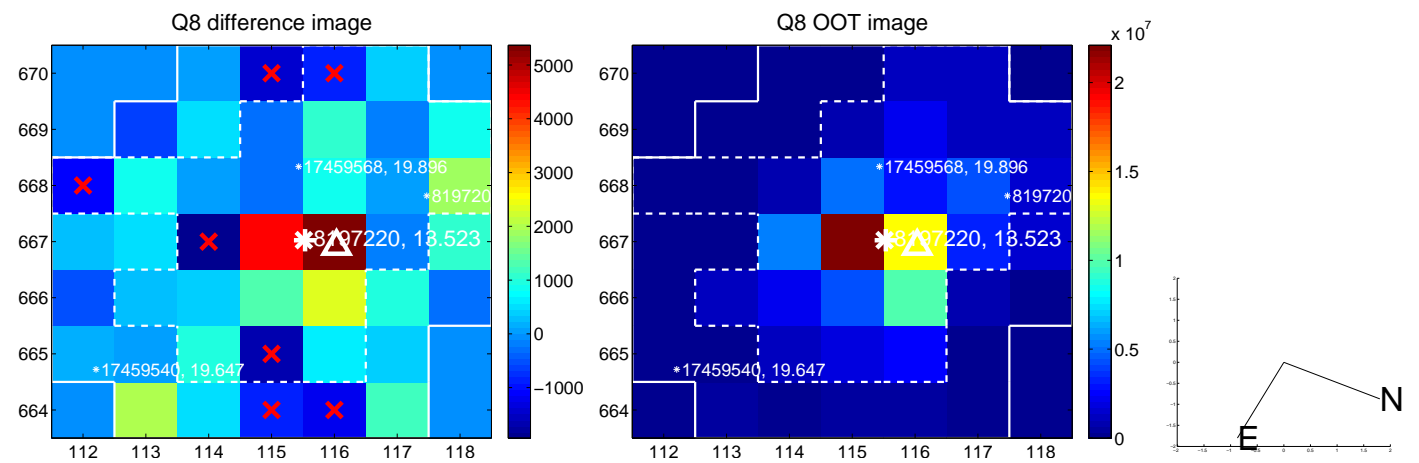
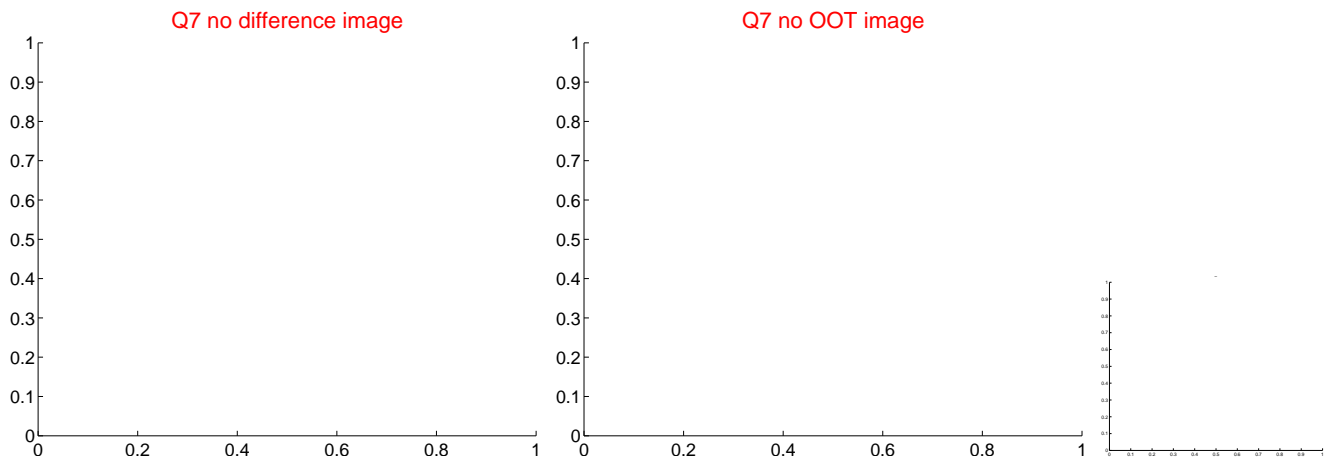
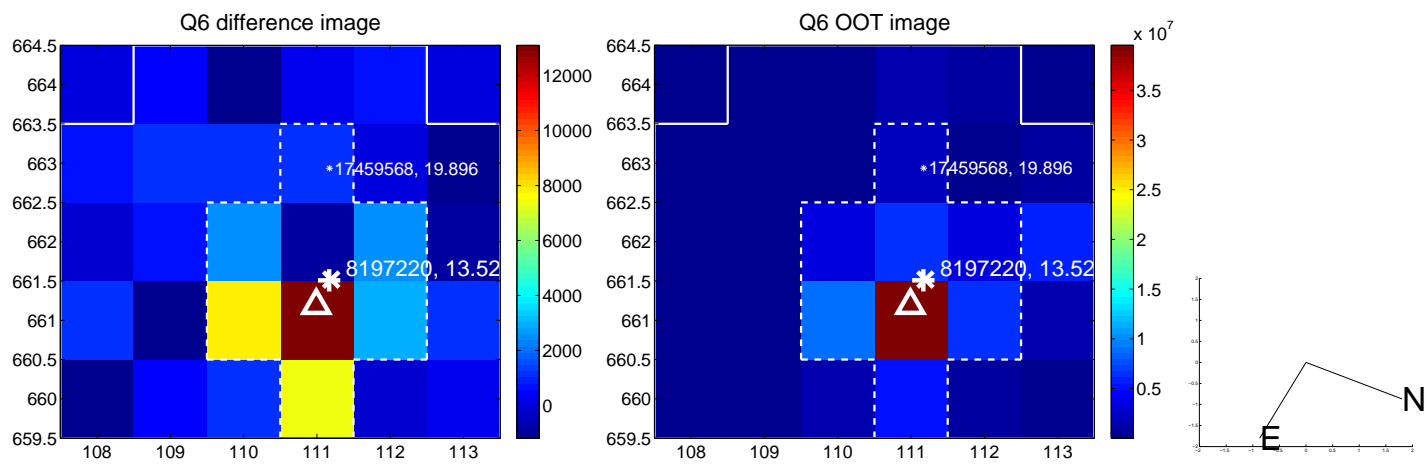
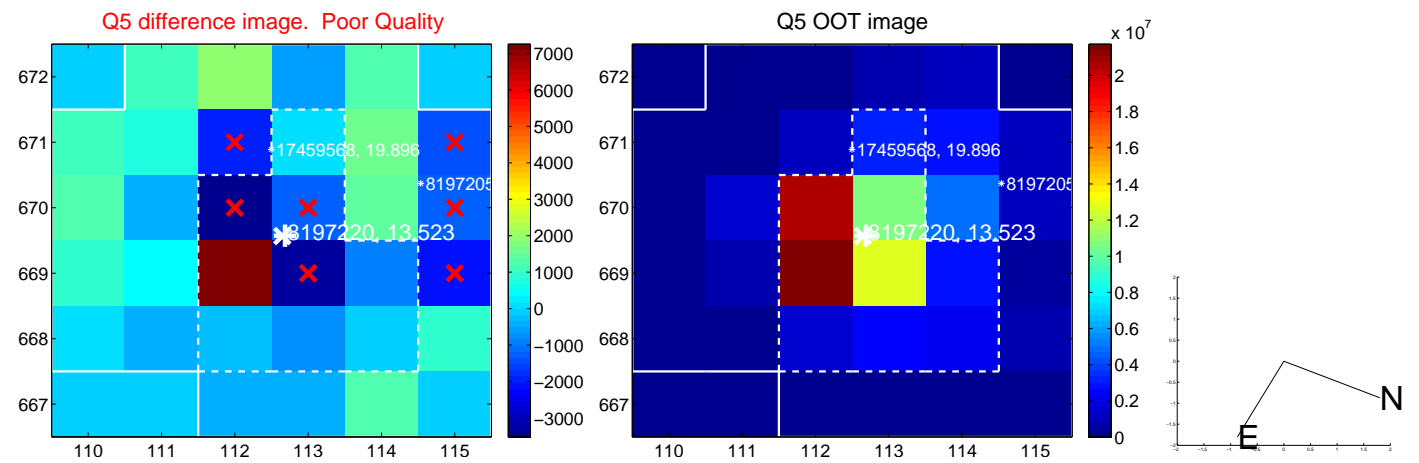


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

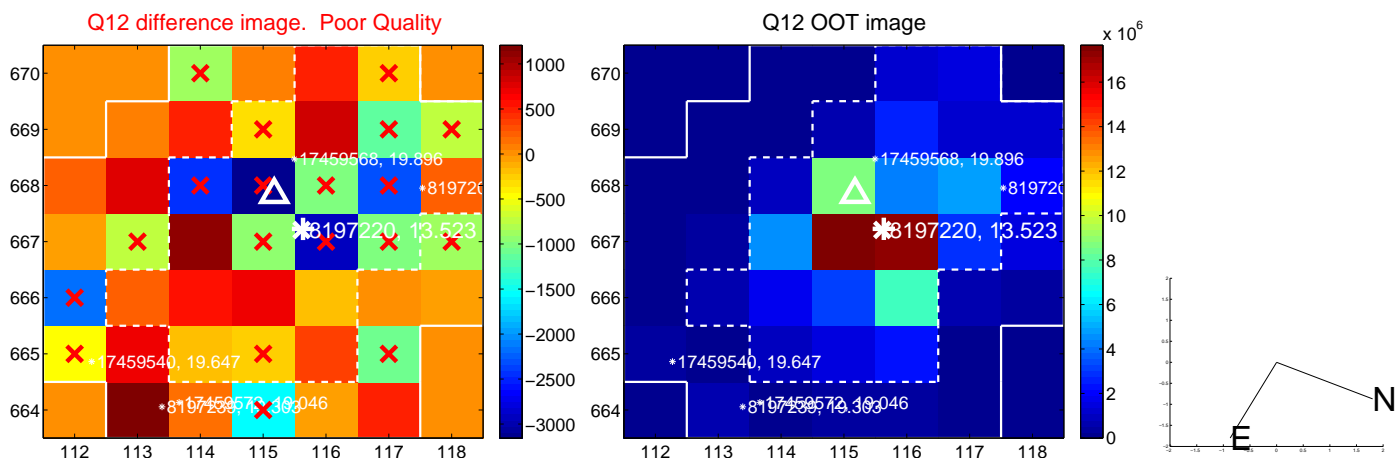
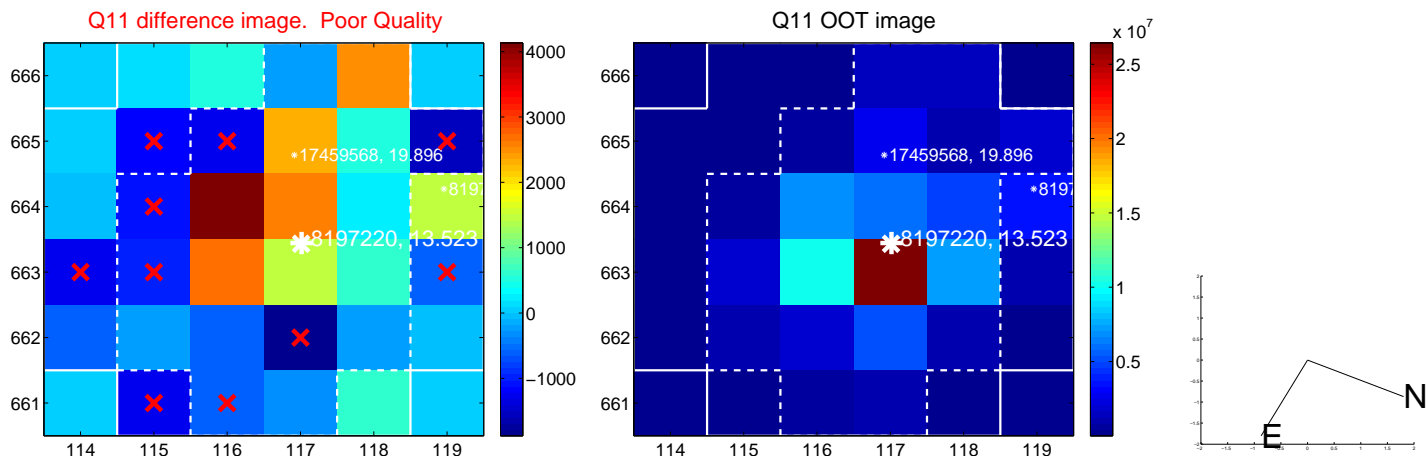
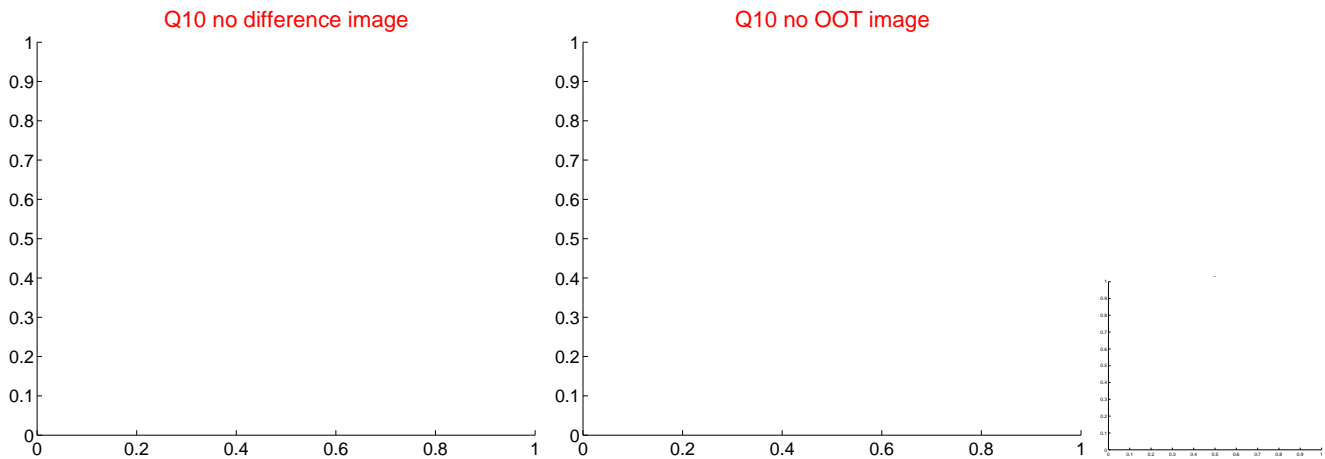
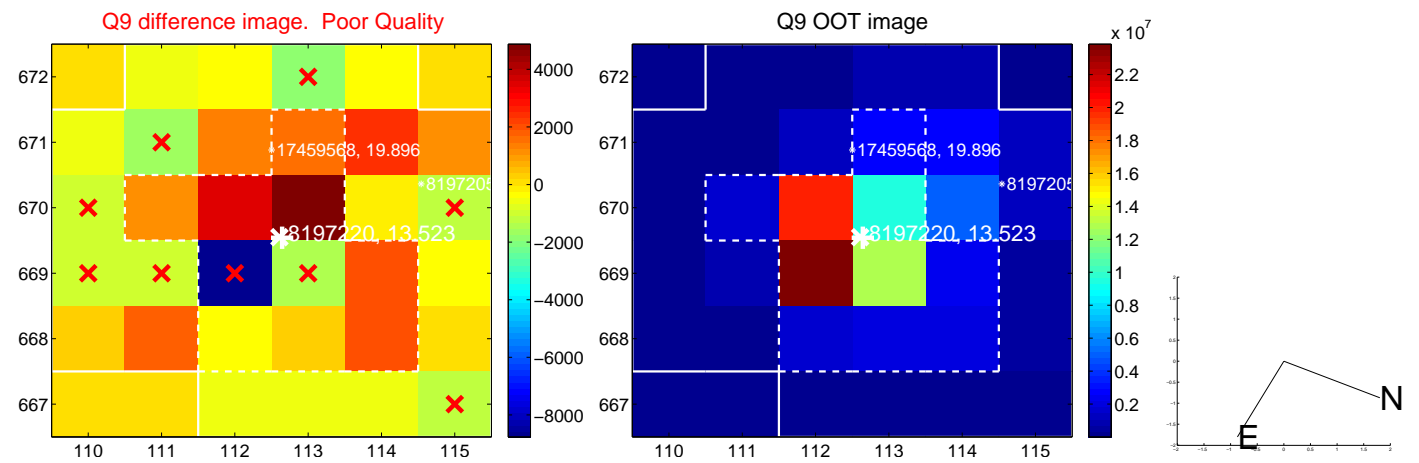
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

