

KIC 007352016

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})
007352016-01	OBS	No	537.931366	501.151088	129.2	21.001	10.0	10.0	2.00	7542	2.67	5.09
007352016-02	OBS	No	0.919382	132.389291	5.1	6.700	8.3	5.5	2.00	7542	0.46	24891.70
007352016-03	OBS	No	25.621817	133.502165	186.4	1.138	14.8	13.0	2.00	7542	2.81	294.60
007352016-04	OBS	No	18.349737	131.543780	161.3	1.323	15.2	12.9	2.00	7542	2.66	459.77
007352016-05	OBS	No	31.583942	147.492154	109.5	4.393	11.7	13.0	2.00	7542	2.39	222.89
007352016-06	OBS	No	14.553533	136.332445	105.3	2.490	13.0	14.5	2.00	7542	2.07	626.26
007352016-07	OBS	No	6.873045	134.622509	35.6	6.035	12.0	10.3	2.00	7542	1.40	1702.88
007352016-08	OBS	No	46.925739	166.830456	156.2	1.233	12.8	12.4	2.00	7542	2.54	131.47
007352016-09	OBS	No	12.448509	138.957477	145.3	1.148	12.7	11.5	2.00	7542	2.57	771.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007352016-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

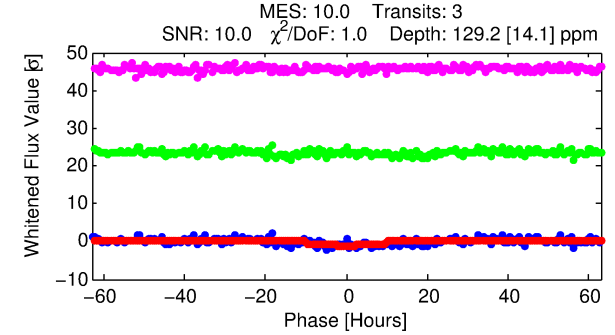
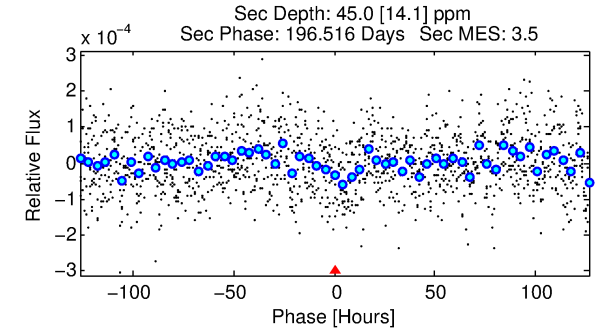
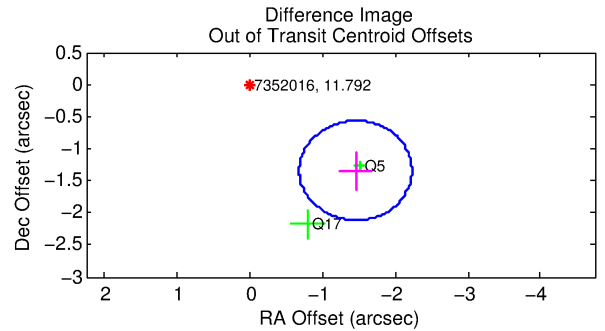
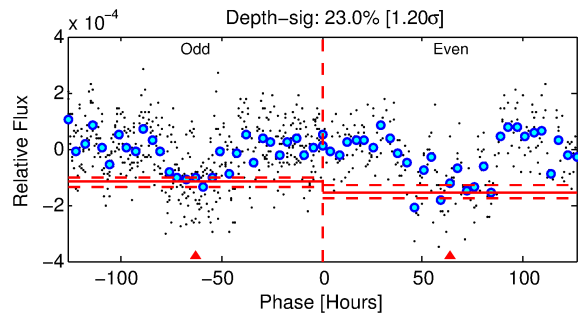
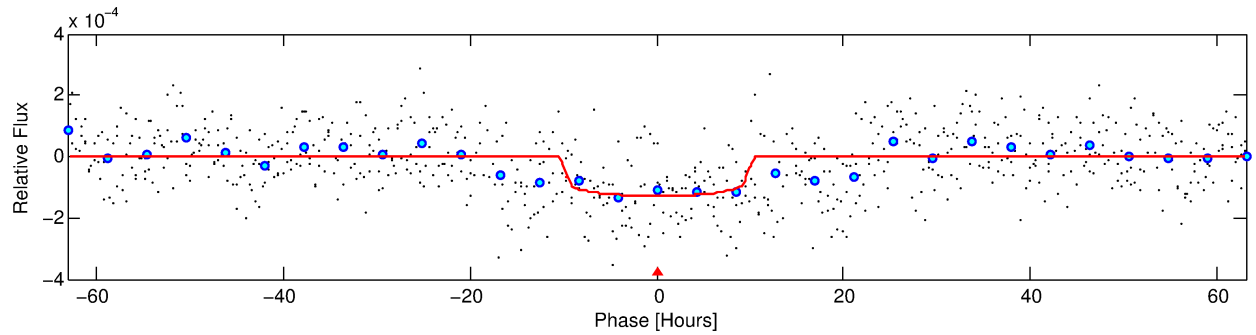
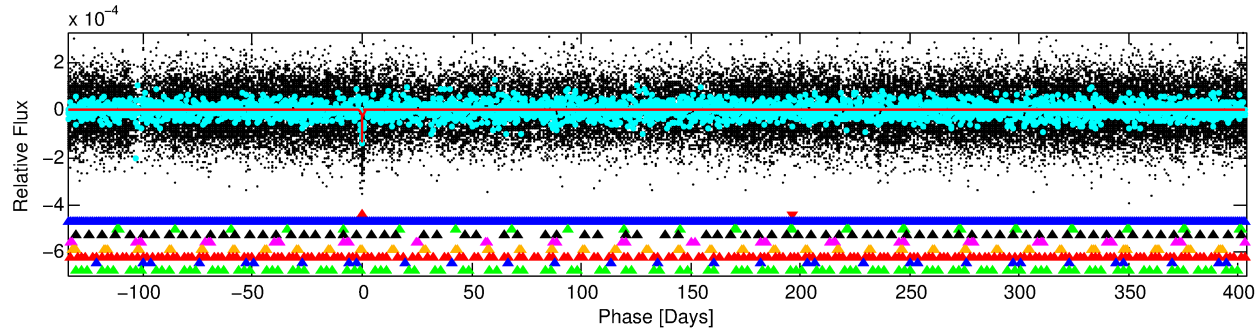
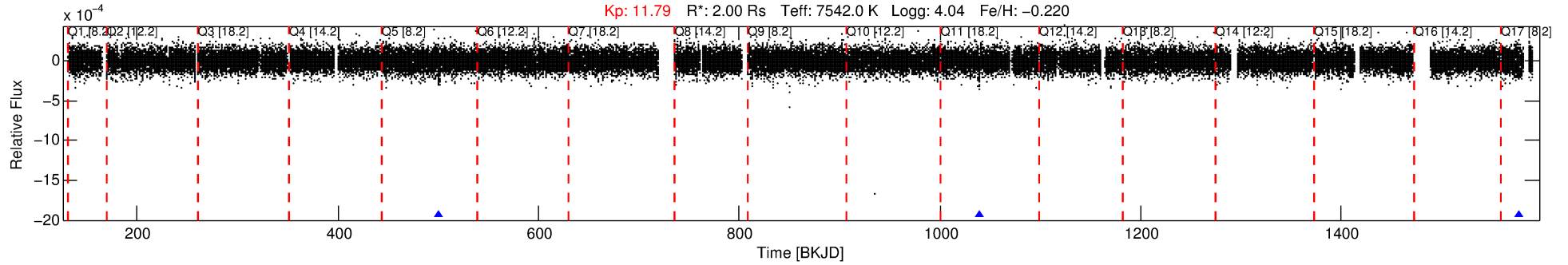
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-01

No Significant Match Found

DV One-Page Summary

KIC: 7352016 Candidate: 1 of 9 Period: 537.931 d



DV Fit Results:

Period = 537.93137 [0.01872] d
Epoch = 501.1511 [0.0238] BKJD
Rp/R* = 0.0122 [0.0012]
a/R* = 88.95 [40.89]
b = 0.90 [0.09]
Seff = 5.09 [1.29]
Teq = 383 [24] K
Rp = 2.67 [0.59] Re
a = 1.5091 [0.2559] AU
Ag = 7899.64 [3522.82] [2.24 σ]
Teffp = 5582 [519] K [10.00 σ]

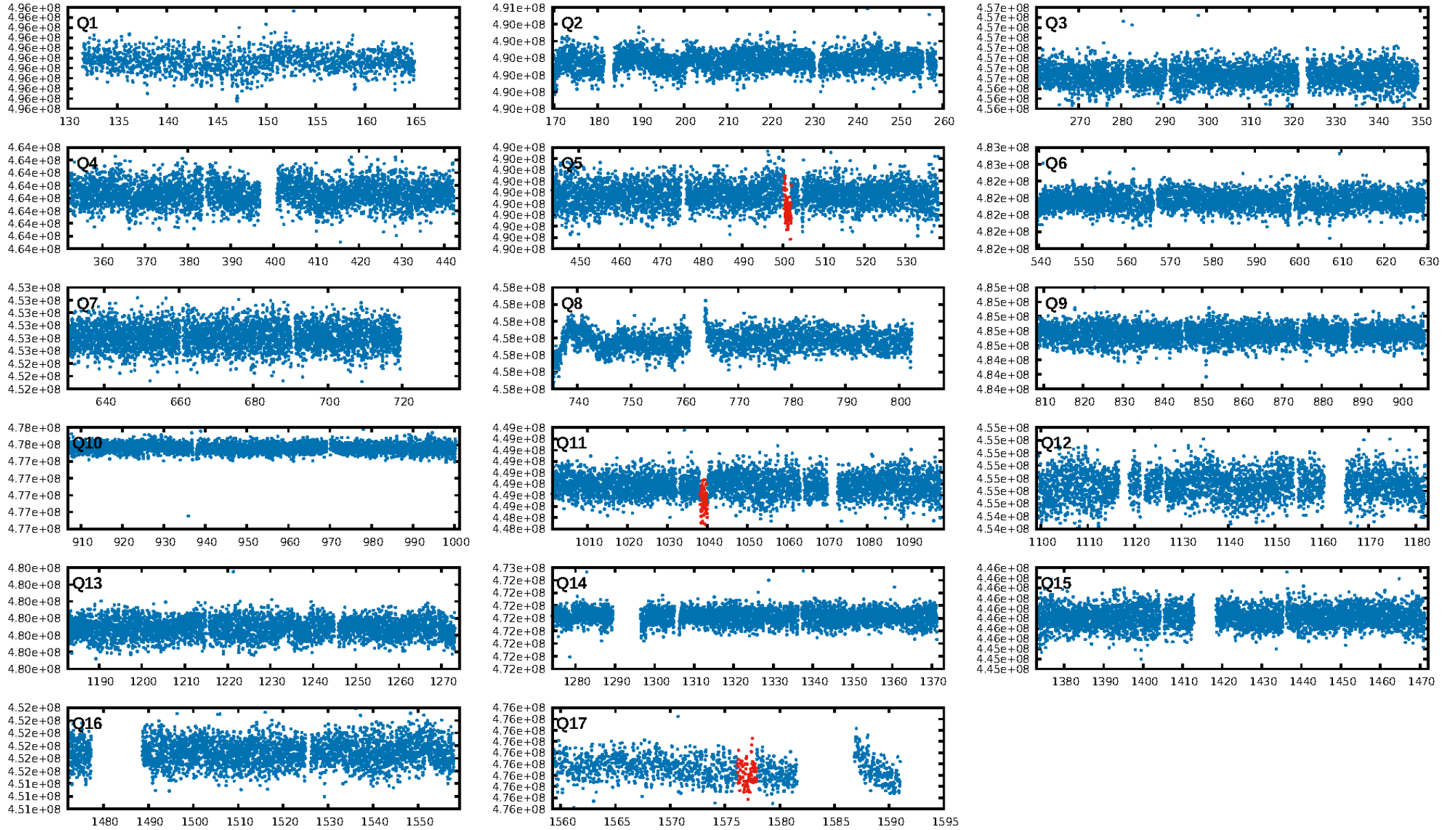
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [560.15 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 9.28e-27
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 2.499
Centroid-sig: 49.1%
Centroid-so: 0.769 arcsec [0.96 σ]
OotOffset-rm: 1.980 arcsec [7.66 σ]
KicOffset-rm: 1.871 arcsec [7.40 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/2]

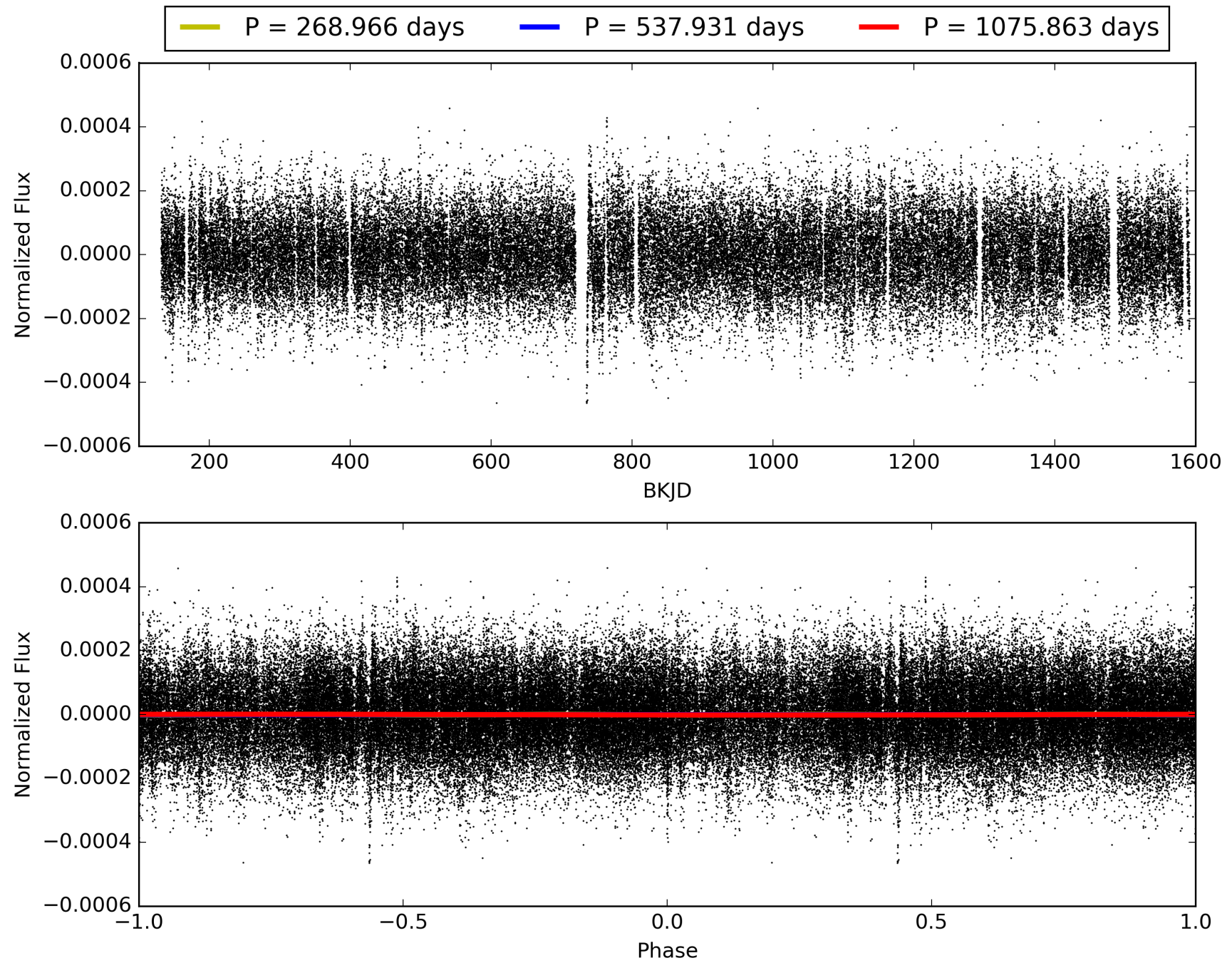
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:28:57 Z

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

TCE 007352016-01, PDC Light Curves

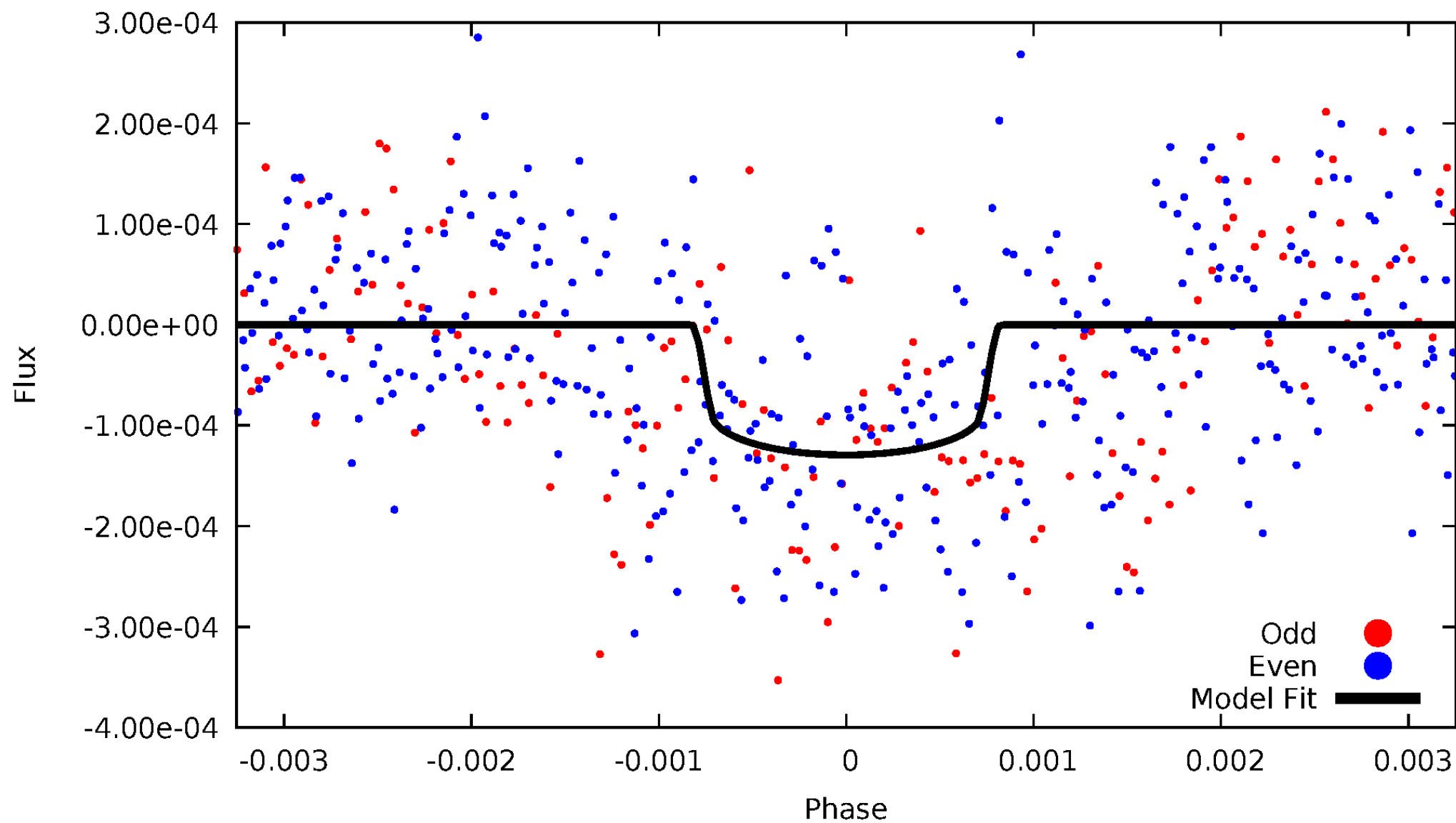


TCE 007352016-01



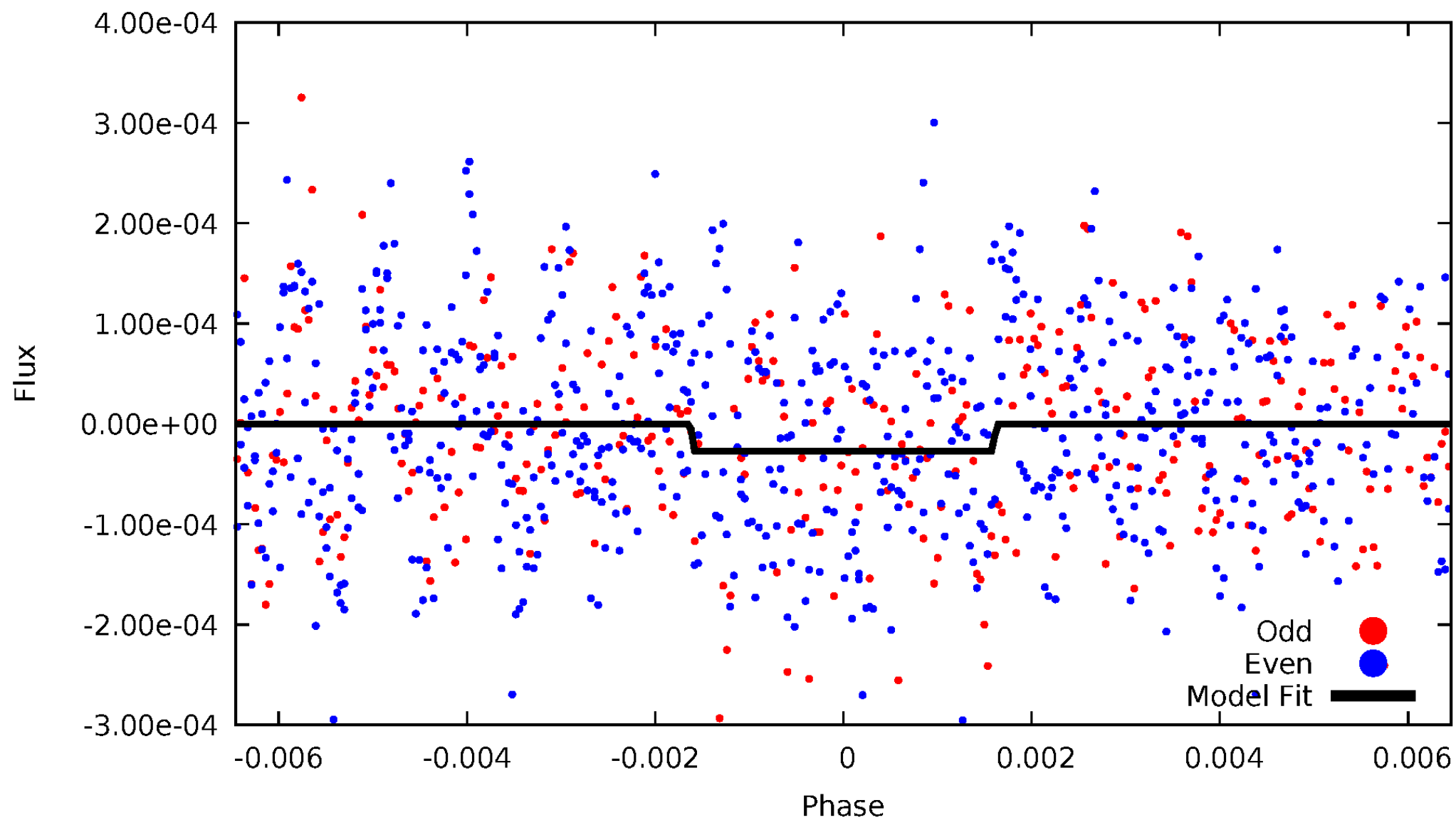
DV Odd/Even

TCE 007352016-01



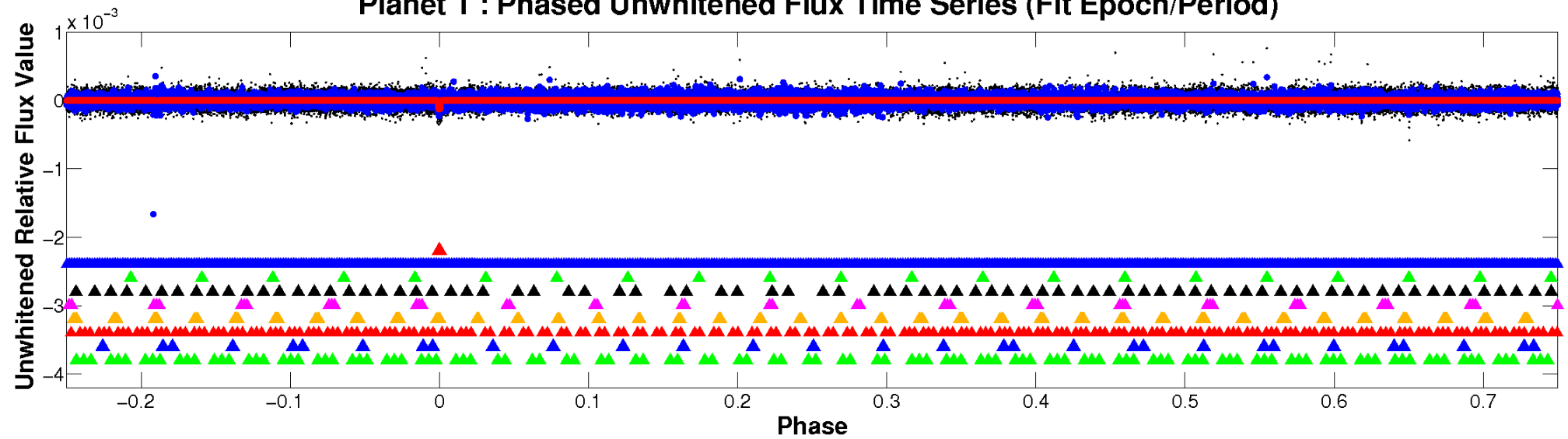
ALT Odd/Even

TCE 007352016-01

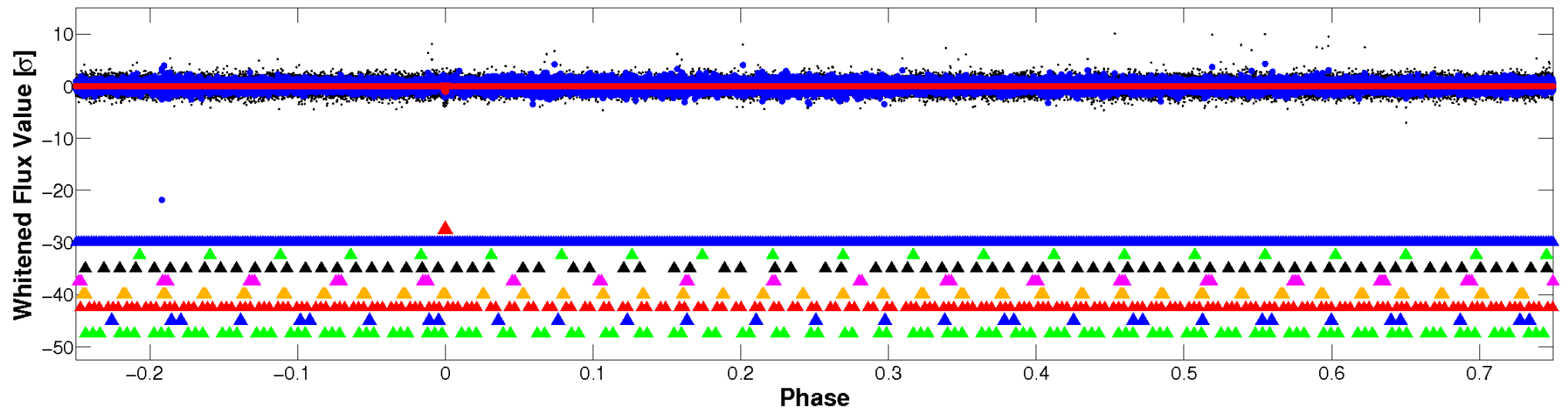


Non-Whitened Vs. Whitened Light Curve

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

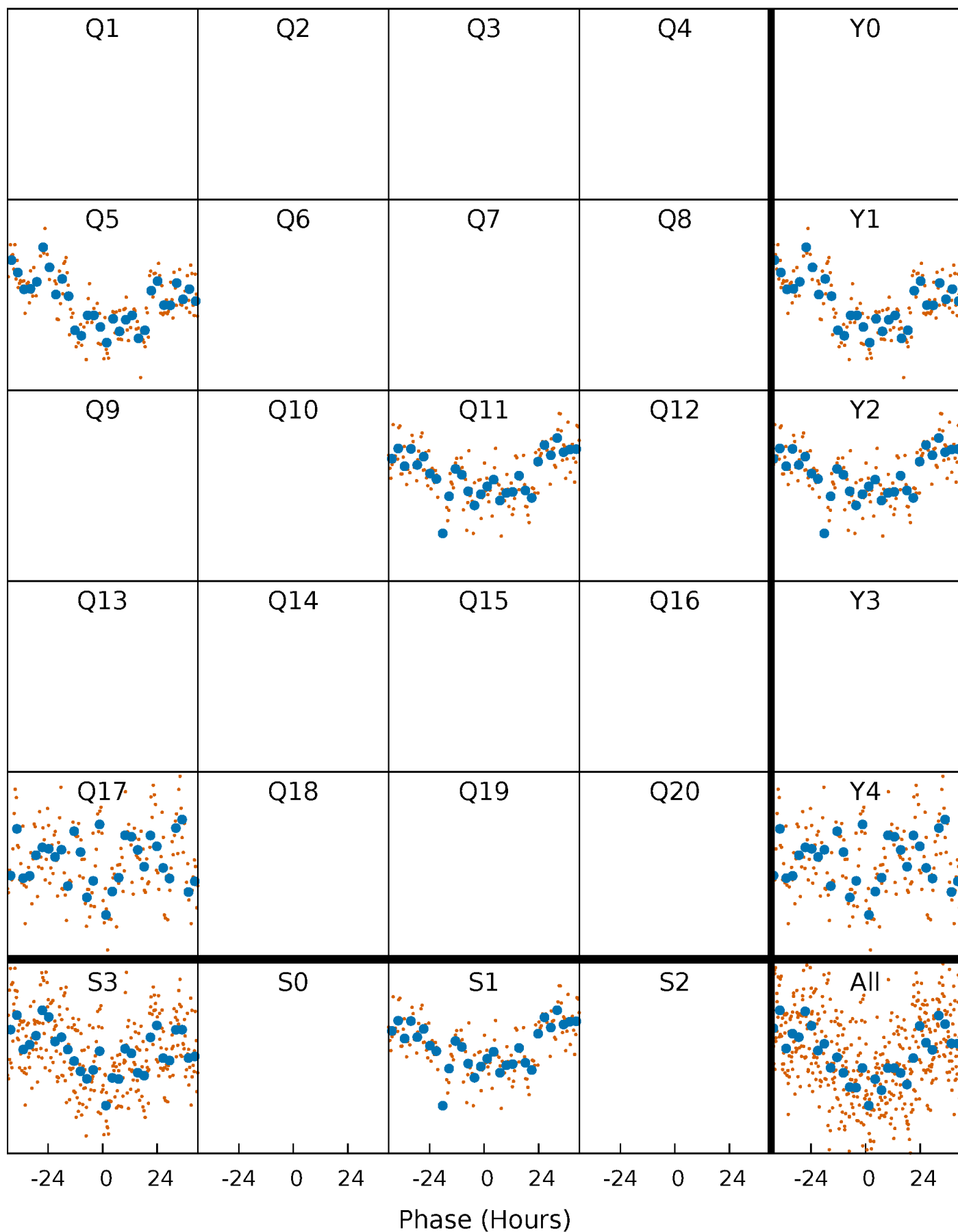


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



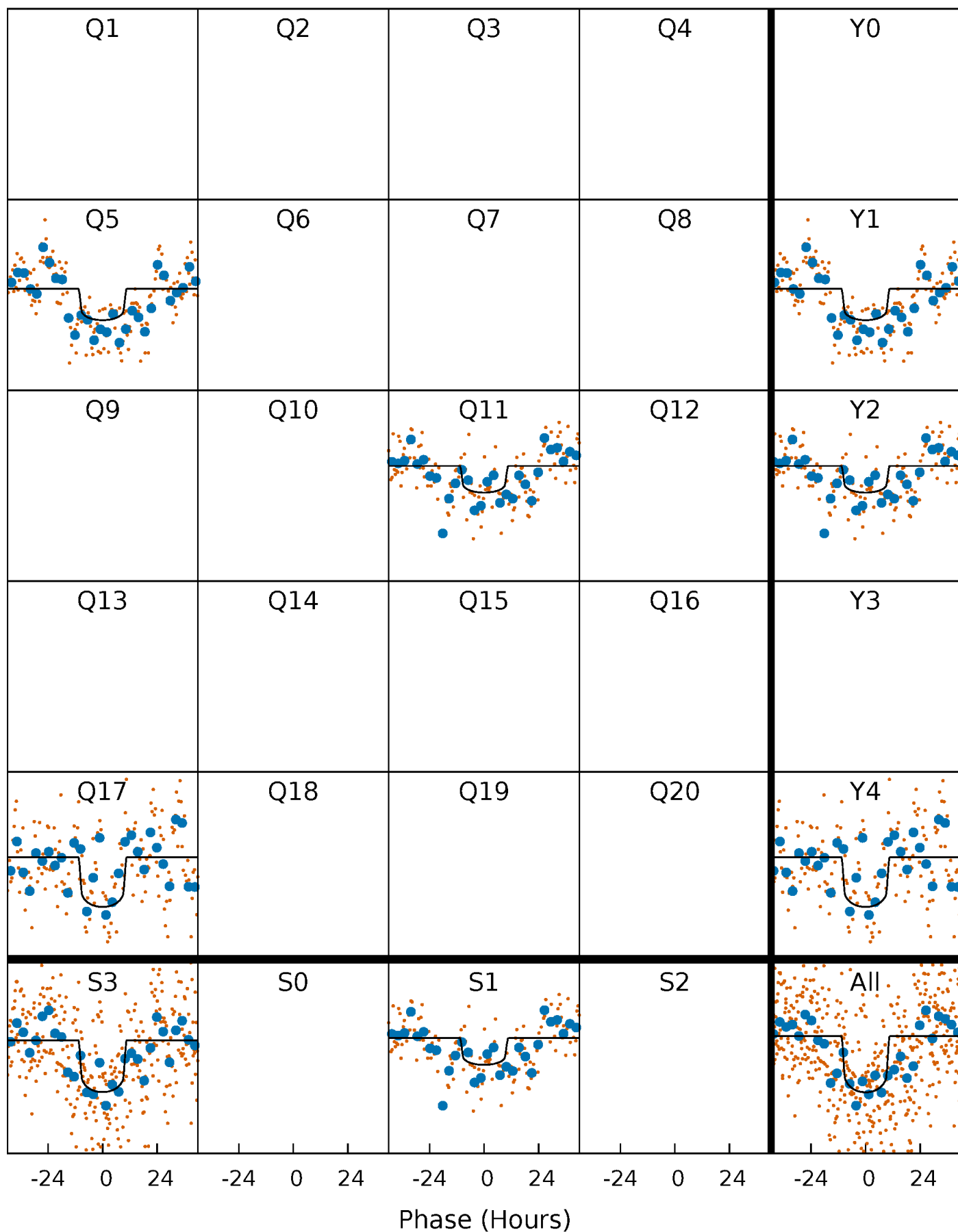
PDC Quarter-Phased Transit Curves

TCE 007352016-01 P=537.931366 Days $T_0=501.151088$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007352016-01 P=537.931366 Days $T_0=501.151088$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

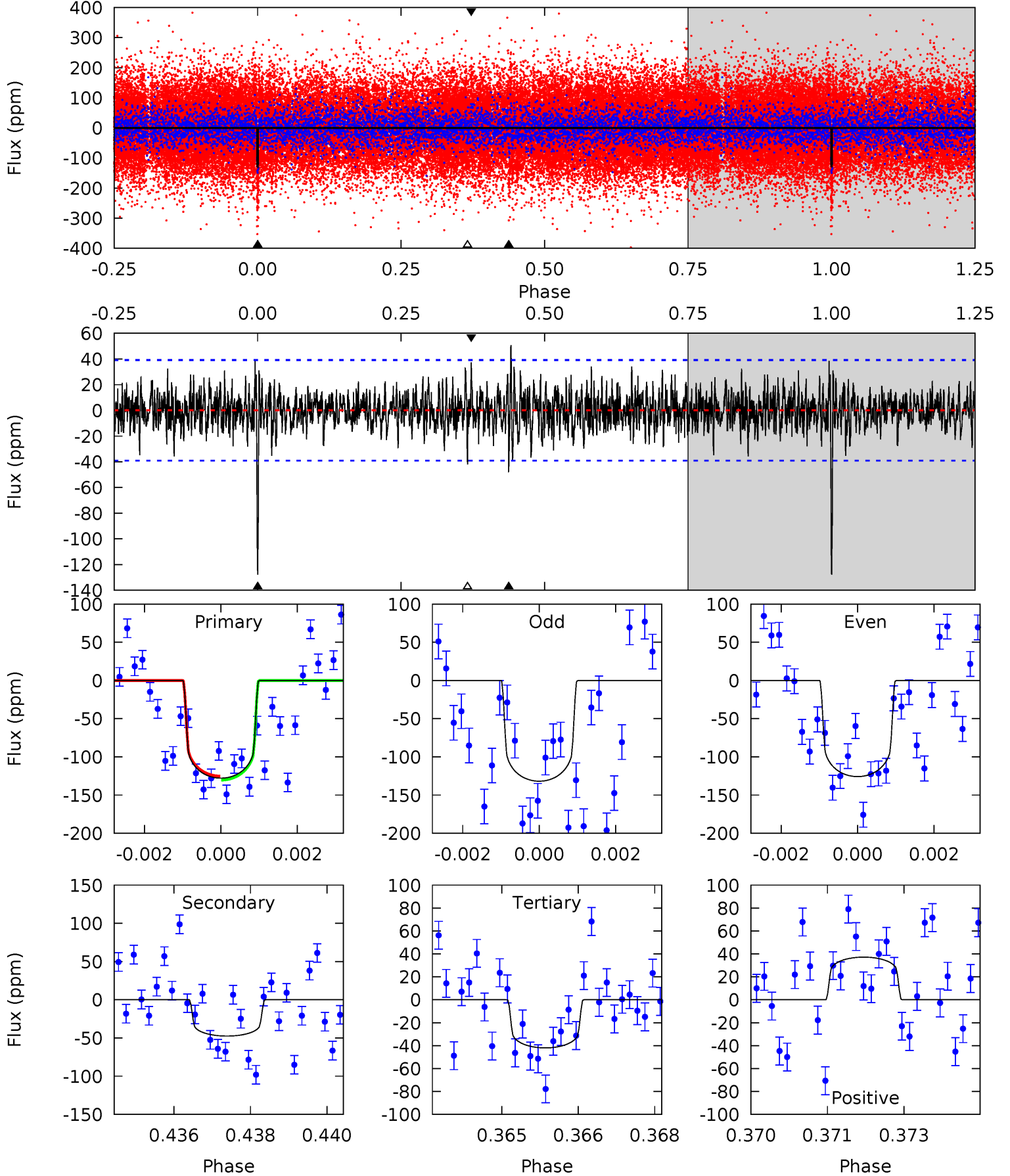
TCE 007352016-01 P=537.913467 Days $T_0=501.169190$ (BKJD)



DV Model-Shift Uniqueness Test

007352016-01, P = 537.931366 Days, E = 501.151088 Days

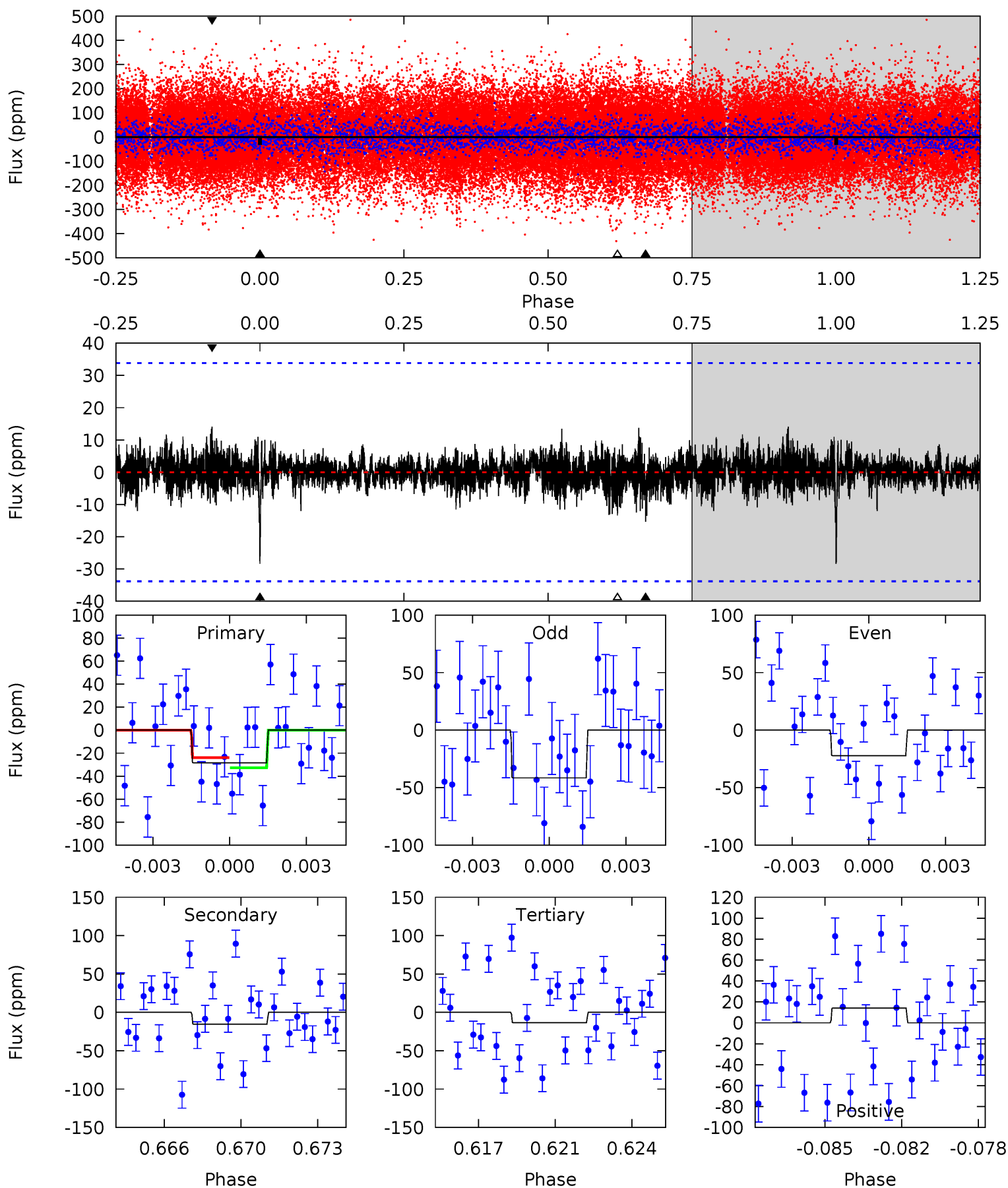
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	6.50	5.75	5.09	5.36	3.14	1.53	11.8	12.4	0.75	1.41	0.39	0.97	0.28	0.35