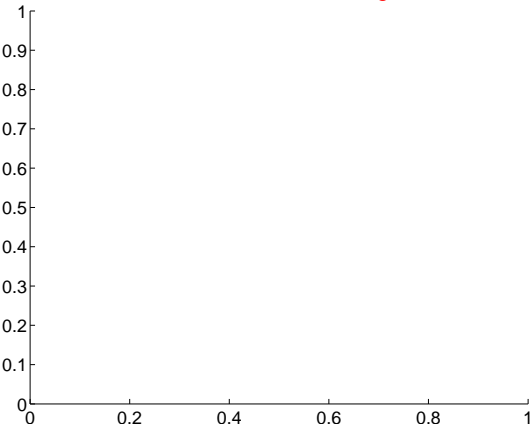


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

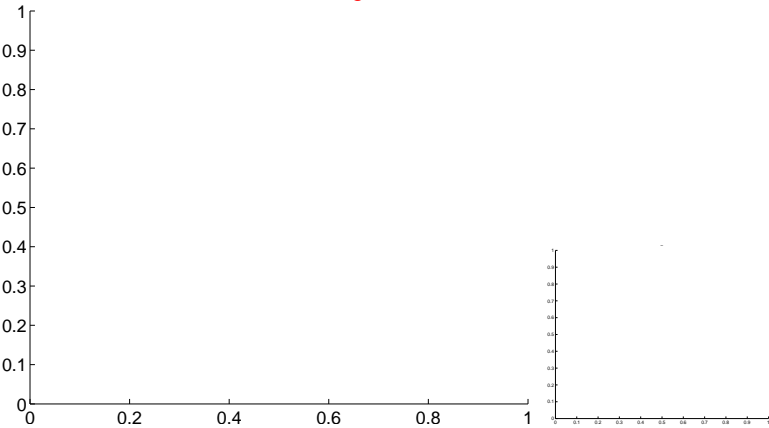


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

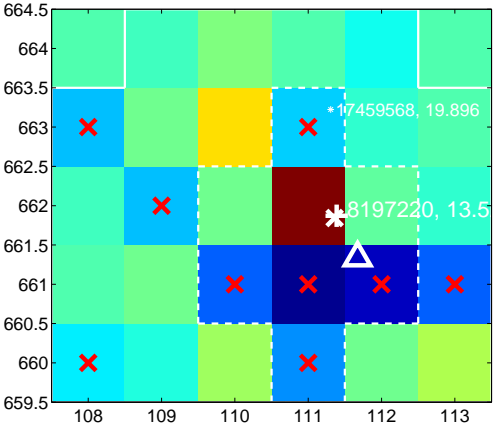
Q13 no difference image



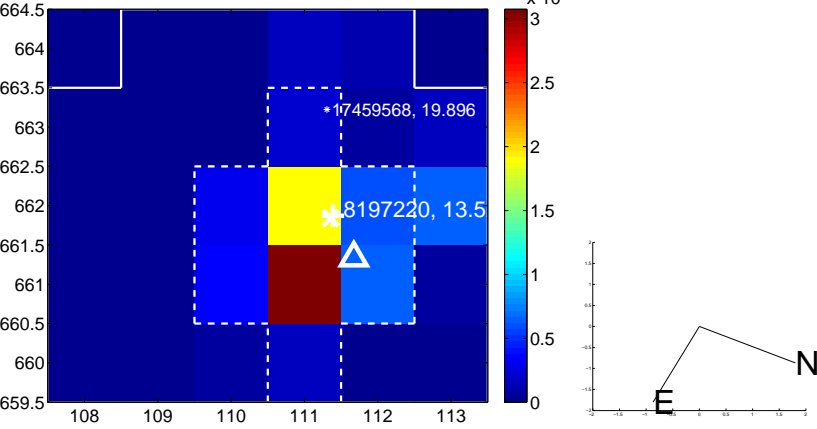
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



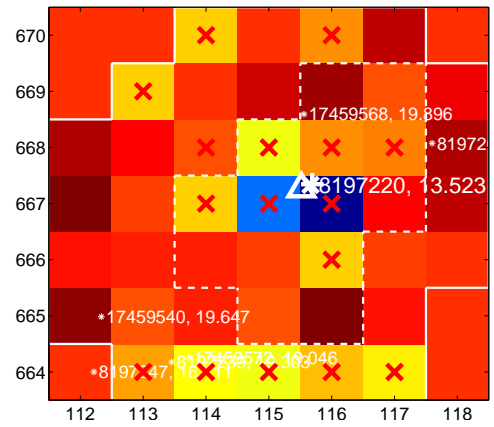
Q15 no difference image



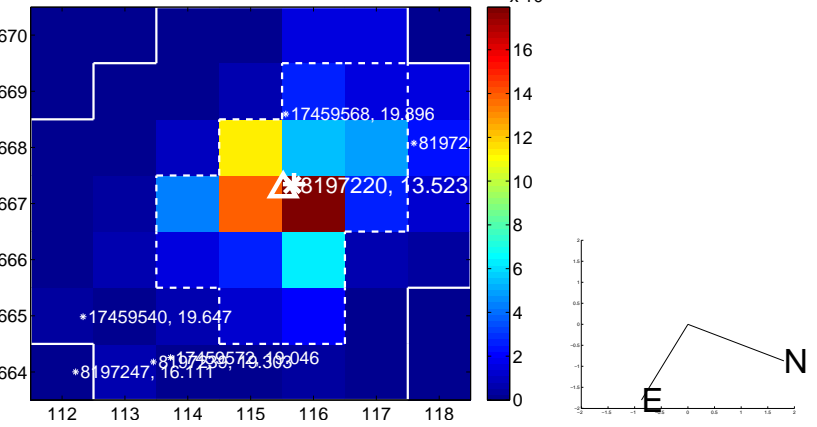
Q15 no OOT image



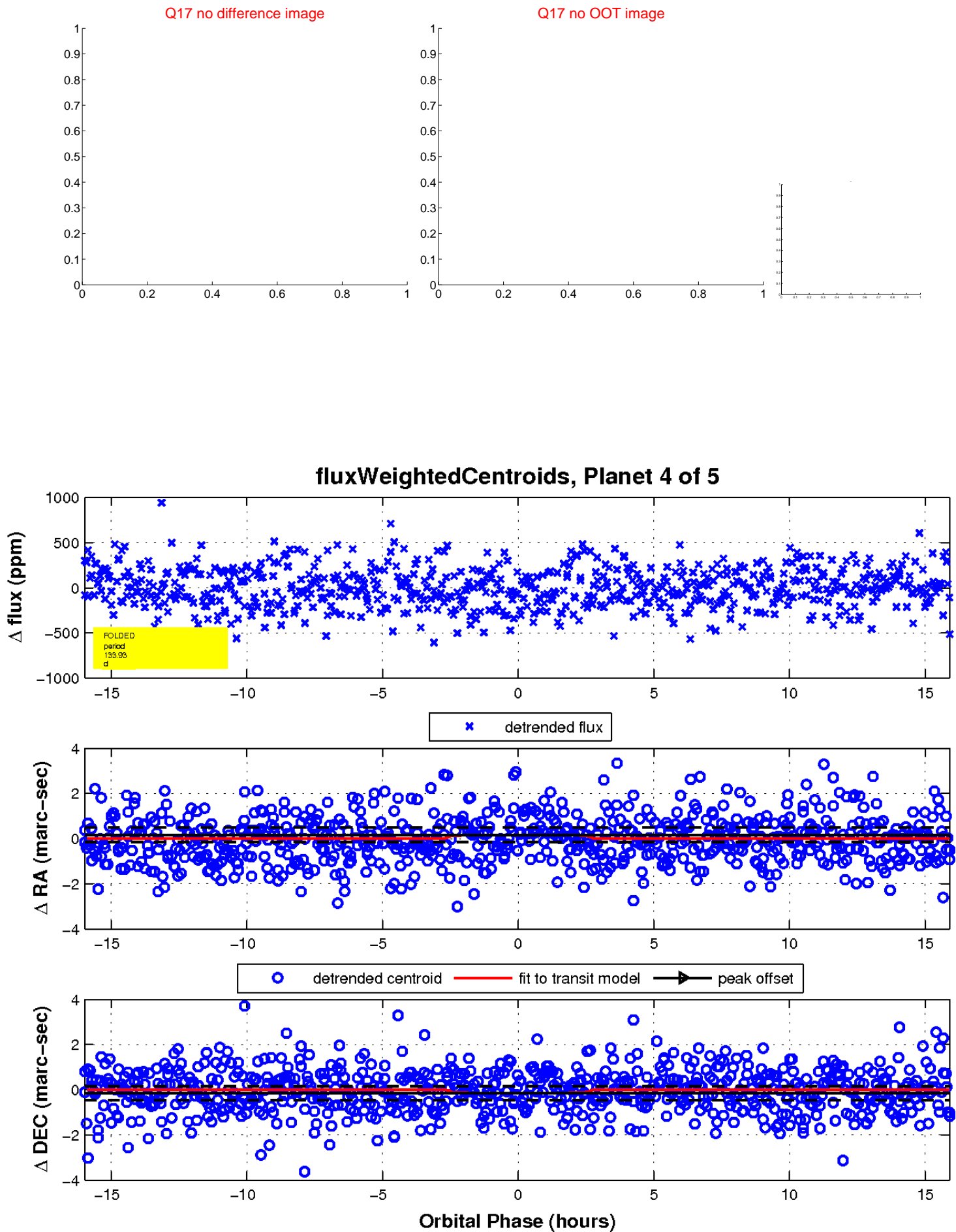
Q16 difference image. Poor Quality



Q16 OOT image

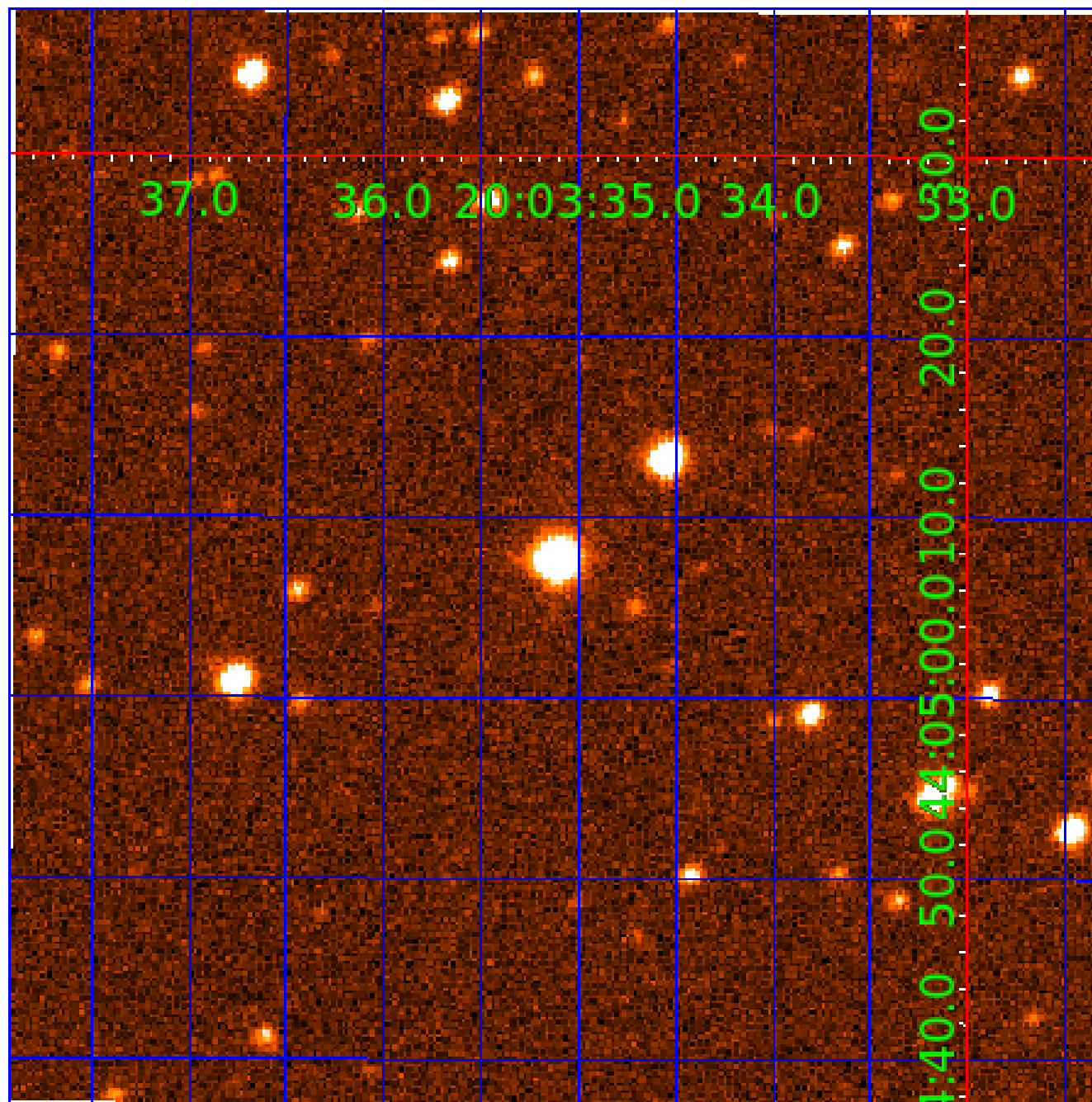


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008197220

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})
008197220-01	OBS	No	0.673285	131.607463	10.4	4.416	8.2	5.1	2.13	7827	0.74	45561.36
008197220-02	OBS	No	38.662140	137.648571	262.8	3.341	8.5	10.3	2.13	7827	3.84	205.66
008197220-03	OBS	No	50.412543	137.988576	327.9	2.508	8.7	9.5	2.13	7827	4.42	144.37
008197220-04	OBS	No	133.926513	214.153146	299.2	5.325	8.5	7.4	2.13	7827	3.73	39.24
008197220-05	OBS	No	40.010239	141.630317	485.2	1.059	10.1	9.2	2.13	7827	4.99	196.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008197220-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008197220-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008197220-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008197220-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV

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

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

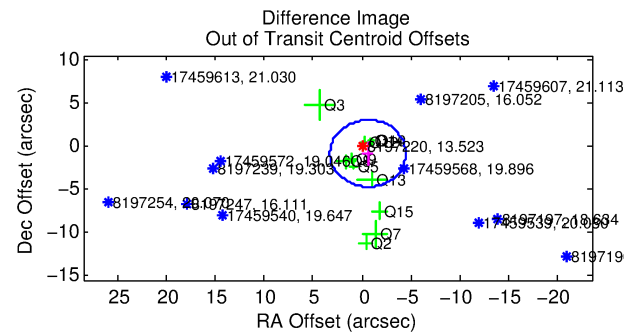
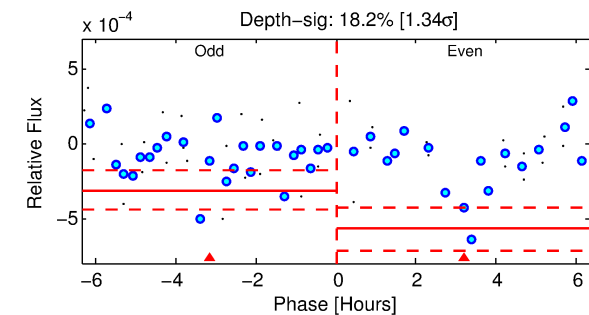
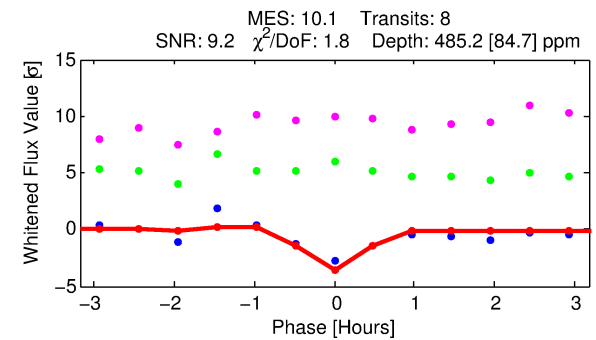
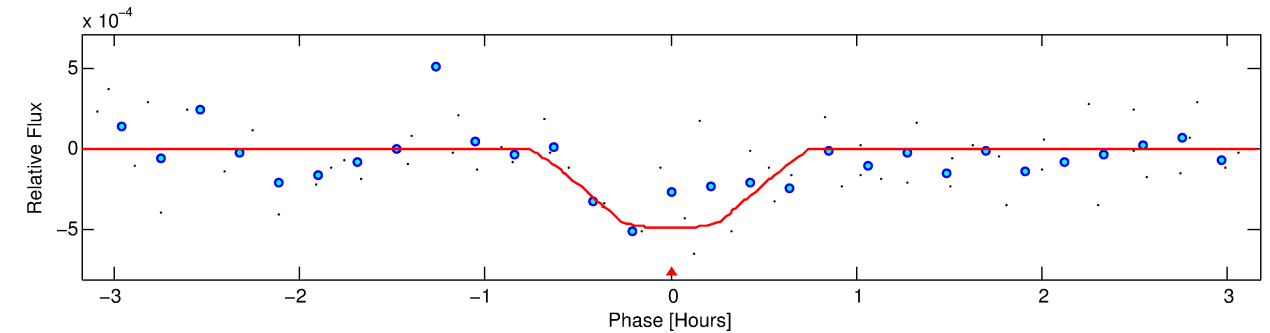
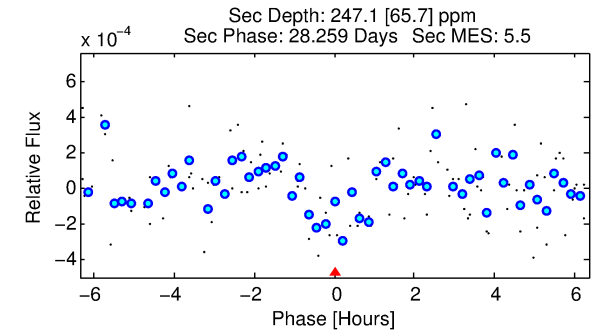
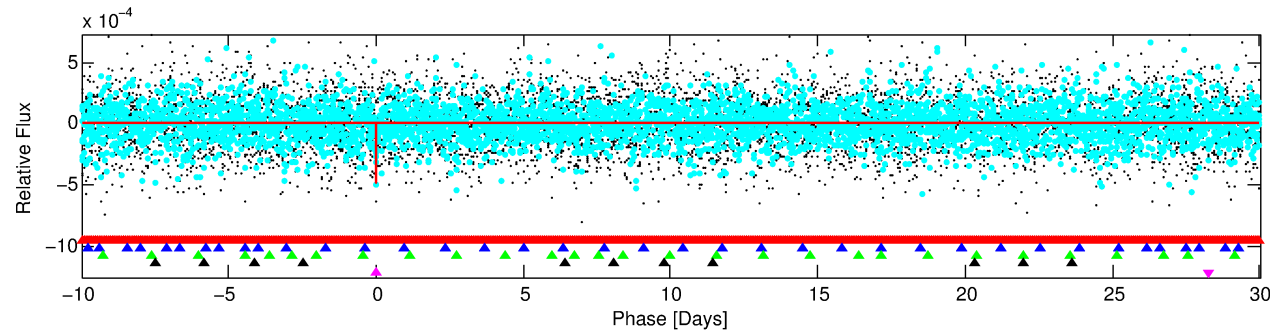
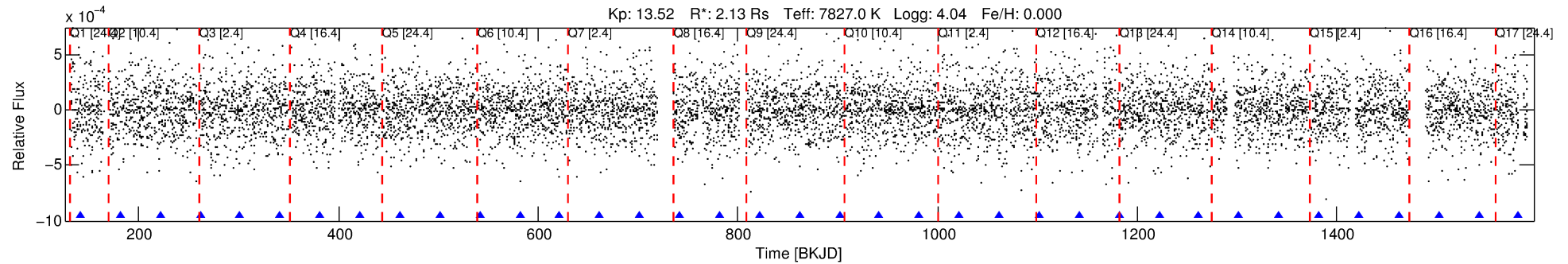
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197220-05

No Significant Match Found

DV One-Page Summary

KIC: 8197220 Candidate: 5 of 5 Period: 40.010 d



DV Fit Results:

Period = 40.01024 [0.00041] d
Epoch = 141.6303 [0.0099] BKJD
Rp/R* = 0.0215 [0.0209]
a/R* = 233.52 [1361.82]
b = 0.62 [5.78]
Seff = 196.47 [69.87]
Teq = 955 [85] K
Rp = 4.99 [5.00] Re
a = 0.2787 [0.0589] AU
Ag = 424.31 [844.22] [0.50σ]
Teffp = 6699 [3302] K [1.74σ]