Alt Model-Shift Uniqueness Test

007352016-01, P = 537.913467 Days, E = 501.169190 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.40	2.37	2.07	2.18	5.24	2.94	0.53	2.33	2.21	0.30	0.19	1.39	1.05	0.33	0.68



Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-47 ± 7	$2.64^{+0.40}_{-0.37}$	532^{+27}_{-23}	5591^{+370}_{-319}	8543^{+3370}_{-2373}
Alt.	-15 ± 6	$1.15^{+0.27}_{-0.29}$	533^{+25}_{-25}	6374^{+1154}_{-970}	14089^{+13184}_{-6620}

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

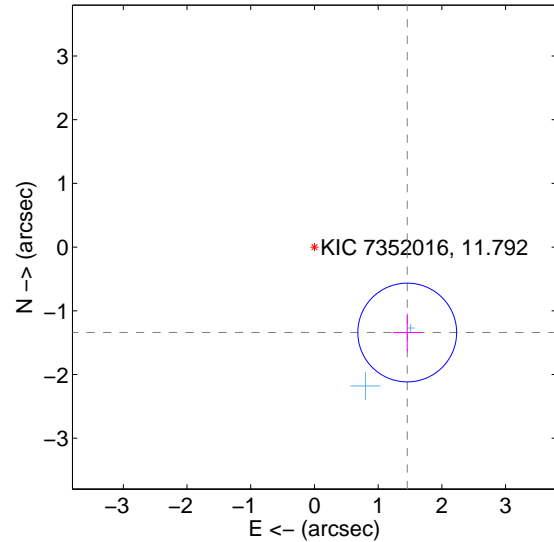
Supplemental centroid analysis for 007352016-01. **Kepler magnitude: 11.79.** Transit SNR 10.05

There are 2 quarters with good PRF difference image offsets

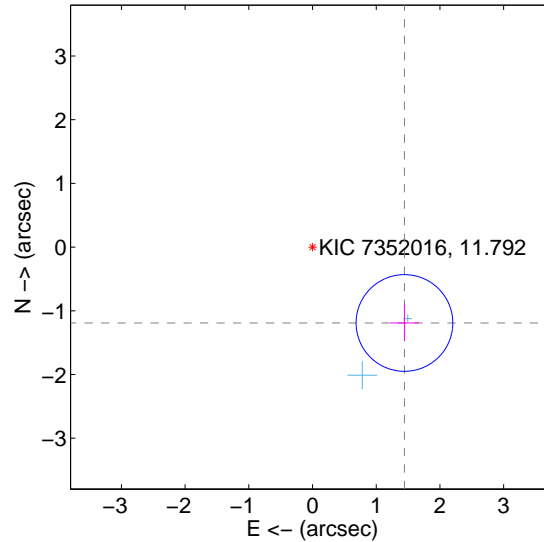
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.980 ± 0.258	7.66	-1.457 ± 0.226	-1.341 ± 0.292
PRF-fit source offset from KIC position	1.871 ± 0.253	7.40	-1.443 ± 0.228	-1.191 ± 0.286
photometric centroid source offset	0.77 ± 0.80	0.96	0.76 ± 0.80	0.11 ± 0.72

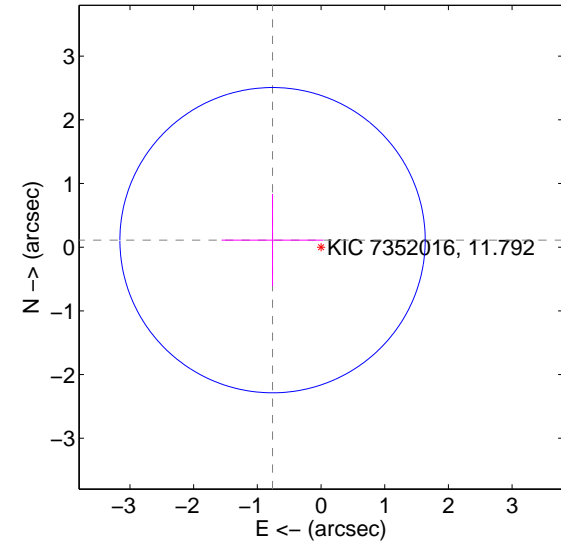
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

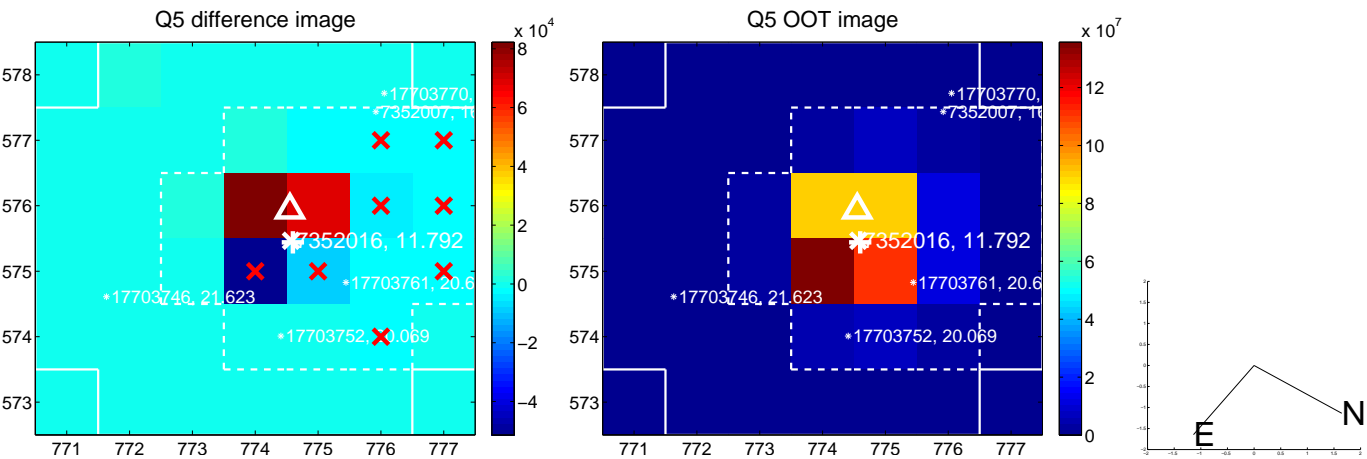


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



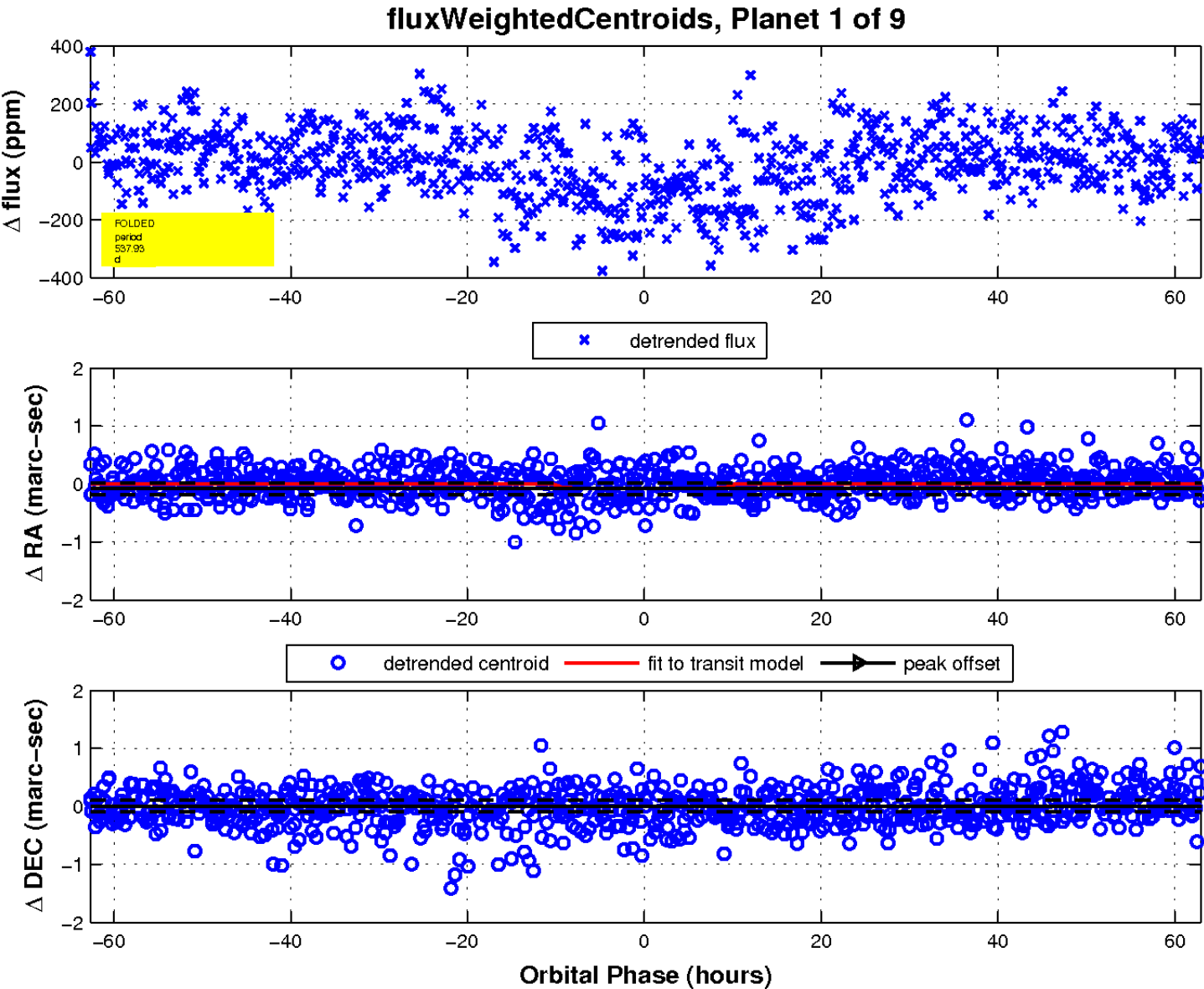
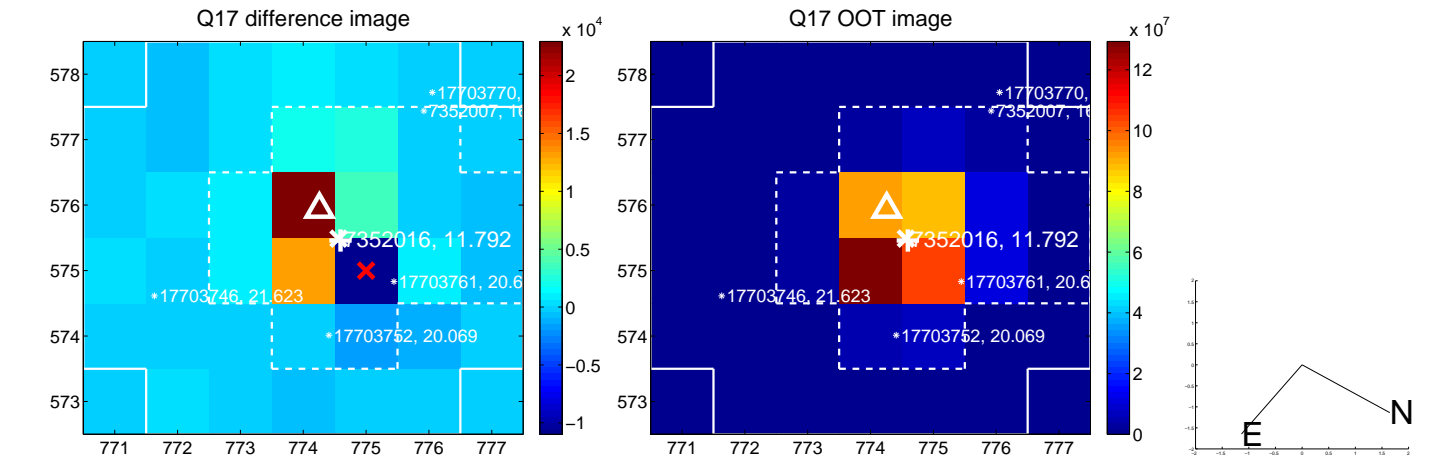
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

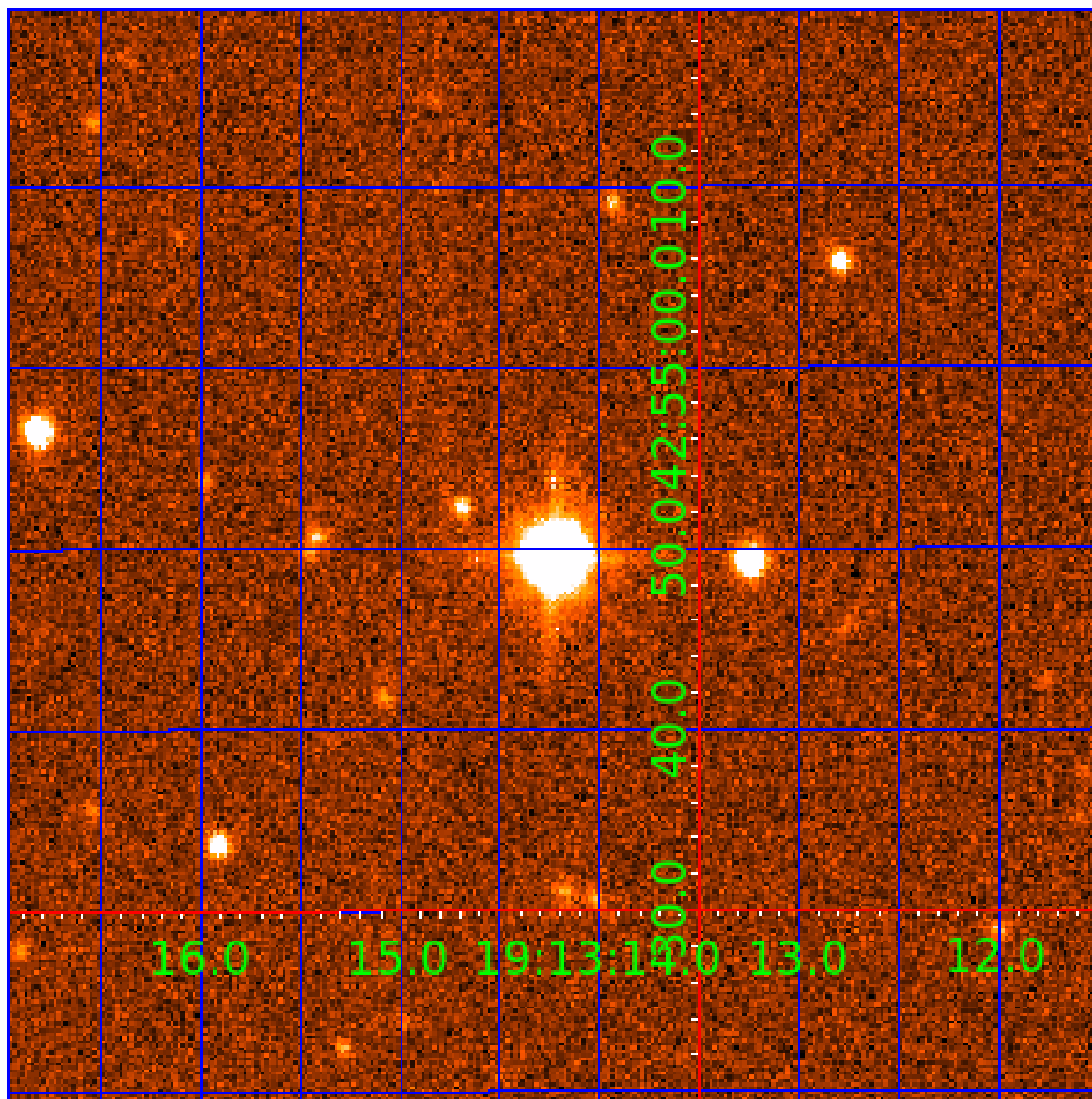


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007352016

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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Robovetter Results

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007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

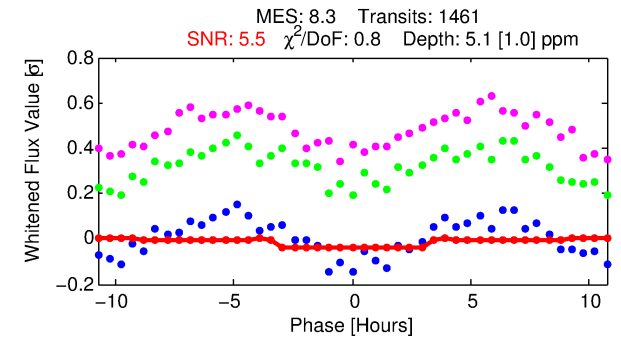
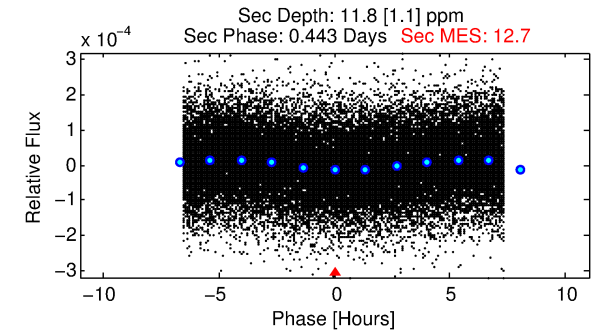
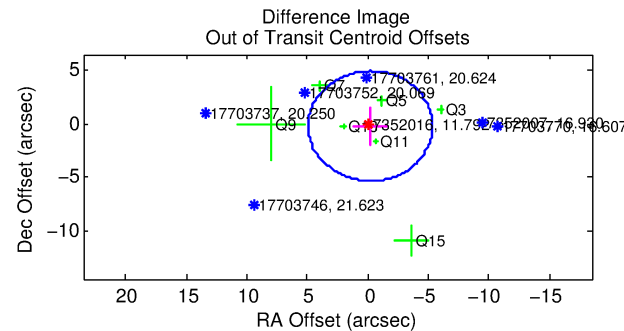
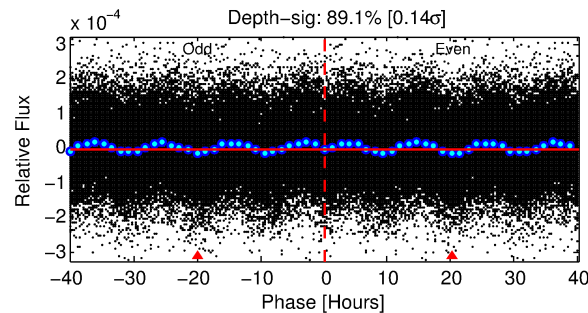
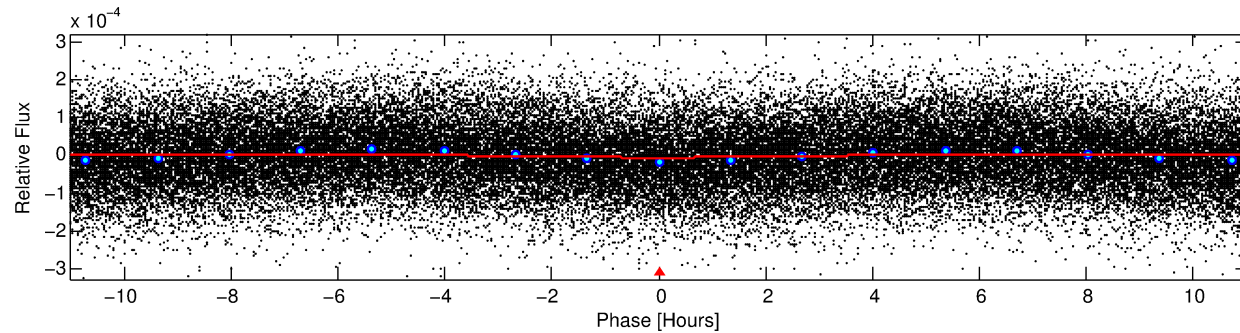
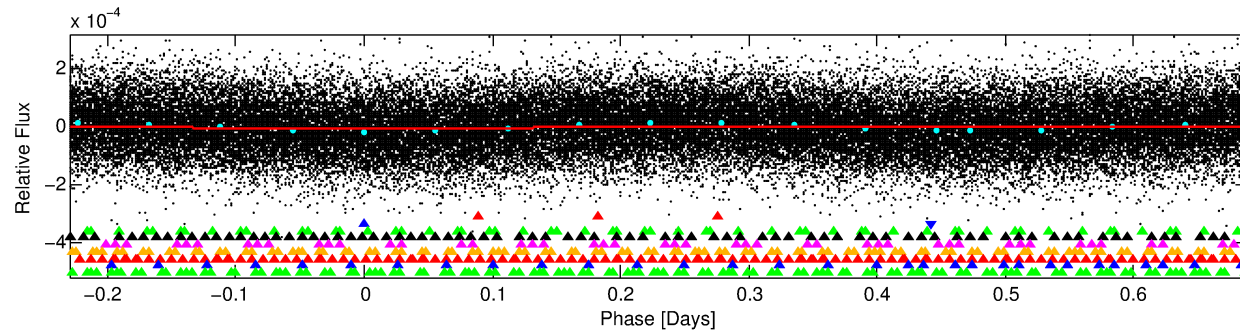
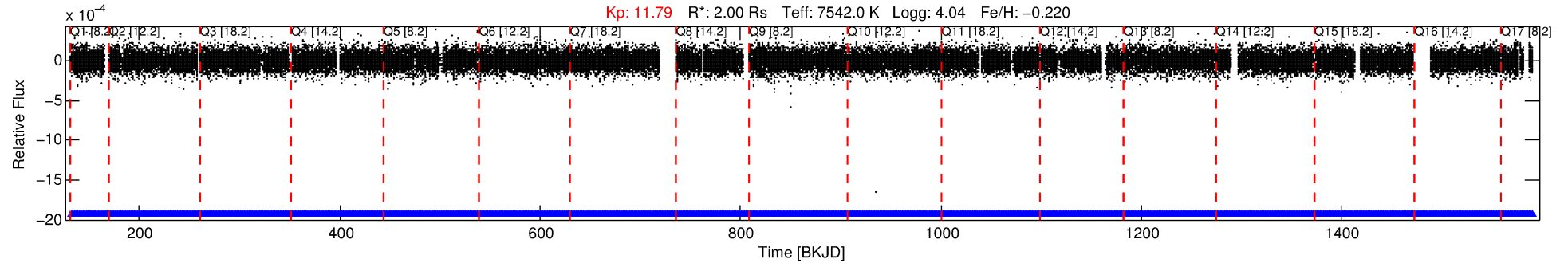
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-02

No Significant Match Found

DV One-Page Summary

KIC: 7352016 Candidate: 2 of 9 Period: 0.919 d



DV Fit Results:

Period = 0.91938 [0.00003] d
Epoch = 132.3893 [0.0090] BKJD
Rp/R* = 0.0021 [0.0027]
a/R* = 1.22 [2.77]
b = 0.25 [26.38]
Seff = 24891.70 [6313.99]
Teq = 3203 [203] K
Rp = 0.45 [0.60] Re
a = 0.0216 [0.0037] AU
Ag = 14.57 [38.45] [0.35 σ]
Teffp = 9675 [6357] K [1.02 σ]

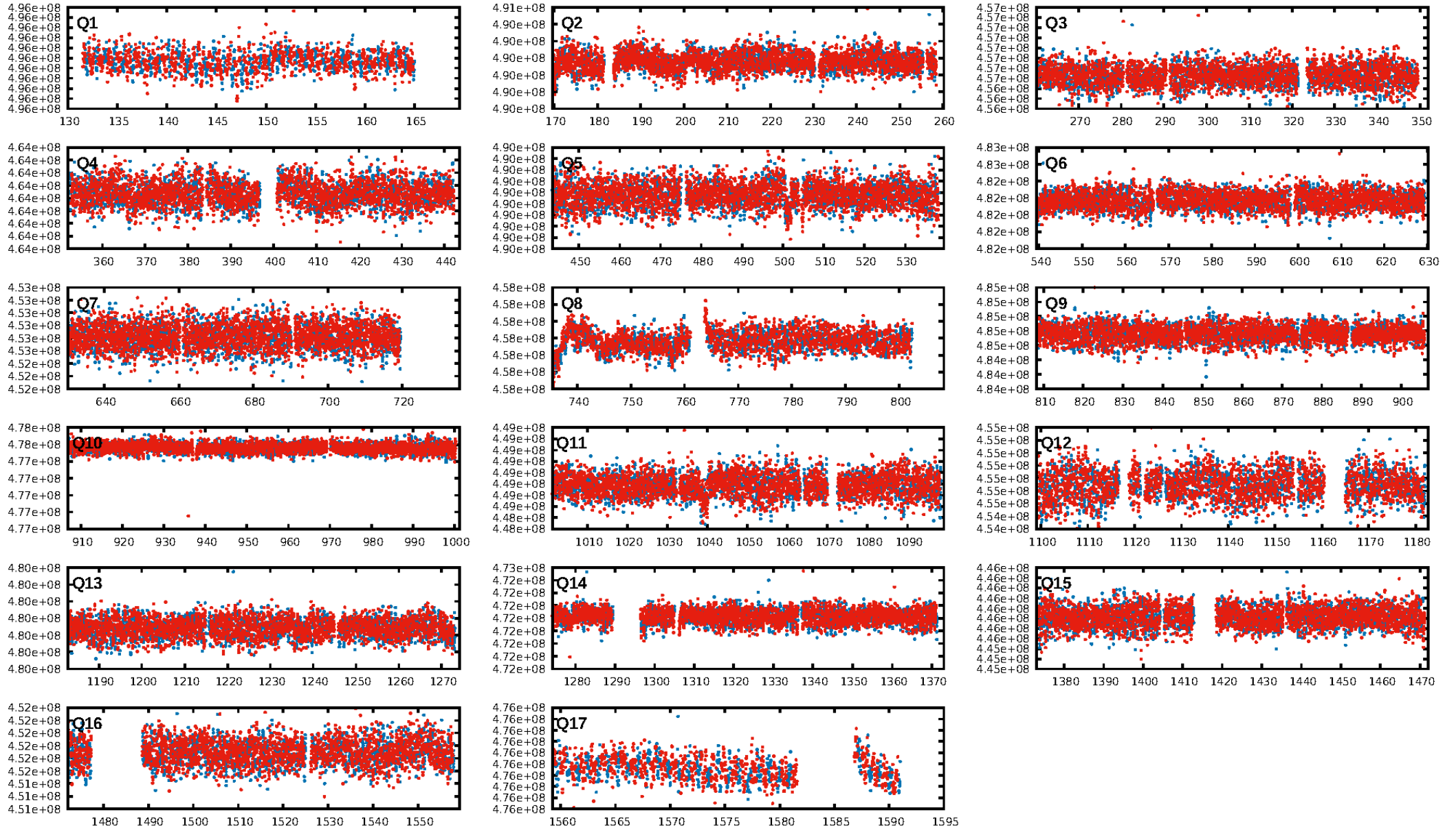
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [15.85 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.56e-20
RollingBand-fgt: 1.00 [1396/1396]
GhostDiagnostic-chr: 8.605
Centroid-sig: 84.5%
Centroid-so: 0.507 arcsec [0.39 σ]
OotOffset-rm: 0.284 arcsec [0.17 σ]
KicOffset-rm: 0.210 arcsec [0.12 σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
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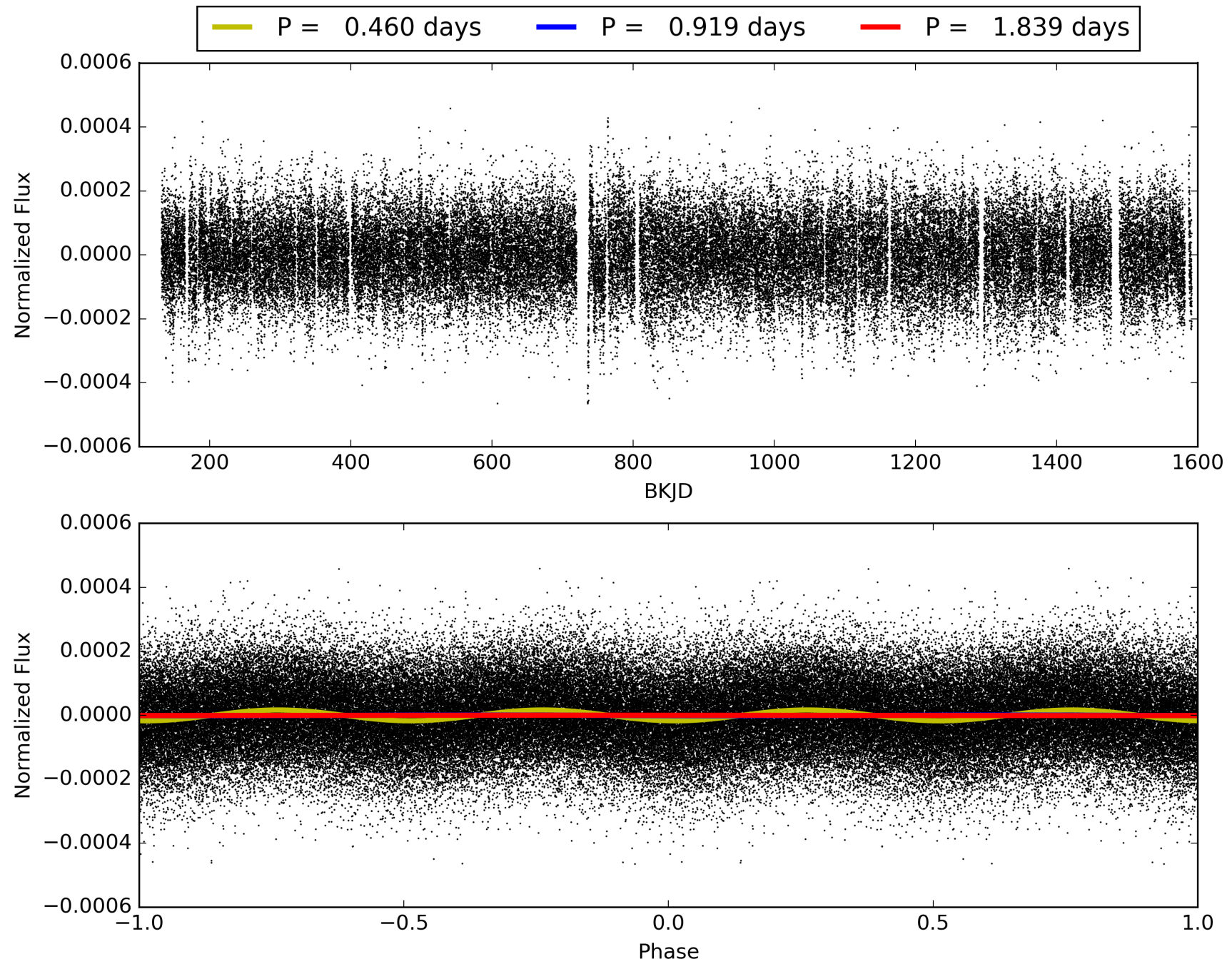
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:29:07 Z