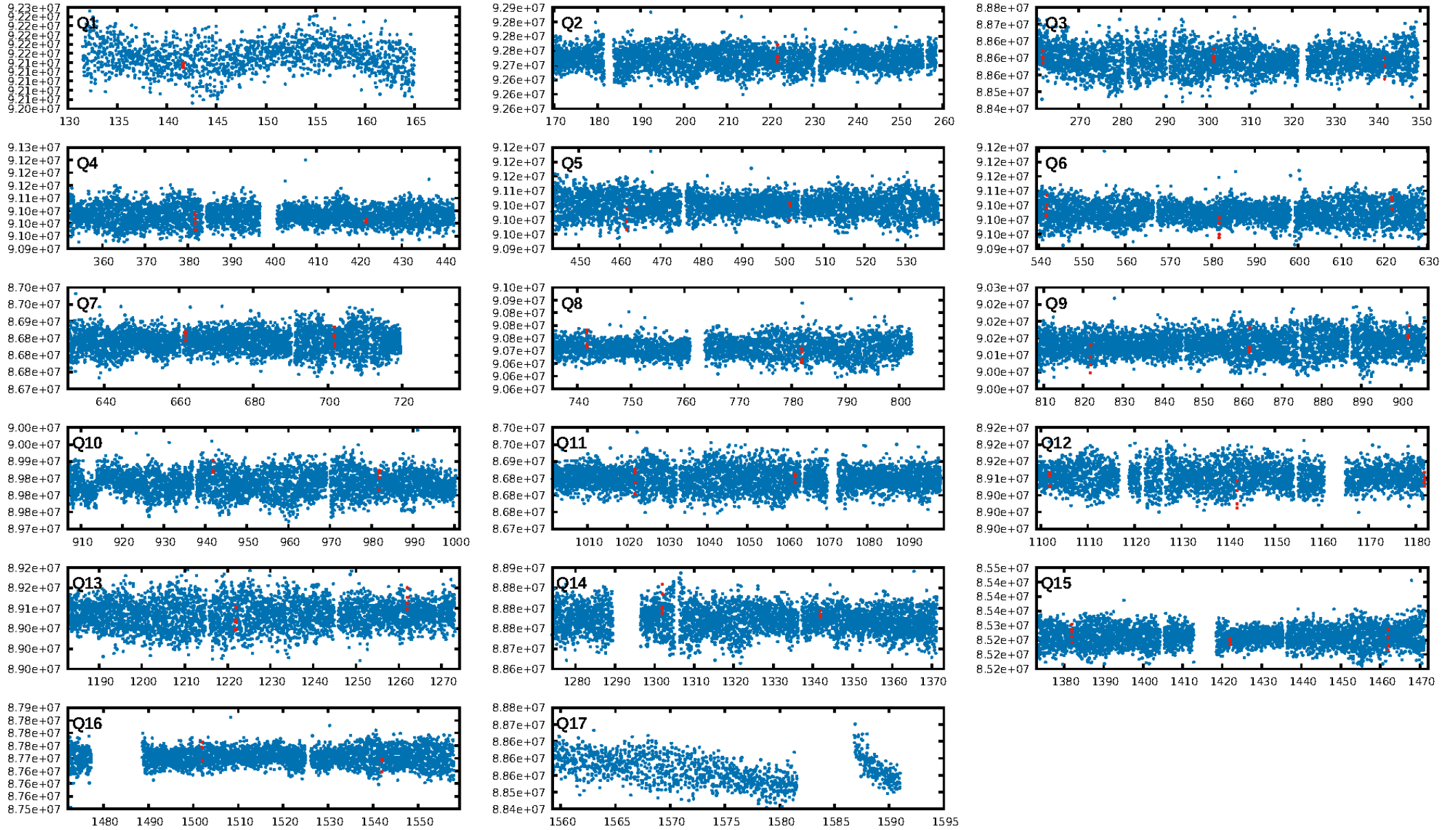
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.23σ]
LongPeriod-sig: 100.0% [91.71σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 46.4%
Bootstrap-pfa: 3.23e-10
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -1.86
Centroid-sig: 57.5%
Centroid-so: 0.311 arcsec [0.39σ]
OotOffset-rm: 1.028 arcsec [0.80σ]
KicOffset-rm: 1.109 arcsec [0.91σ]
OotOffset-st: 3/3/2/3 [11]
KicOffset-st: 3/3/2/3 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 0.12 [2/16]

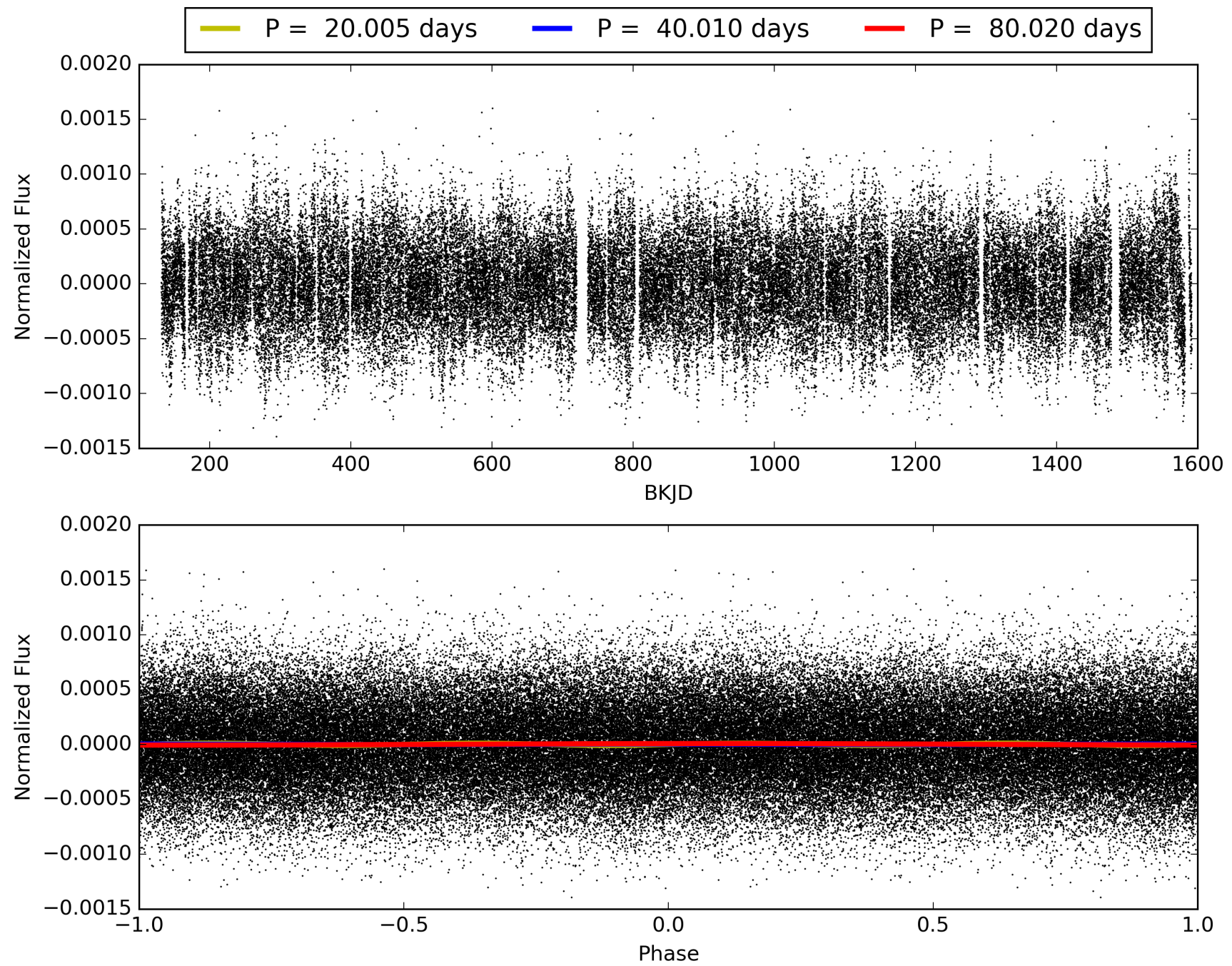
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:47:30 Z

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

TCE 008197220-05, PDC Light Curves

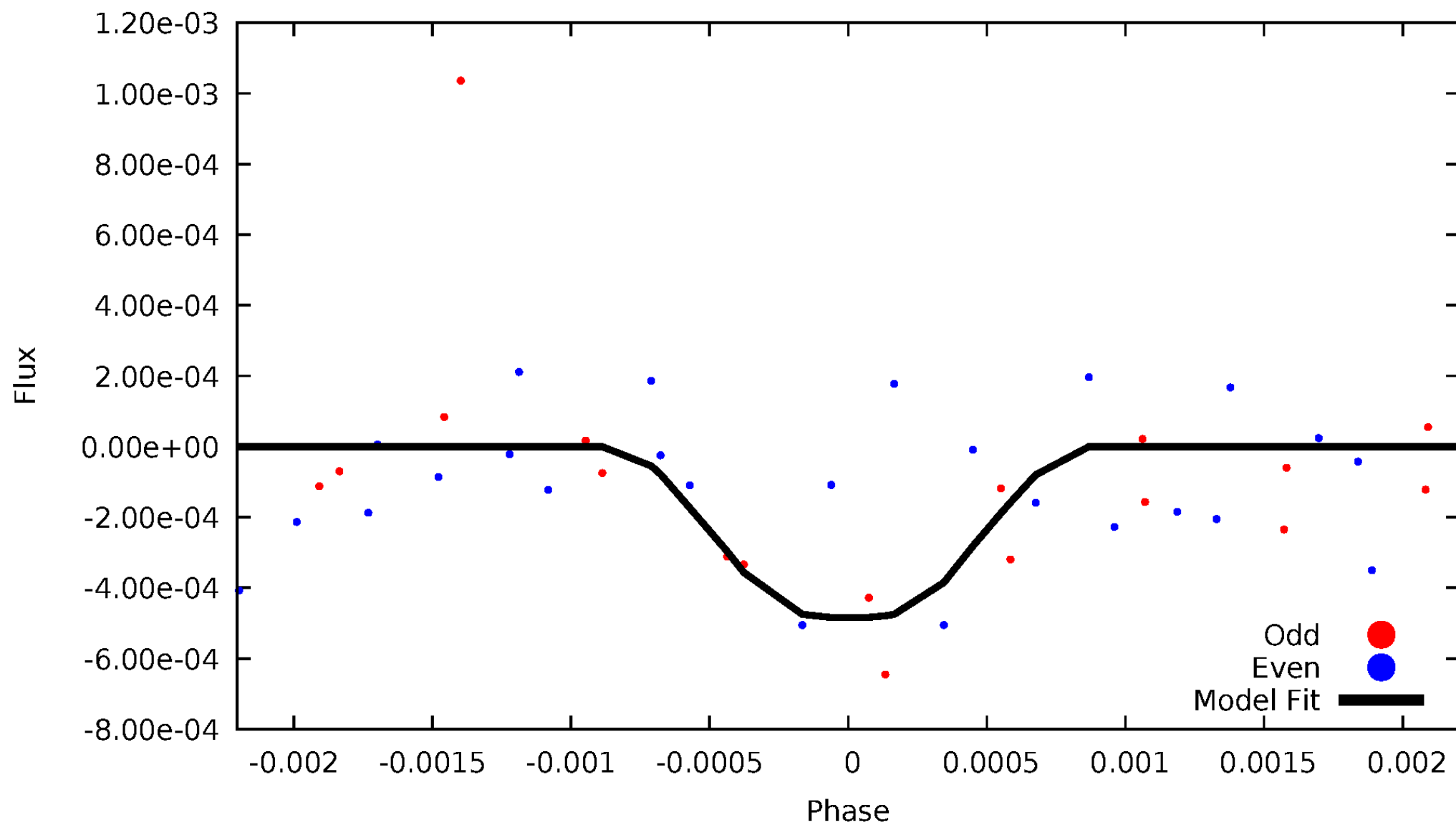


TCE 008197220-05



DV Odd/Even

TCE 008197220-05

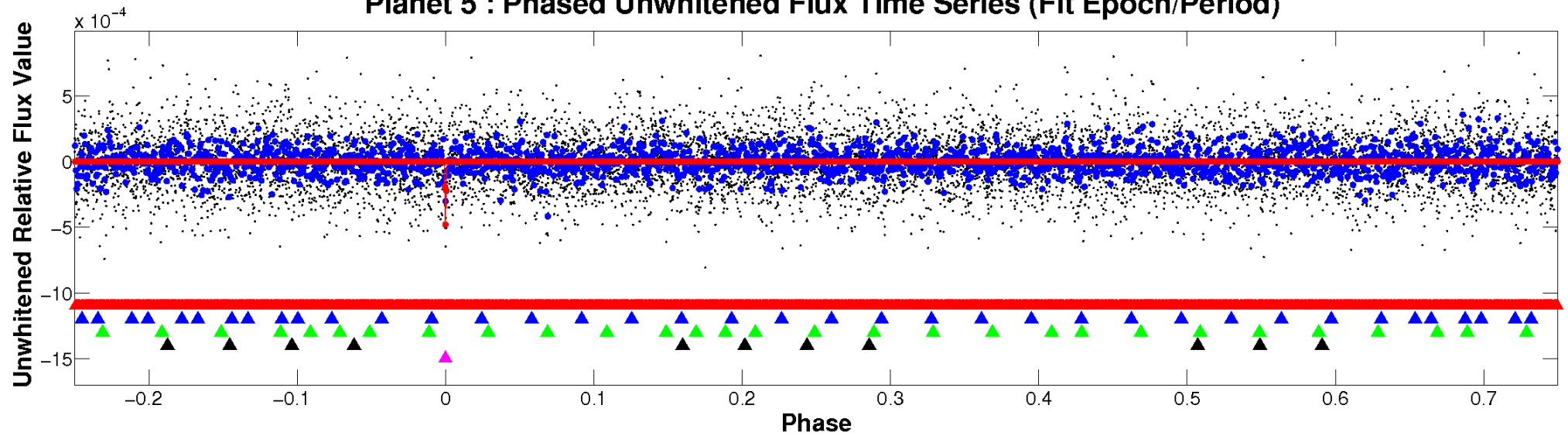


ALT Odd/Even

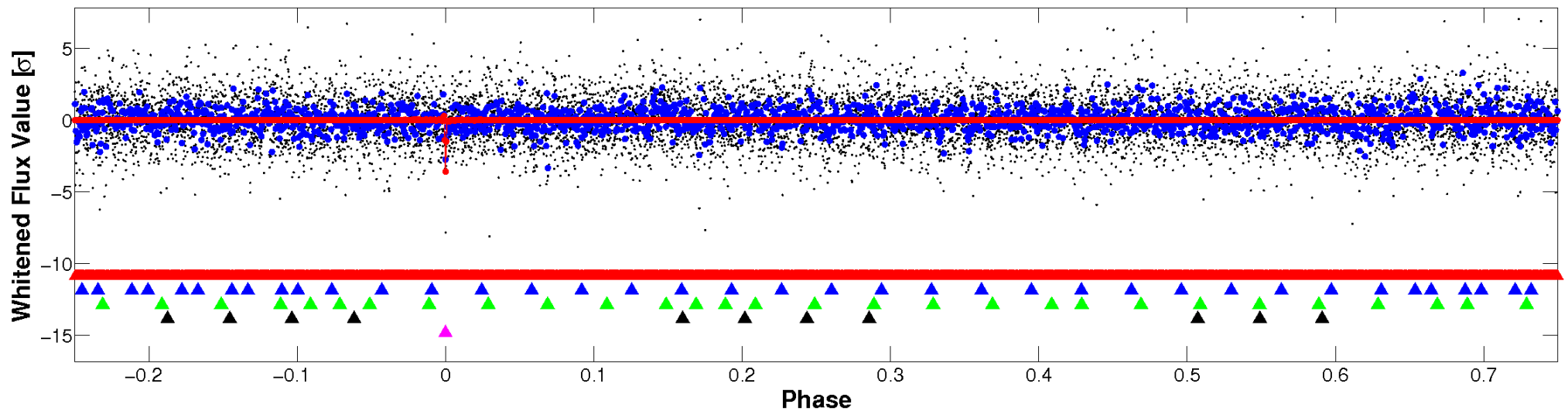
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

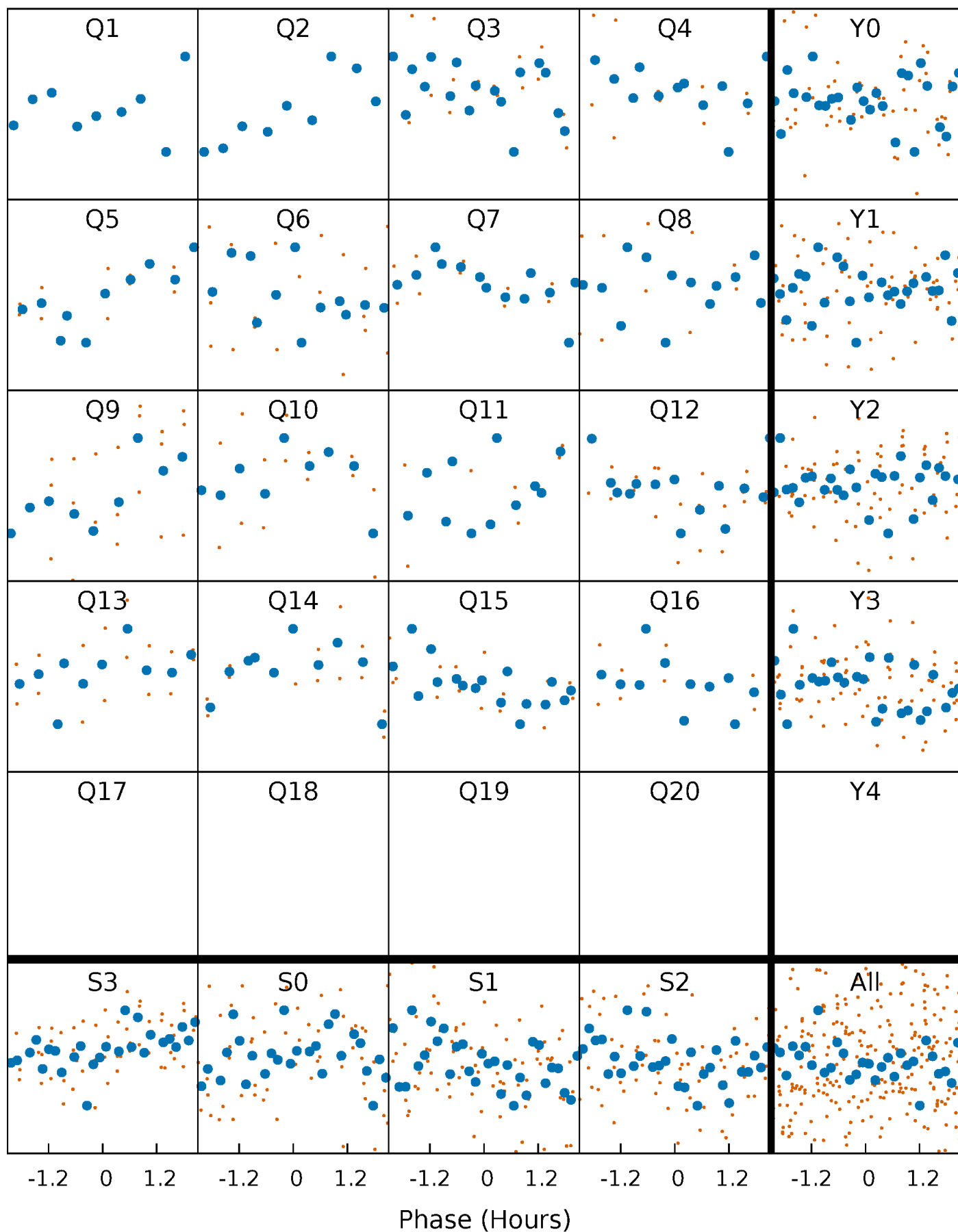


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



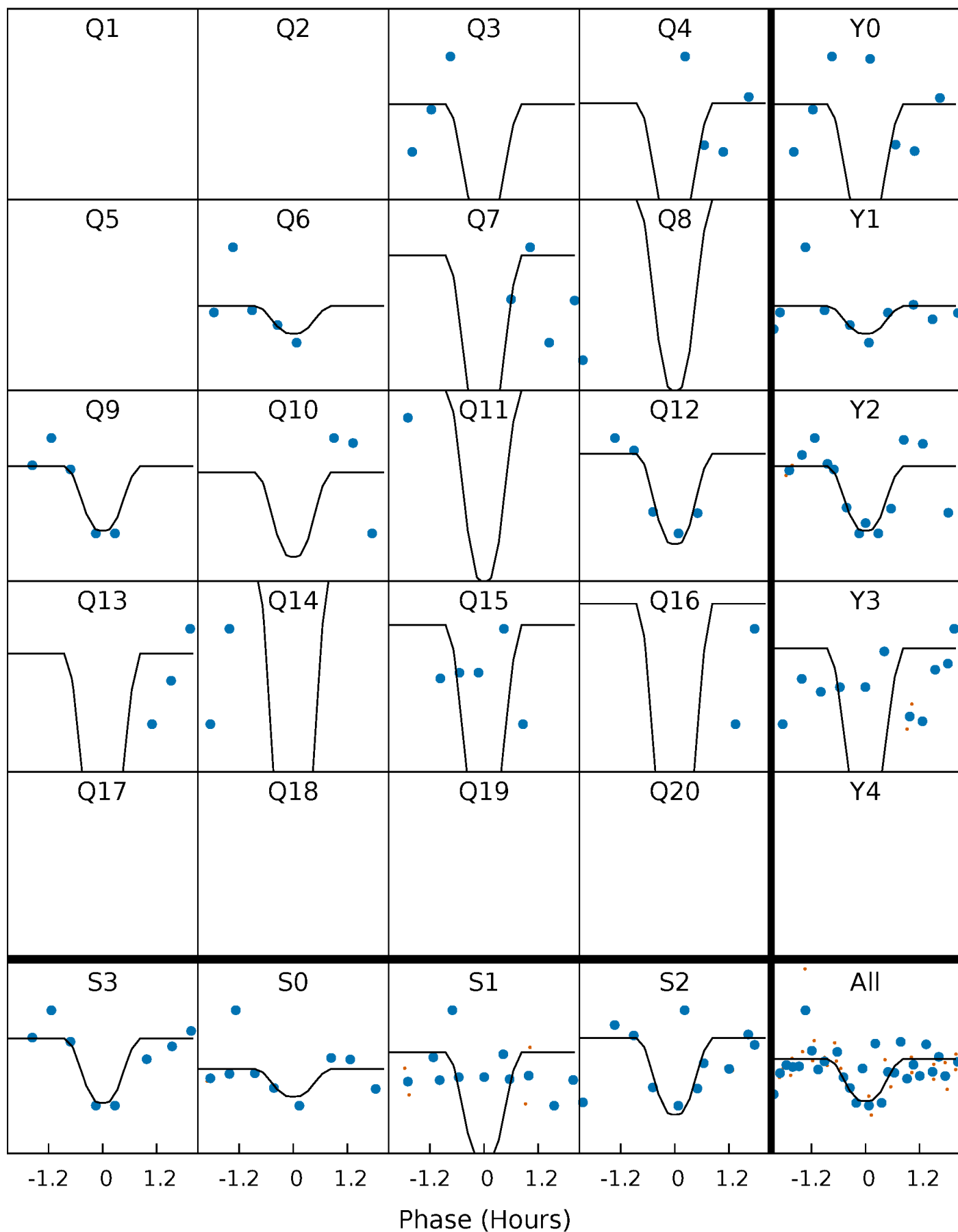
PDC Quarter-Phased Transit Curves

TCE 008197220-05 P= 40.010239 Days $T_0=141.630317$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008197220-05 P= 40.010239 Days $T_0=141.630317$ (BKJD)

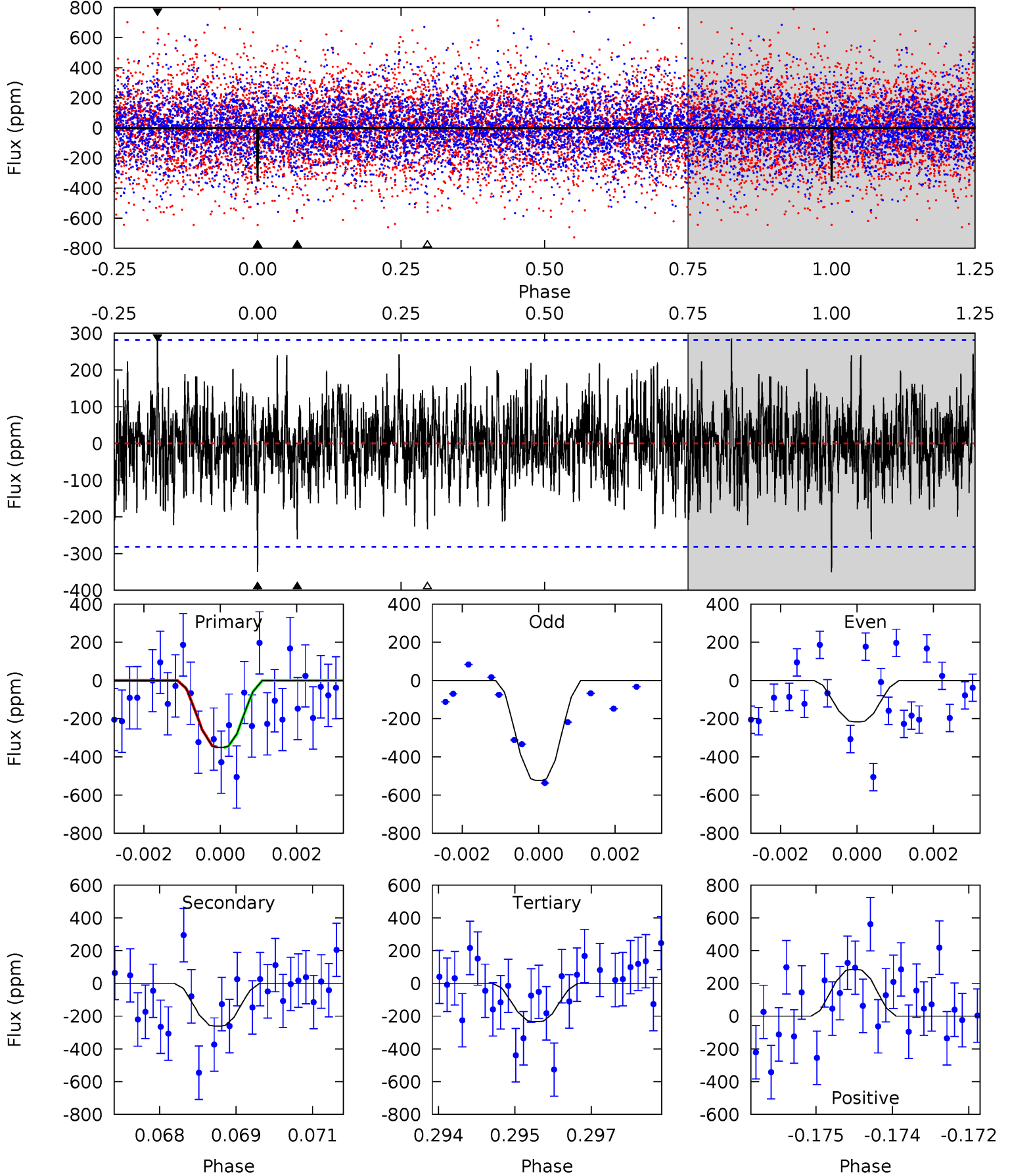


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008197220-05, $P = 40.010239$ Days, $E = 101.620078$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.68	4.97	4.46	5.44	5.37	3.16	1.46	2.23	1.24	0.51	-0.47	2.90	0.65	0.45	0.02