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

TCE 007352016-02, PDC Light Curves

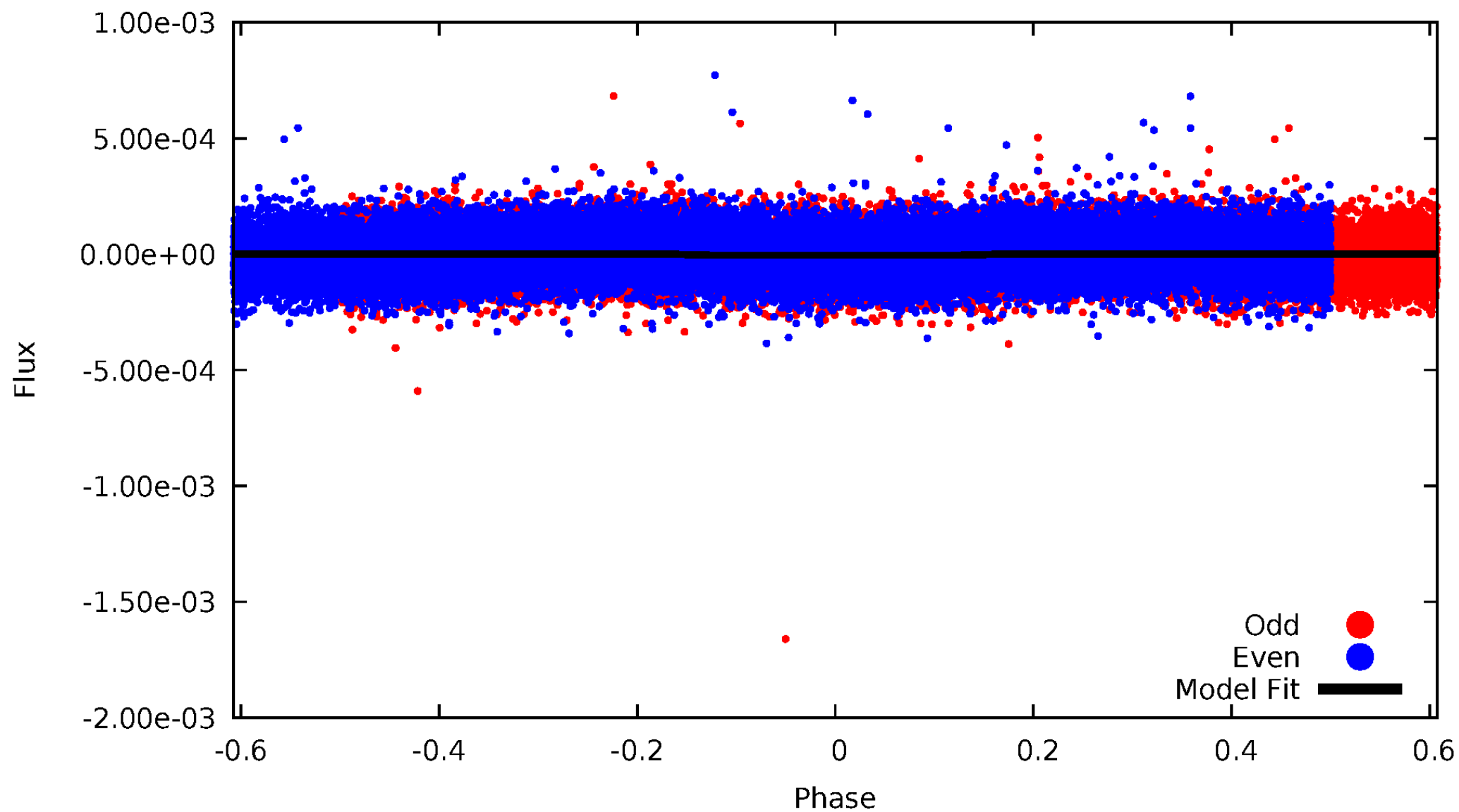


TCE 007352016-02



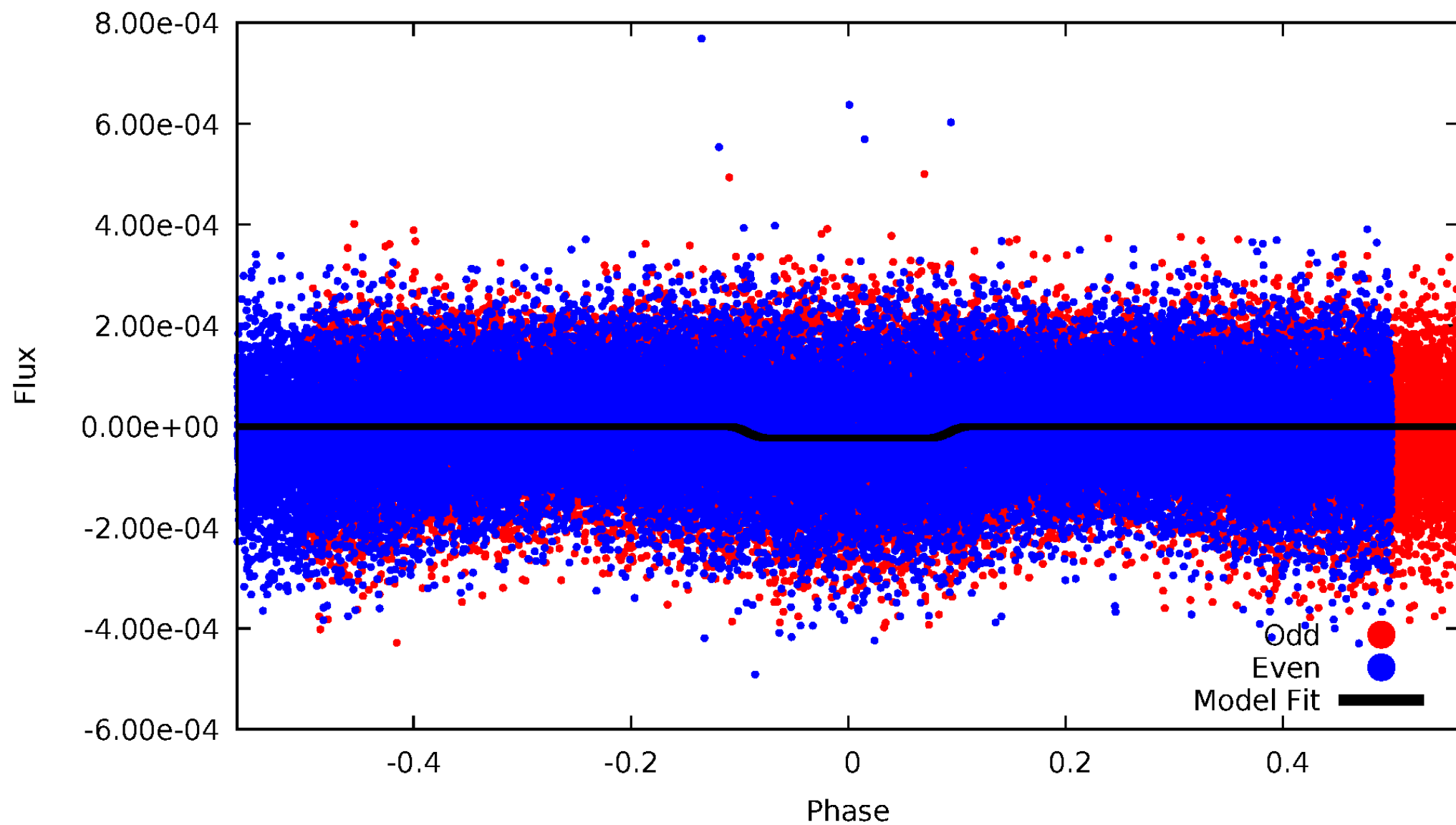
DV Odd/Even

TCE 007352016-02



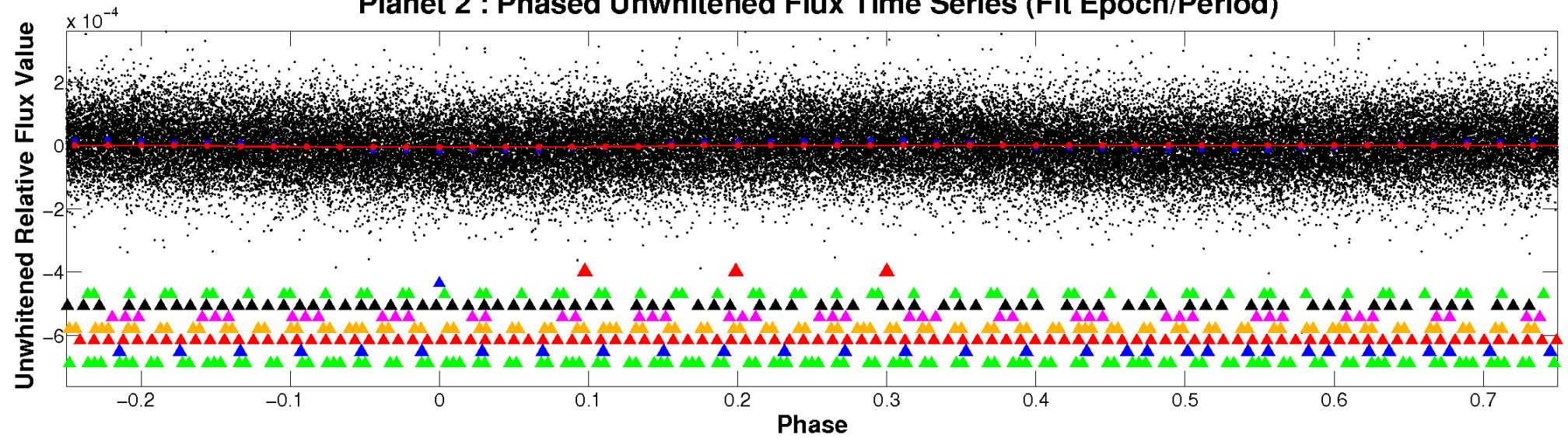
ALT Odd/Even

TCE 007352016-02

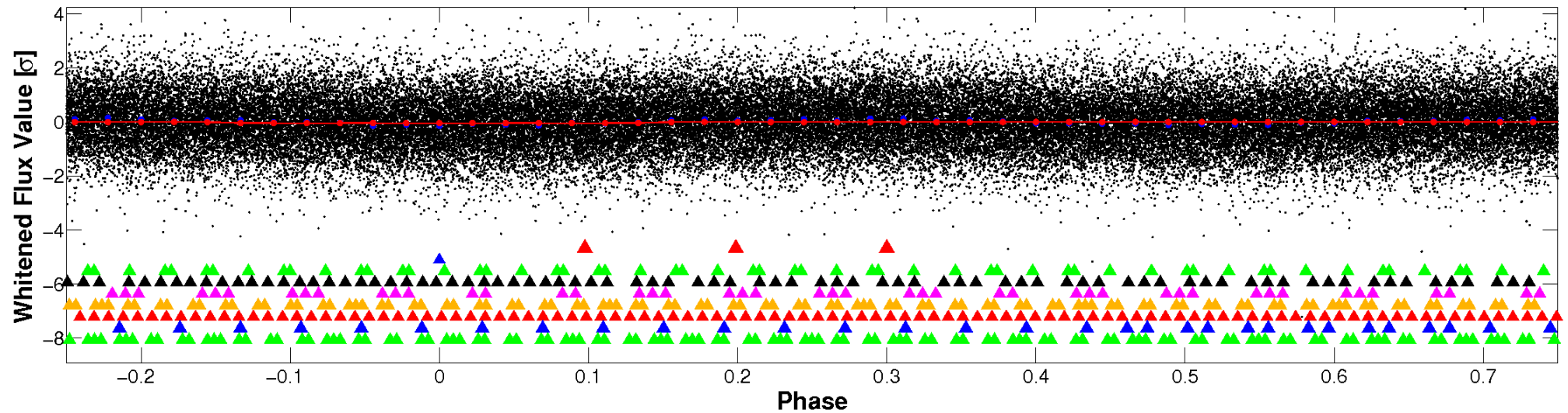


Non-Whitened Vs. Whitened Light Curve

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

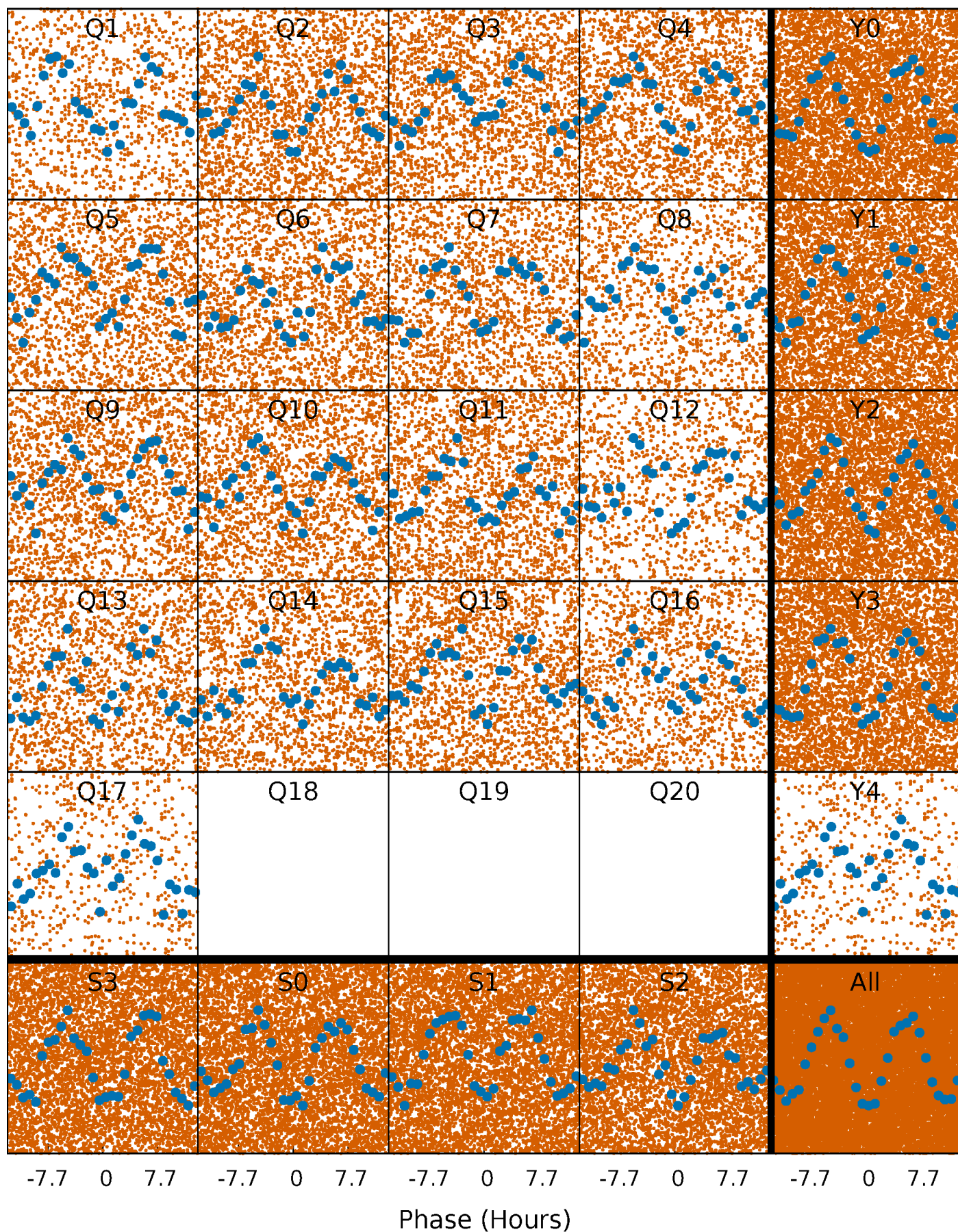


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



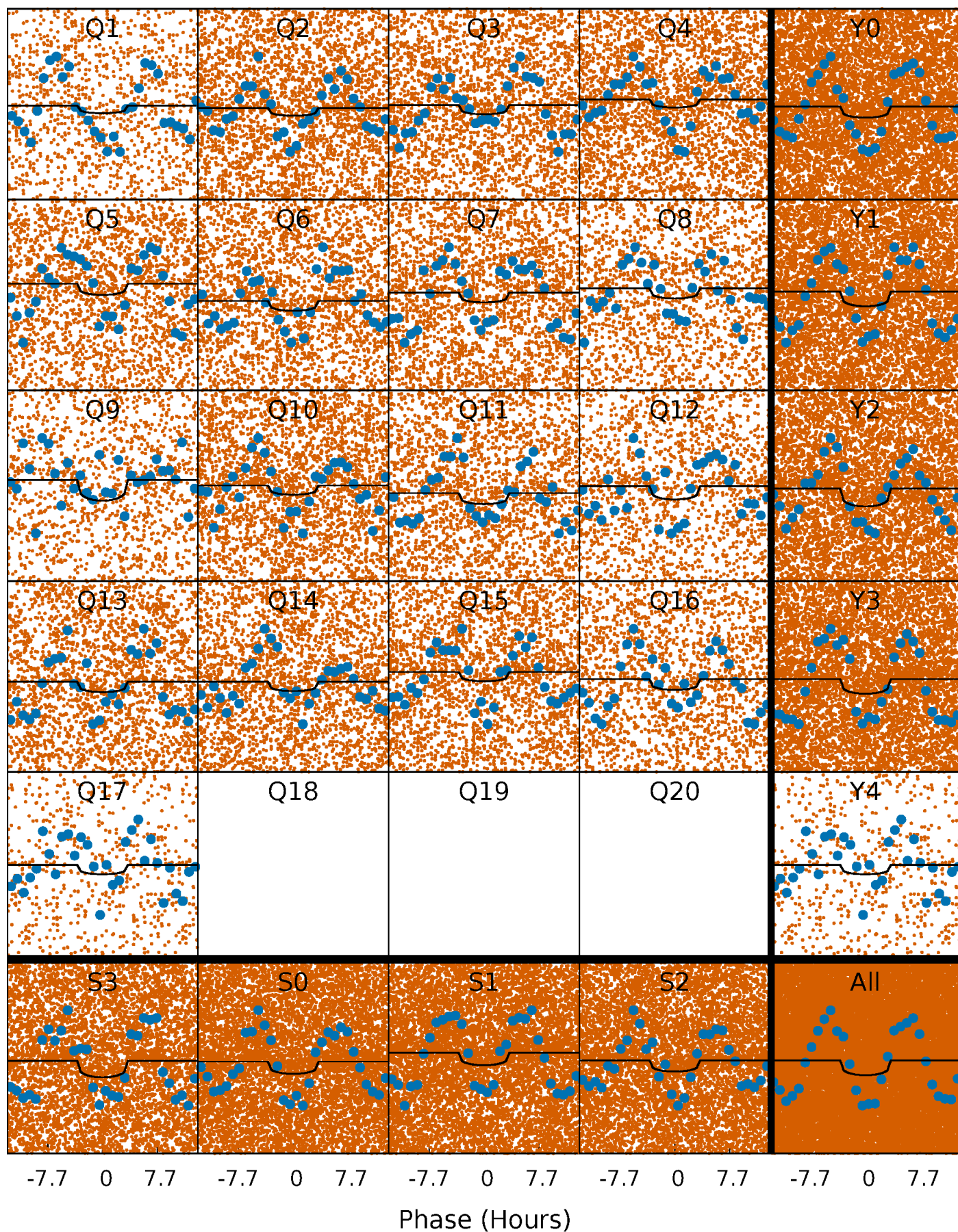
PDC Quarter-Phased Transit Curves

TCE 007352016-02 P= 0.919382 Days $T_0=132.389291$ (BKJD)



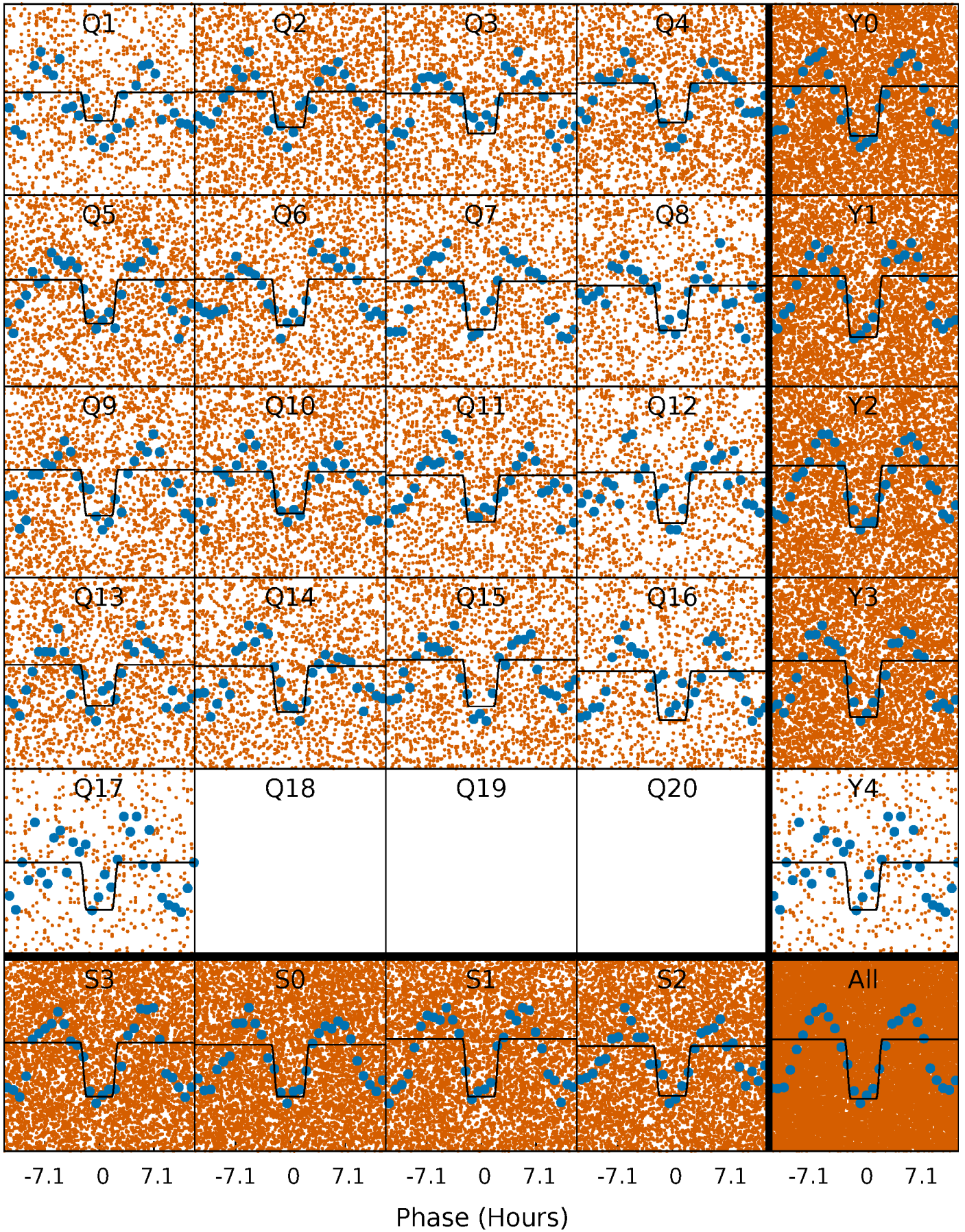
DV Quarter-Phased Transit Curves

TCE 007352016-02 P= 0.919382 Days $T_0=132.389291$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

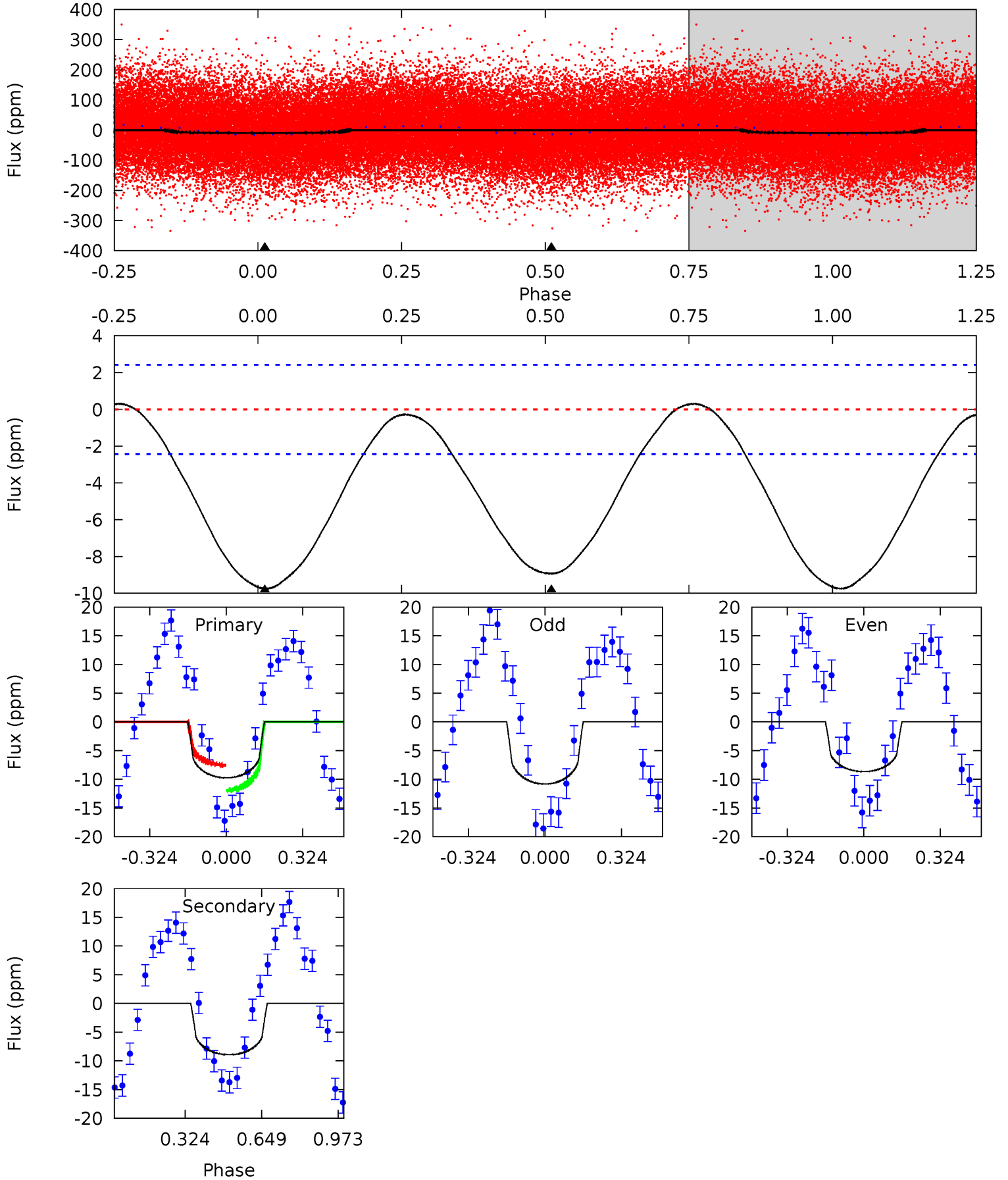
TCE 007352016-02 P= 0.919377 Days $T_0=132.408002$ (BKJD)



DV Model-Shift Uniqueness Test

007352016-02, P = 0.919382 Days, E = 131.469909 Days

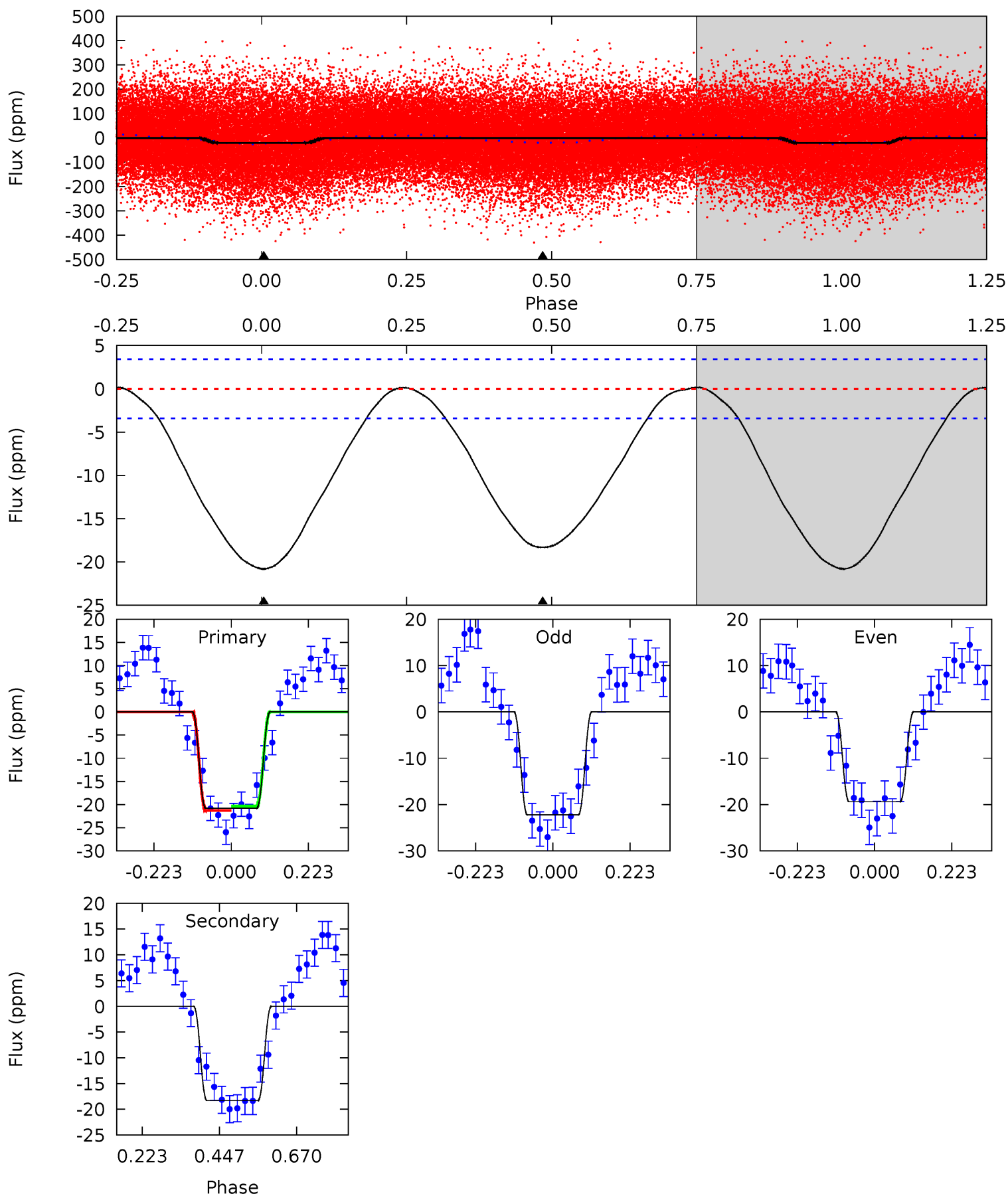
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	15.9	0	0	4.31	0.99	0.53	17.3	17.3	15.9	15.9	1.93	0.97	0.03	3.84



Alt Model-Shift Uniqueness Test

007352016-02, P = 0.919377 Days, E = 131.488625 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	23.6	0	0	4.39	1.22	0.24	26.8	26.8	23.6	23.6	1.82	0.98	0.01	0.52



Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 1	$0.62^{+0.53}_{-0.39}$	4474^{+209}_{-211}	7525^{+9889}_{-2227}	$5.970^{+40.231}_{-4.319}$
Alt.	-18 ± 1	$1.07^{+0.60}_{-0.52}$	4461^{+217}_{-200}	6887^{+3869}_{-1546}	$4.237^{+11.785}_{-2.536}$

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

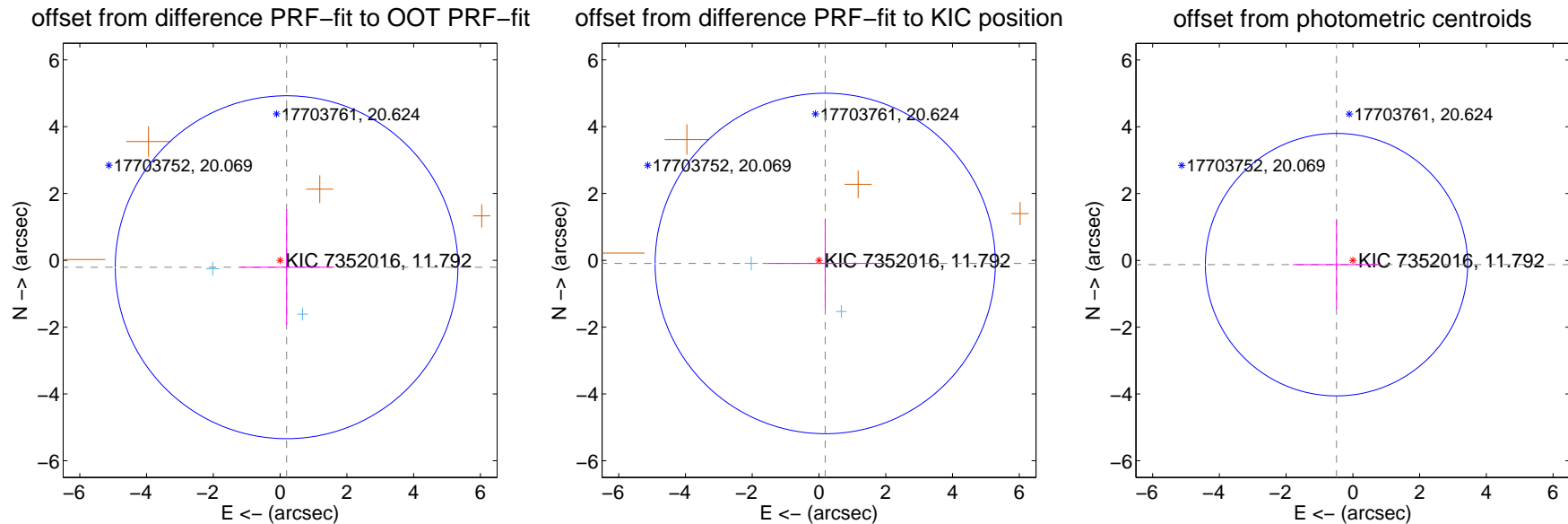
DV Centroid Data

Supplemental centroid analysis for 007352016-02. **Kepler magnitude: 11.79.** Transit SNR 5.51

There are 2 quarters with good PRF difference image offsets

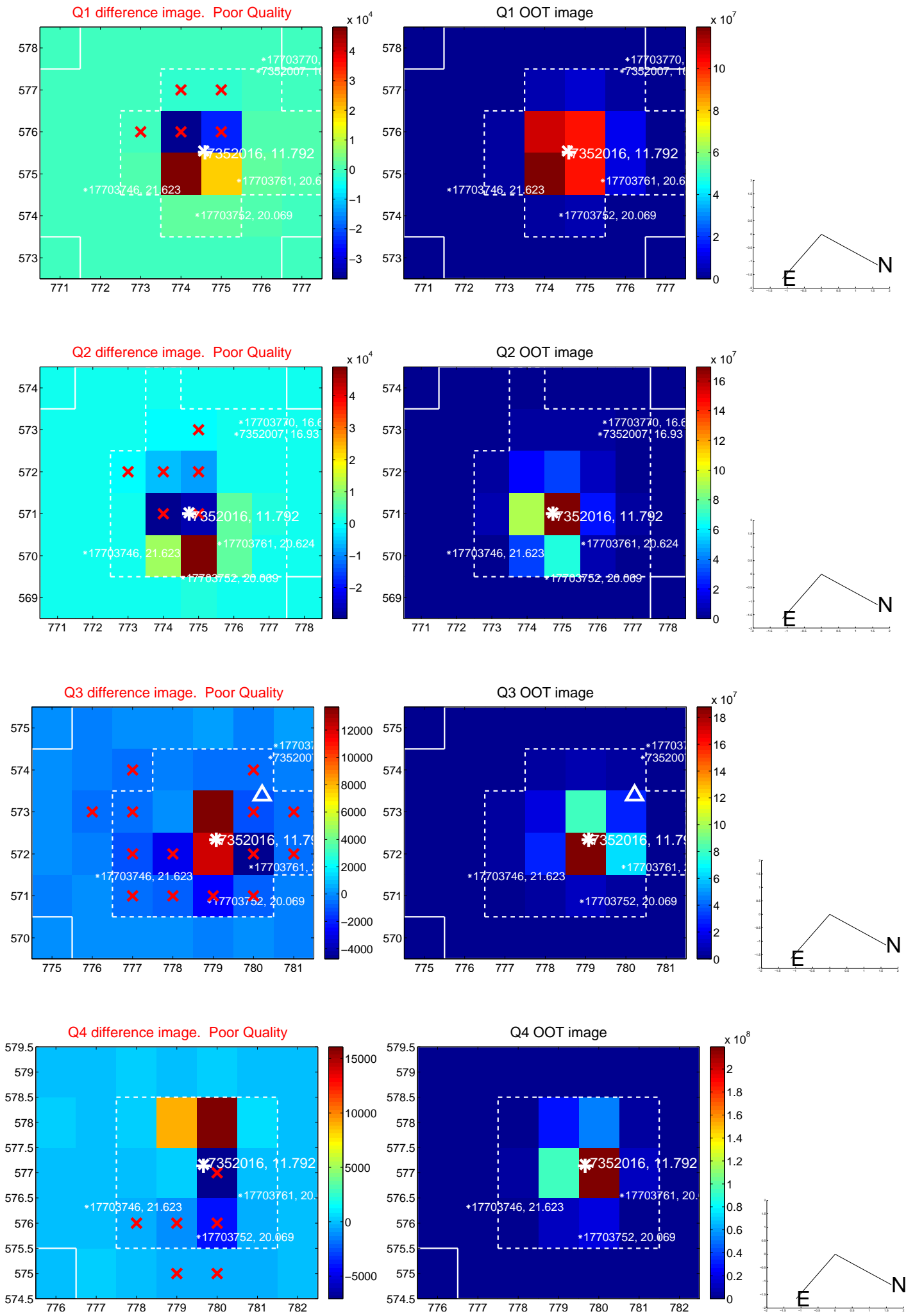
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.284 ± 1.711	0.17	-0.194 ± 1.382	-0.207 ± 1.724
PRF-fit source offset from KIC position	0.210 ± 1.699	0.12	-0.187 ± 1.680	-0.095 ± 1.337
photometric centroid source offset	0.51 ± 1.31	0.39	0.49 ± 1.31	-0.13 ± 1.33

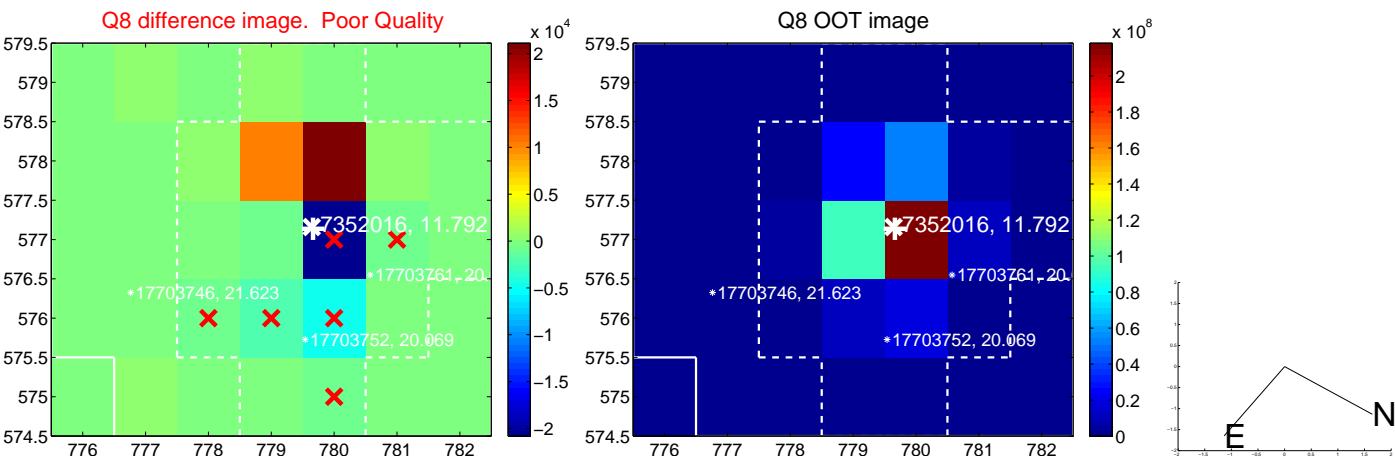
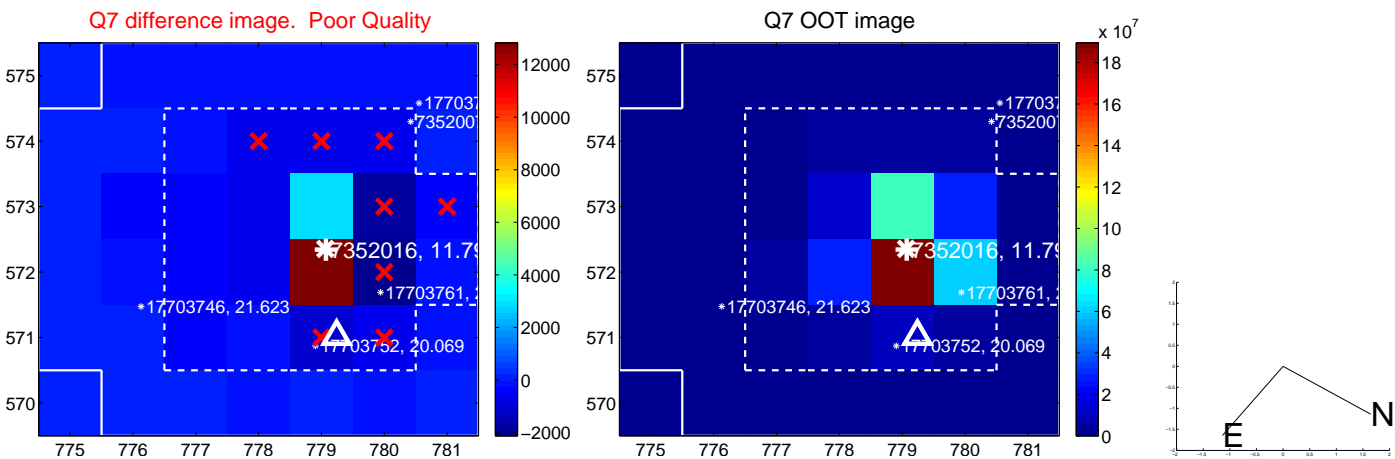
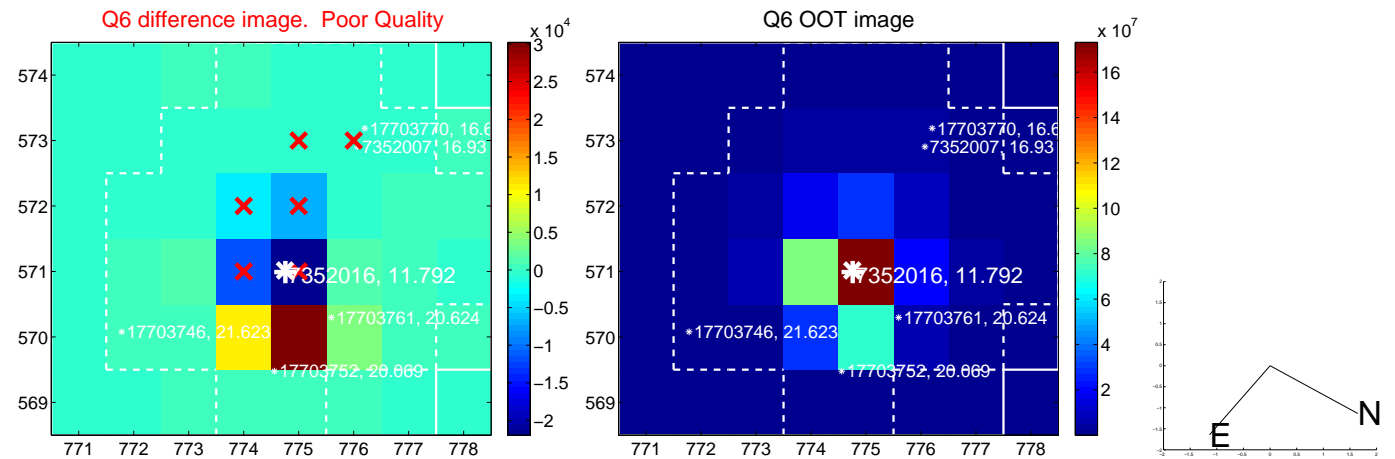
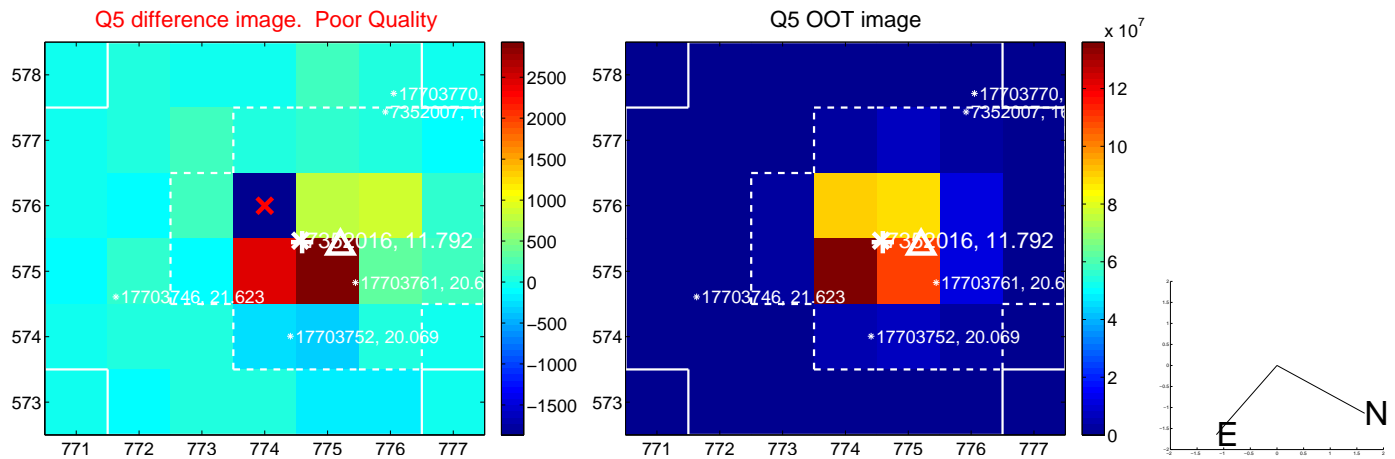


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

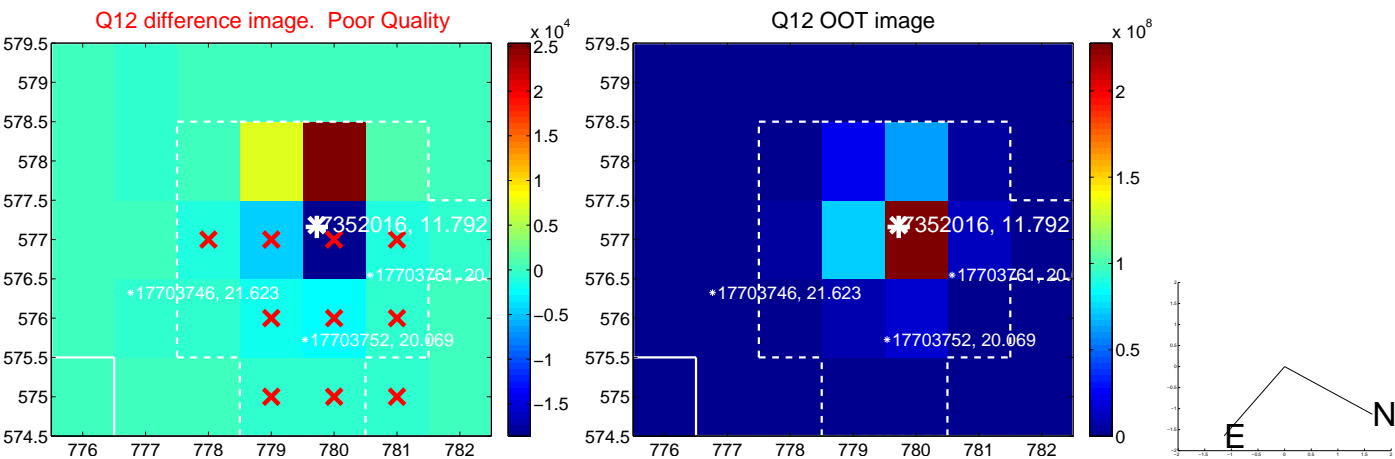
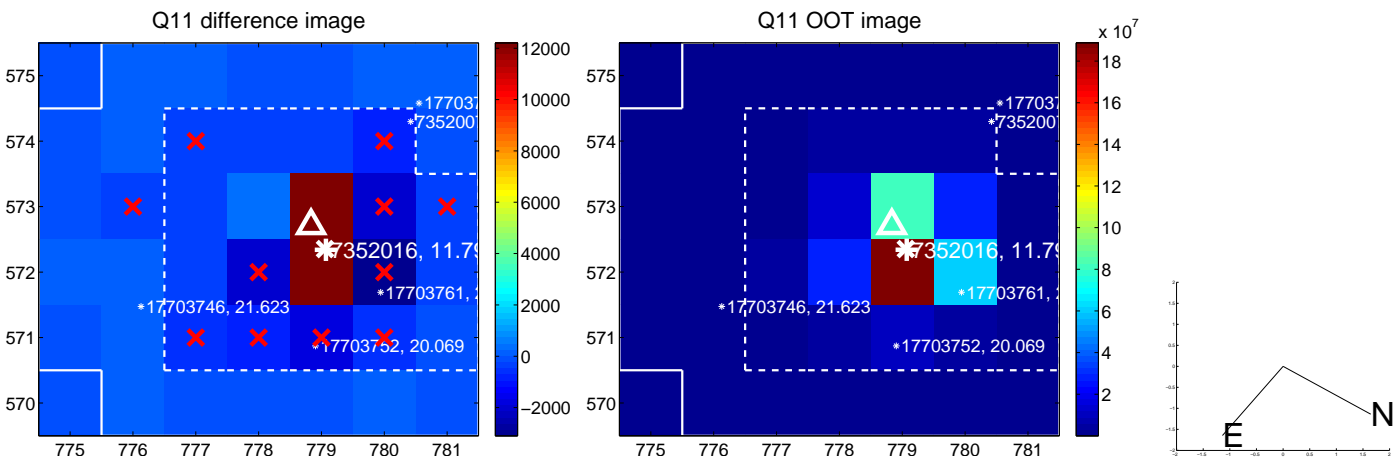
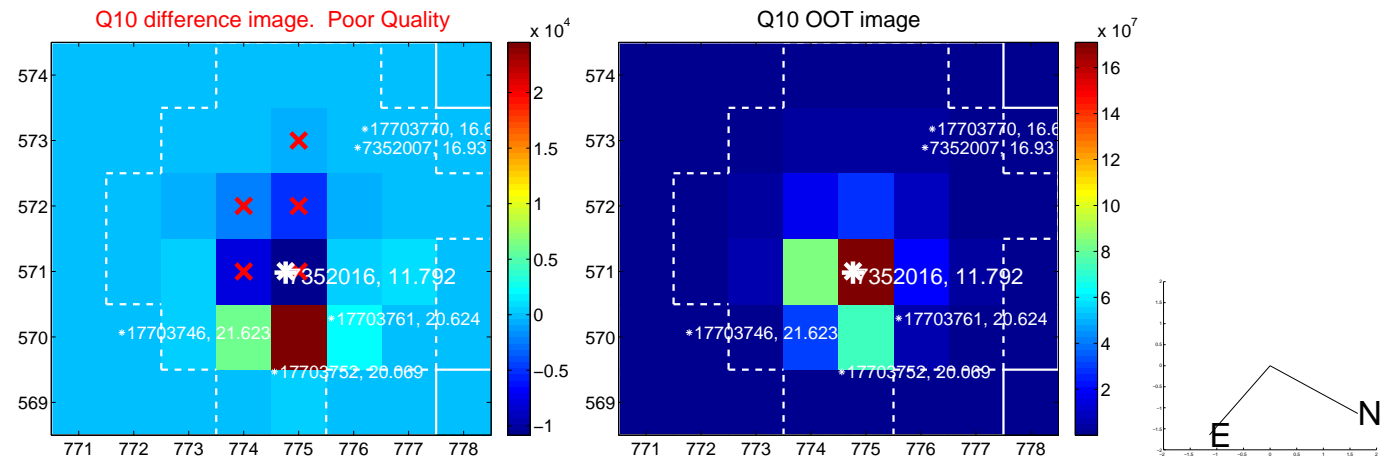
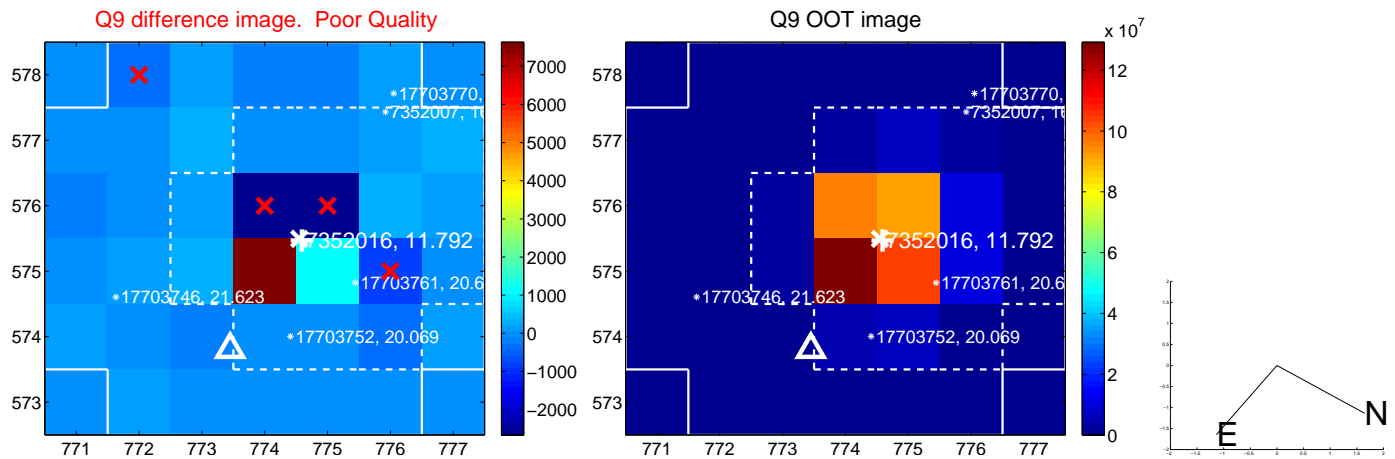
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