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008197220

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7827^{+214}_{-322}	$4.037^{+0.176}_{-0.144}$	$0.000^{+0.200}_{-0.350}$	$2.130^{+0.467}_{-0.519}$	$1.799^{+0.145}_{-0.339}$	$0.262^{+0.258}_{-0.113}$
	+3%/-4%	+4%/-4%	+inf%/-inf%	+22%/-24%	+8%/-19%	+98%/-43%
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 008197220-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-261 ± 52	$5.99^{+4.80}_{-3.57}$	1329^{+94}_{-94}	5962^{+4575}_{-1396}	305^{+1617}_{-214}
Alt.	N/A	N/A	N/A	N/A	N/A

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

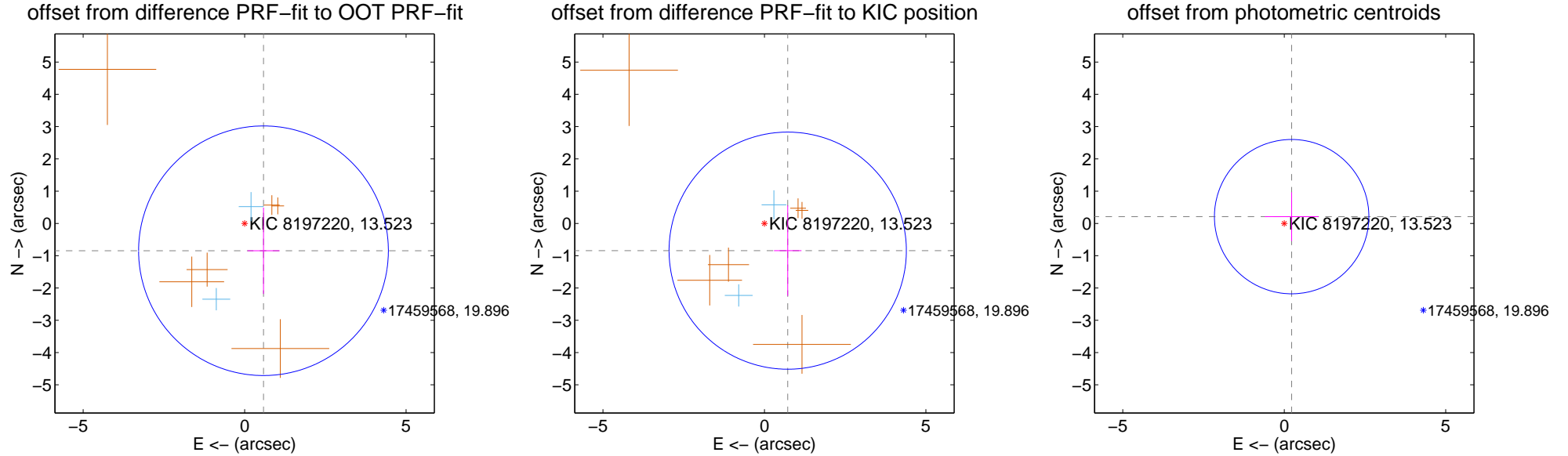
DV Centroid Data

Supplemental centroid analysis for 008197220-05. Kepler magnitude: 13.52. Transit SNR 9.22

There are 2 quarters with good PRF difference image offsets

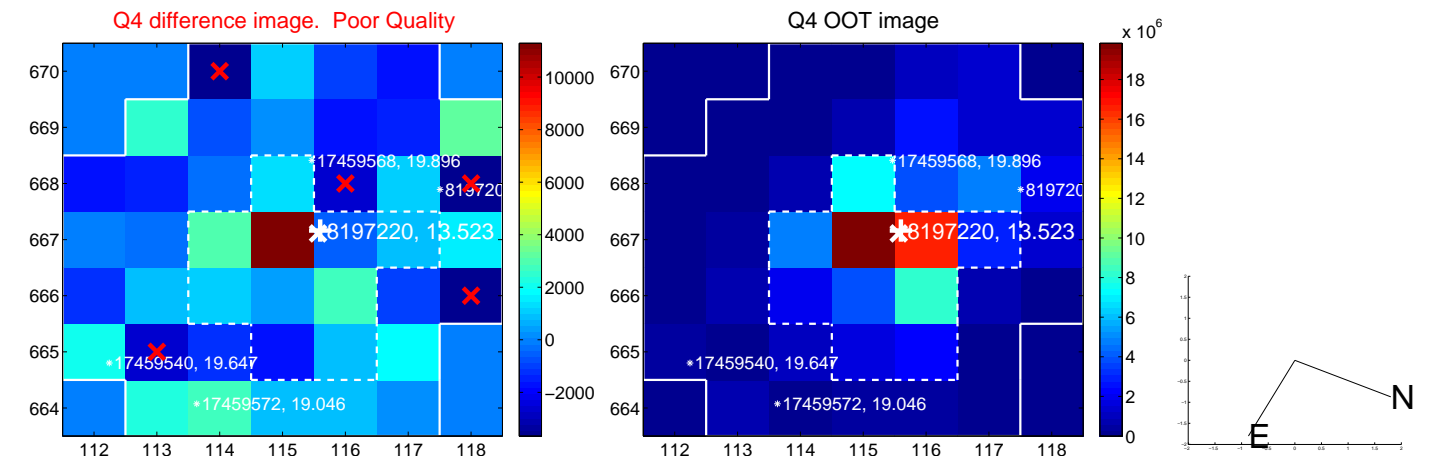
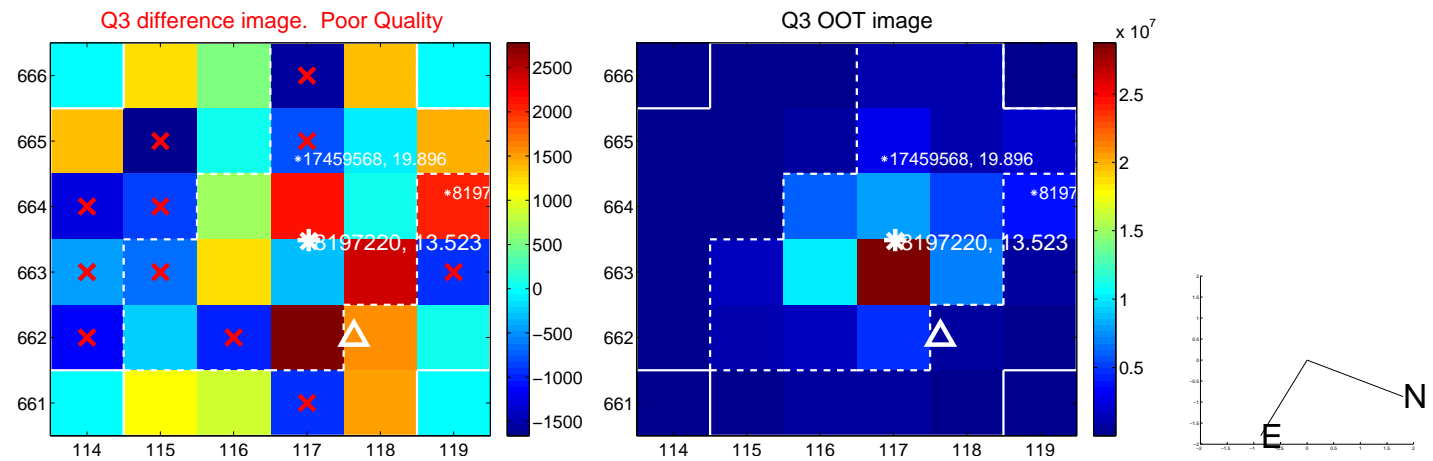
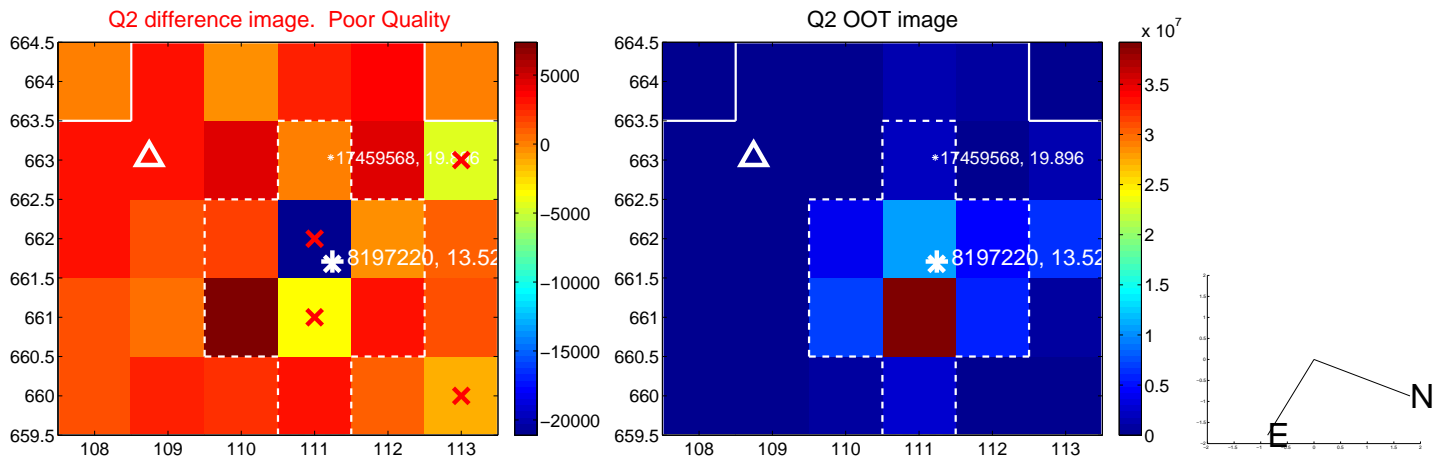
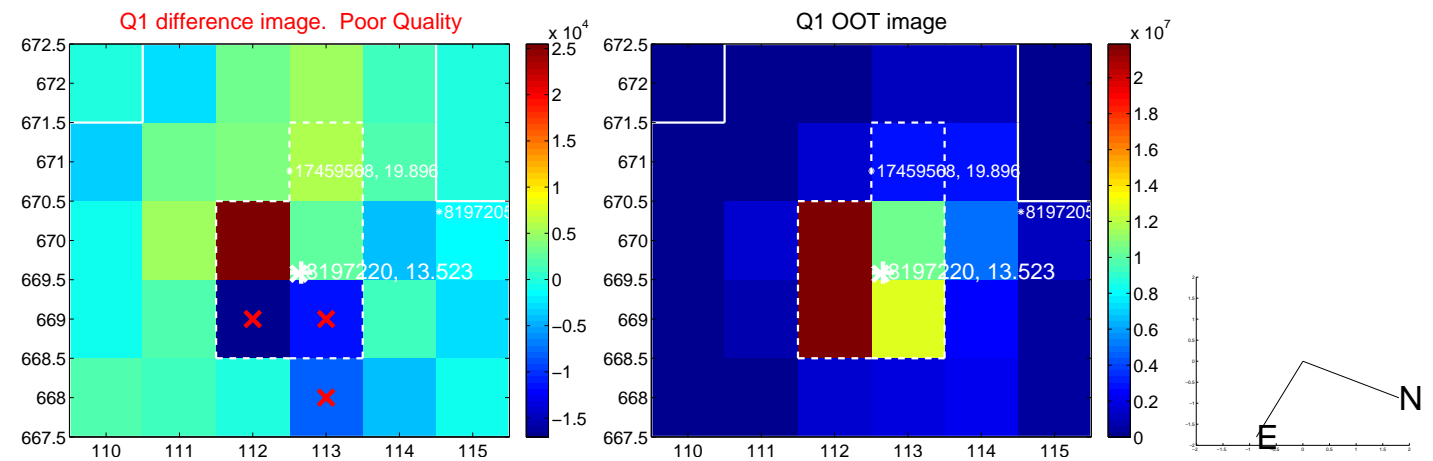
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.028 ± 1.289	0.80	-0.584 ± 0.497	-0.846 ± 1.336
PRF-fit source offset from KIC position	1.109 ± 1.224	0.91	-0.721 ± 0.425	-0.843 ± 1.400
photometric centroid source offset	0.31 ± 0.80	0.39	-0.23 ± 0.83	0.21 ± 0.76

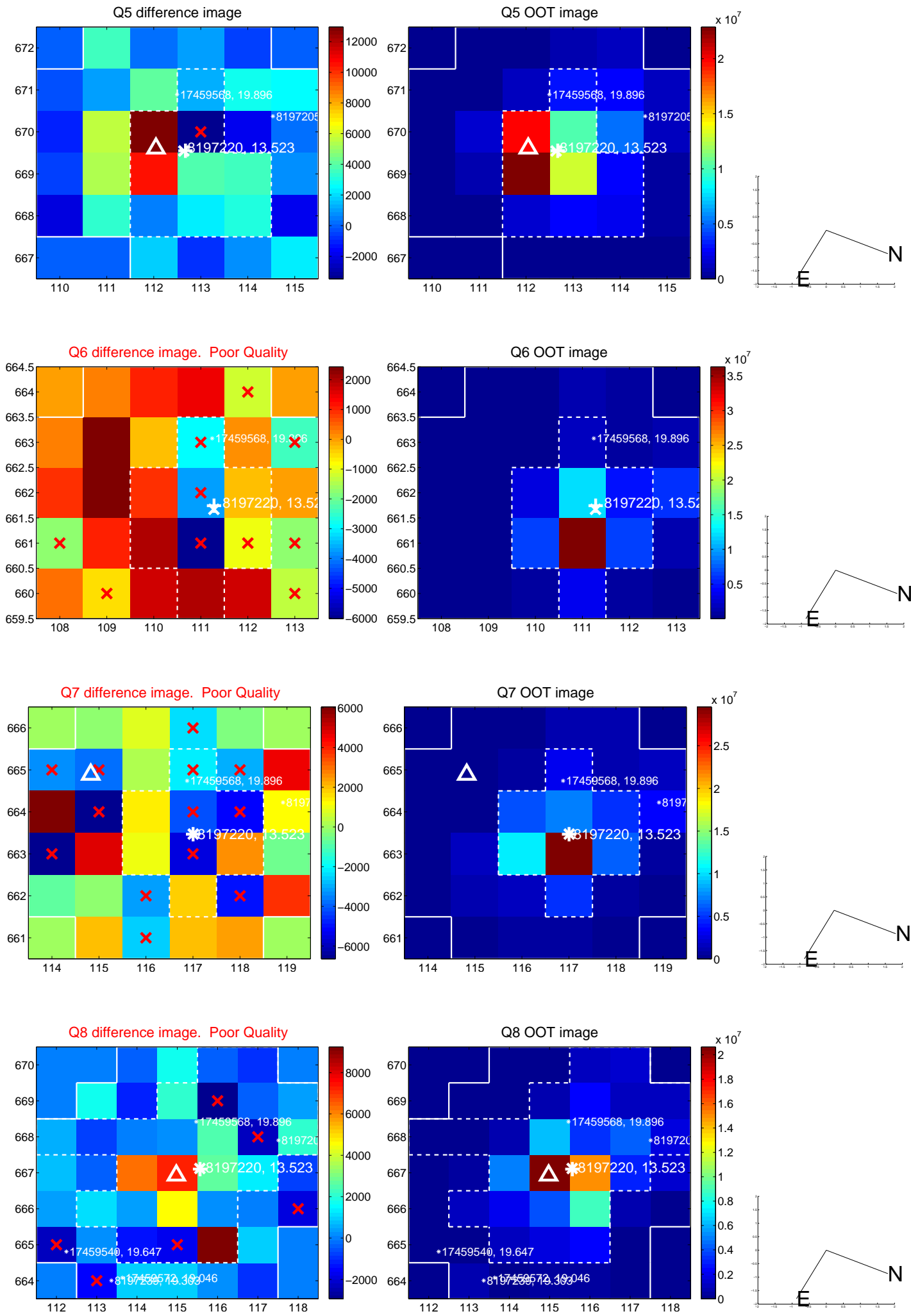


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

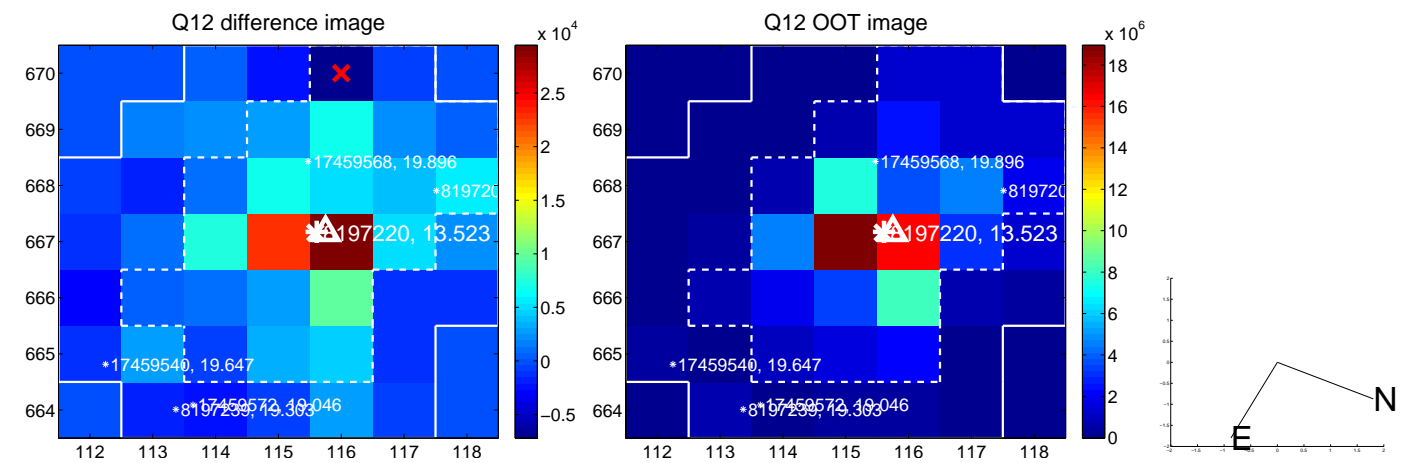
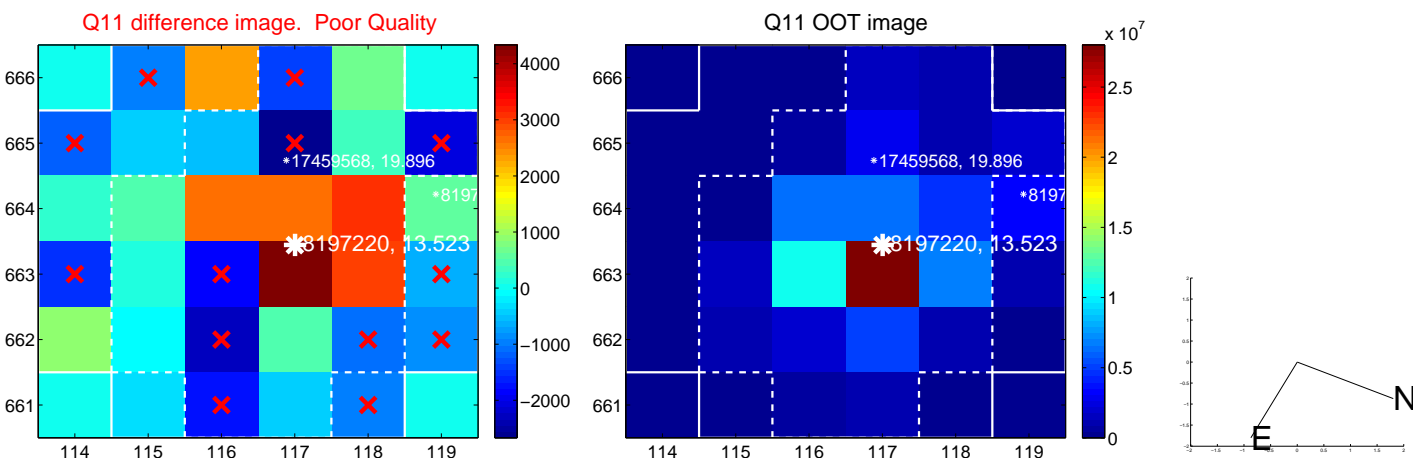
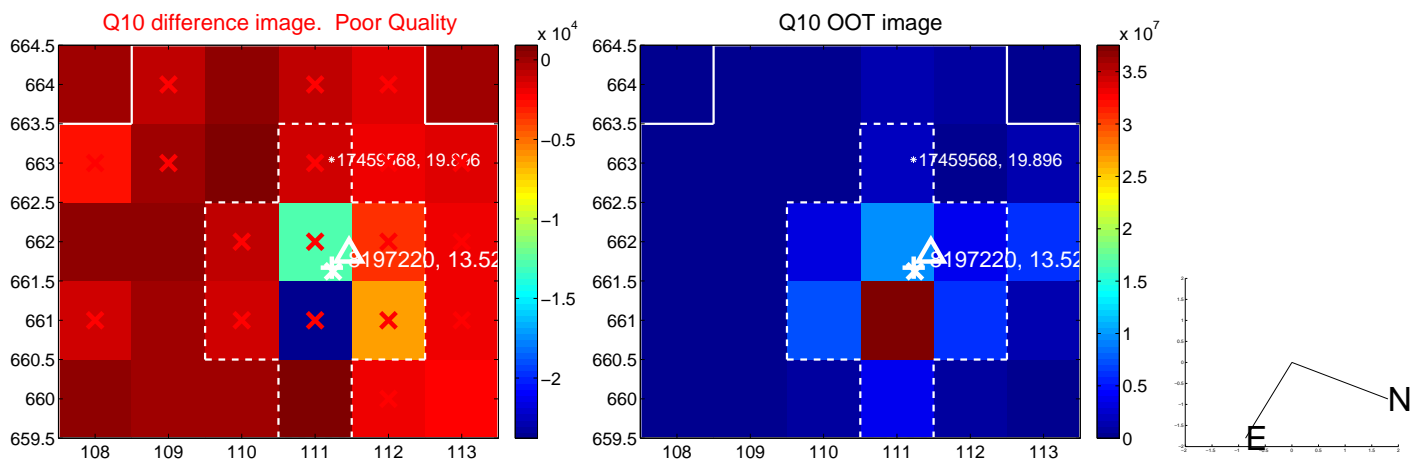
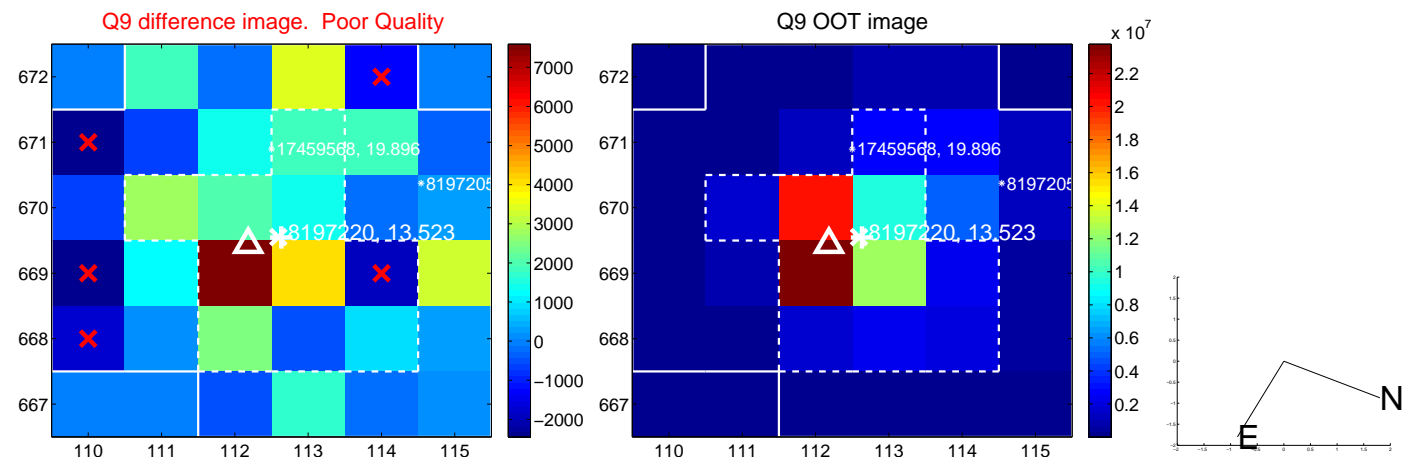
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