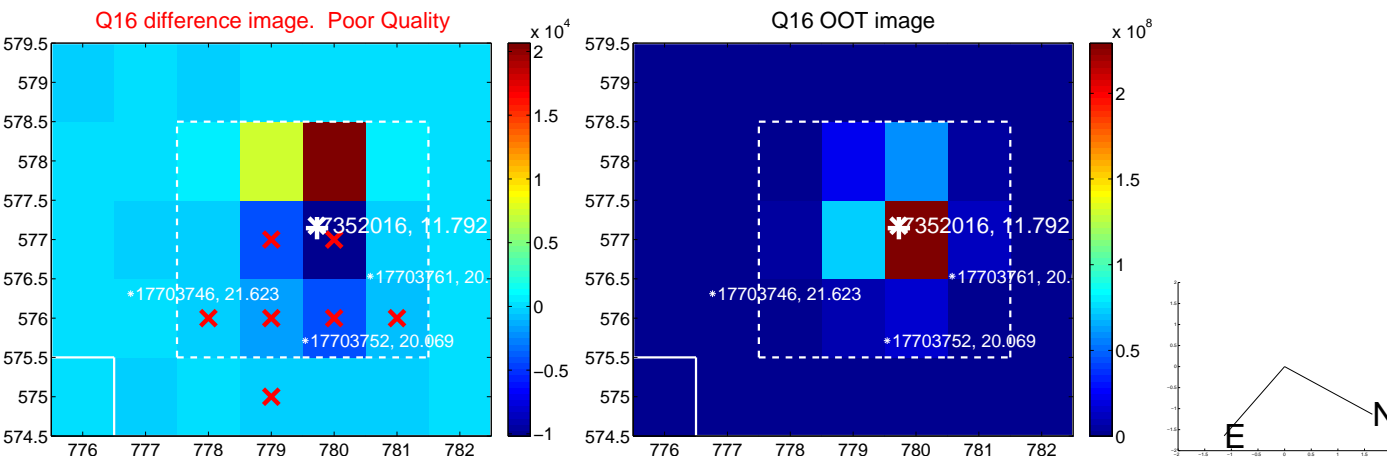
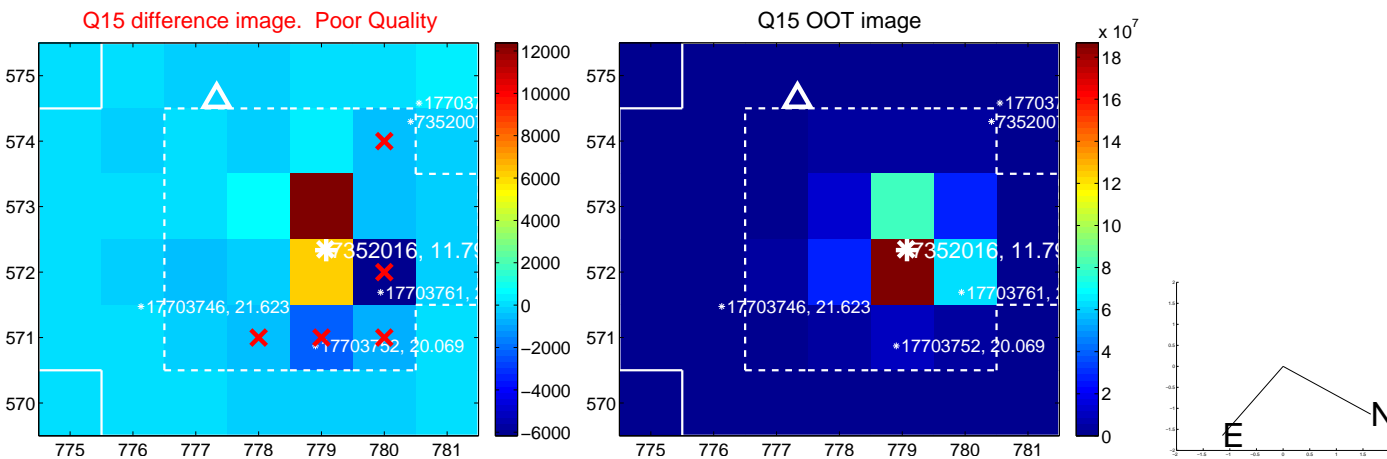
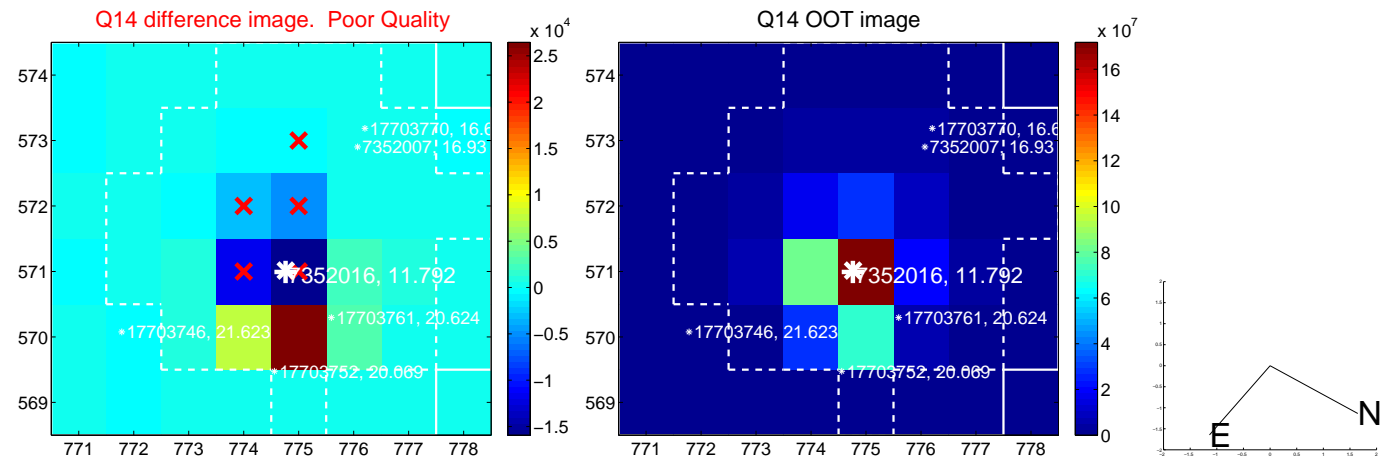
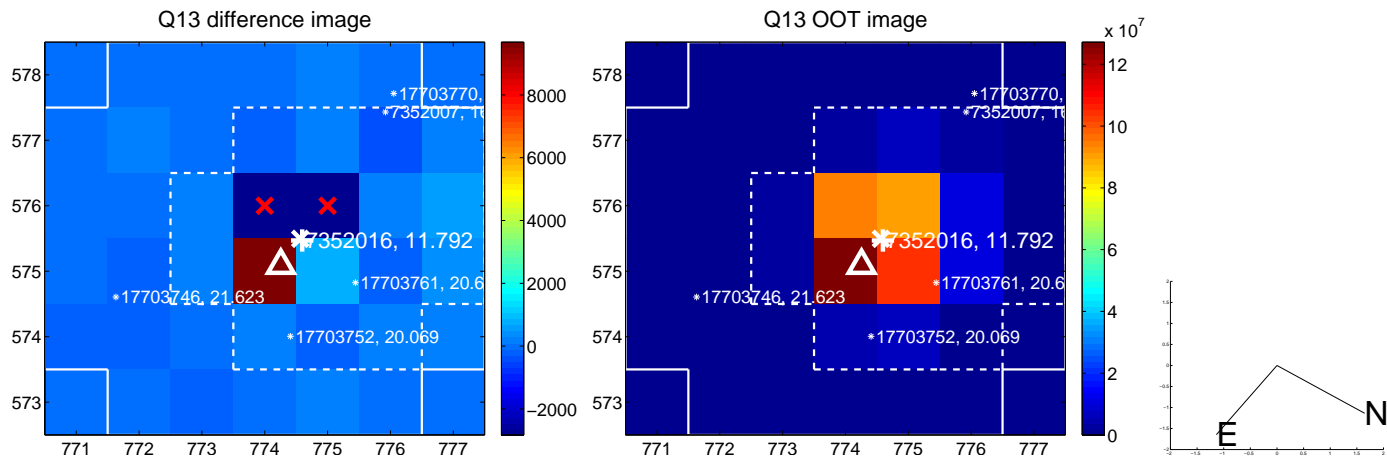
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



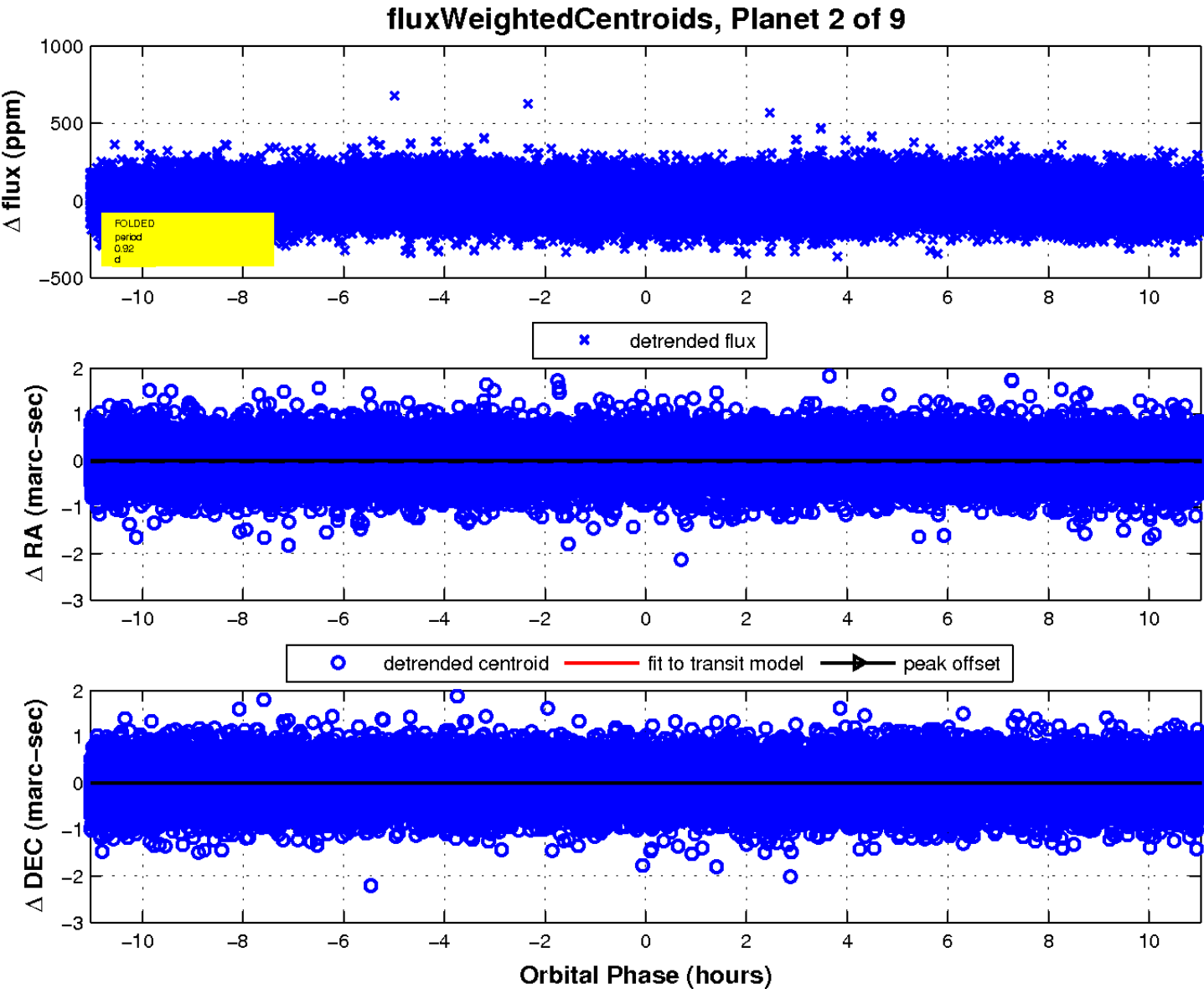
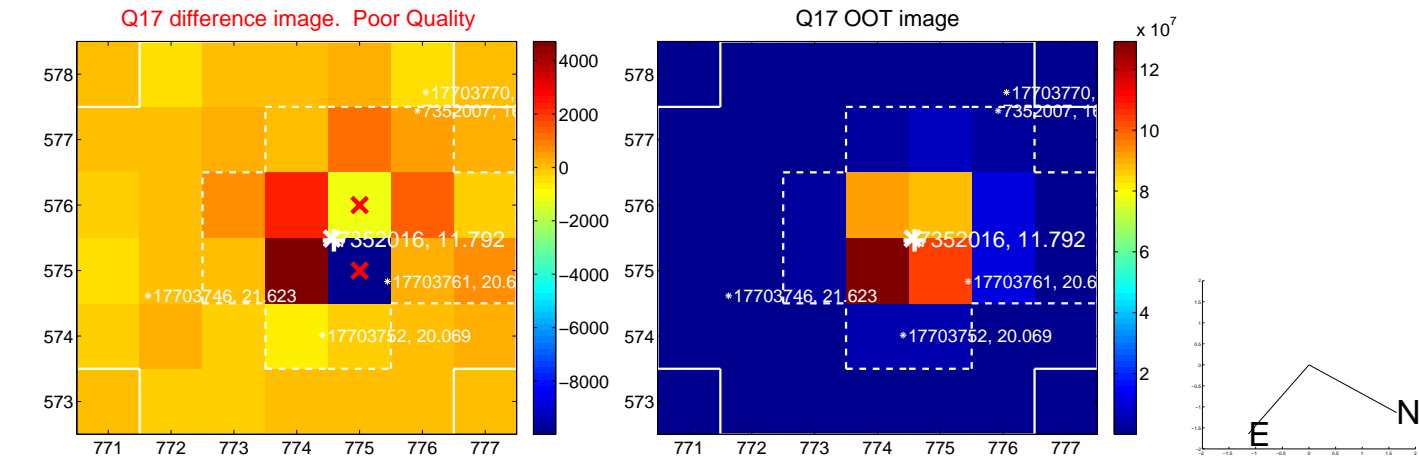
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

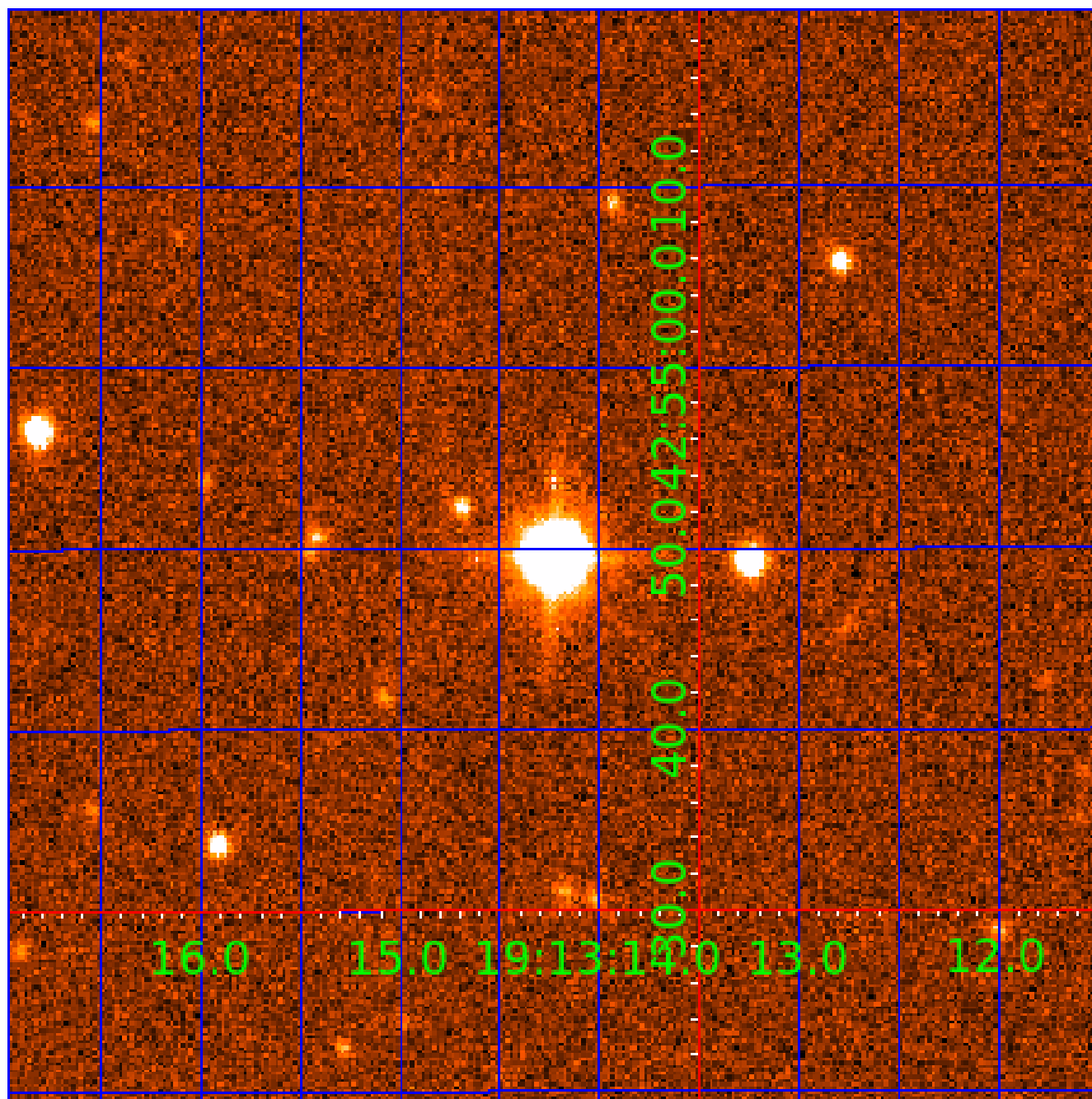


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007352016

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})
007352016-01	OBS	No	537.931366	501.151088	129.2	21.001	10.0	10.0	2.00	7542	2.67	5.09
007352016-02	OBS	No	0.919382	132.389291	5.1	6.700	8.3	5.5	2.00	7542	0.46	24891.70
007352016-03	OBS	No	25.621817	133.502165	186.4	1.138	14.8	13.0	2.00	7542	2.81	294.60
007352016-04	OBS	No	18.349737	131.543780	161.3	1.323	15.2	12.9	2.00	7542	2.66	459.77
007352016-05	OBS	No	31.583942	147.492154	109.5	4.393	11.7	13.0	2.00	7542	2.39	222.89
007352016-06	OBS	No	14.553533	136.332445	105.3	2.490	13.0	14.5	2.00	7542	2.07	626.26
007352016-07	OBS	No	6.873045	134.622509	35.6	6.035	12.0	10.3	2.00	7542	1.40	1702.88
007352016-08	OBS	No	46.925739	166.830456	156.2	1.233	12.8	12.4	2.00	7542	2.54	131.47
007352016-09	OBS	No	12.448509	138.957477	145.3	1.148	12.7	11.5	2.00	7542	2.57	771.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007352016-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

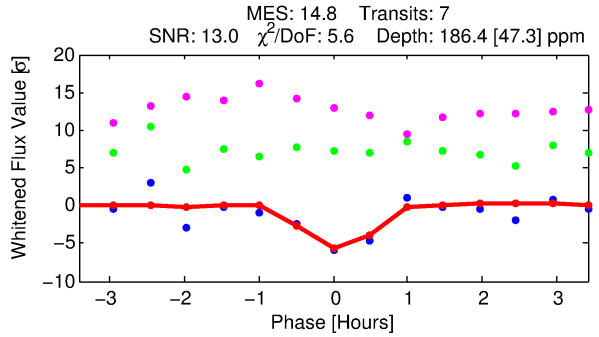
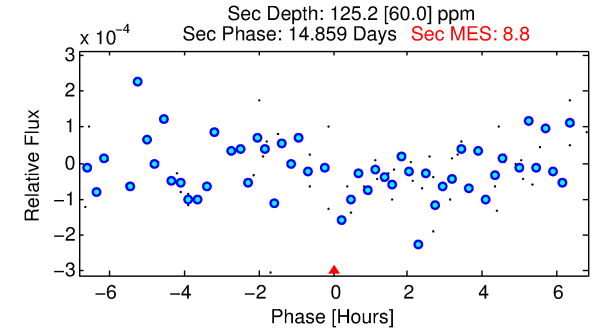
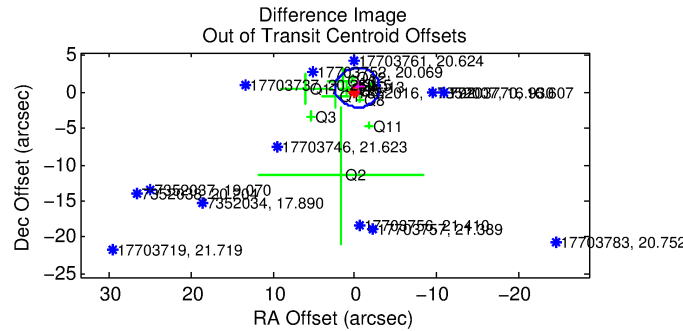
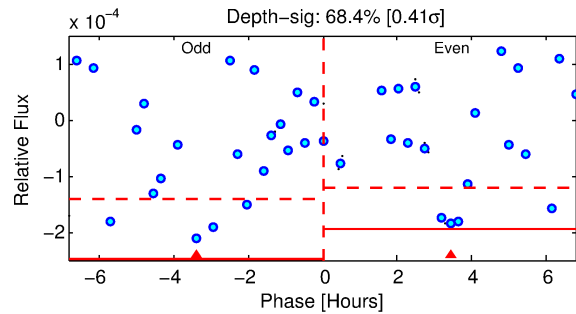
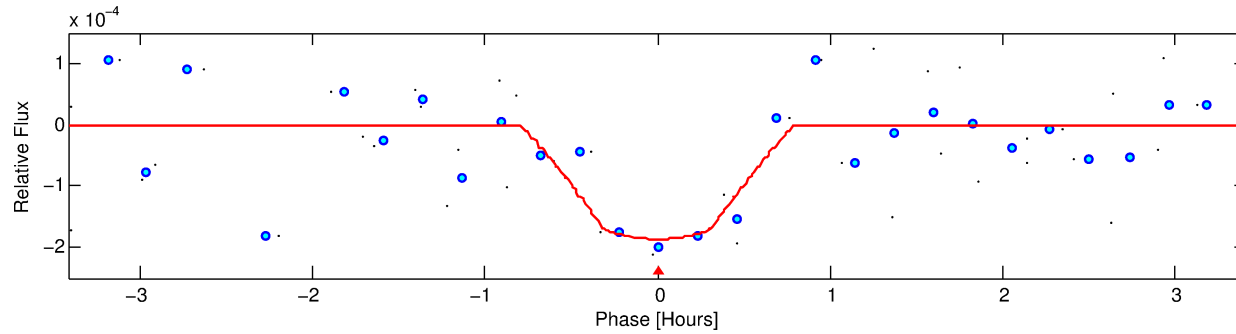
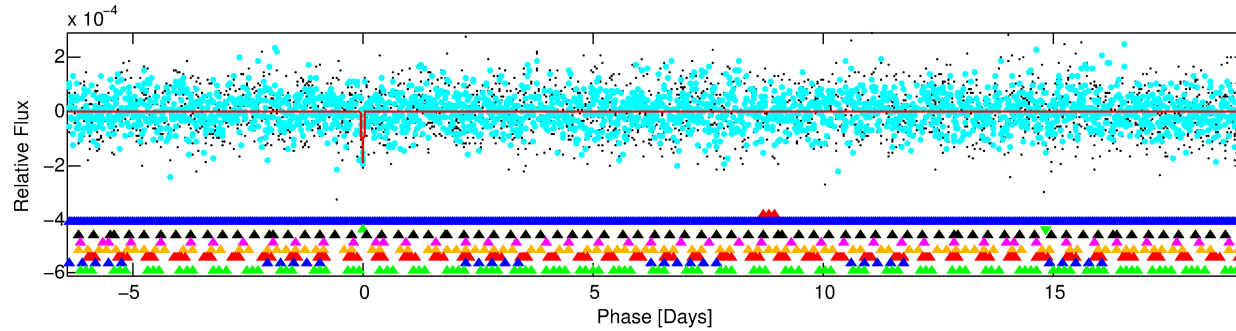
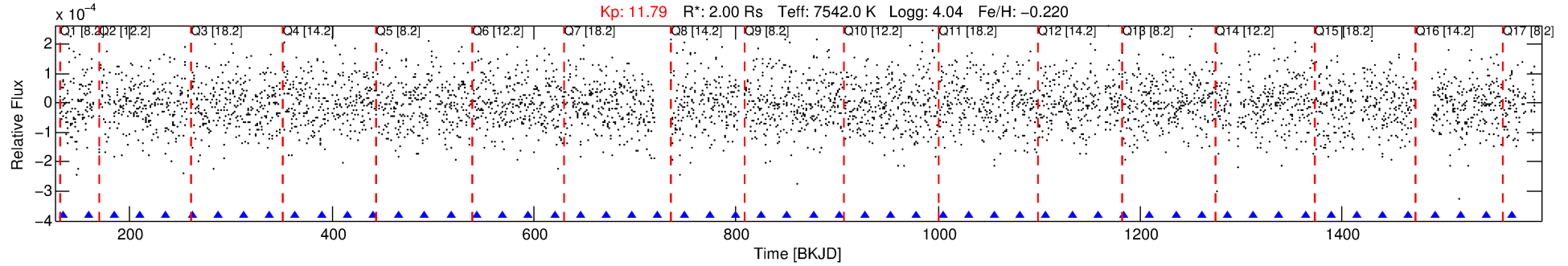
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-03

No Significant Match Found

DV One-Page Summary

KIC: 7352016 Candidate: 3 of 9 Period: 25.622 d



DV Fit Results:

Period = 25.62182 [0.00029] d
Epoch = 133.5022 [0.0090] BKJD
Rp/R* = 0.0129 [0.0197]
a/R* = 157.49 [1290.41]
b = 0.43 [15.28]
Seff = 294.60 [74.73]
Teq = 1056 [67] K
Rp = 2.81 [4.33] Re
a = 0.1983 [0.0336] AU
Ag = 342.57 [1063.16] [0.32 σ]
Teffp = 7027 [5435] K [1.10 σ]

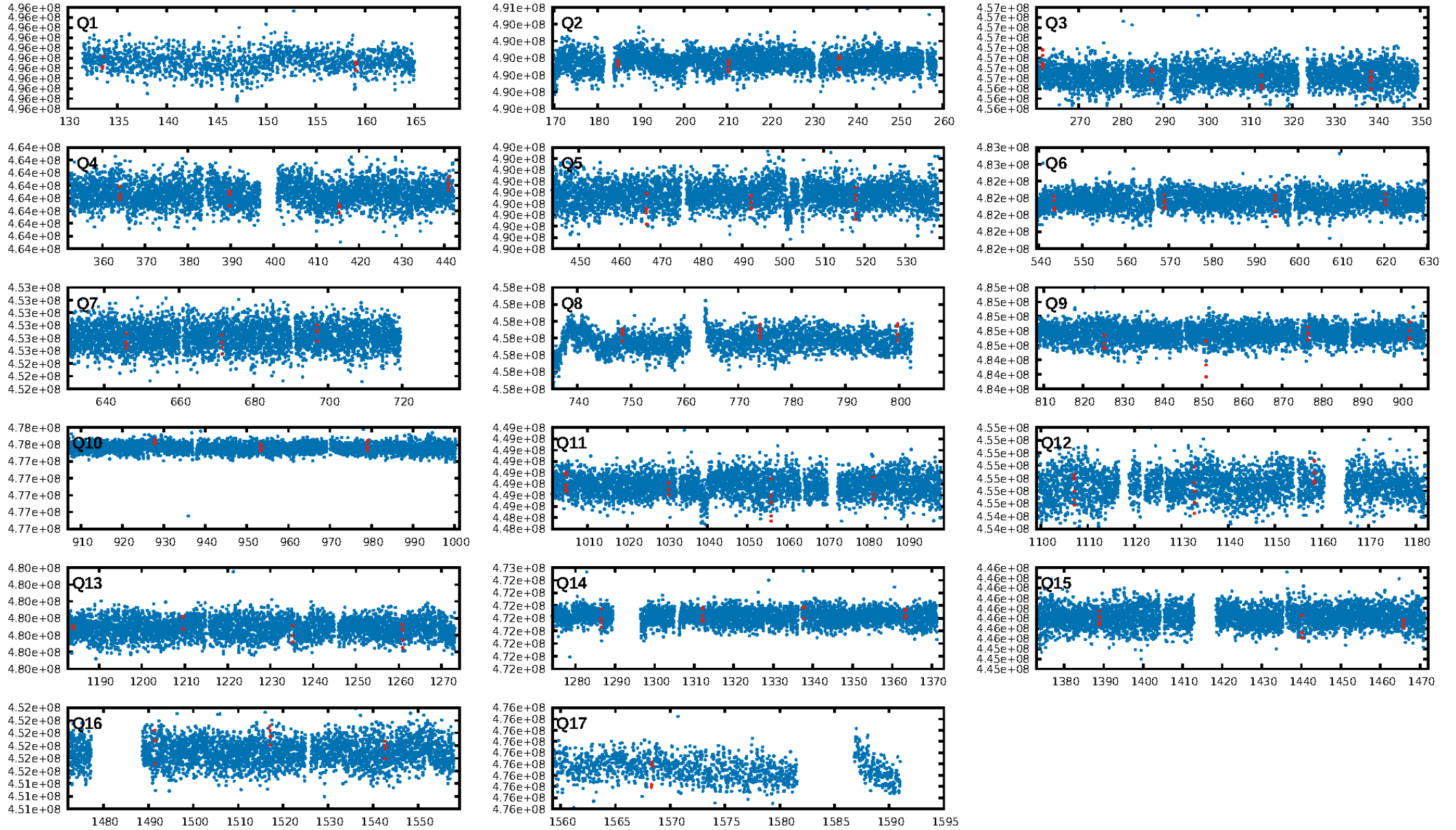
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [99.99 σ]
LongPeriod-sig: 100.0% [31.53 σ]
ModelChiSquare2-sig: 7.8%
ModelChiSquareGof-sig: 90.3%
Bootstrap-pfa: 9.57e-12
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 2.327
Centroid-sig: 20.1%
Centroid-so: 0.220 arcsec [0.52 σ]
OotOffset-rm: 0.683 arcsec [0.76 σ]
KicOffset-rm: 0.681 arcsec [0.71 σ]
OotOffset-st: 2/3/4/4 [13]
KicOffset-st: 2/3/4/4 [13]
DiffImageQuality-fgm: 0.38 [5/13]
DiffImageOverlap-fno: 0.25 [4/16]

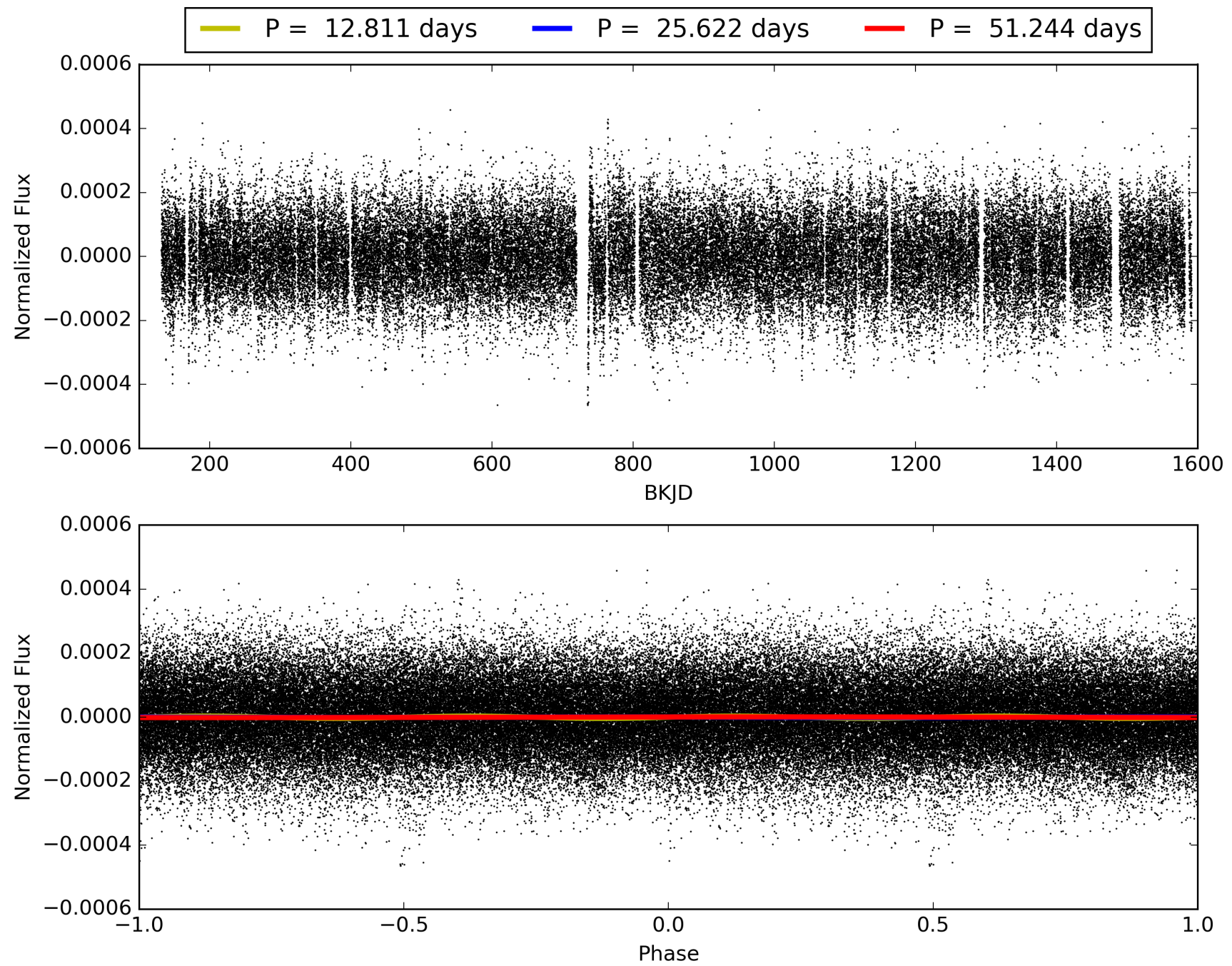
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:29:19 Z

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

TCE 007352016-03, PDC Light Curves

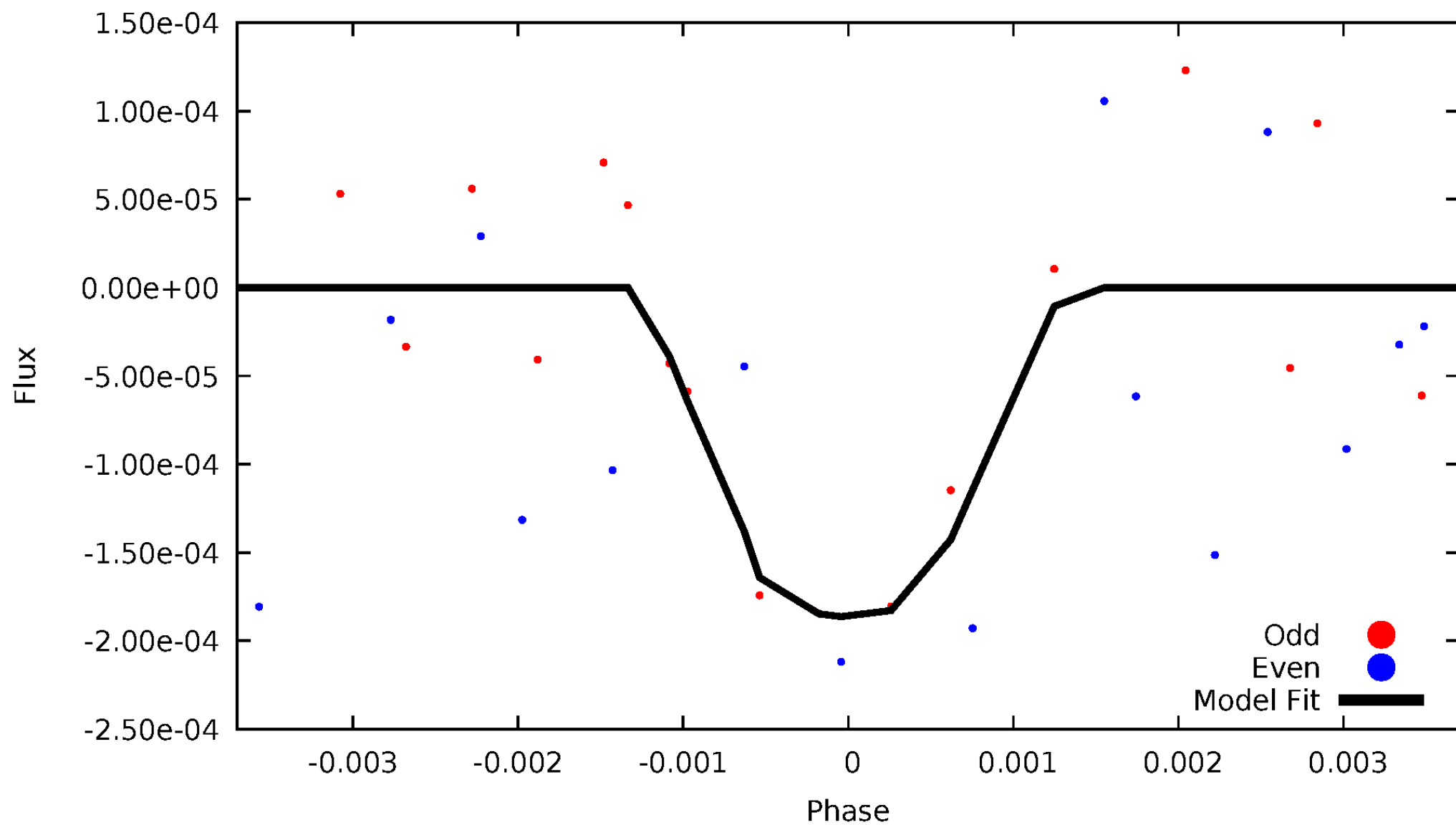


TCE 007352016-03



DV Odd/Even

TCE 007352016-03

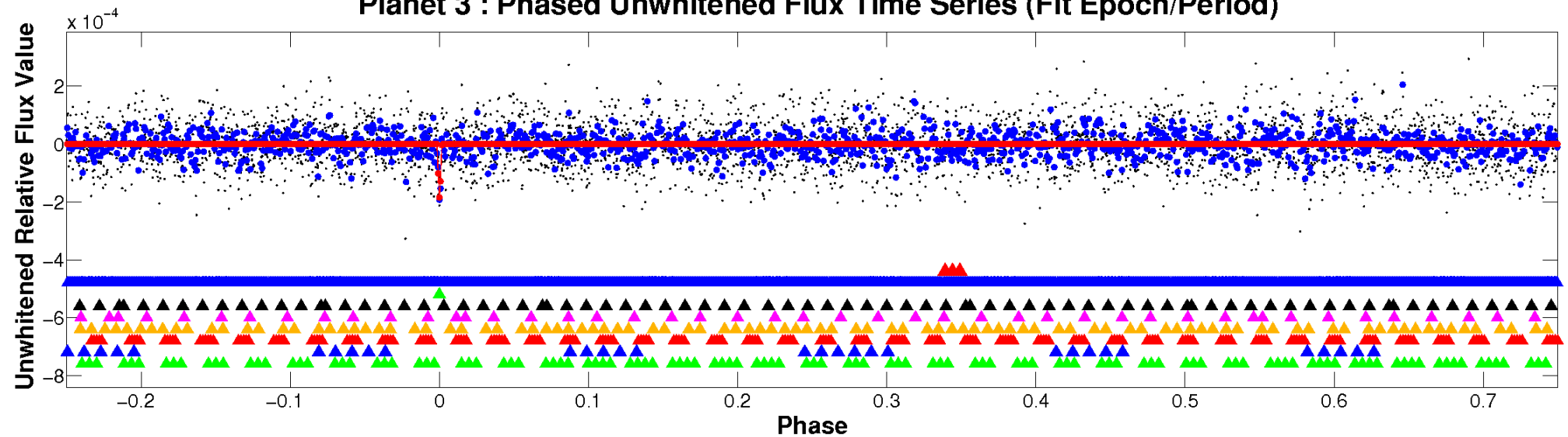


ALT Odd/Even

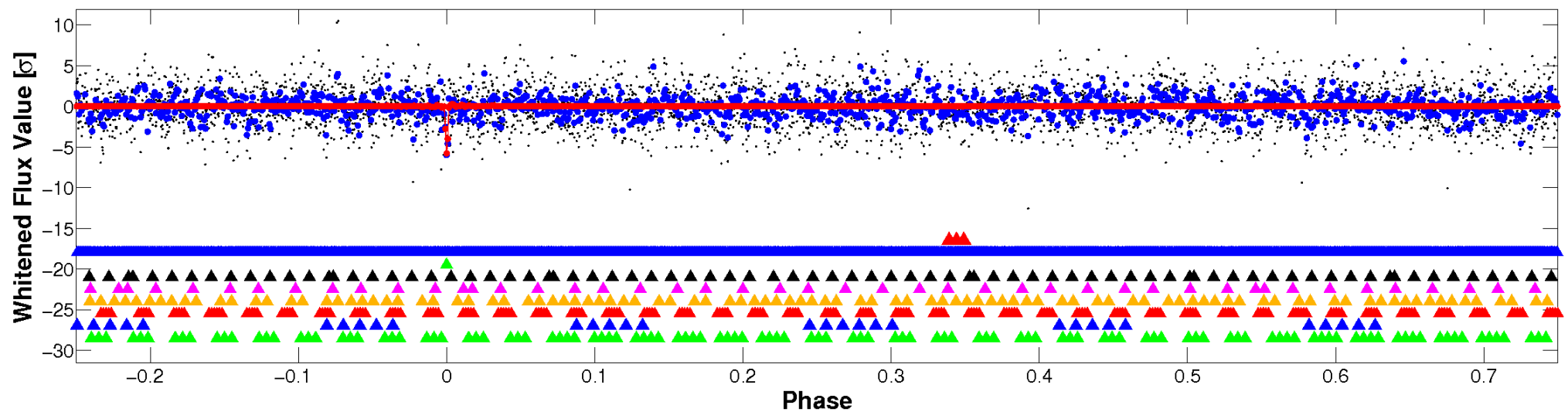
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