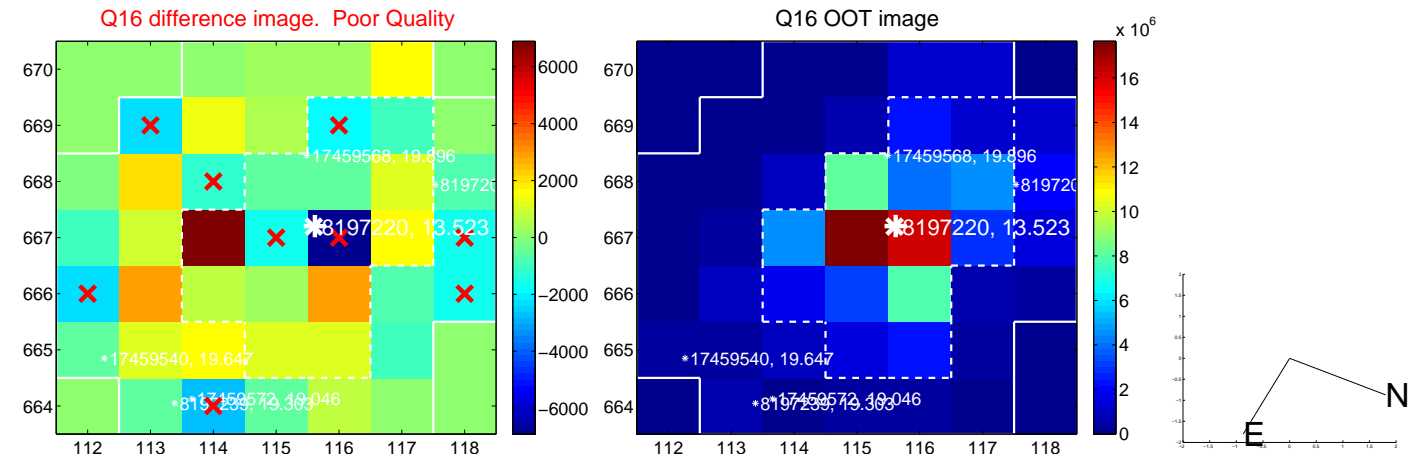
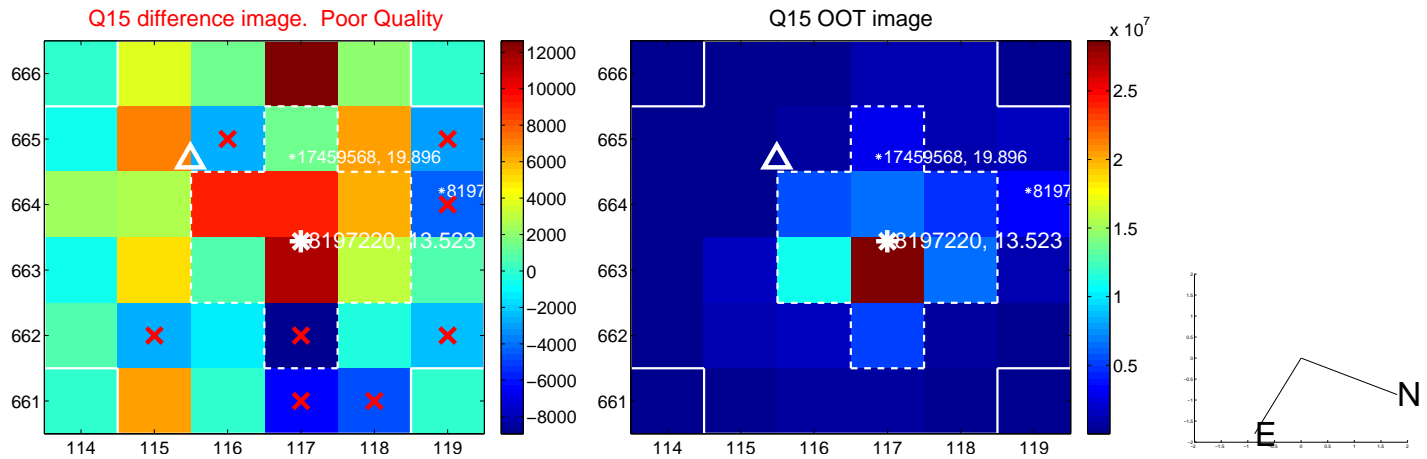
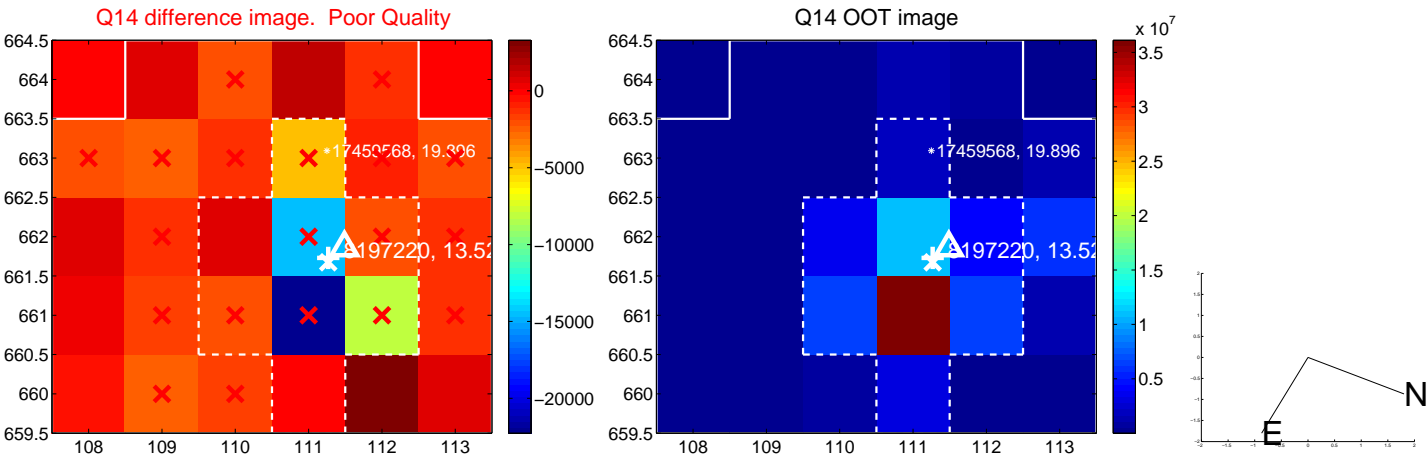
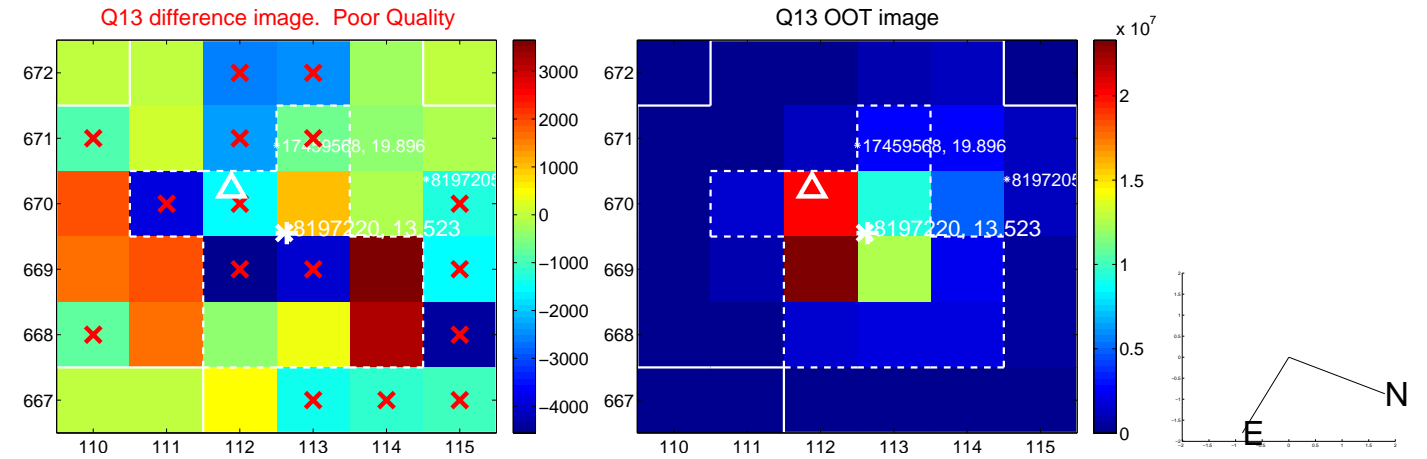
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



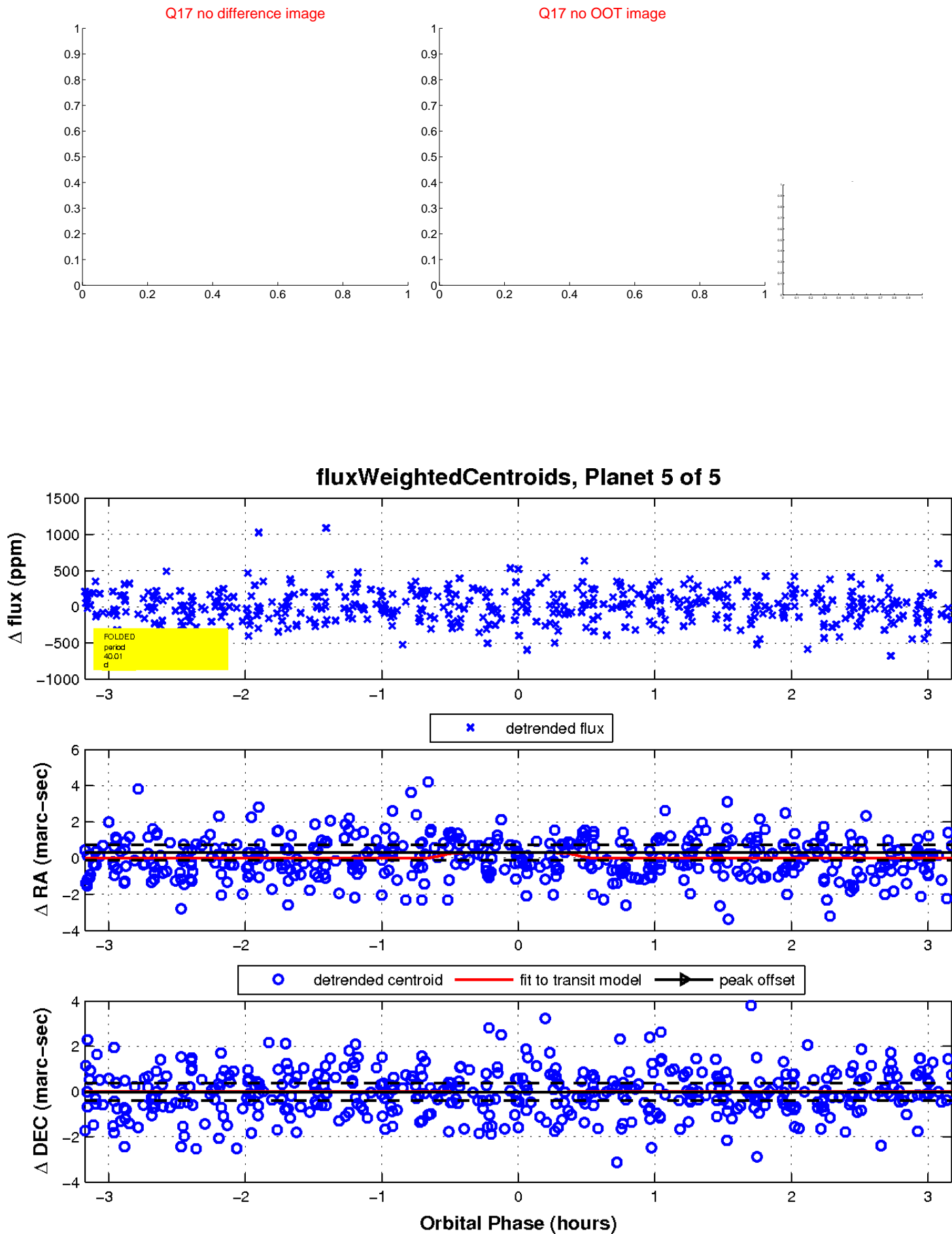
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UKIRT Image

Declination