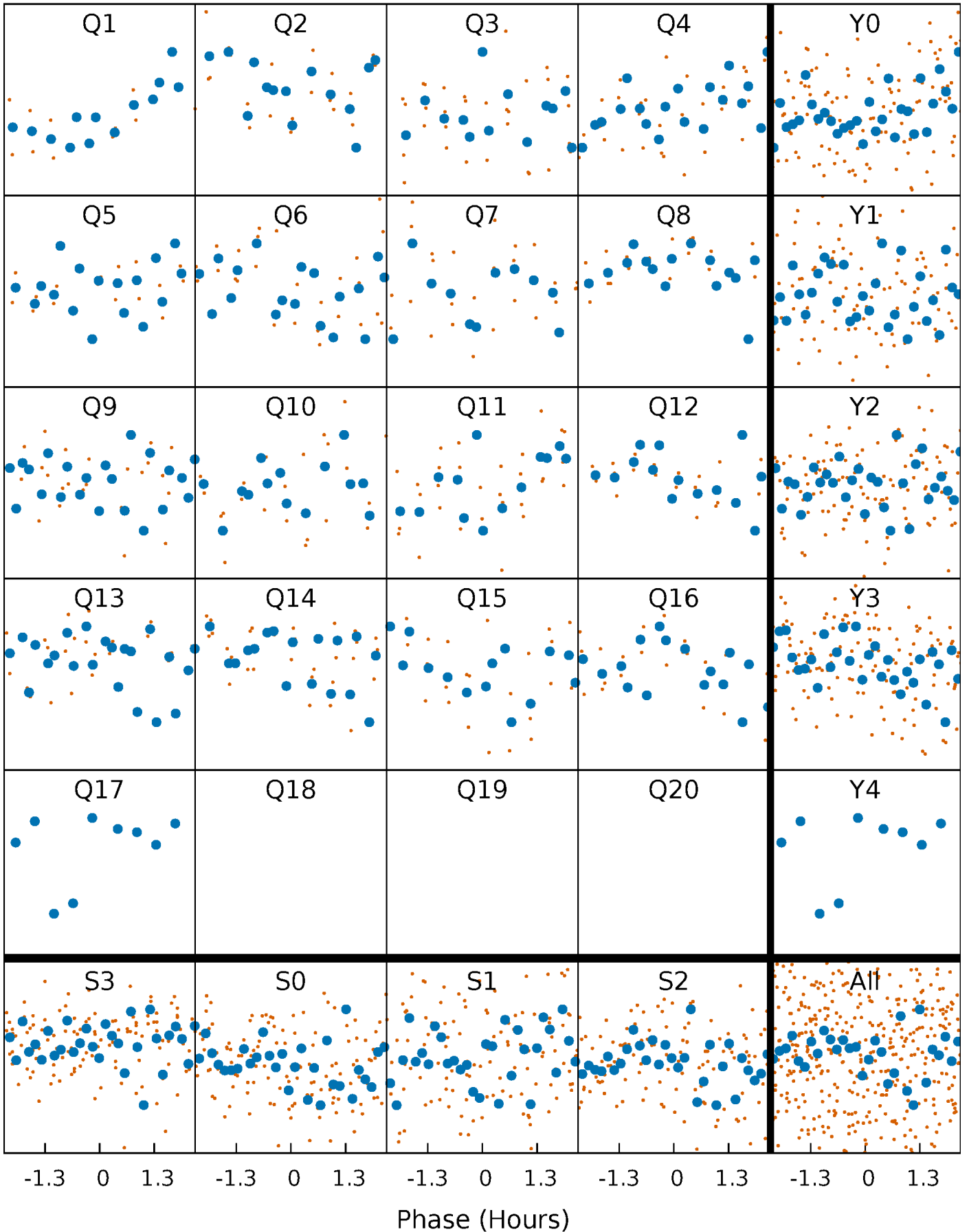


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



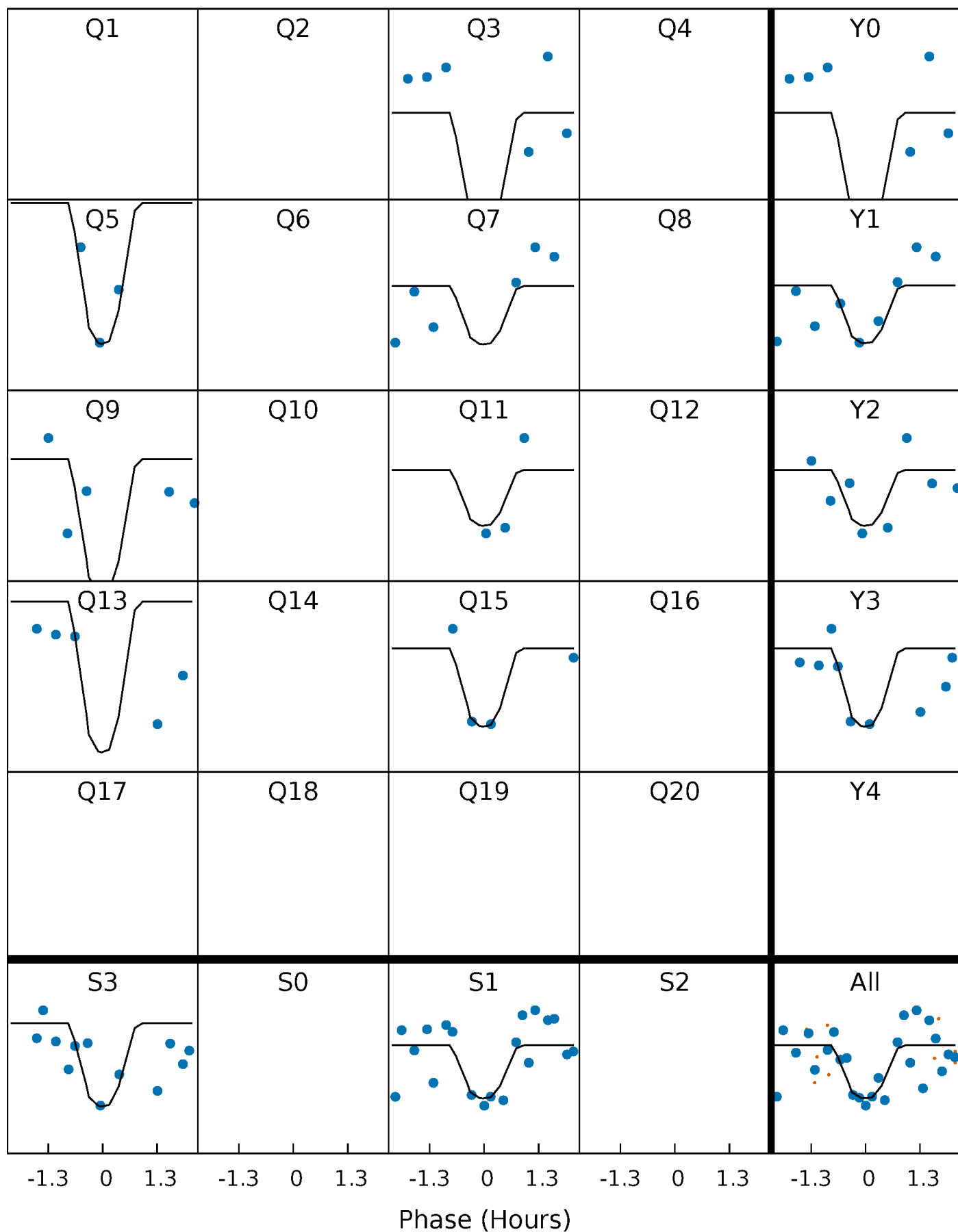
PDC Quarter-Phased Transit Curves

TCE 007352016-03 P= 25.621817 Days $T_0=133.502165$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007352016-03 P= 25.621817 Days $T_0=133.502165$ (BKJD)

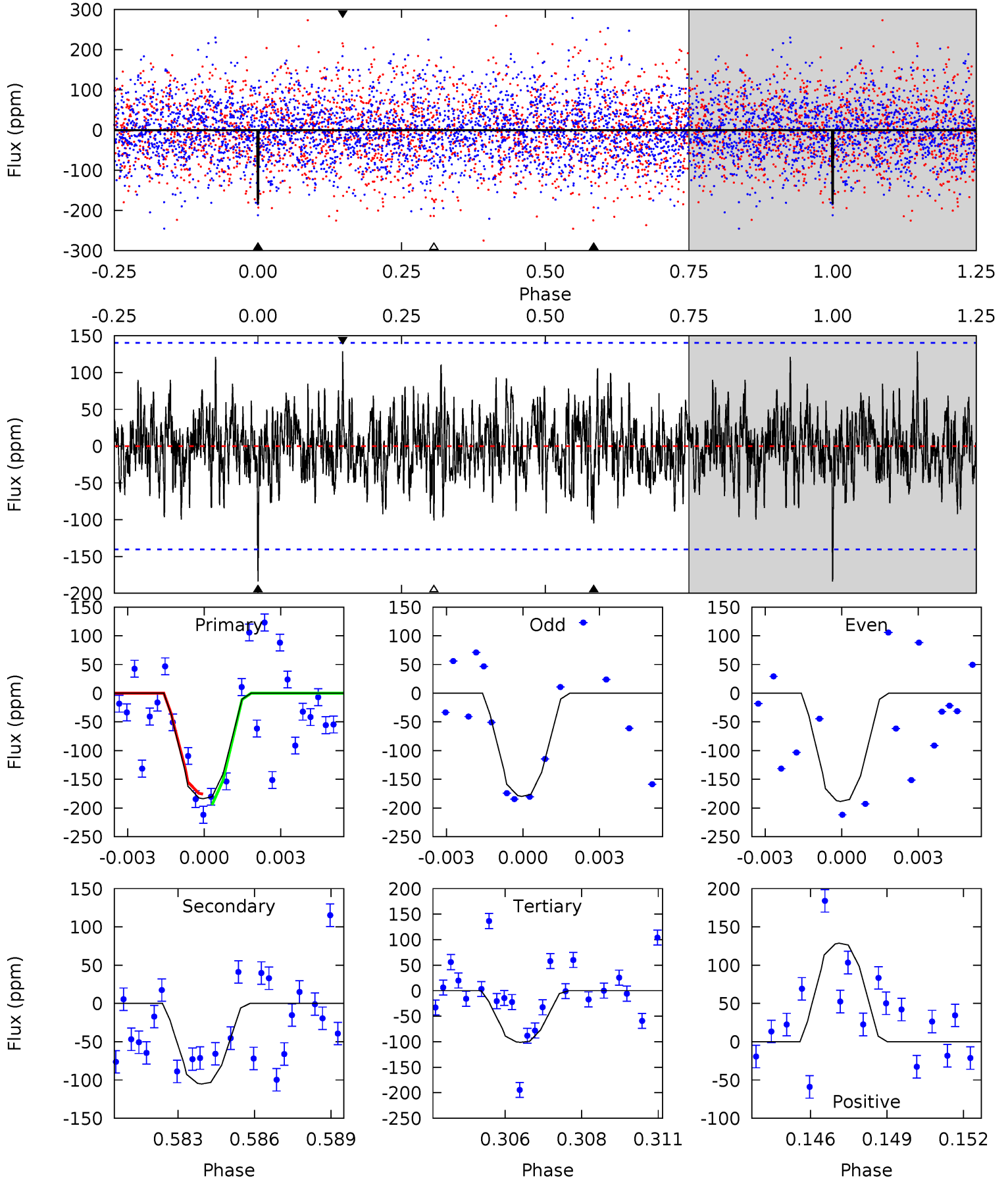


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007352016-03, P = 25.621817 Days, E = 107.880348 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.93	3.96	3.81	4.85	5.28	3.02	1.32	3.12	2.08	0.15	-0.89	0.16	1.06	0.41	0.35



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-105 ± 27	$4.15^{+3.86}_{-2.77}$	1471^{+72}_{-69}	5367^{+5365}_{-1205}	127^{+1130}_{-92}
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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

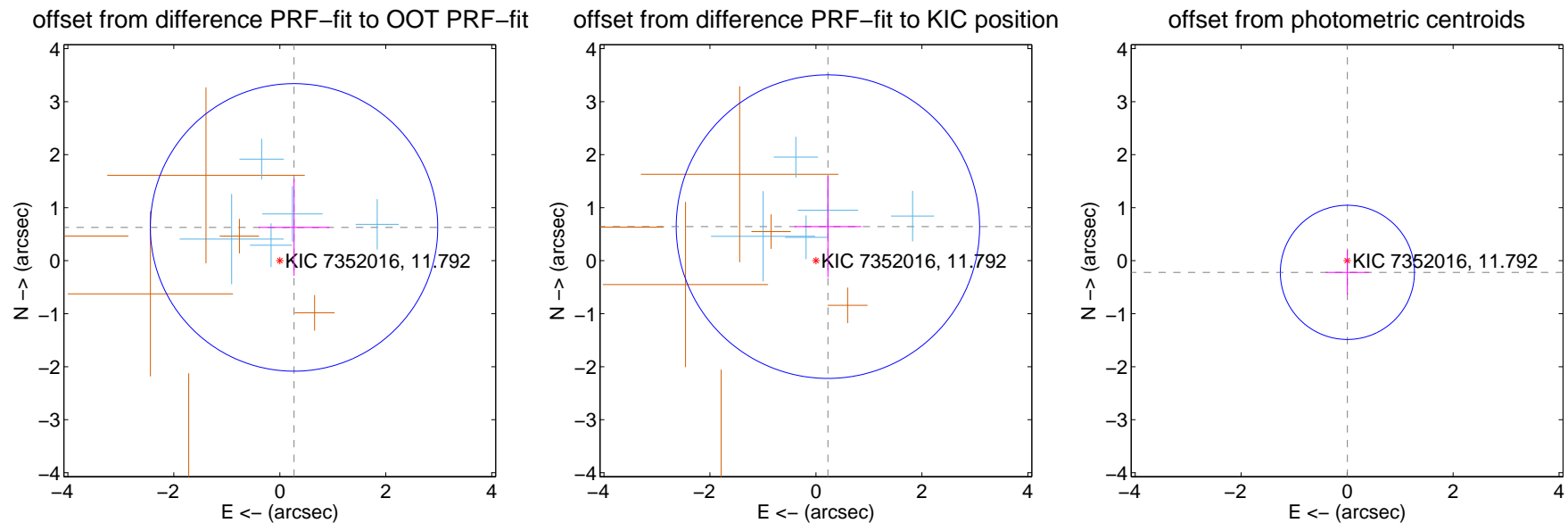
DV Centroid Data

Supplemental centroid analysis for 007352016-03. **Kepler magnitude: 11.79.** Transit SNR 13.04

There are 5 quarters with good PRF difference image offsets

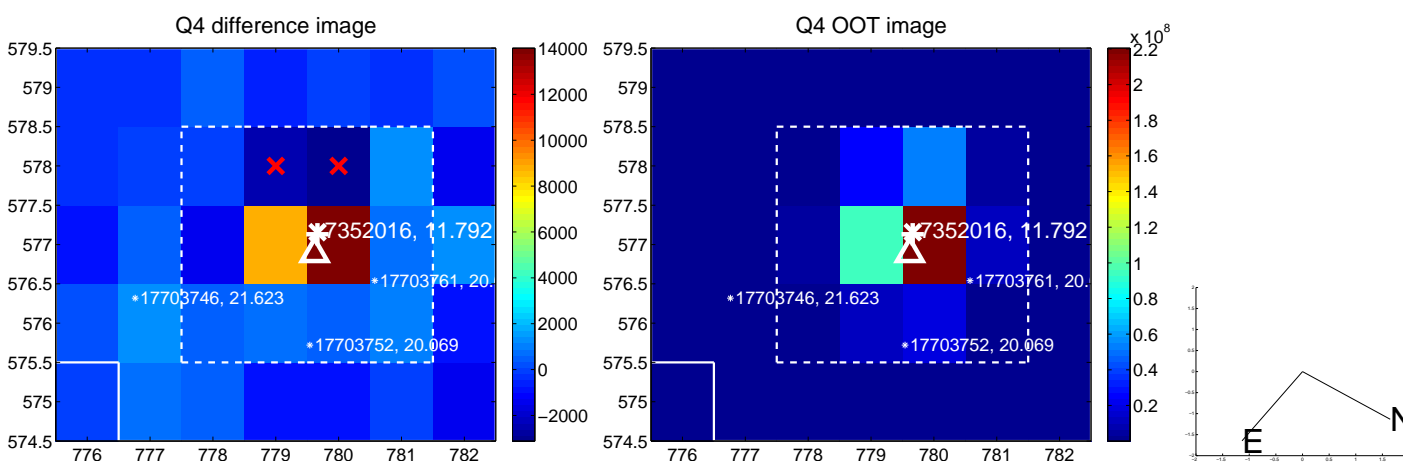
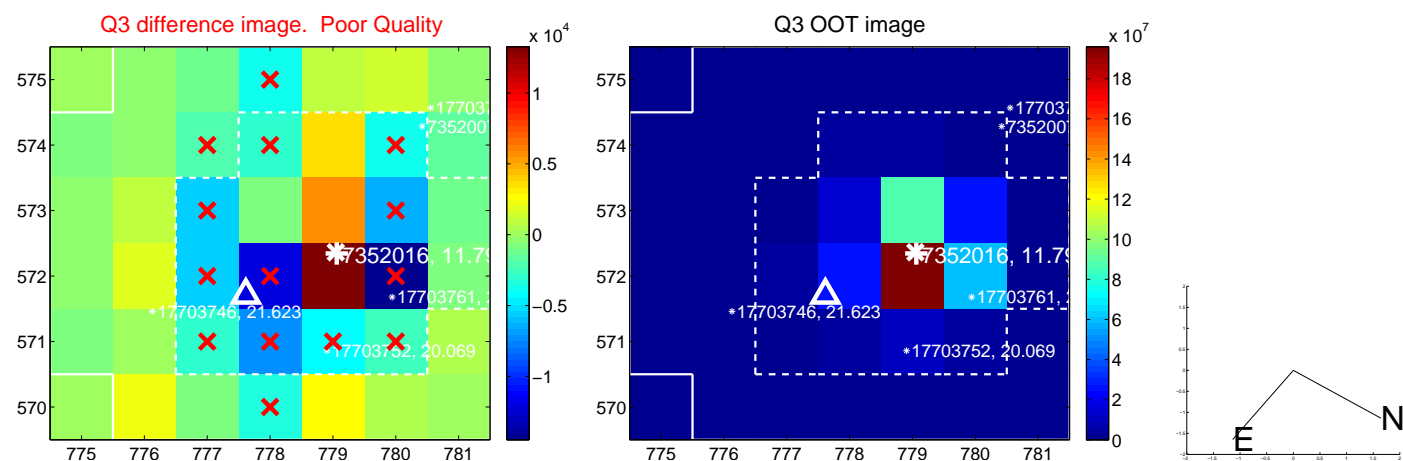
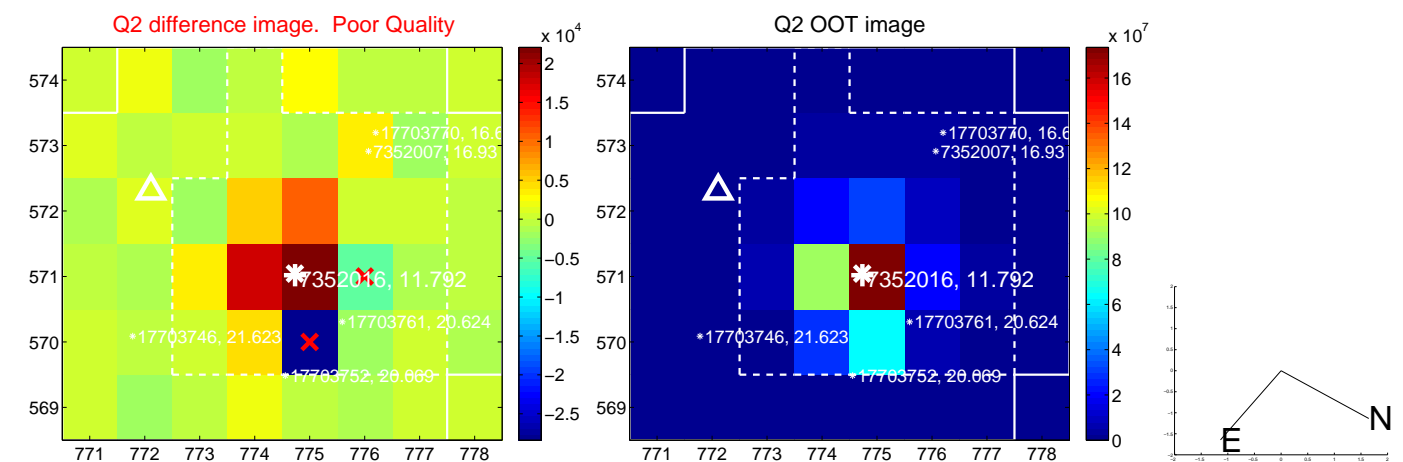
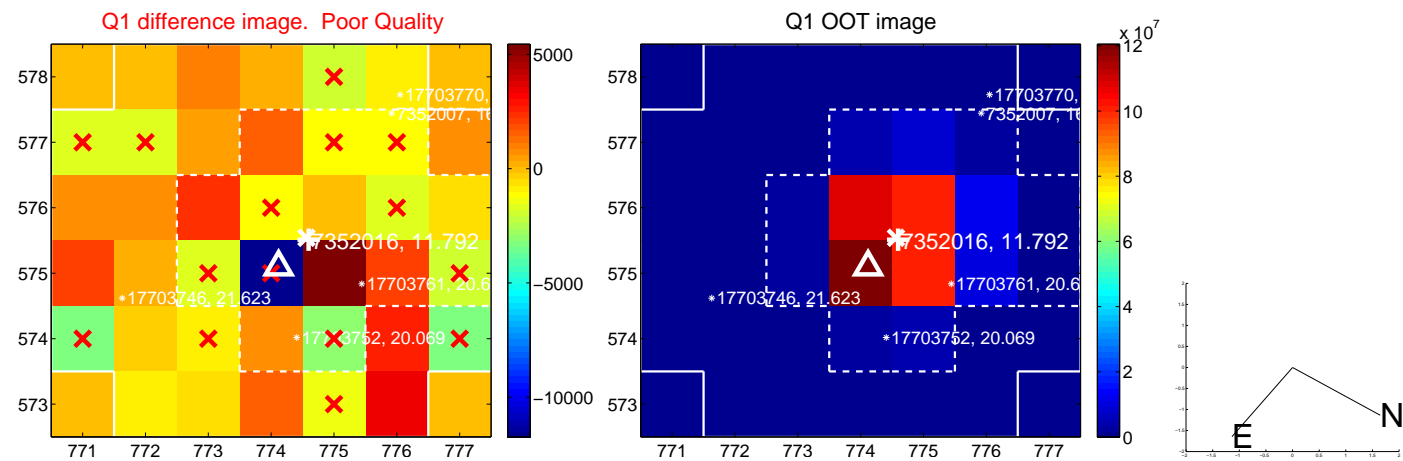
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.683 ± 0.904	0.76	-0.269 ± 0.670	0.628 ± 0.913
PRF-fit source offset from KIC position	0.681 ± 0.955	0.71	-0.226 ± 0.631	0.643 ± 0.953
photometric centroid source offset	0.22 ± 0.42	0.52	-0.00 ± 0.41	-0.22 ± 0.42

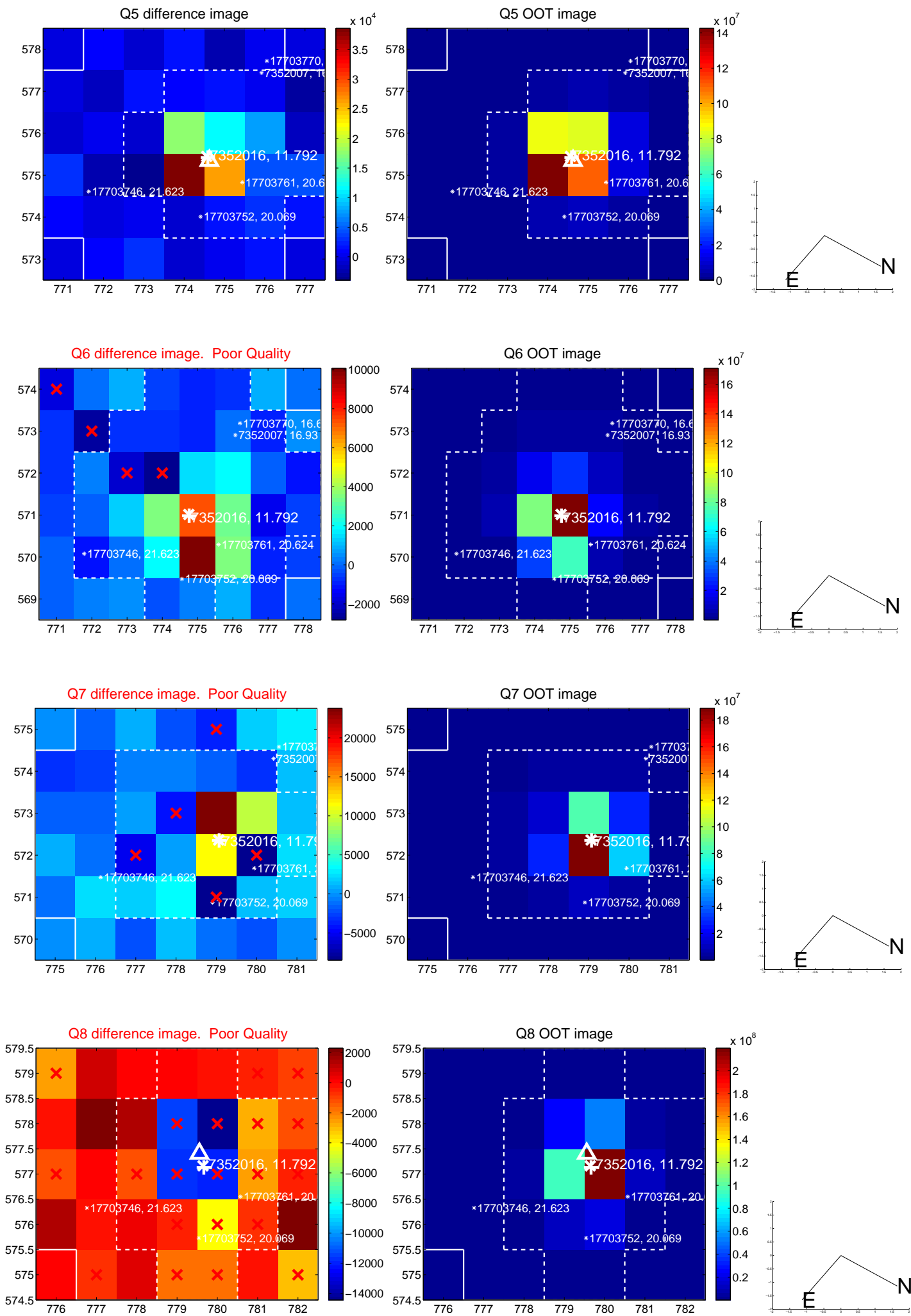


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

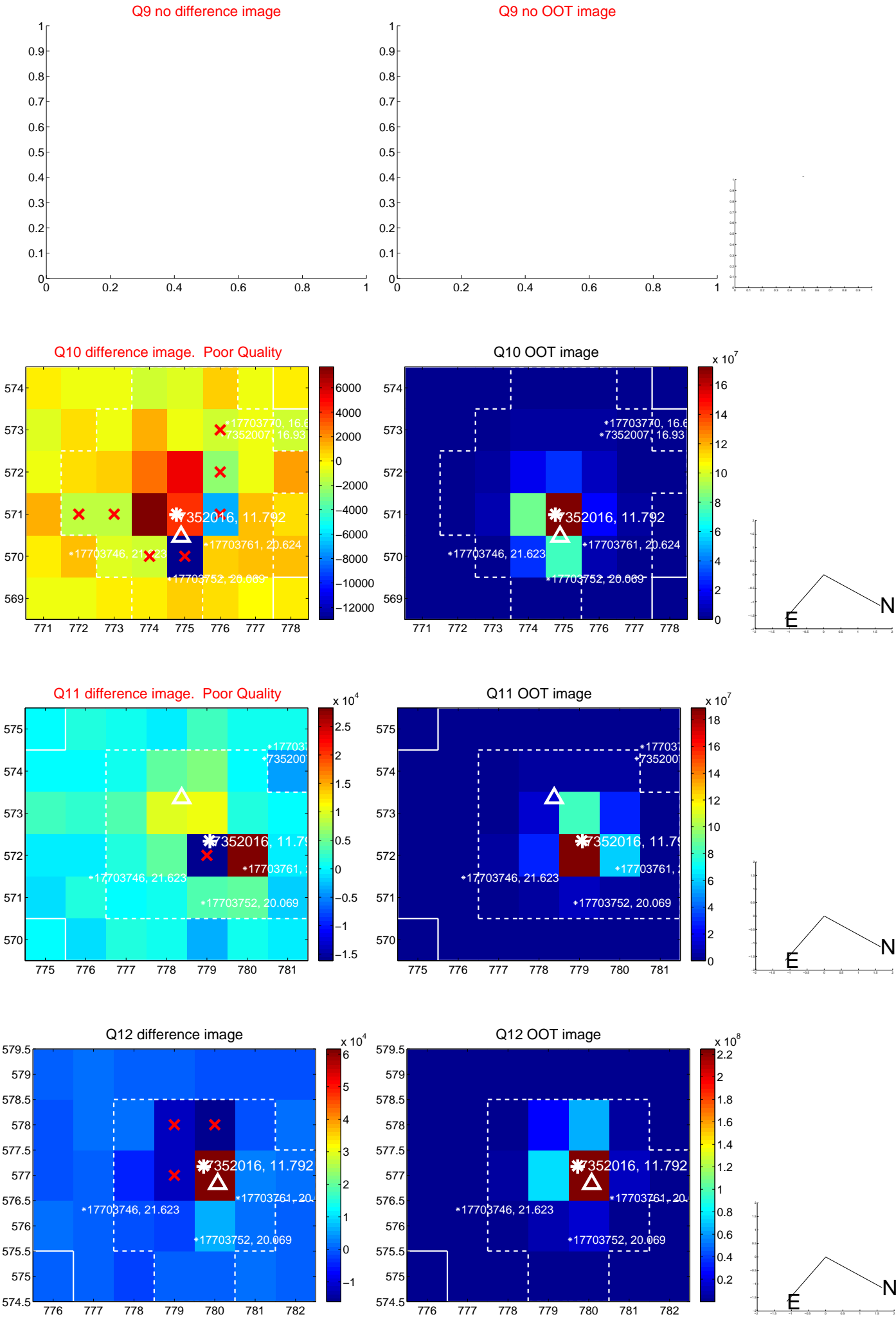
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



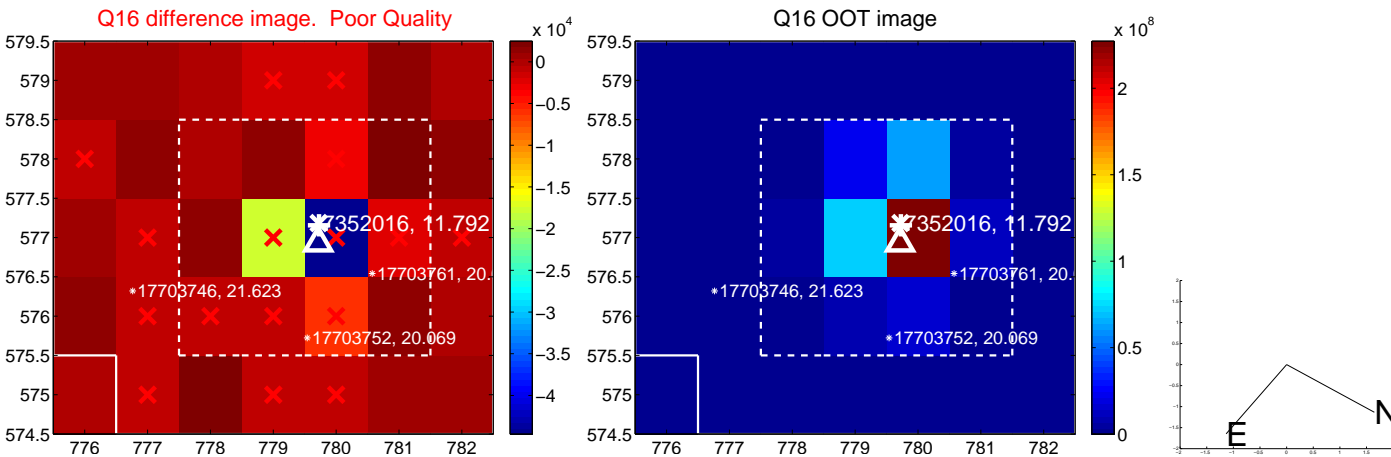
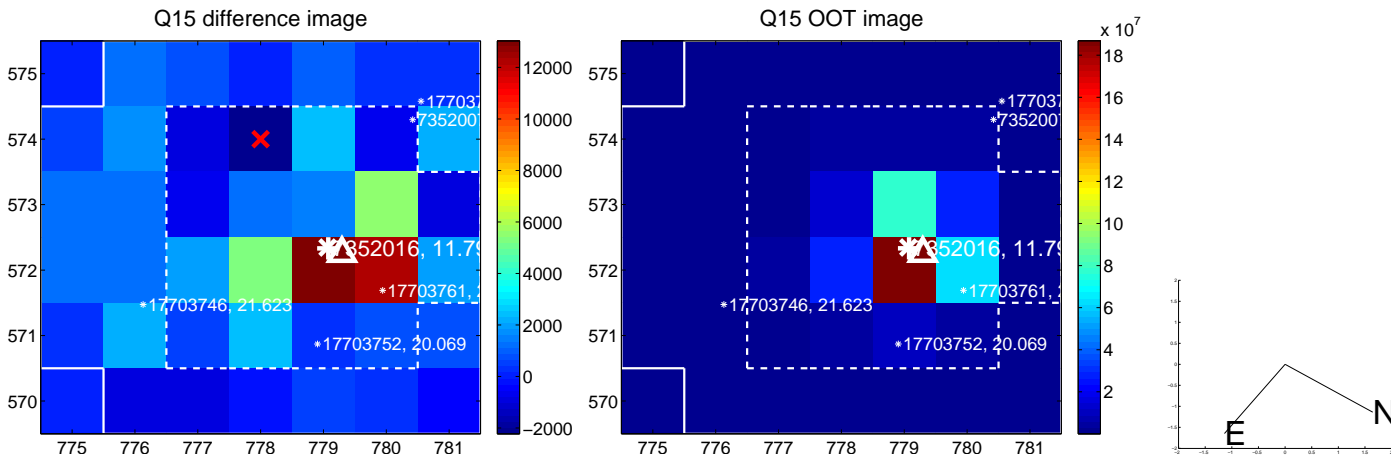
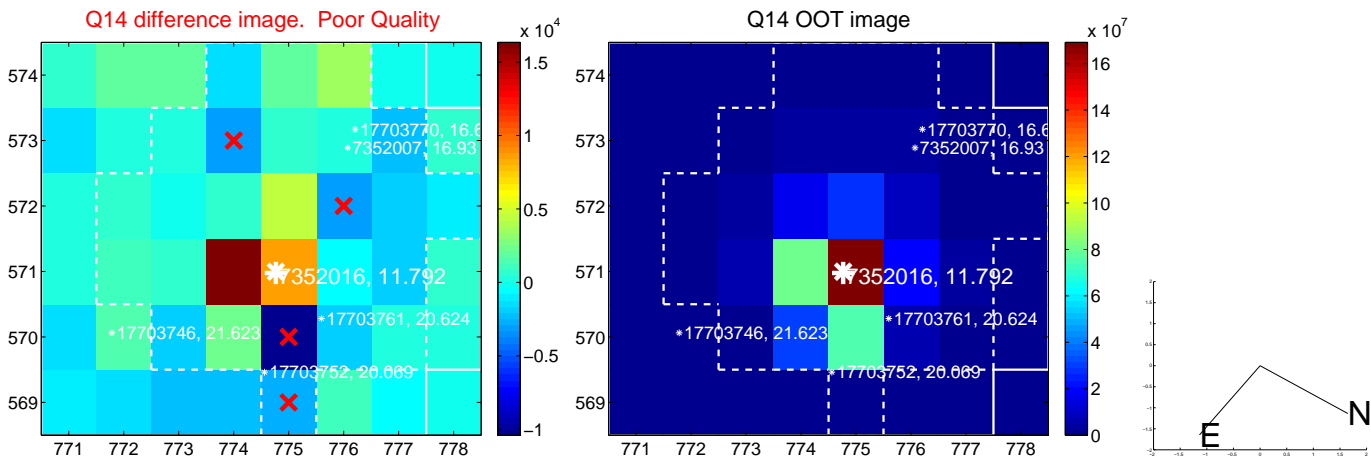
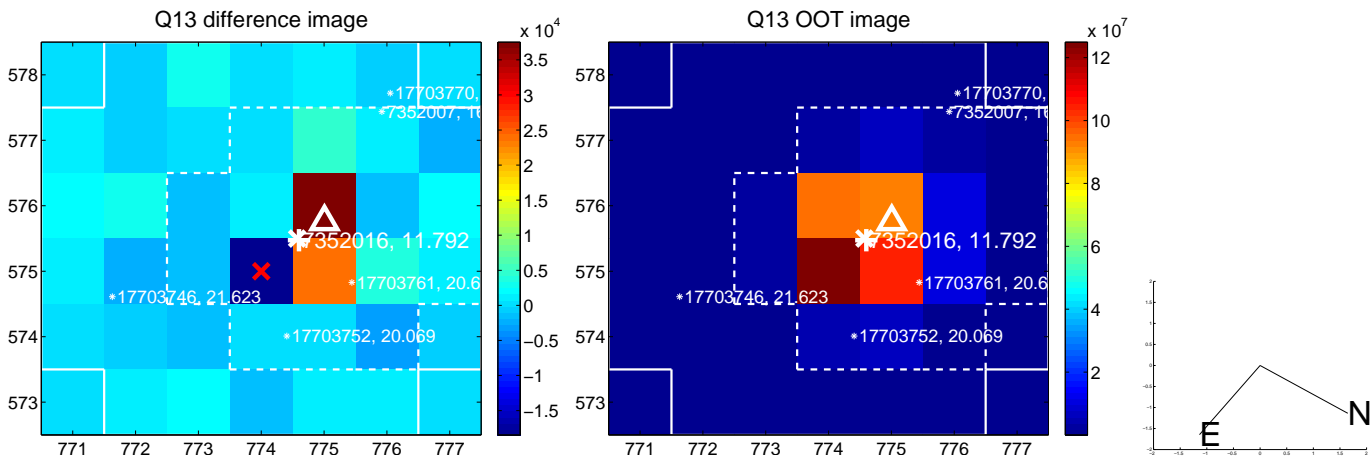
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



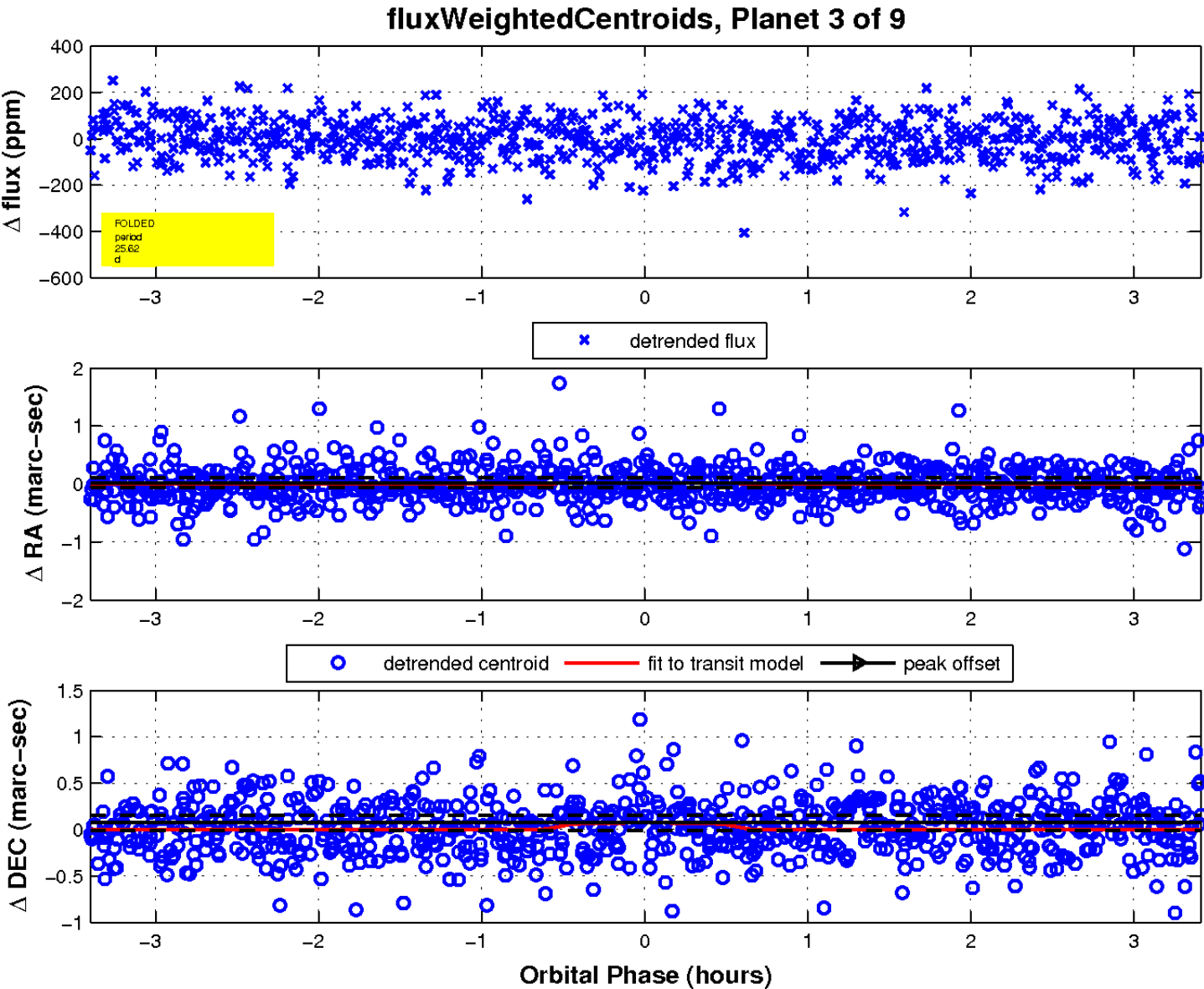
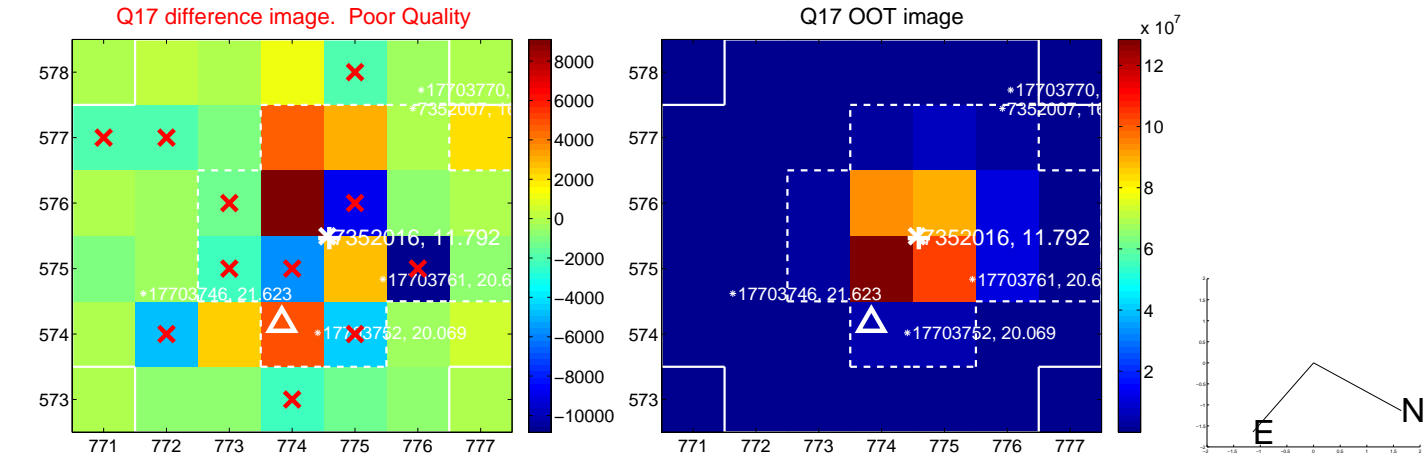
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

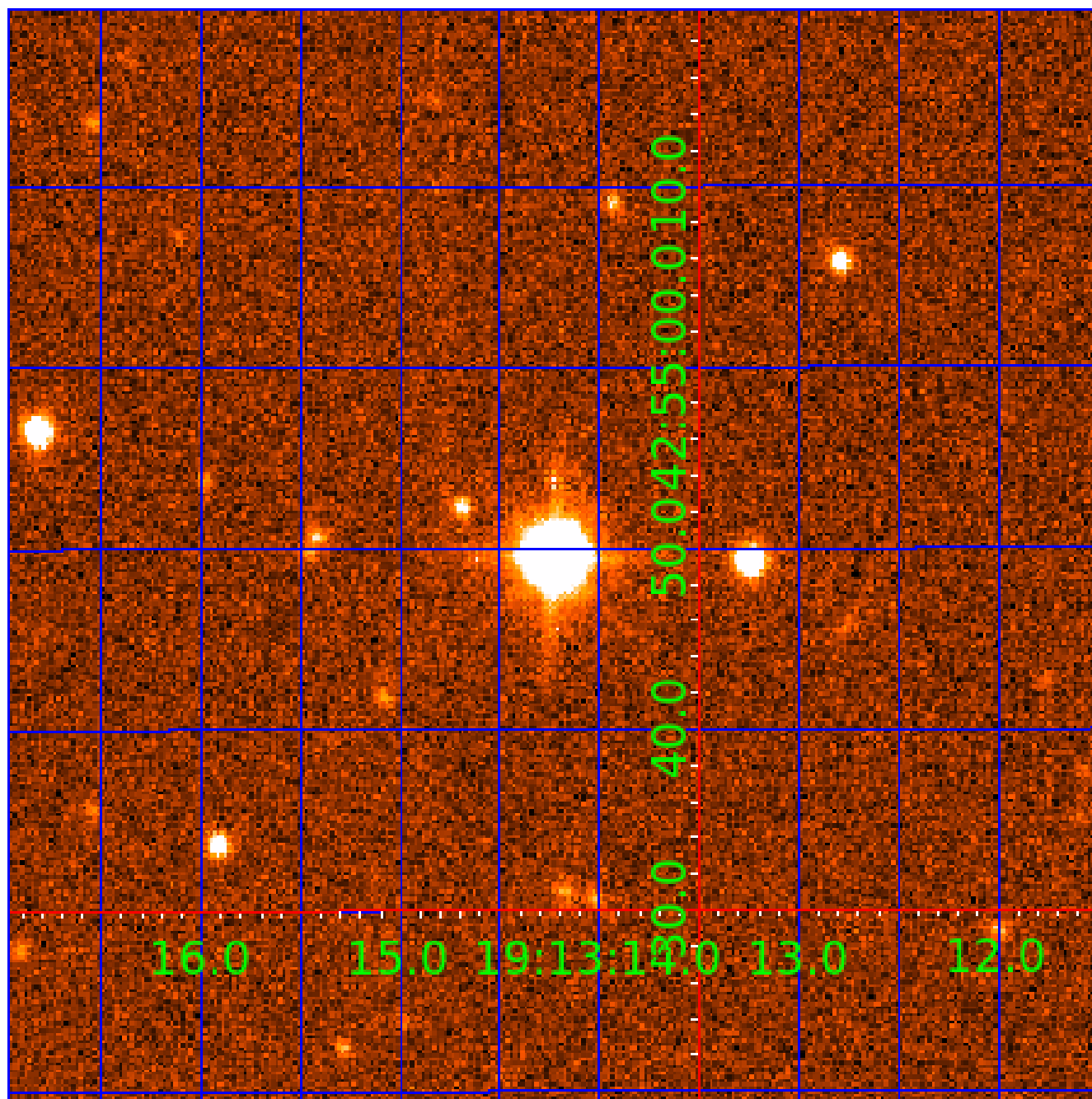


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007352016

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})
007352016-01	OBS	No	537.931366	501.151088	129.2	21.001	10.0	10.0	2.00	7542	2.67	5.09
007352016-02	OBS	No	0.919382	132.389291	5.1	6.700	8.3	5.5	2.00	7542	0.46	24891.70
007352016-03	OBS	No	25.621817	133.502165	186.4	1.138	14.8	13.0	2.00	7542	2.81	294.60
007352016-04	OBS	No	18.349737	131.543780	161.3	1.323	15.2	12.9	2.00	7542	2.66	459.77
007352016-05	OBS	No	31.583942	147.492154	109.5	4.393	11.7	13.0	2.00	7542	2.39	222.89
007352016-06	OBS	No	14.553533	136.332445	105.3	2.490	13.0	14.5	2.00	7542	2.07	626.26
007352016-07	OBS	No	6.873045	134.622509	35.6	6.035	12.0	10.3	2.00	7542	1.40	1702.88
007352016-08	OBS	No	46.925739	166.830456	156.2	1.233	12.8	12.4	2.00	7542	2.54	131.47
007352016-09	OBS	No	12.448509	138.957477	145.3	1.148	12.7	11.5	2.00	7542	2.57	771.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007352016-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

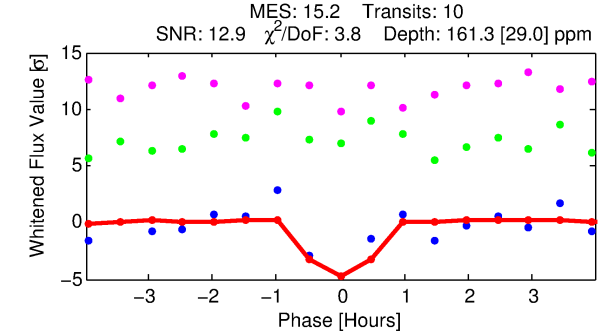
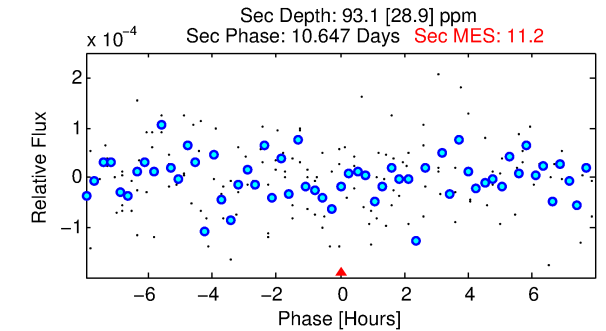
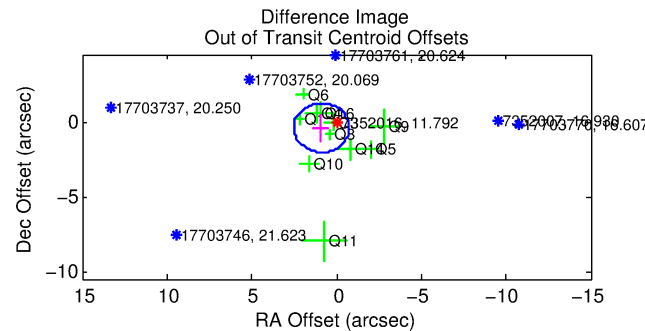
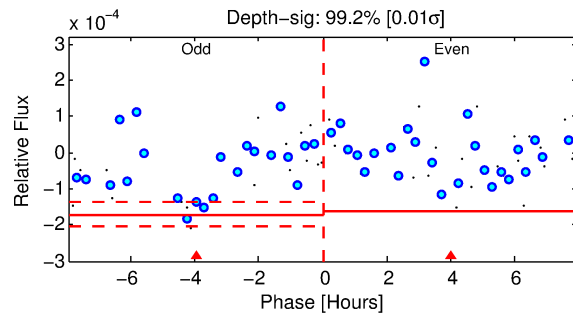
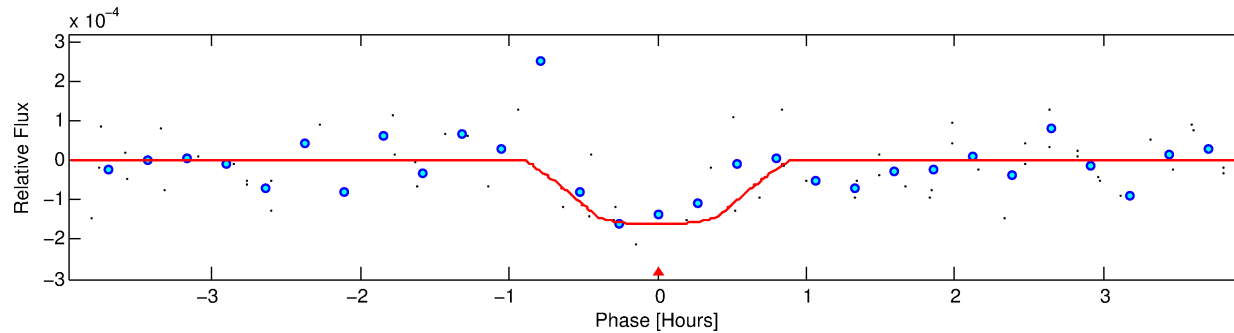
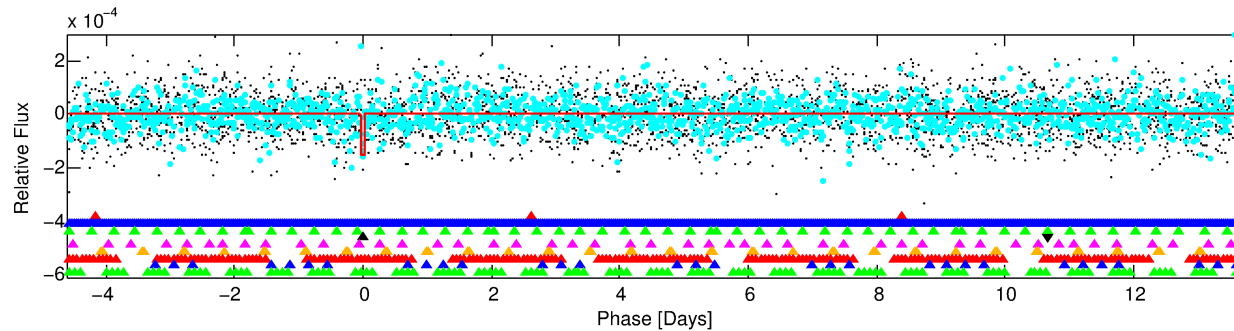
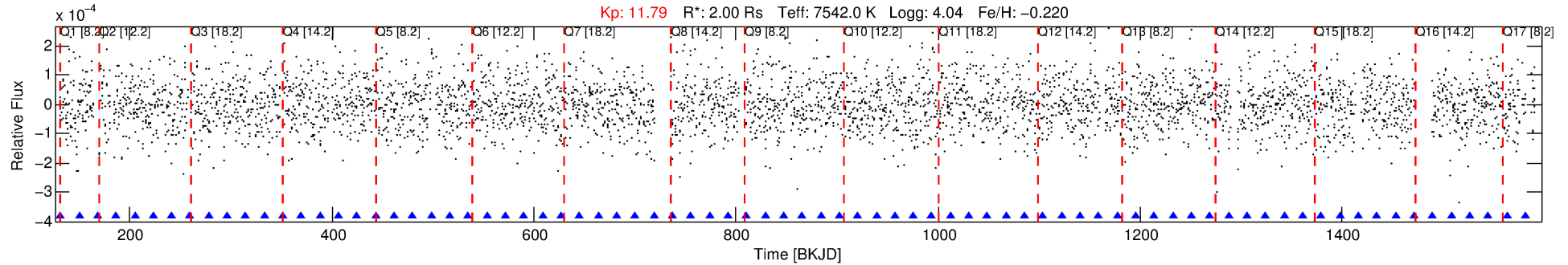
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-04

No Significant Match Found

DV One-Page Summary

KIC: 7352016 Candidate: 4 of 9 Period: 18.350 d



DV Fit Results:

Period = 18.34974 [0.00018] d
Epoch = 131.5438 [0.0060] BKJD
 $R_p/R^* = 0.0122$ [0.0141]
 $a/R^* = 88.16$ [537.11]
 $b = 0.58$ [7.07]
 $\text{Seff} = 459.77$ [116.63]
 $T_{\text{eq}} = 1181$ [75] K
 $R_p = 2.66$ [3.11] R_e
 $a = 0.1587$ [0.0269] AU
 $\text{Ag} = 182.53$ [427.37] [0.42 σ]
 $T_{\text{eff}} = 6710$ [3906] K [1.42 σ]

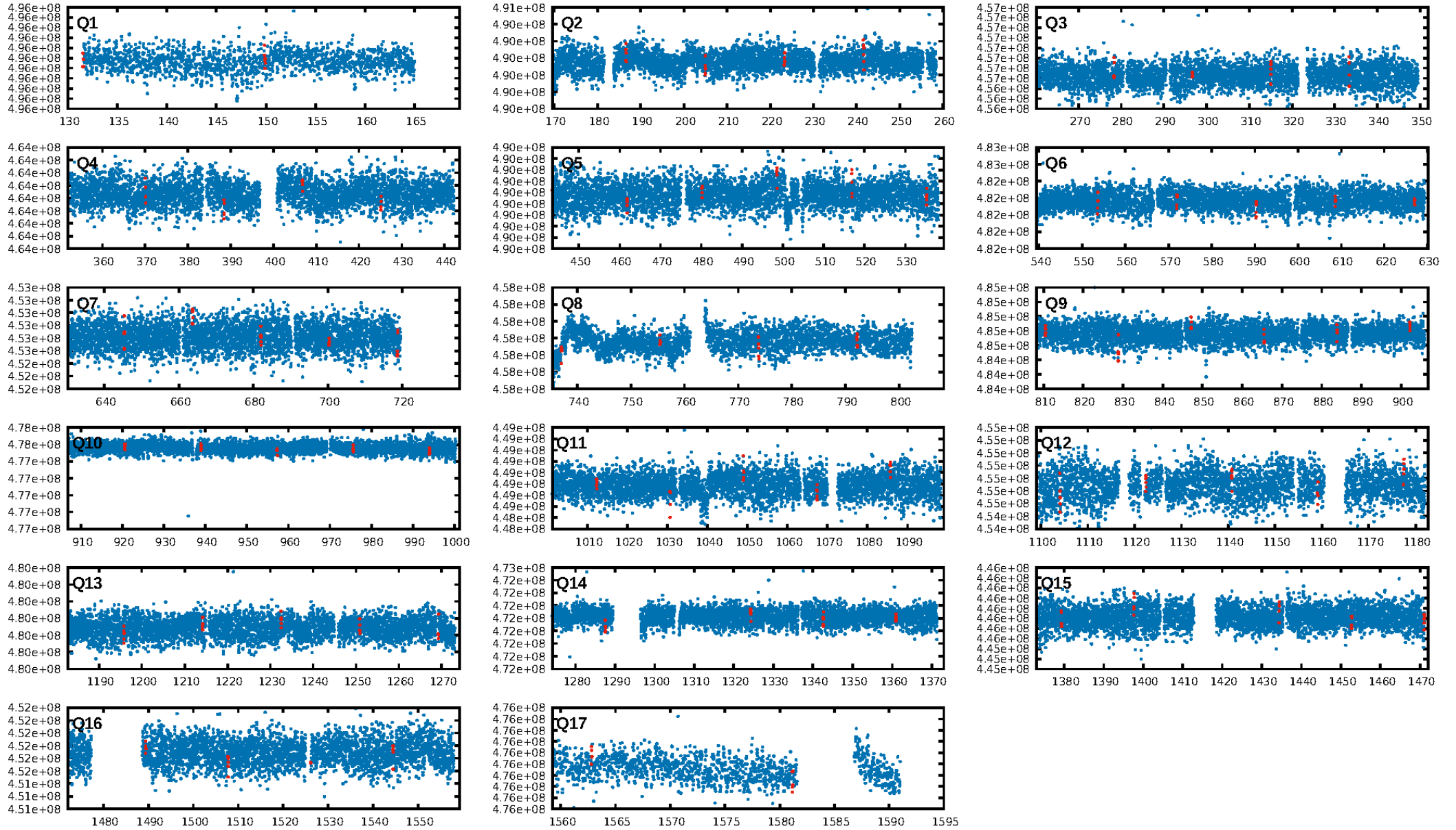
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.31 σ]
LongPeriod-sig: 100.0% [99.99 σ]
 $\text{ModelChiSquare2-sig}: 0.0\%$
 $\text{ModelChiSquareGof-sig}: 57.8\%$
 $\text{Bootstrap-pfa}: 1.45e-12$
RollingBand-fgt: 1.00 [10/10]
 $\text{GhostDiagnostic-chr}: -0.8008$
Centroid-sig: 0.0%
Centroid-so: 1.489 arcsec [3.89 σ]
OotOffset-rm: 0.977 arcsec [1.80 σ]
KicOffset-rm: 0.970 arcsec [1.95 σ]
OotOffset-st: 3/2/3/3 [11]
KicOffset-st: 3/2/3/3 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 0.29 [5/17]

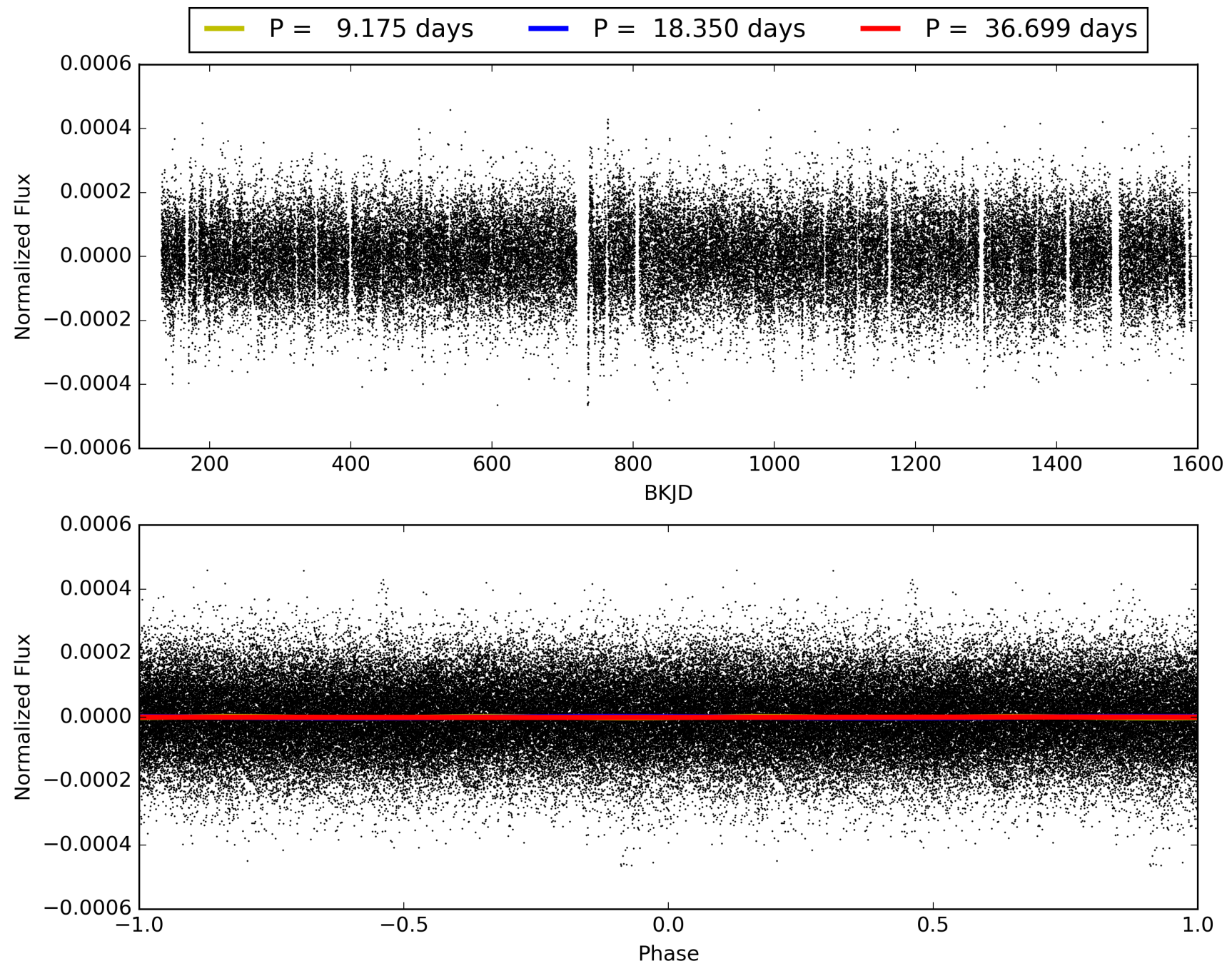
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:29:22 Z

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

TCE 007352016-04, PDC Light Curves

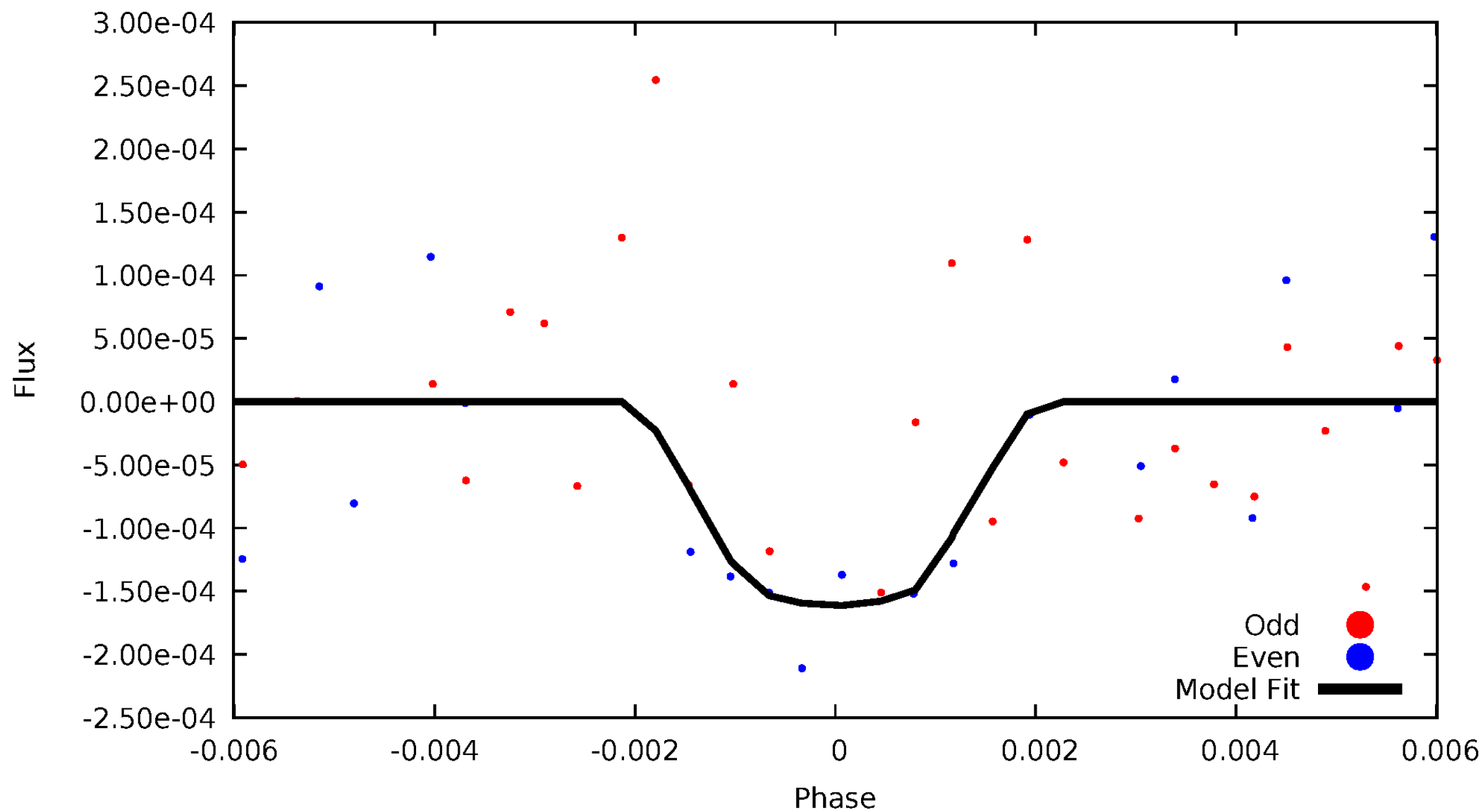


TCE 007352016-04



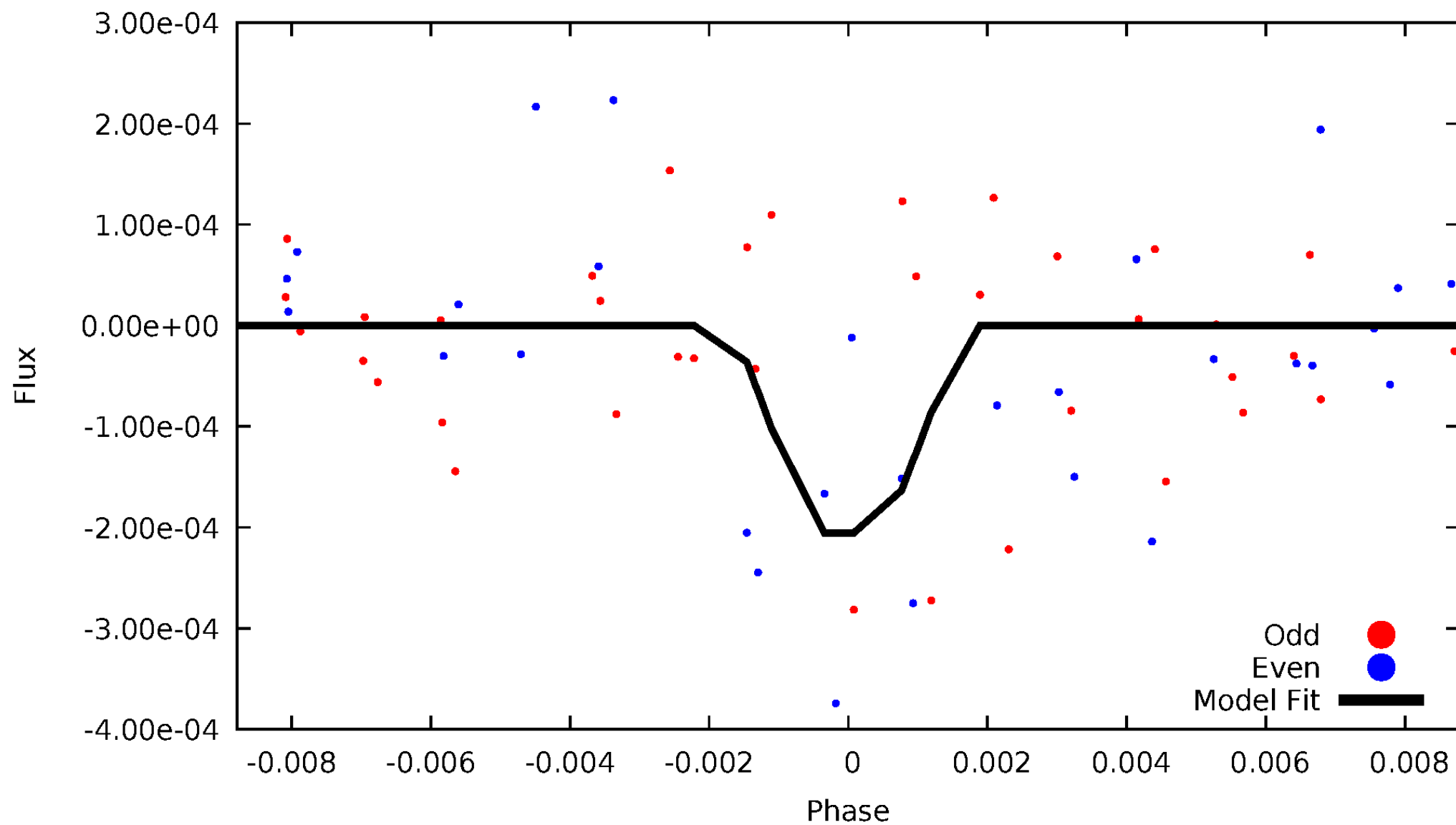
DV Odd/Even

TCE 007352016-04



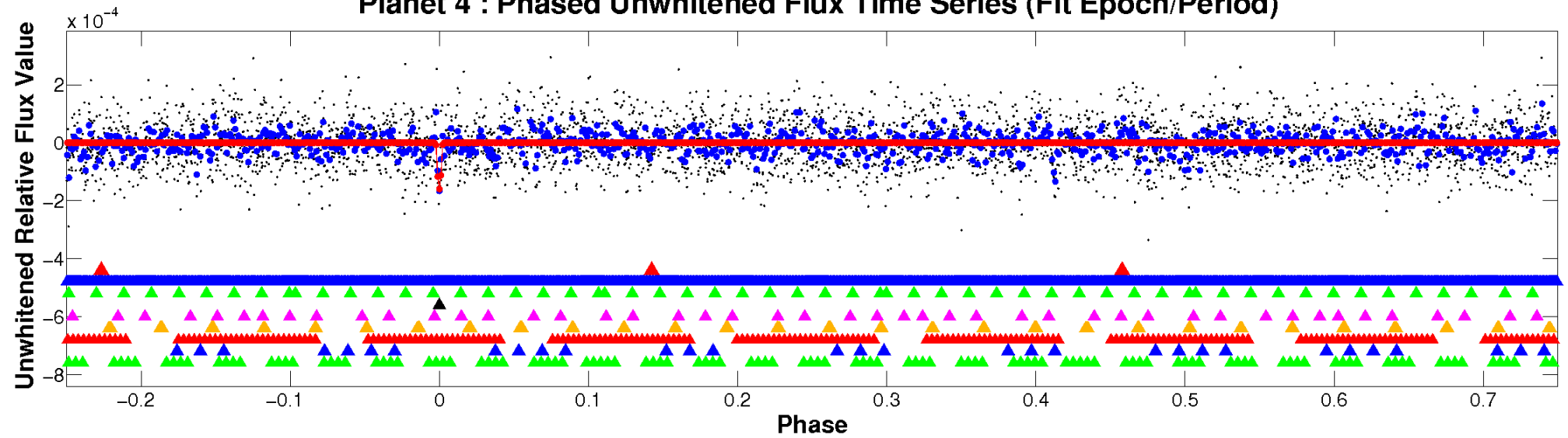
ALT Odd/Even

TCE 007352016-04

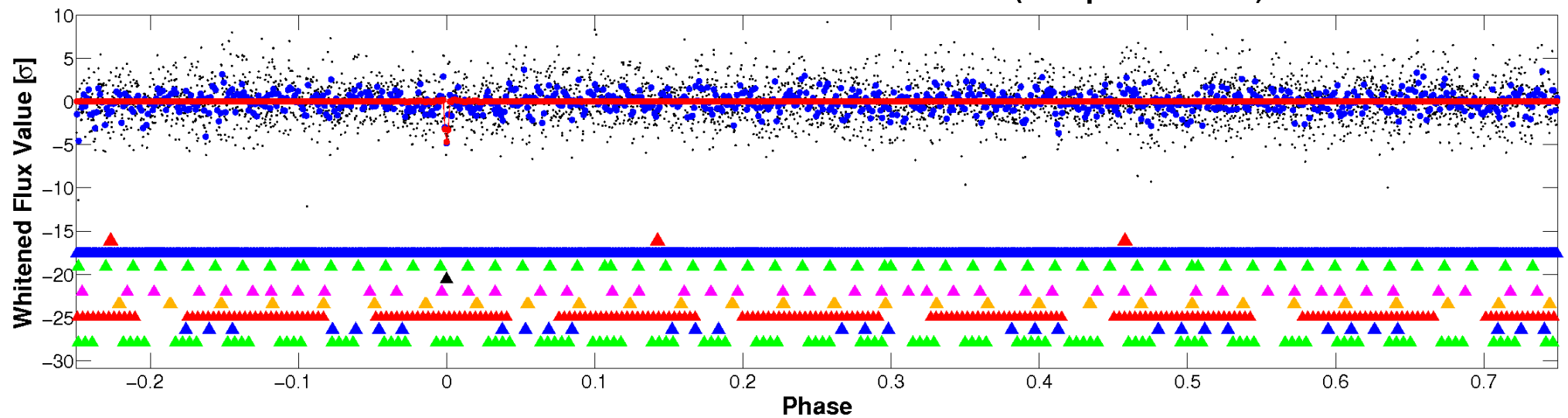


Non-Whitened Vs. Whitened Light Curve

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

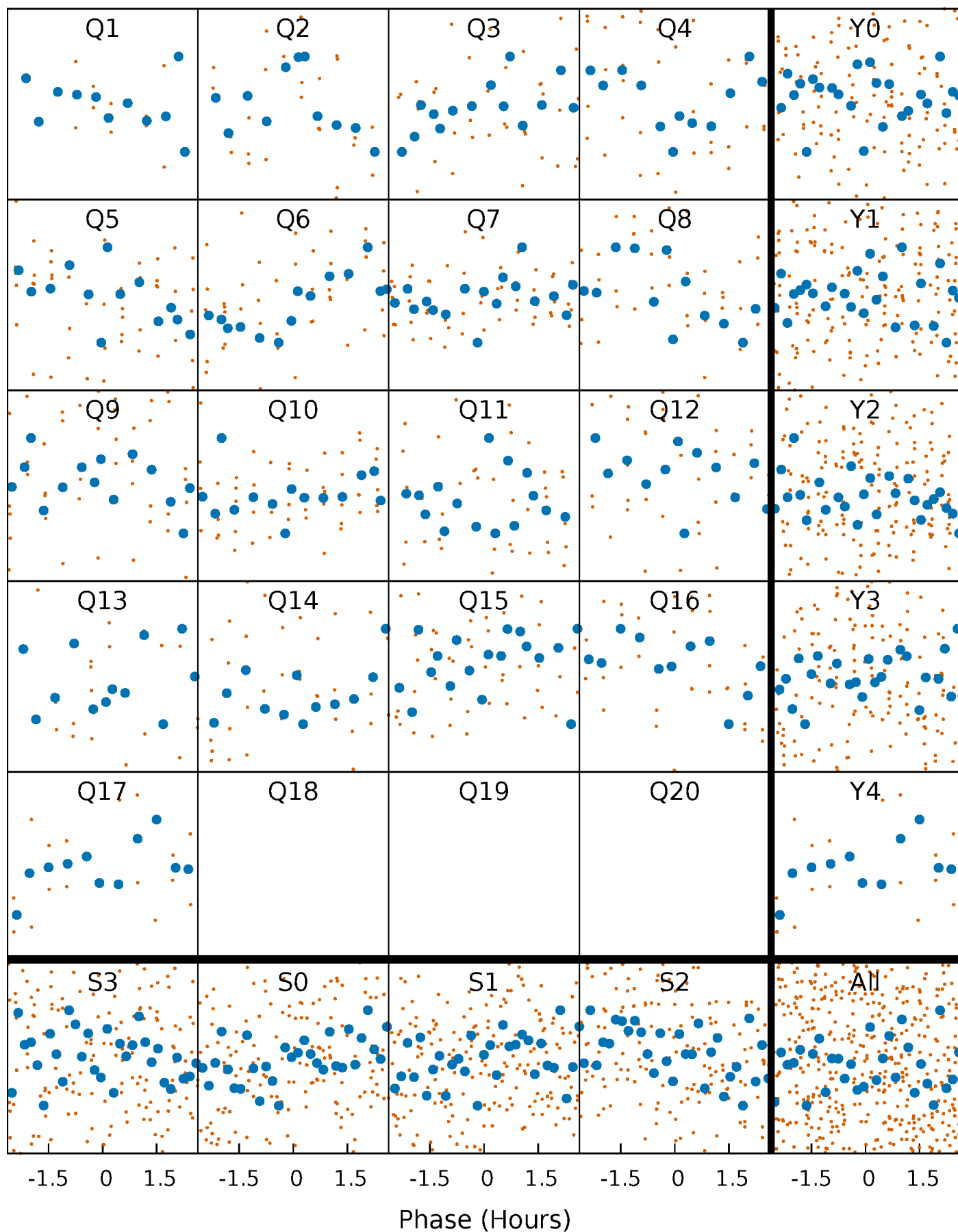


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



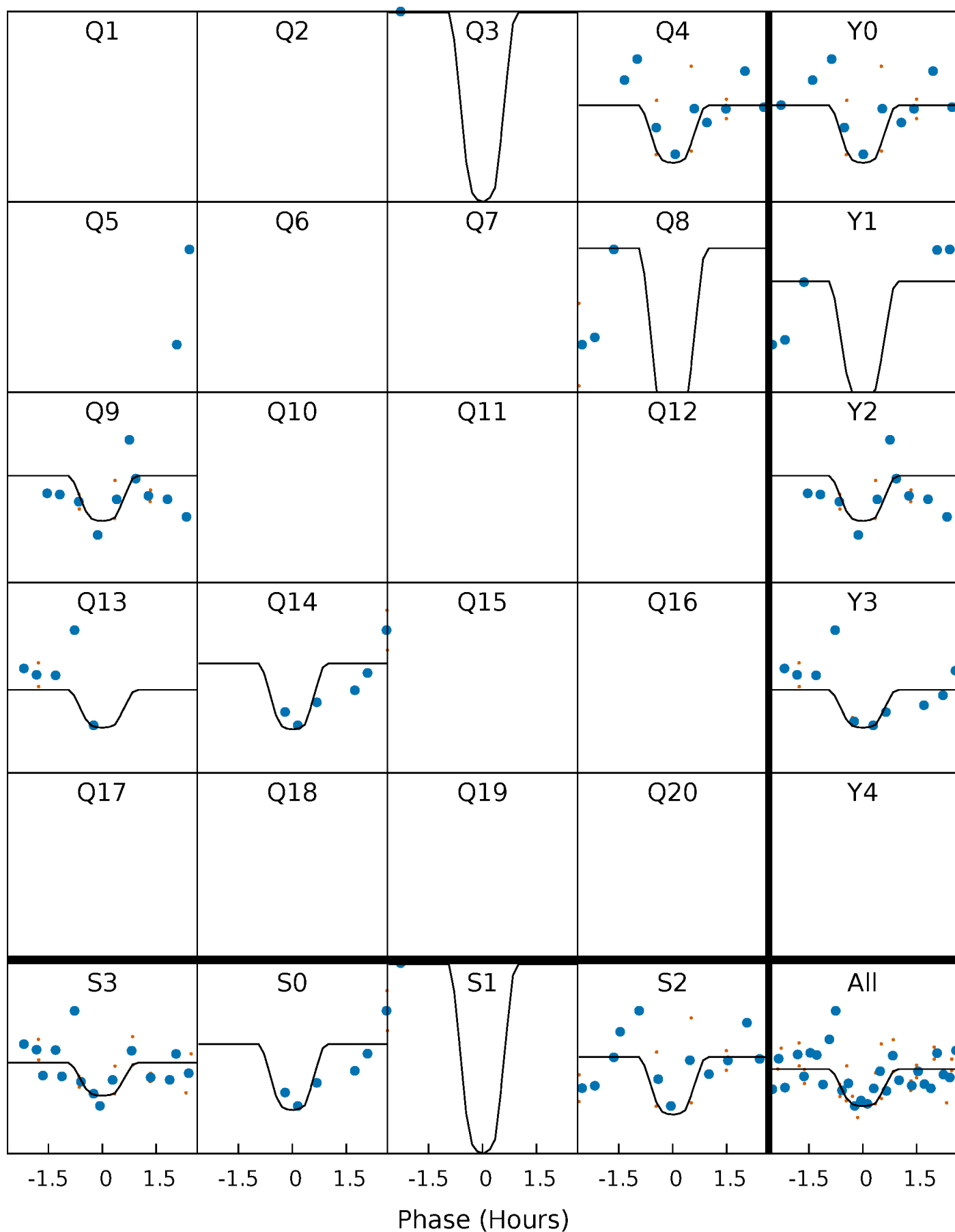
PDC Quarter-Phased Transit Curves

TCE 007352016-04 P= 18.349737 Days $T_0=131.543780$ (BKJD)



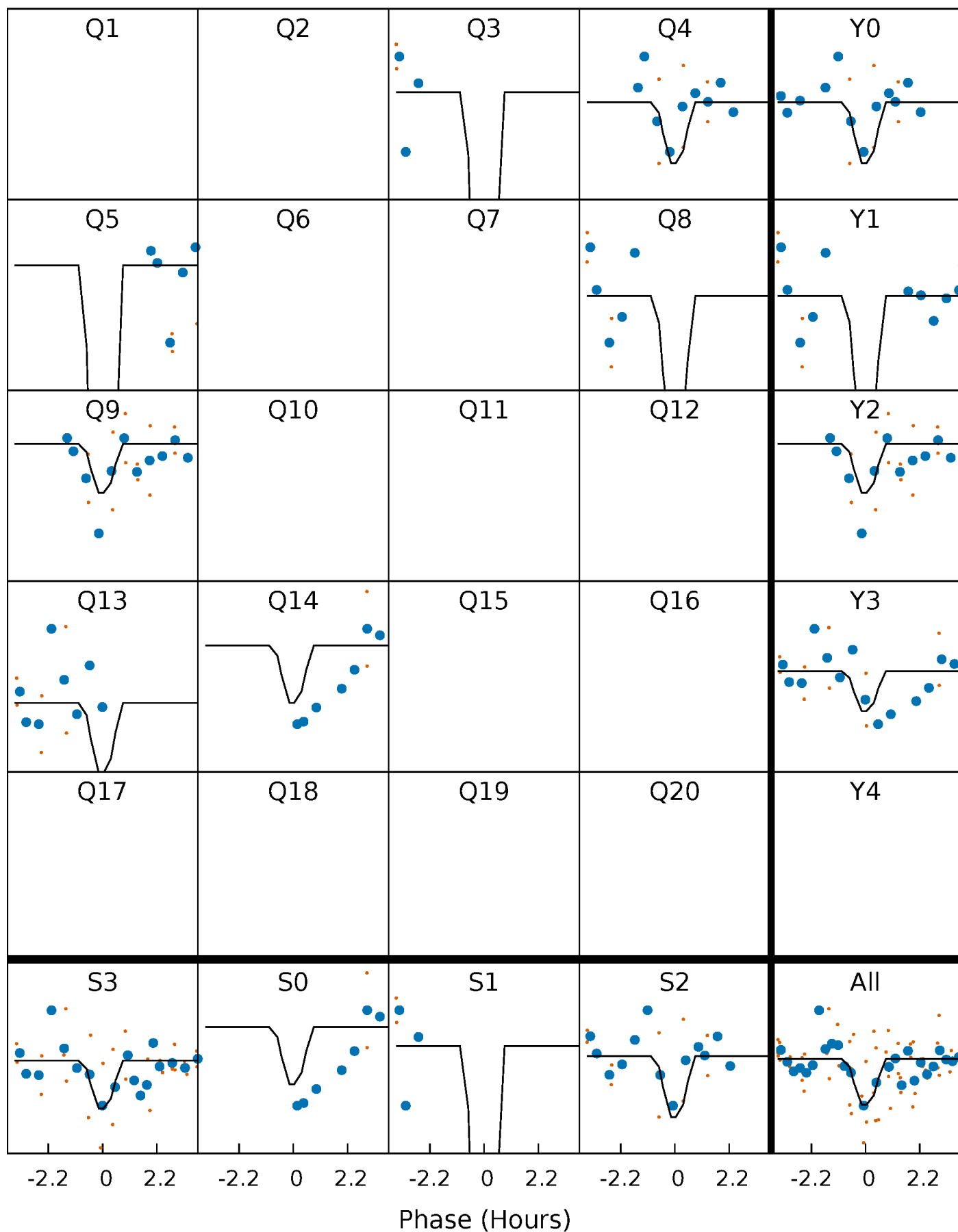
DV Quarter-Phased Transit Curves

TCE 007352016-04 P= 18.349737 Days $T_0=131.543780$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

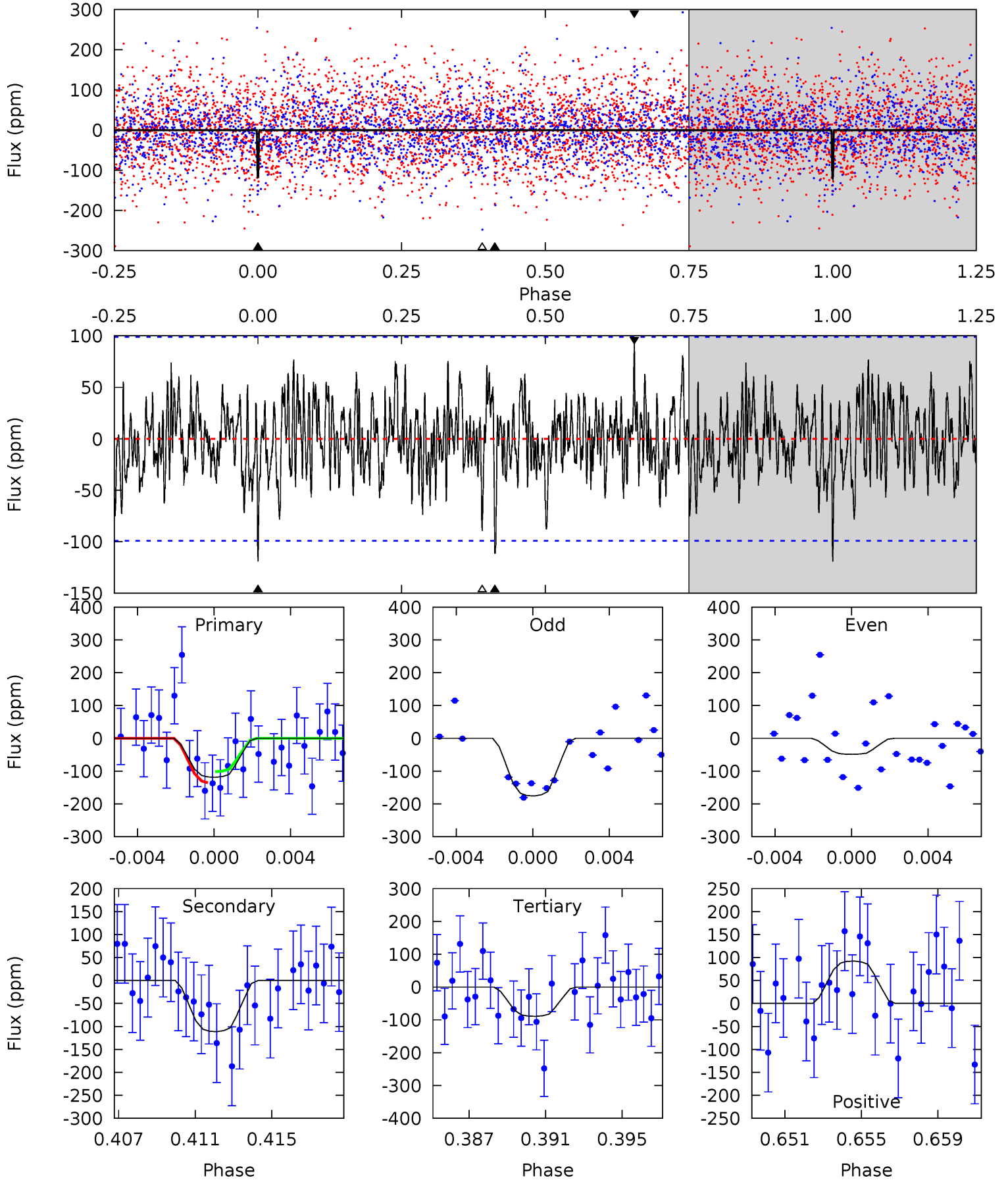
TCE 007352016-04 P= 18.349308 Days $T_0=131.557335$ (BKJD)



DV Model-Shift Uniqueness Test

007352016-04, P = 18.349737 Days, E = 131.543780 Days

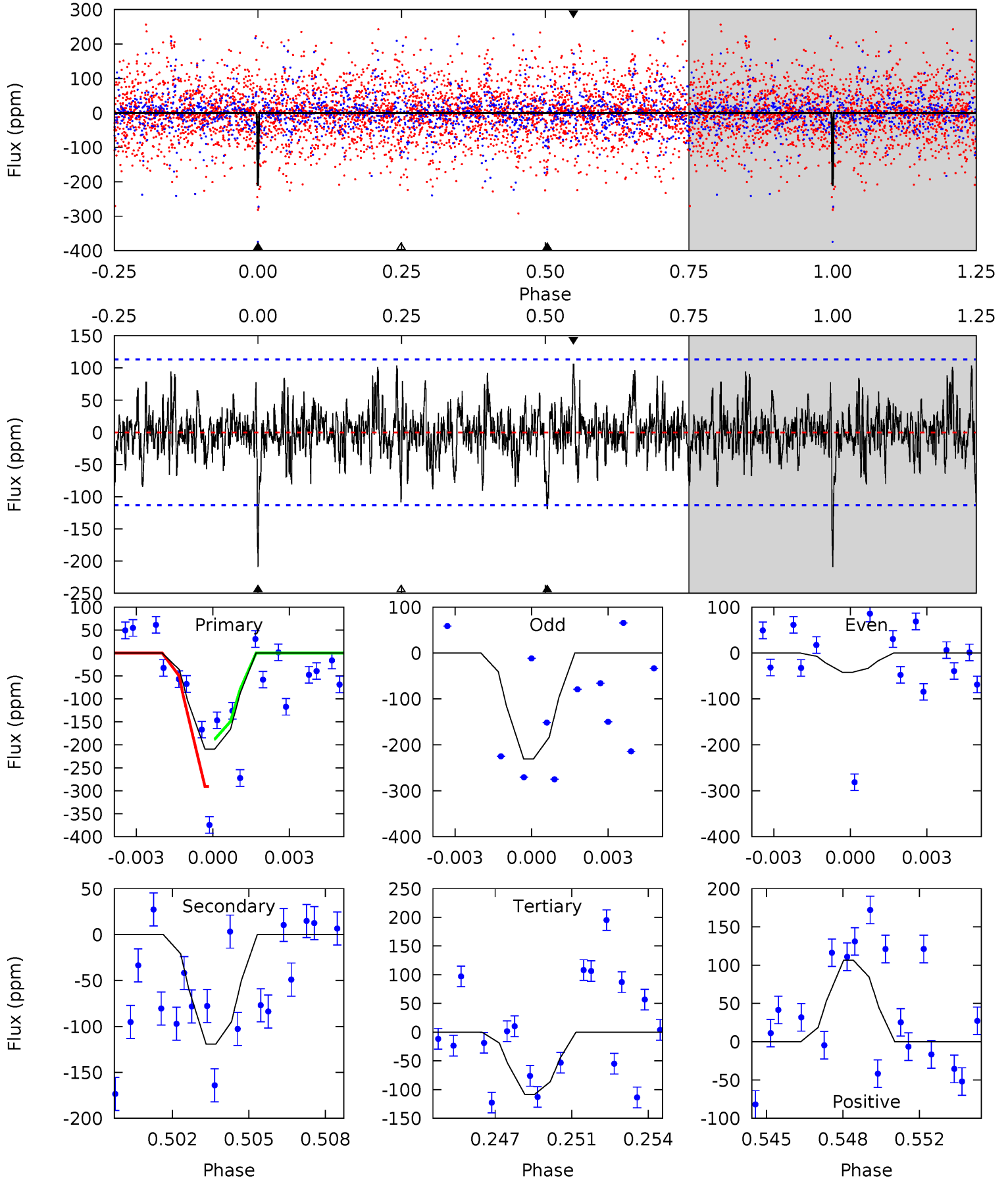
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.25	5.85	4.69	4.85	5.20	2.87	1.52	1.56	1.40	1.16	1.00	3.44	0.83	0.44	0.87



Alt Model-Shift Uniqueness Test

007352016-04, P = 18.349308 Days, E = 131.557335 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.66	5.51	5.01	4.91	5.23	2.93	1.35	4.65	4.74	0.49	0.59	4.32	0.94	0.34	2.26



Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-111 ± 19	$3.18^{+2.85}_{-1.98}$	1649^{+76}_{-81}	6203^{+5674}_{-1460}	151^{+892}_{-110}
Alt.	-119 ± 22	$3.62^{+2.83}_{-2.28}$	1640^{+81}_{-67}	5966^{+5349}_{-1365}	128^{+761}_{-90}

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 $A_{obs} \gg 1.0$

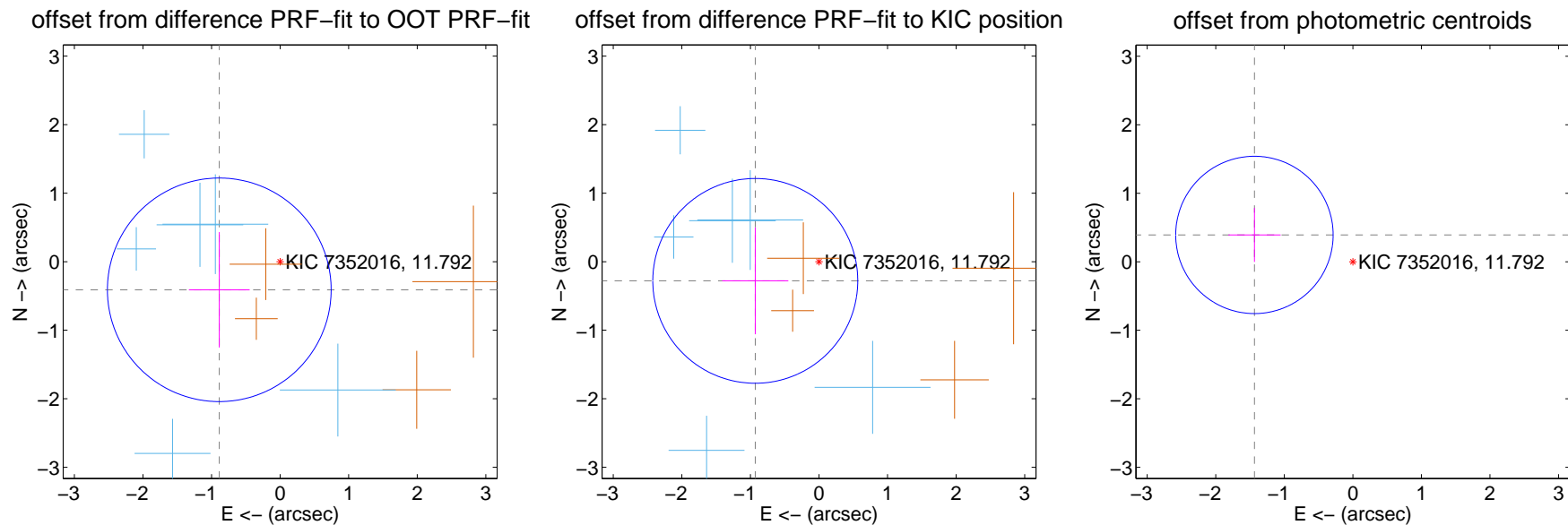
DV Centroid Data

Supplemental centroid analysis for 007352016-04. **Kepler magnitude: 11.79.** Transit SNR 12.92

There are 6 quarters with good PRF difference image offsets

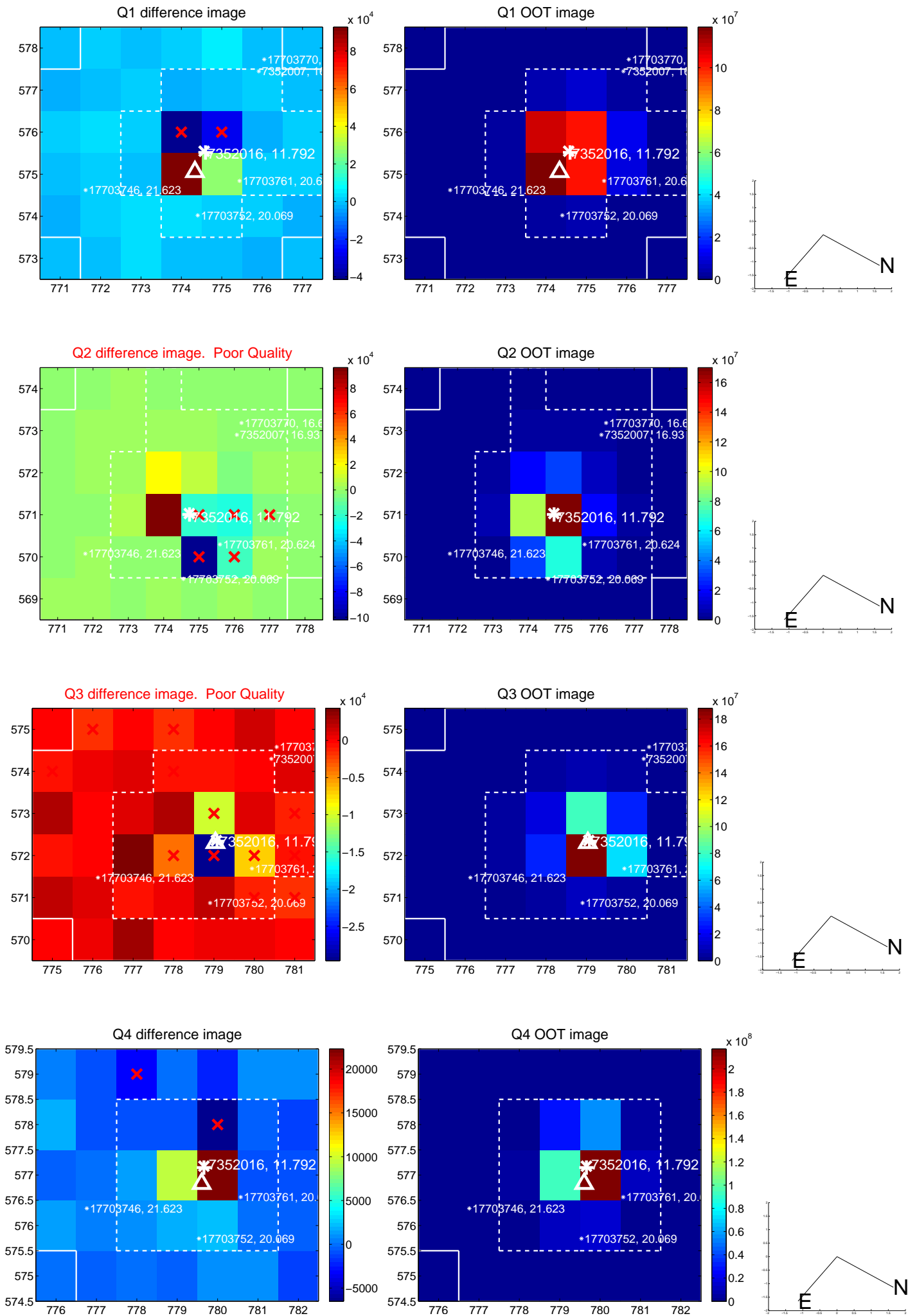
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.977 ± 0.544	1.80	0.887 ± 0.443	-0.410 ± 0.842
PRF-fit source offset from KIC position	0.970 ± 0.498	1.95	0.929 ± 0.483	-0.280 ± 0.779
photometric centroid source offset	1.49 ± 0.38	3.89	1.44 ± 0.38	0.39 ± 0.39

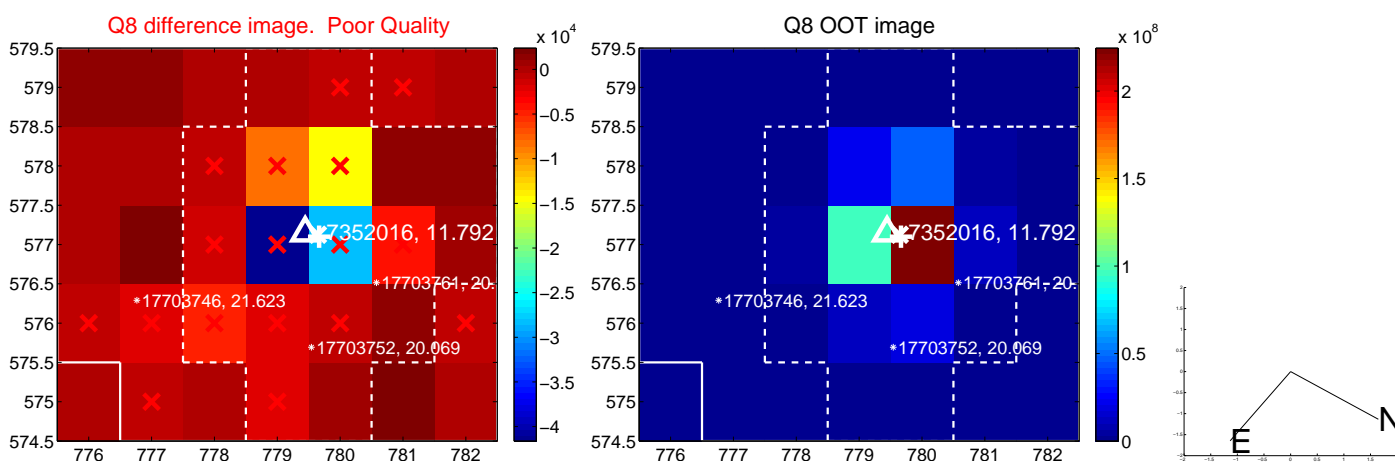
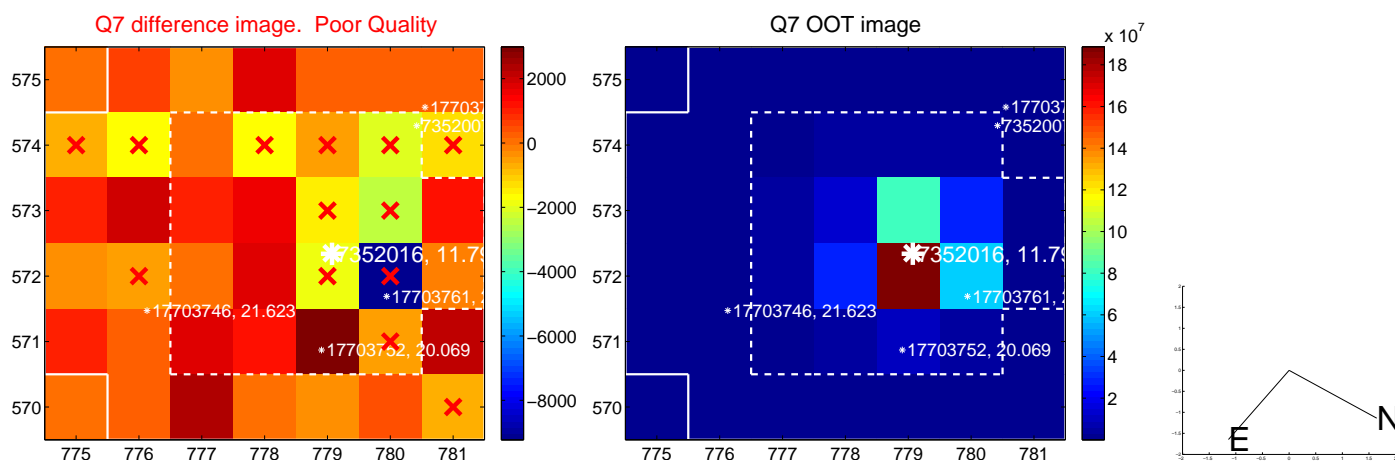
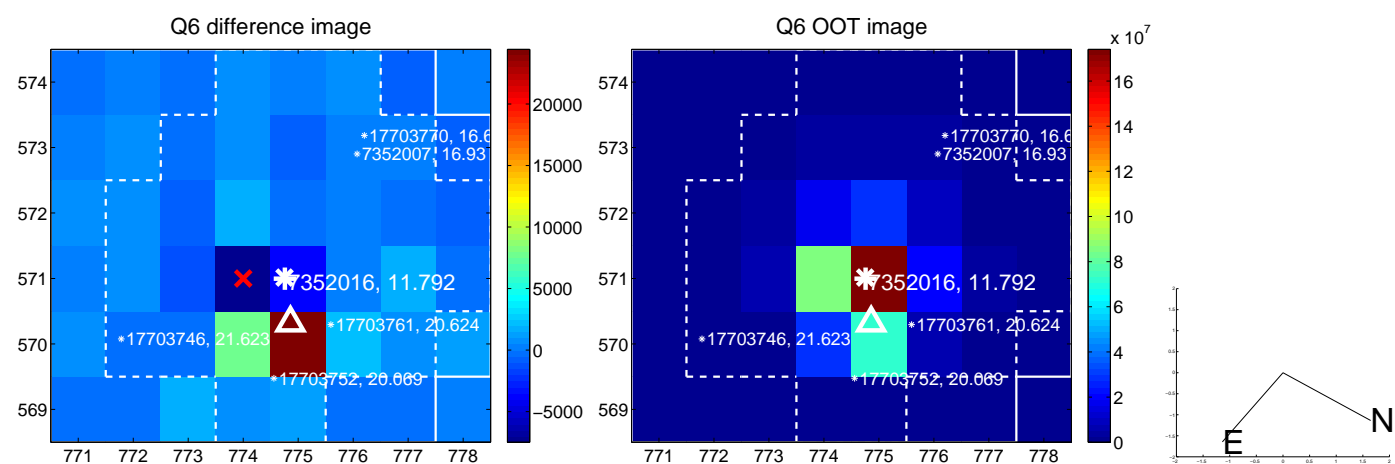
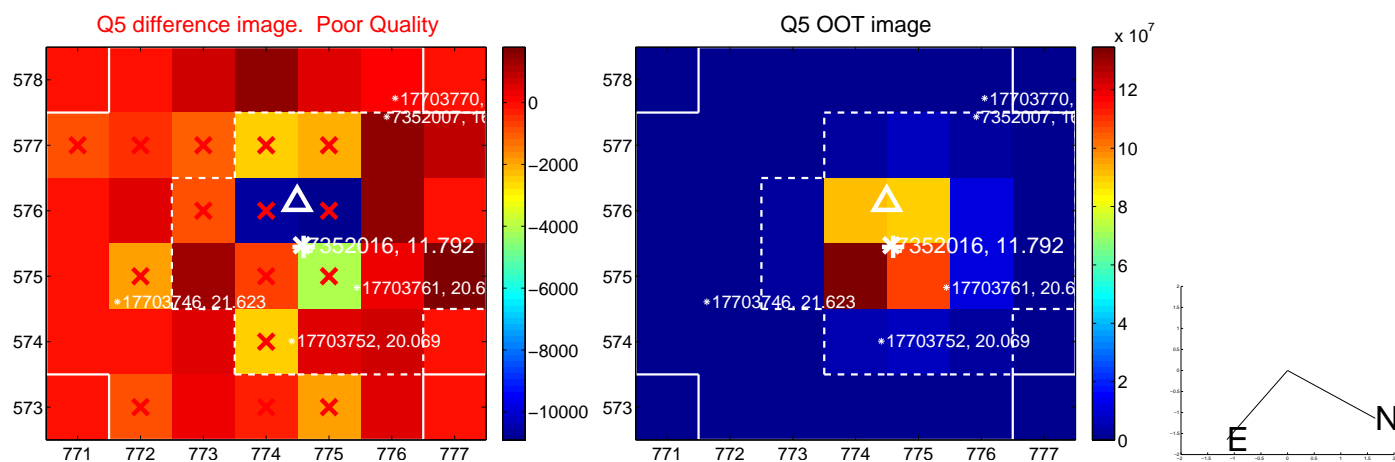


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

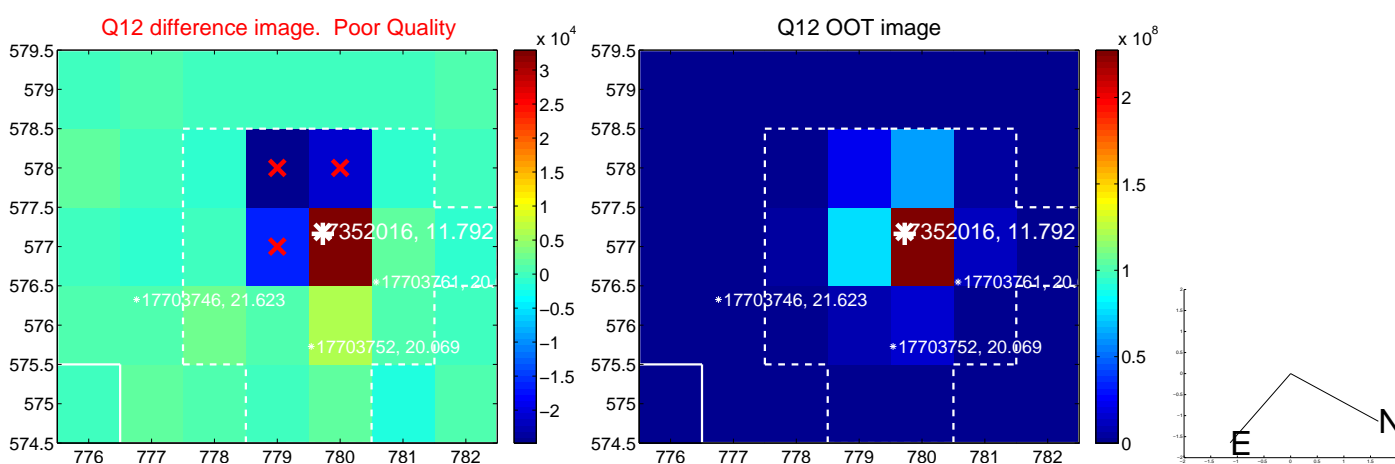
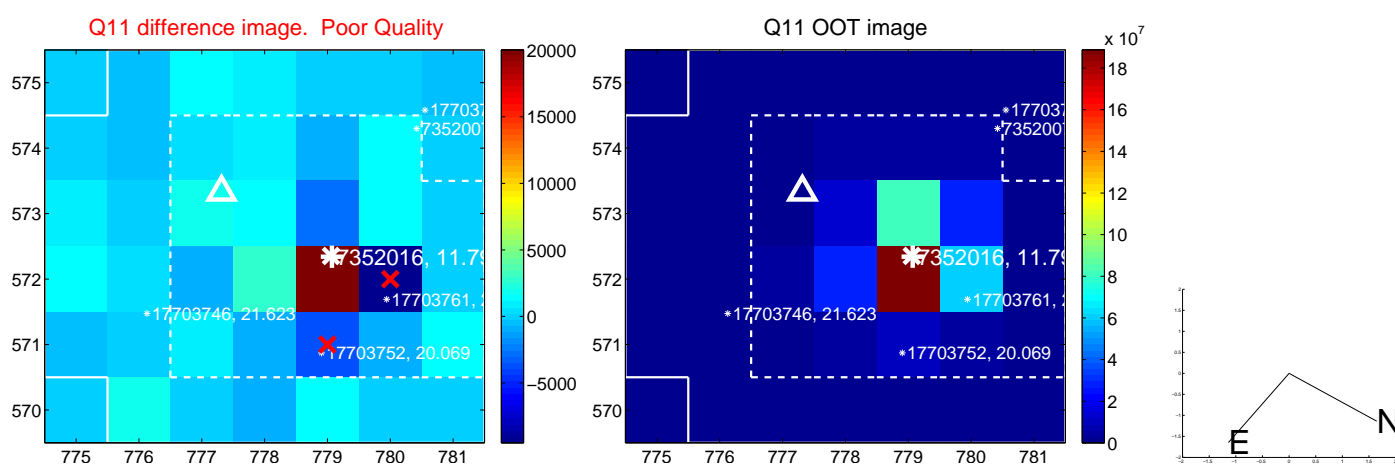
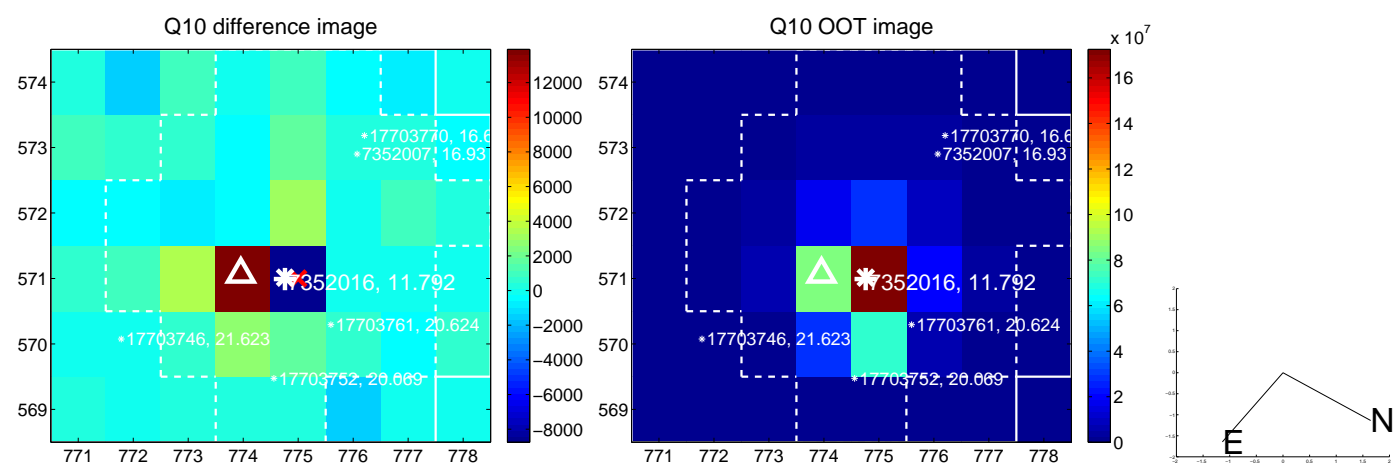
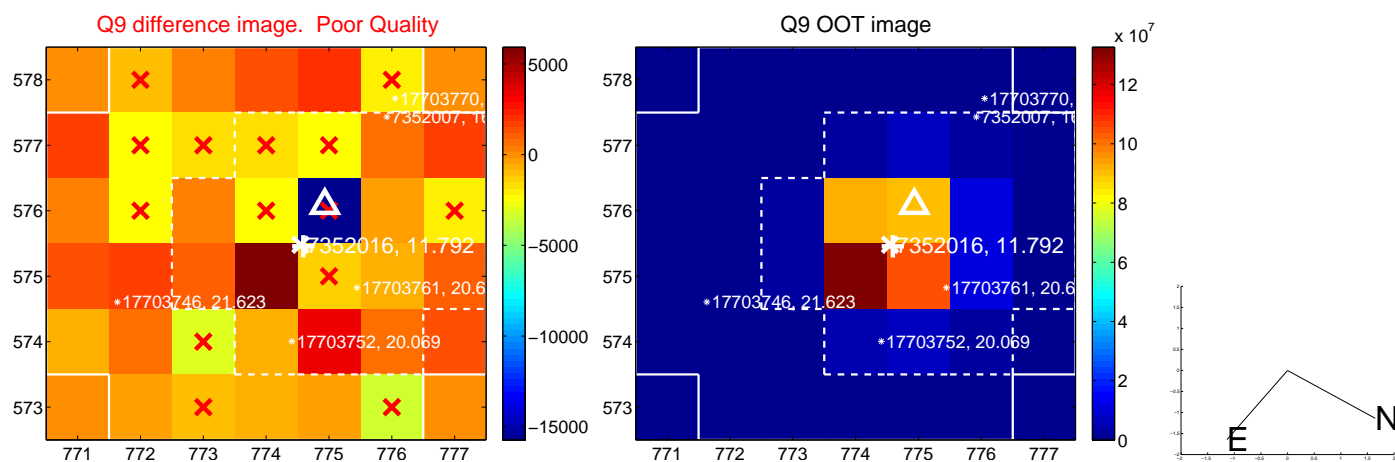
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



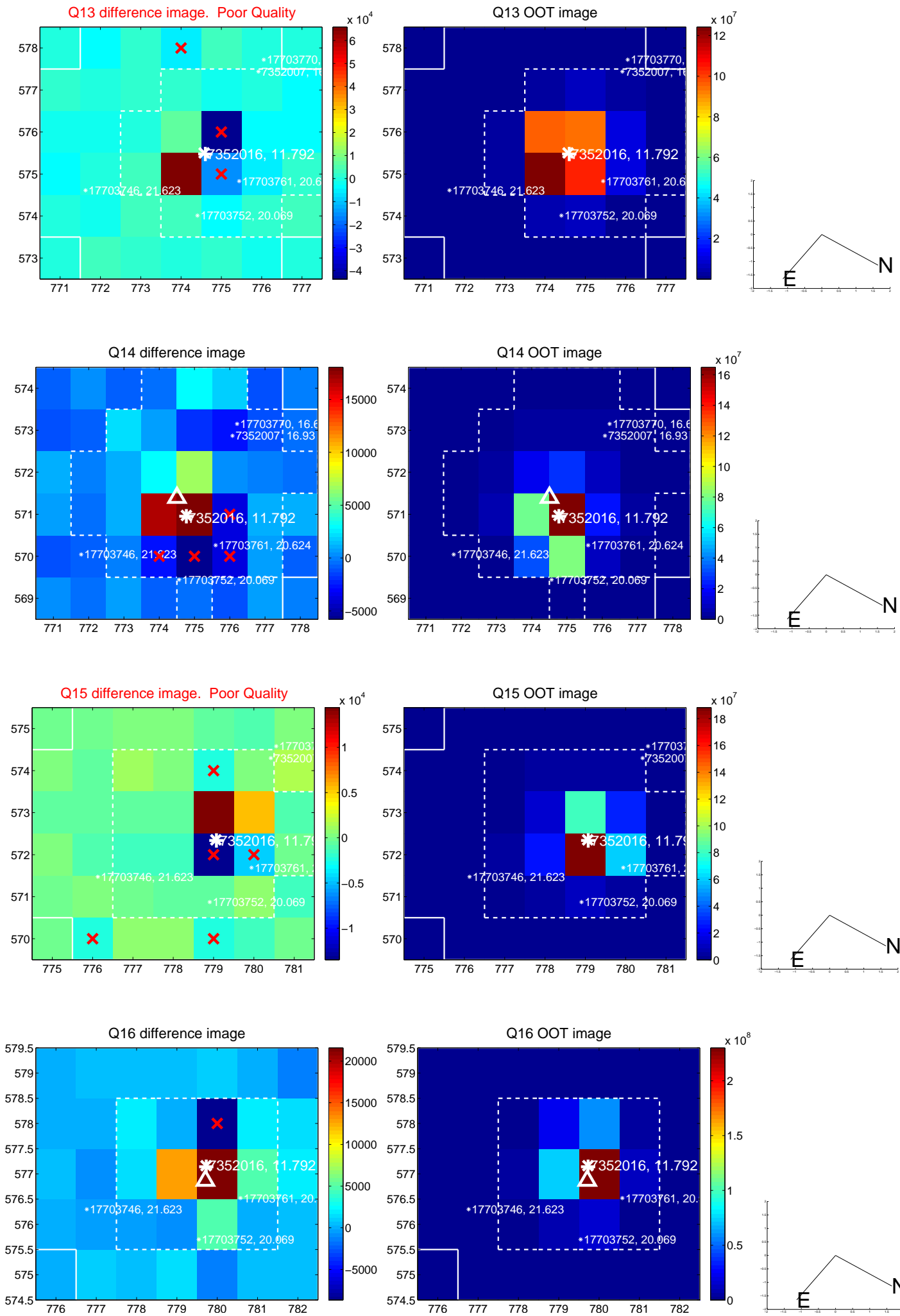
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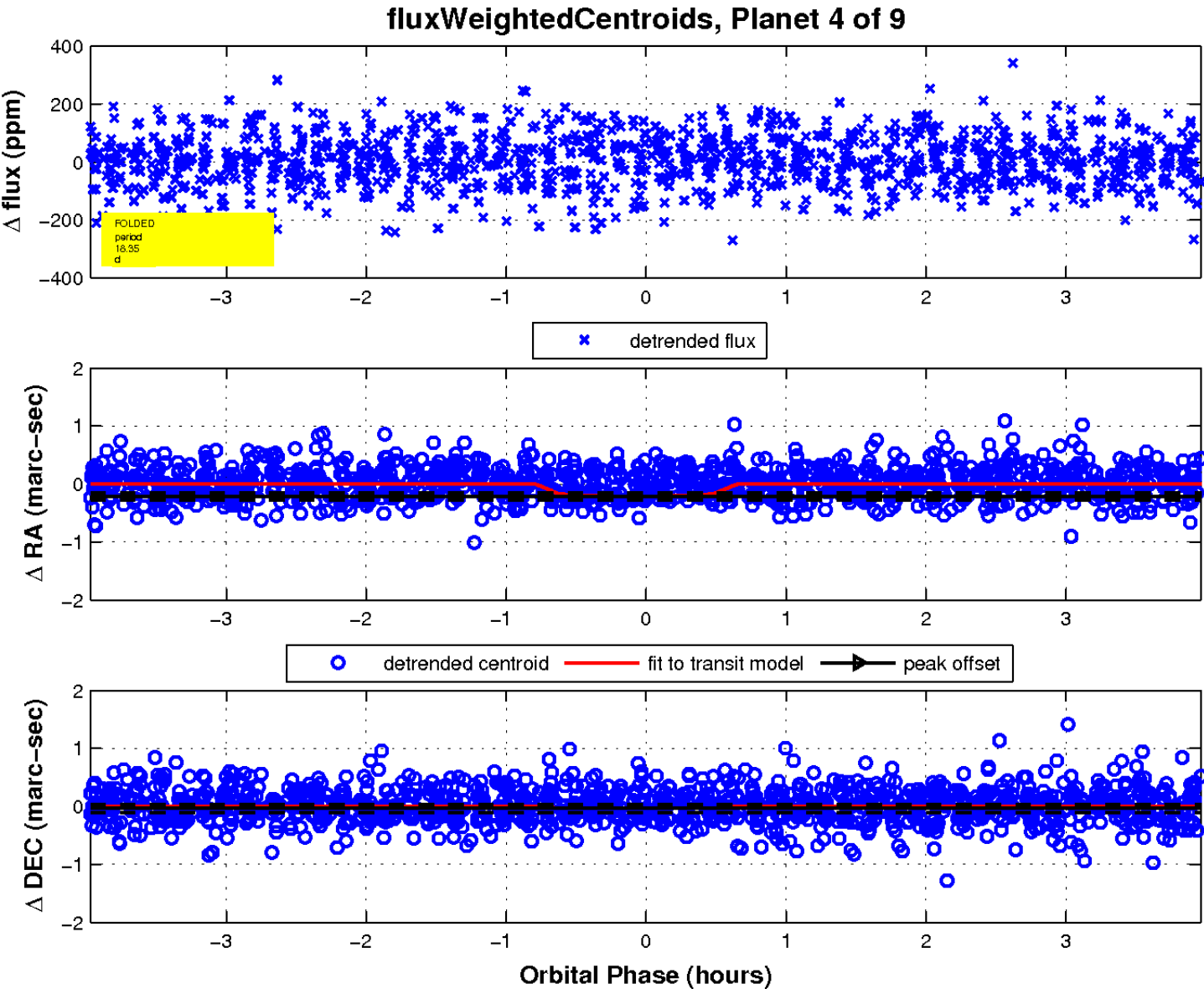
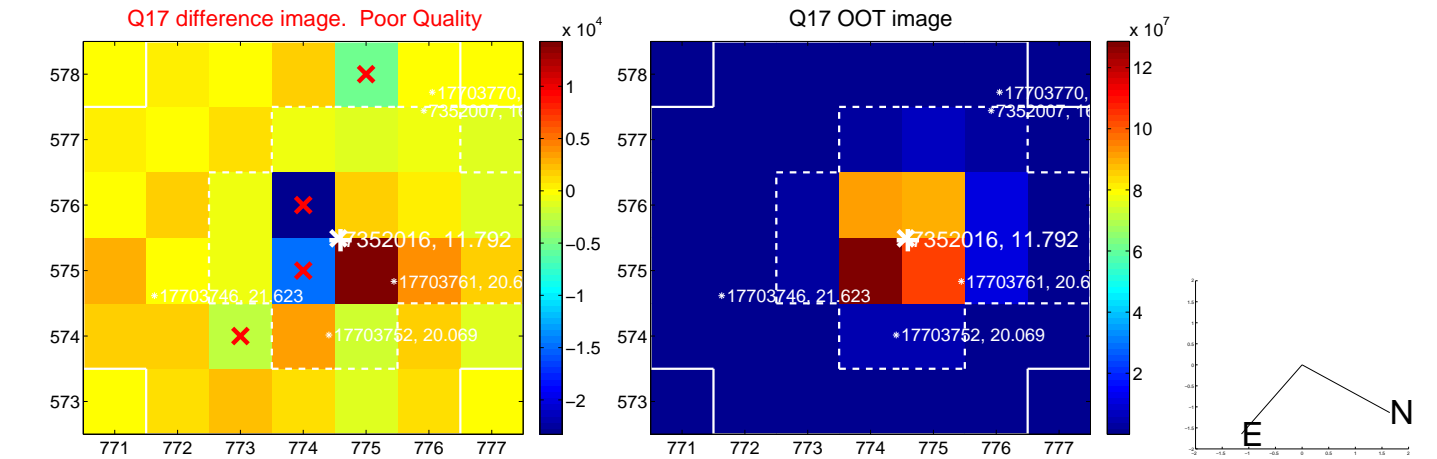
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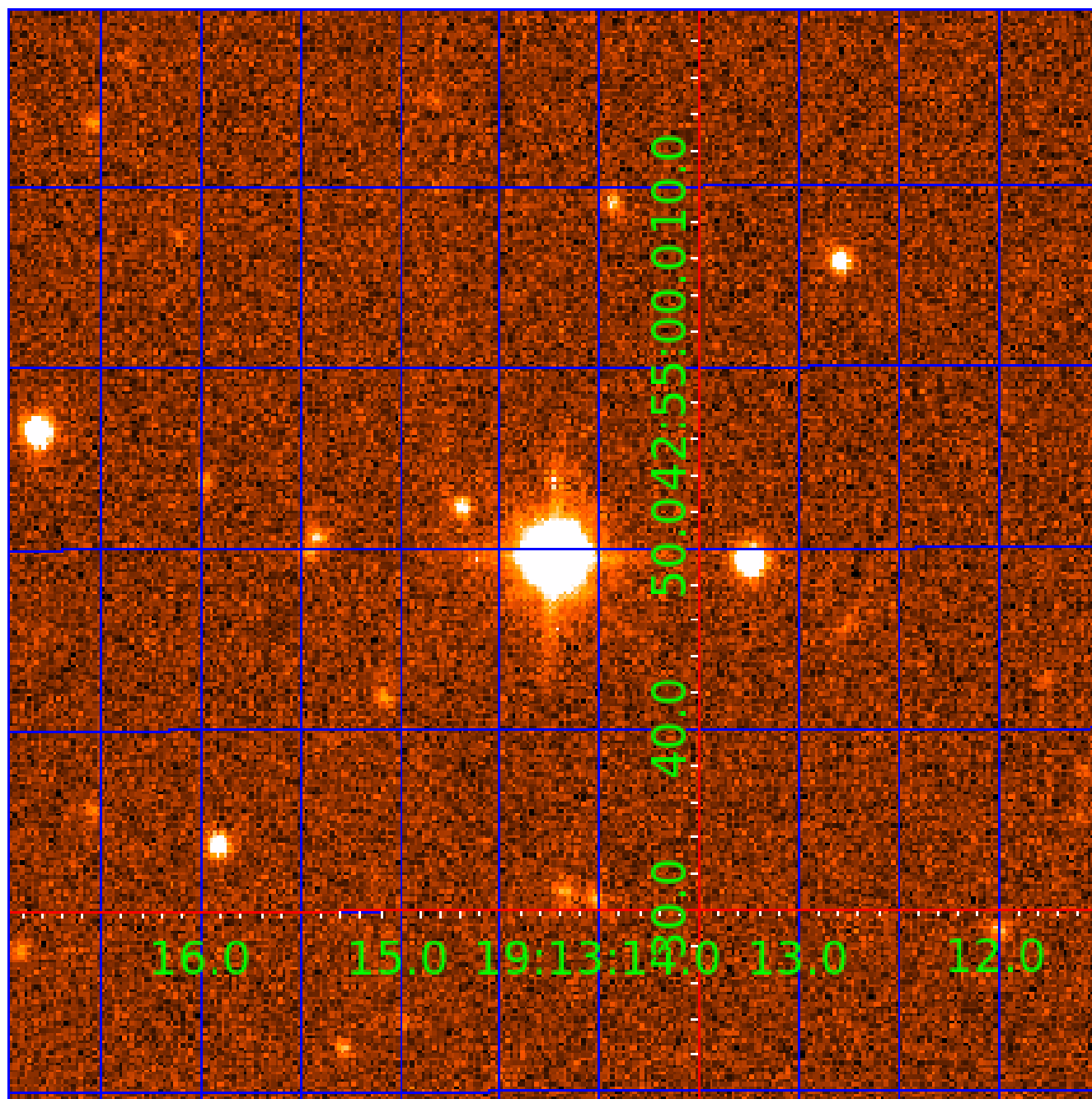


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007352016

Q1-17 DR25 TCE Parameters

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007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

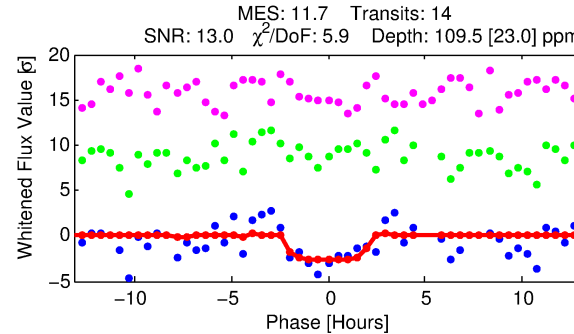
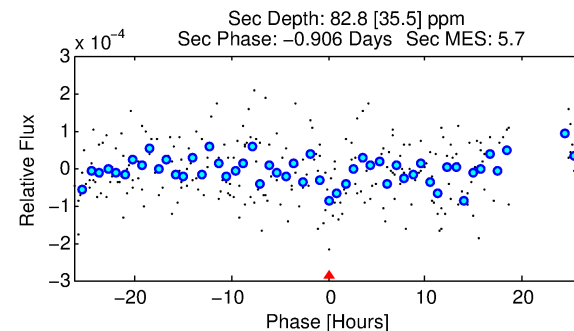
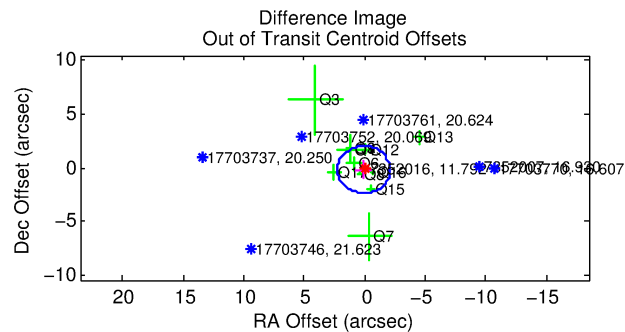
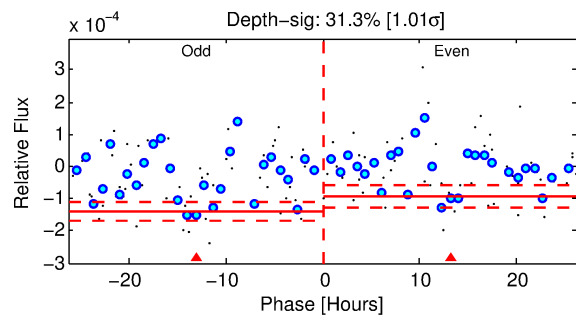
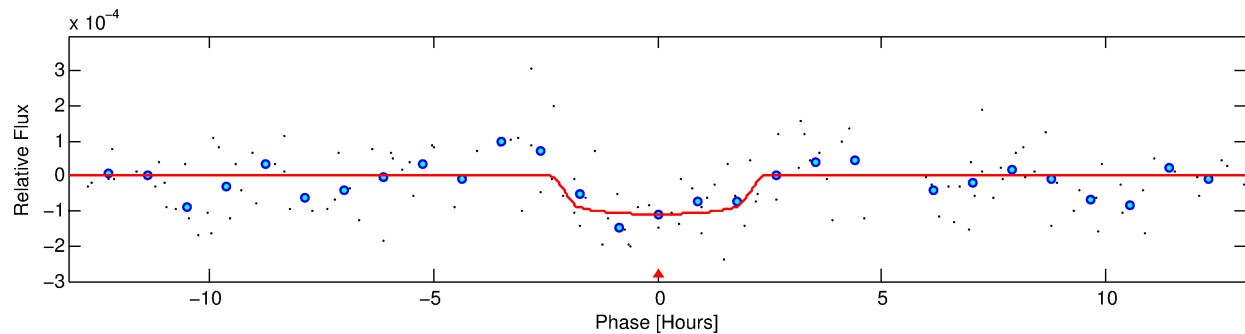
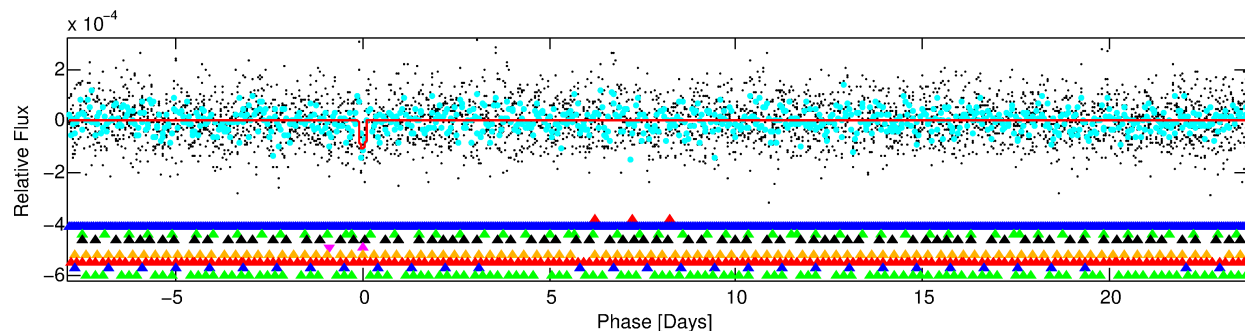
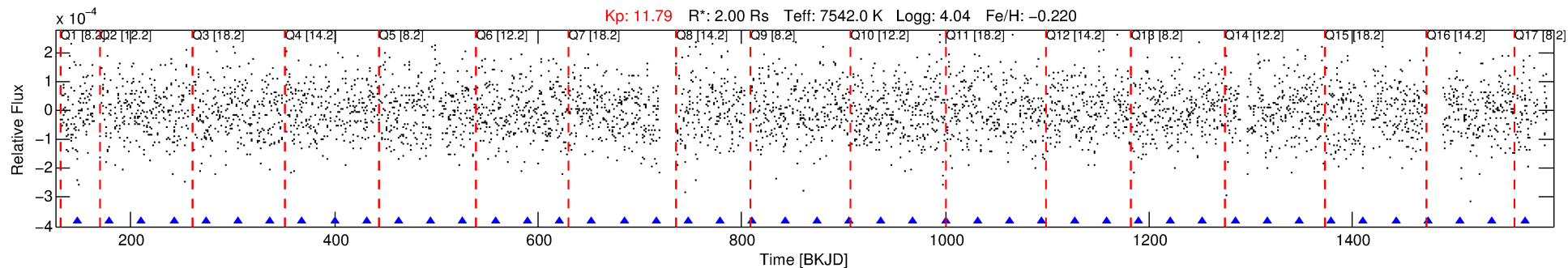
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-05

No Significant Match Found

DV One-Page Summary

KIC: 7352016 Candidate: 5 of 9 Period: 31.584 d



DV Fit Results:

Period = 31.58394 [0.00097] d
Epoch = 147.4922 [0.0192] BKJD
Rp/R* = 0.0109 [0.0129]
a/R* = 28.97 [190.01]
b = 0.86 [1.98]
Seff = 222.89 [56.54]
Teq = 985 [62] K
Rp = 2.39 [2.85] Re
a = 0.2280 [0.0387] AU
Ag = 415.74 [1000.00] [0.41 σ]
Teffp = 6879 [4115] K [1.43 σ]

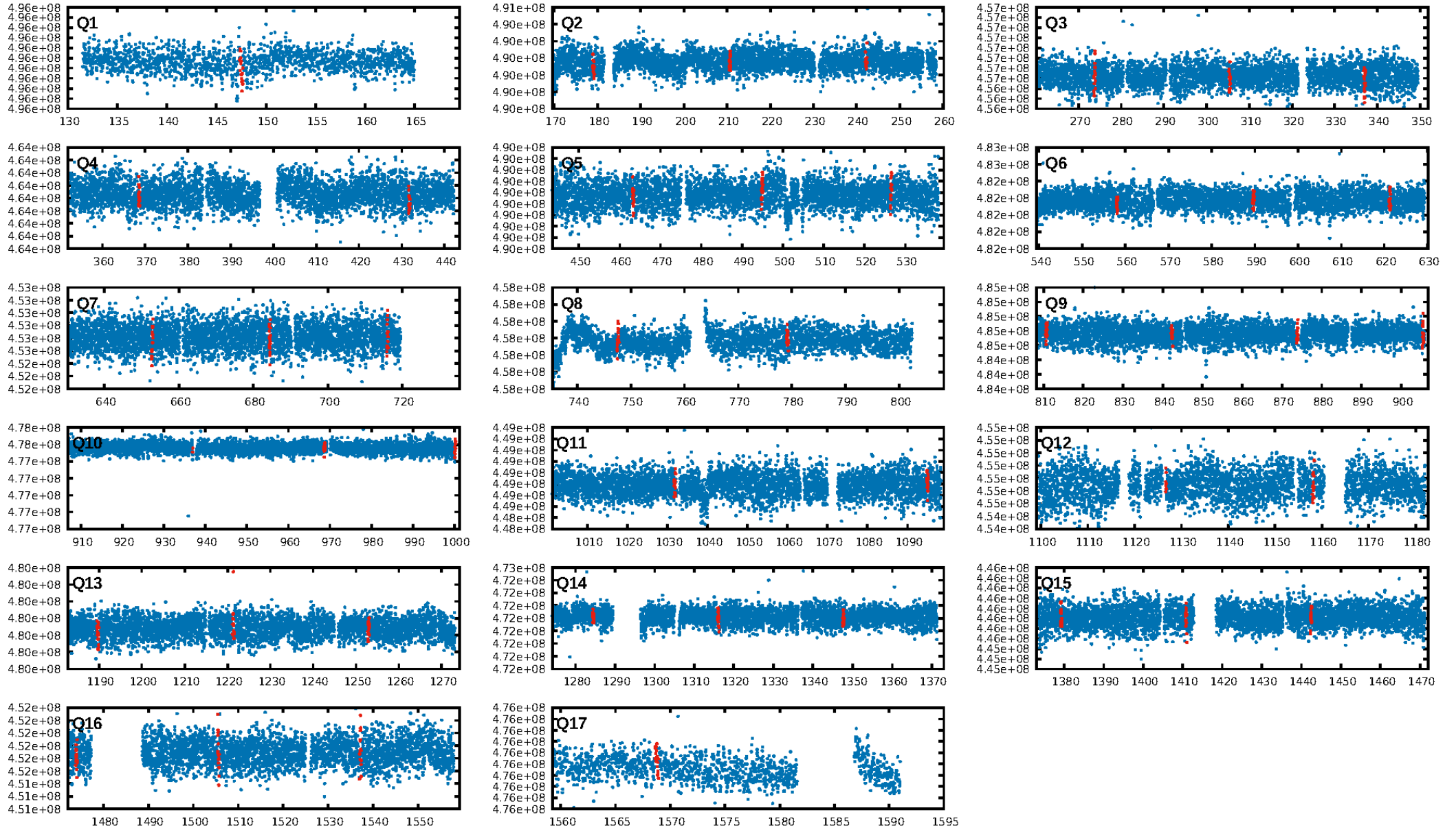
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.53 σ]
LongPeriod-sig: 100.0% [80.70 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 98.6%
Bootstrap-pfa: 4.79e-11
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: -0.5618
Centroid-sig: 92.2%
Centroid-so: 0.100 arcsec [0.21 σ]
OotOffset-rm: 0.215 arcsec [0.29 σ]
KicOffset-rm: 0.150 arcsec [0.24 σ]
OotOffset-st: 1/3/4/3 [11]
KicOffset-st: 1/3/4/3 [11]
DiffImageQuality-fgm: 0.27 [3/11]
DiffImageOverlap-fno: 0.00 [0/17]

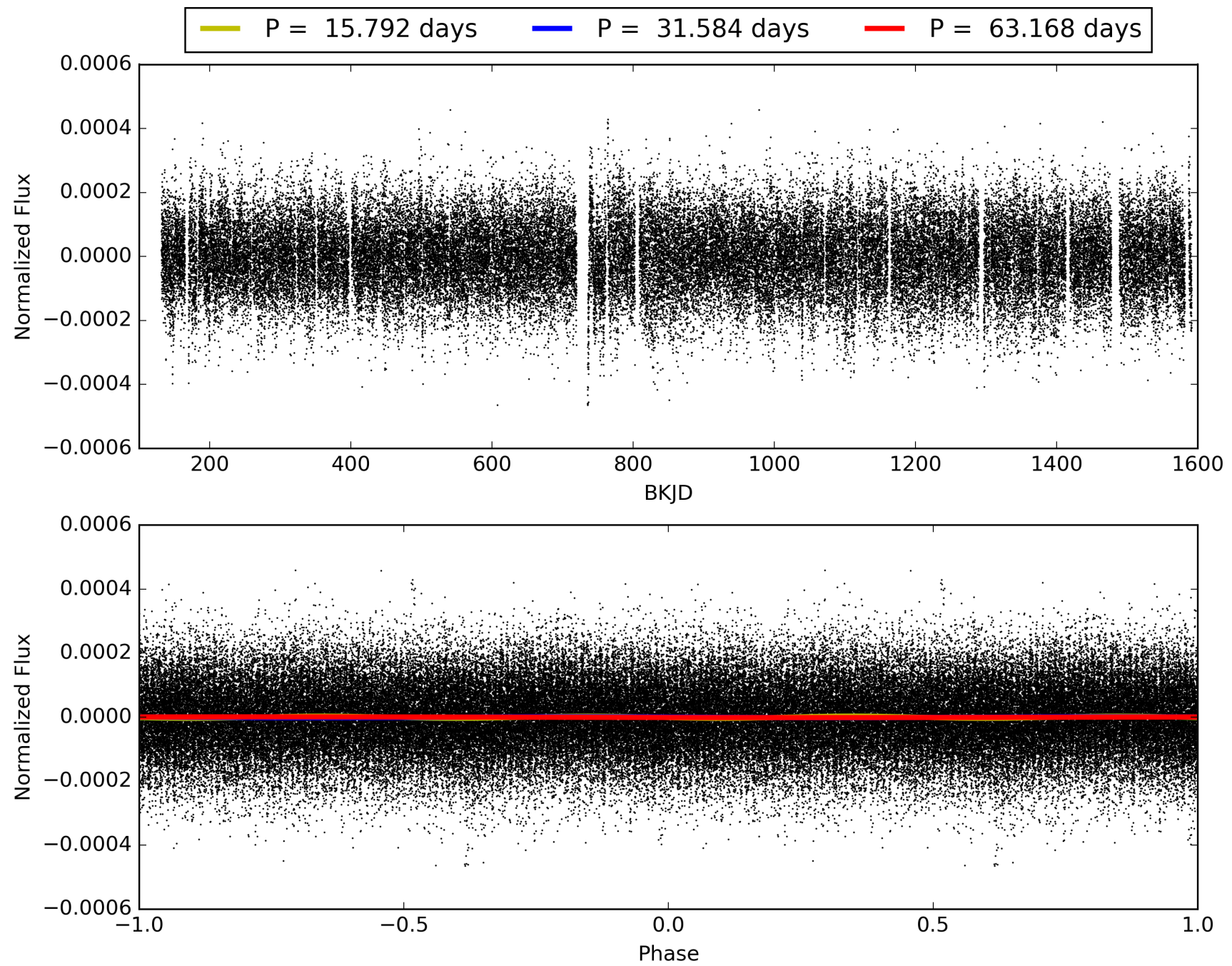
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:29:26 Z

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

TCE 007352016-05, PDC Light Curves

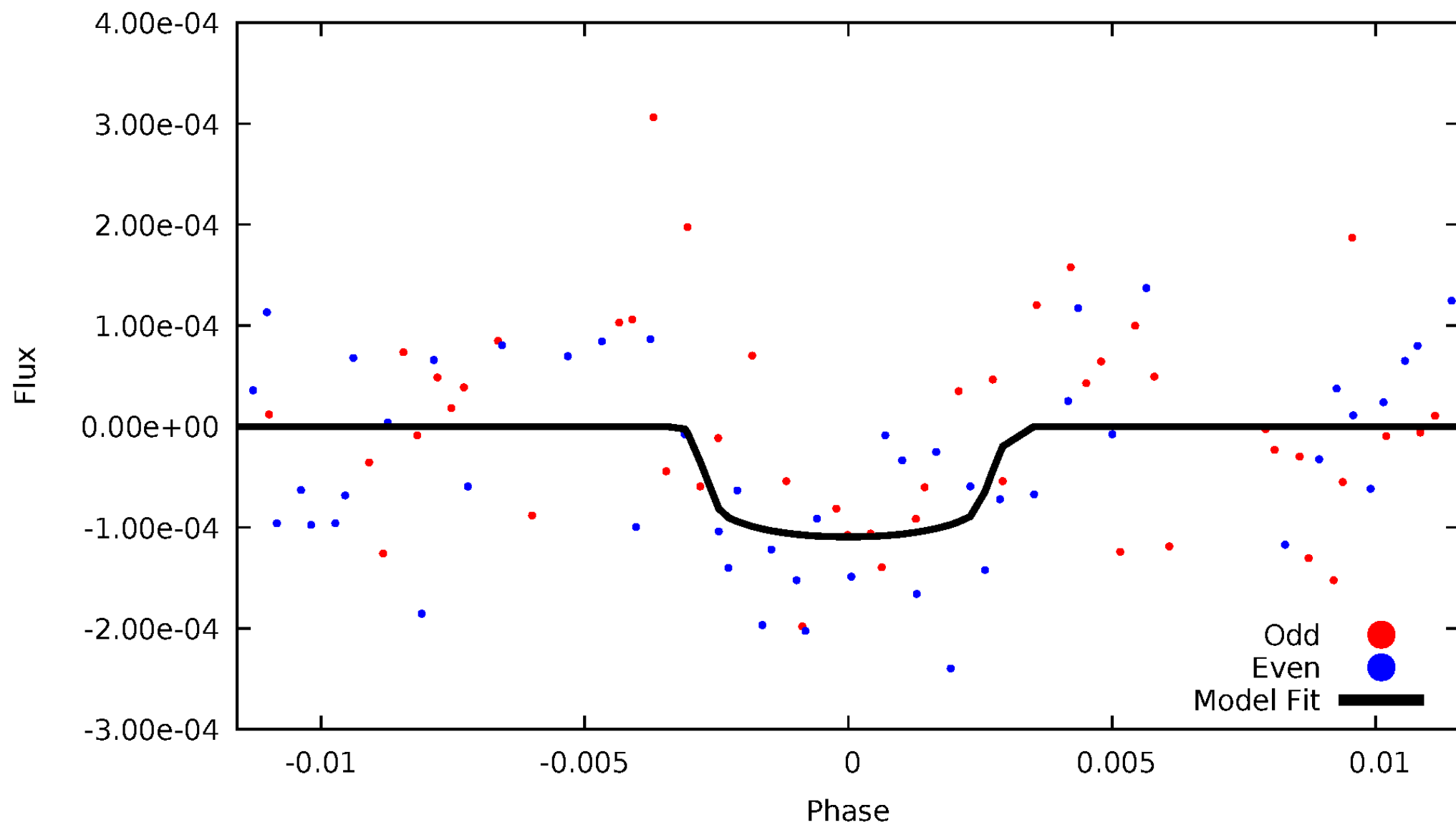


TCE 007352016-05



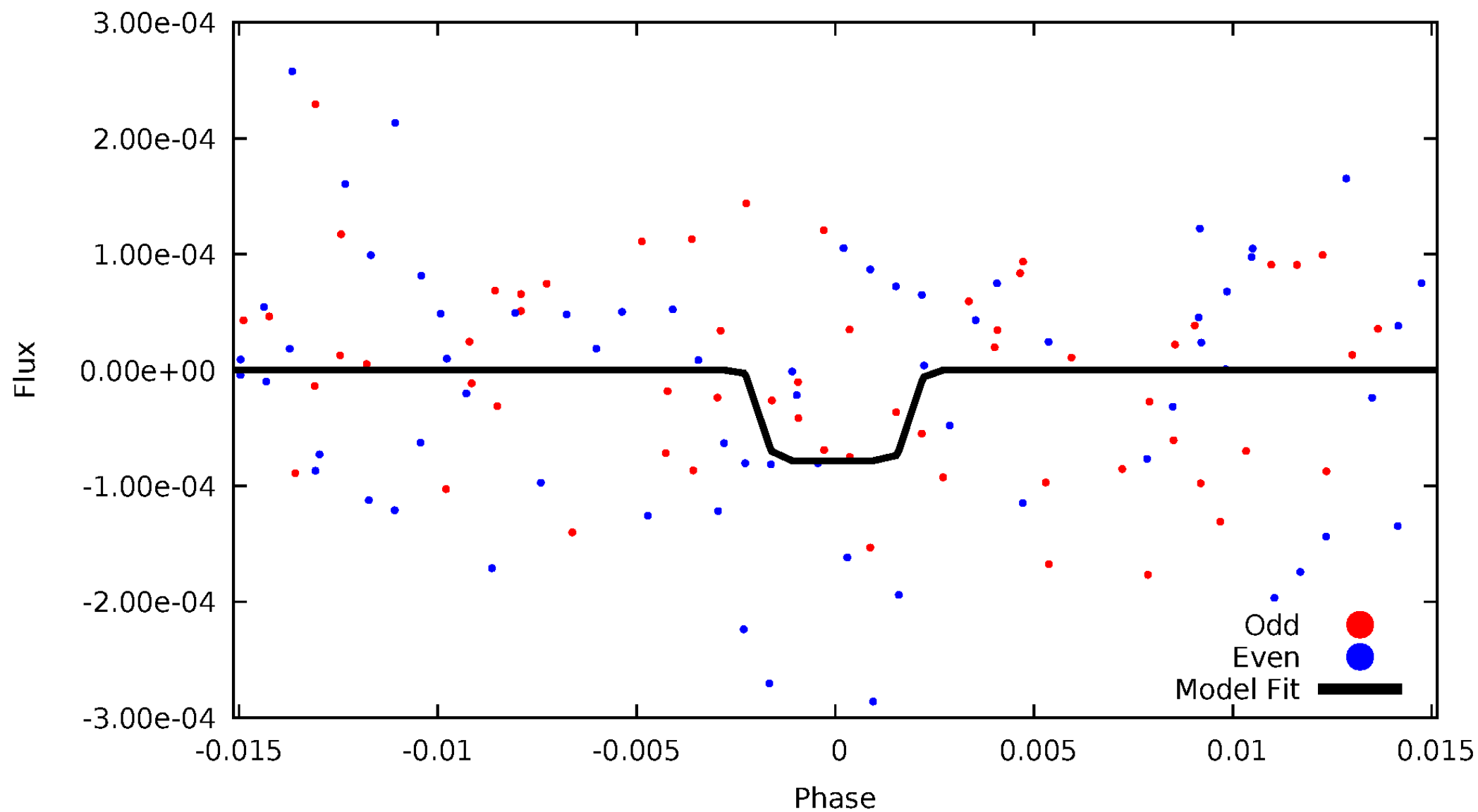
DV Odd/Even

TCE 007352016-05



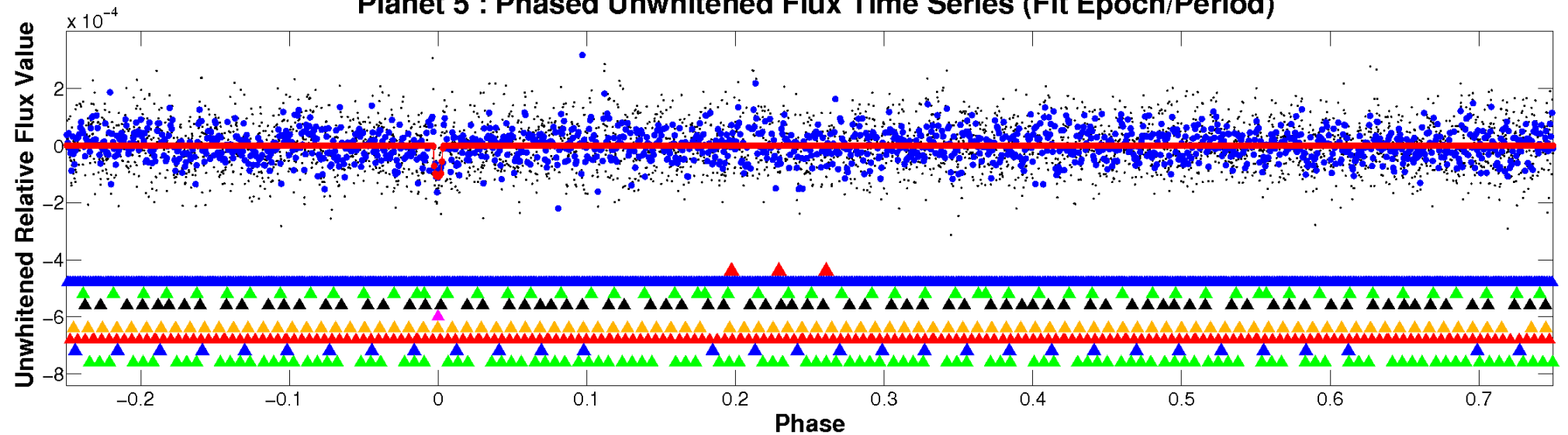
ALT Odd/Even

TCE 007352016-05

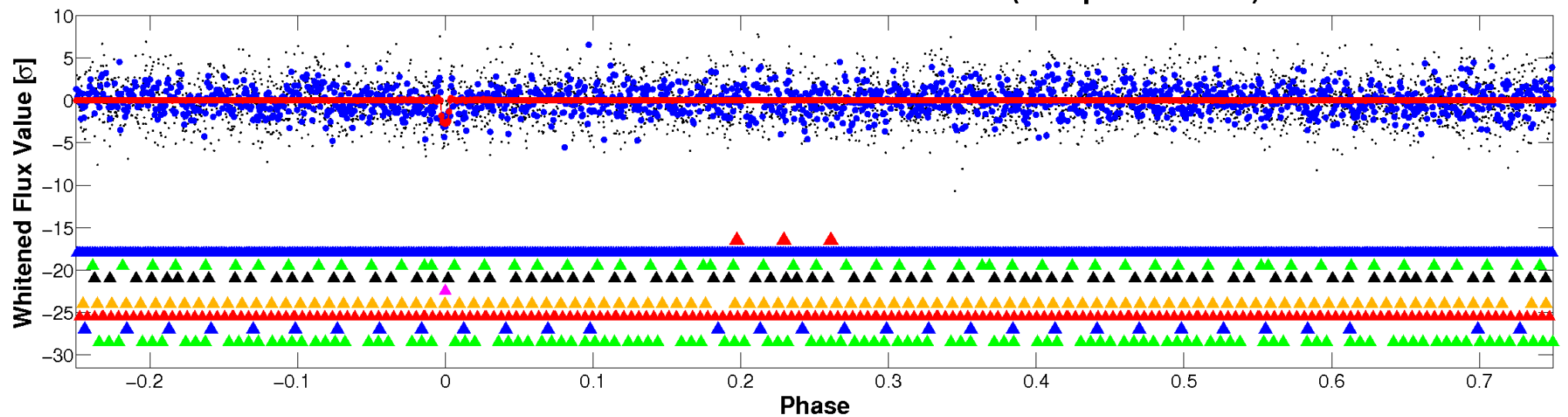


Non-Whitened Vs. Whitened Light Curve

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

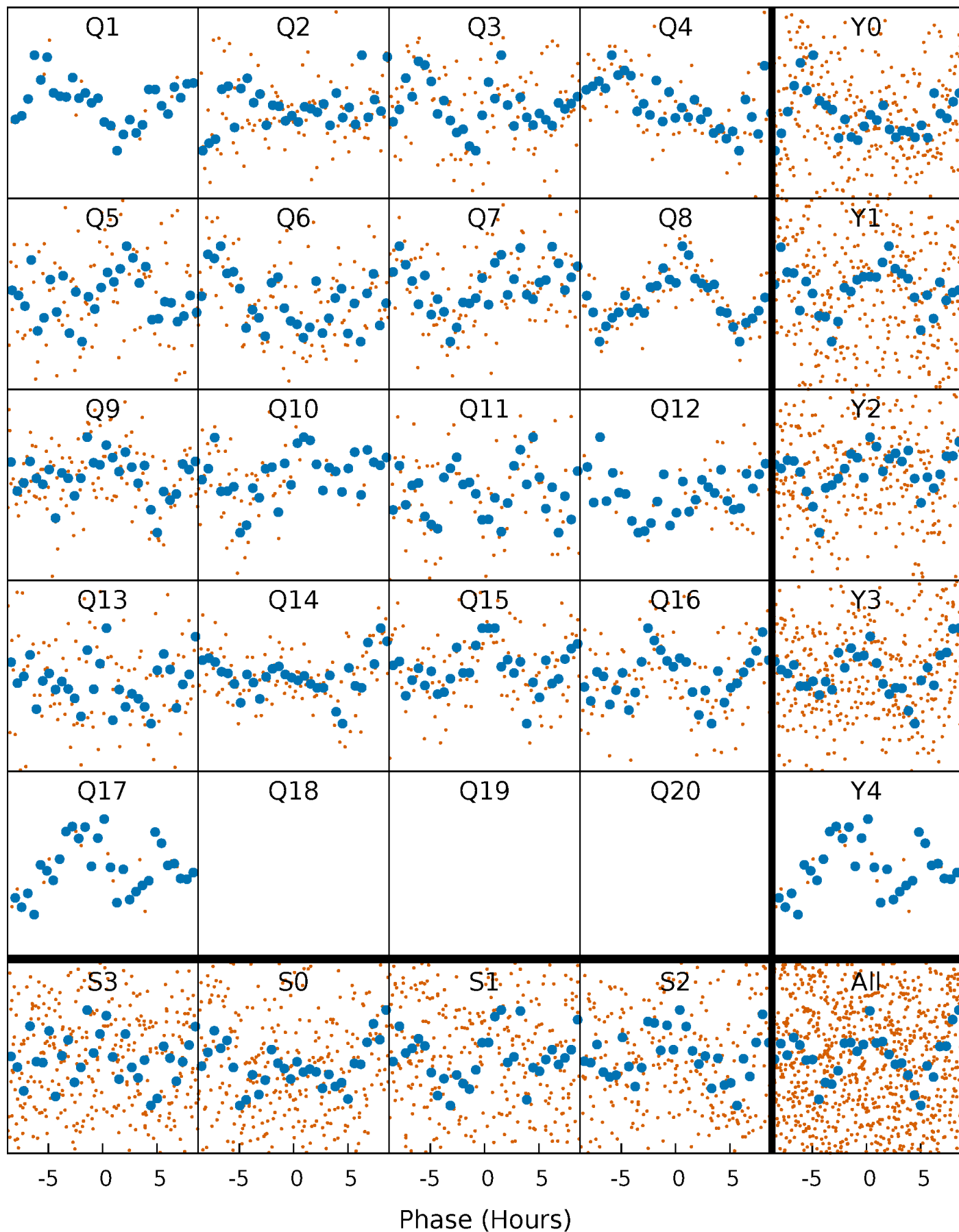


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



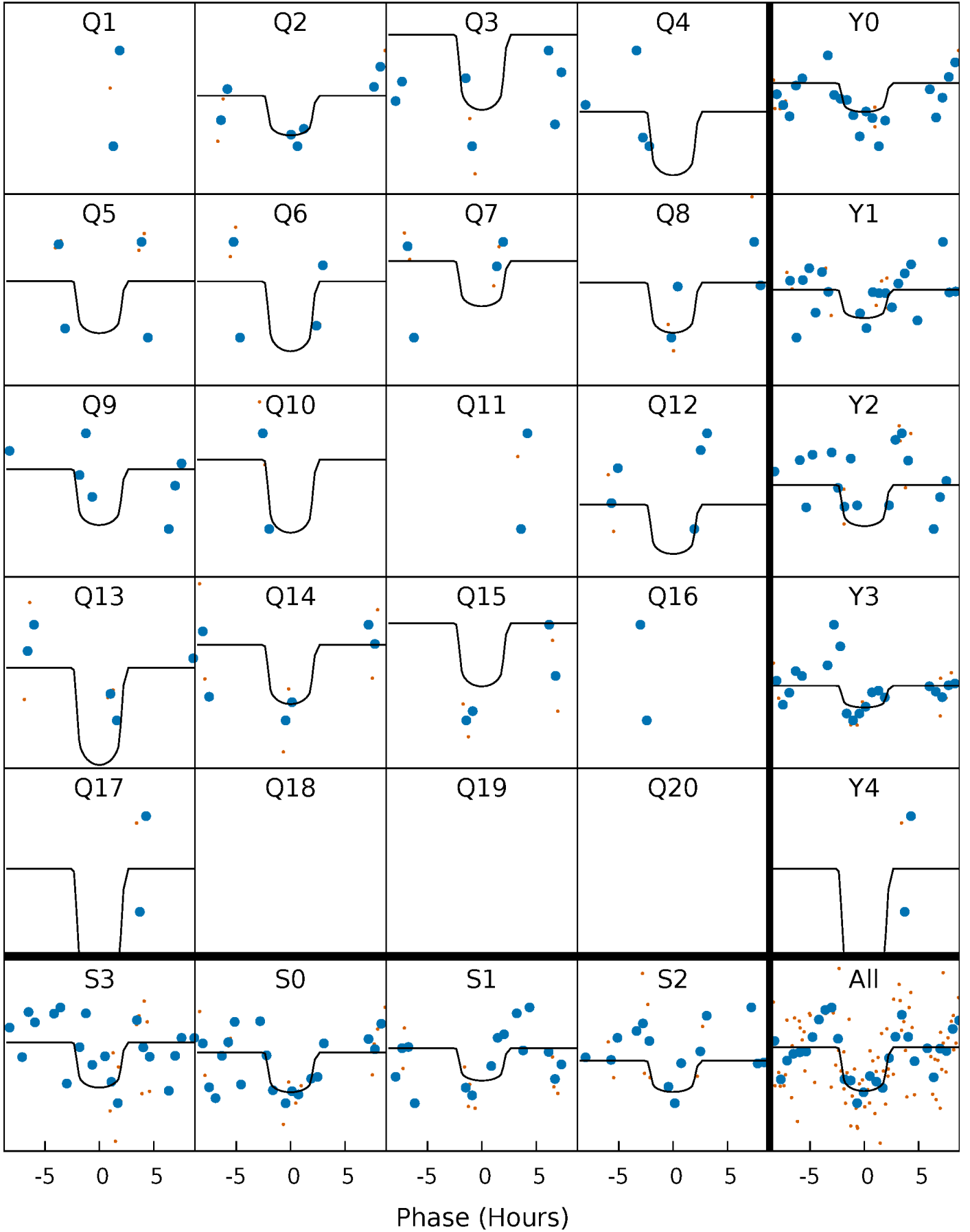
PDC Quarter-Phased Transit Curves

TCE 007352016-05 P= 31.583942 Days $T_0=147.492154$ (BKJD)



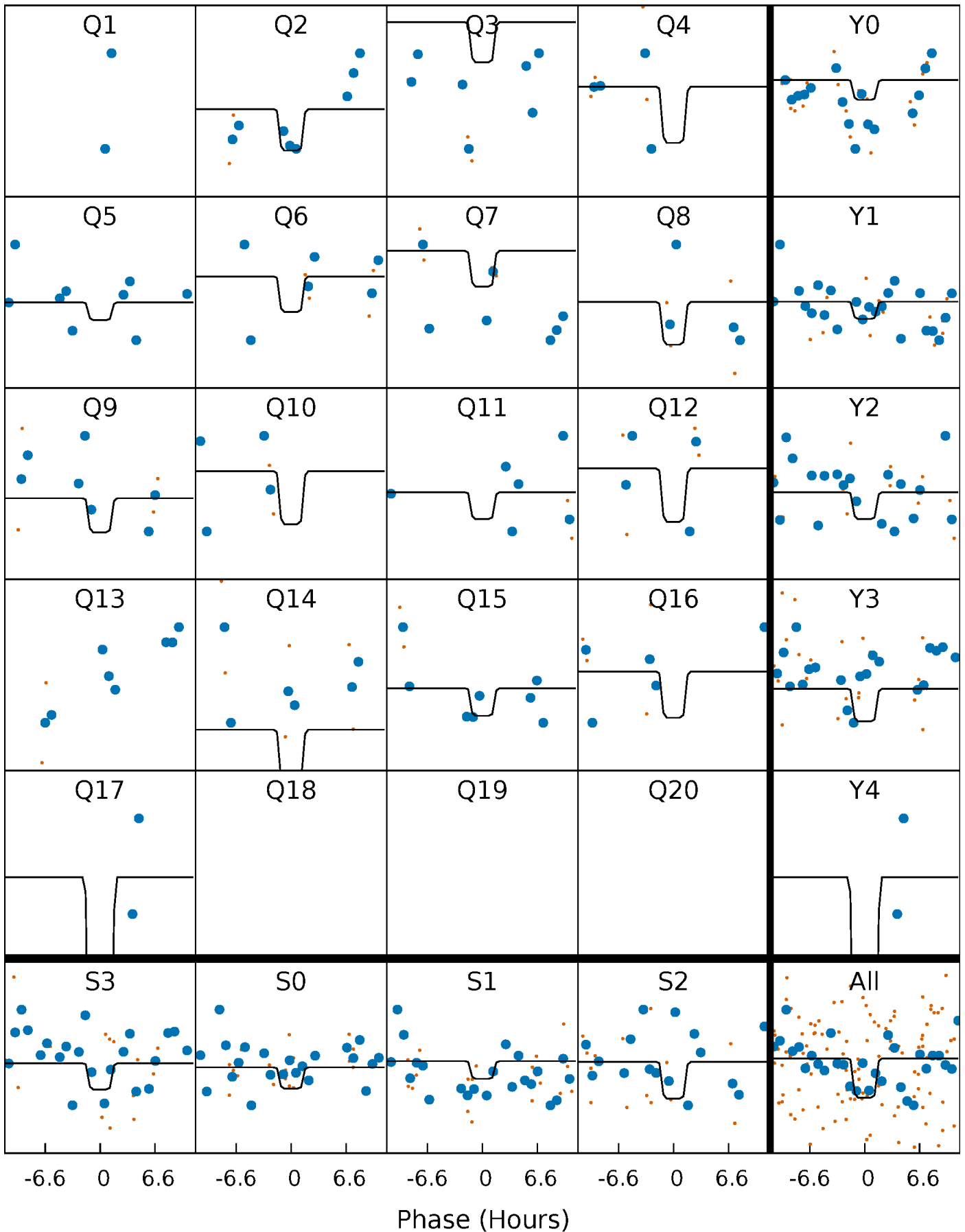
DV Quarter-Phased Transit Curves

TCE 007352016-05 P= 31.583942 Days $T_0=147.492154$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

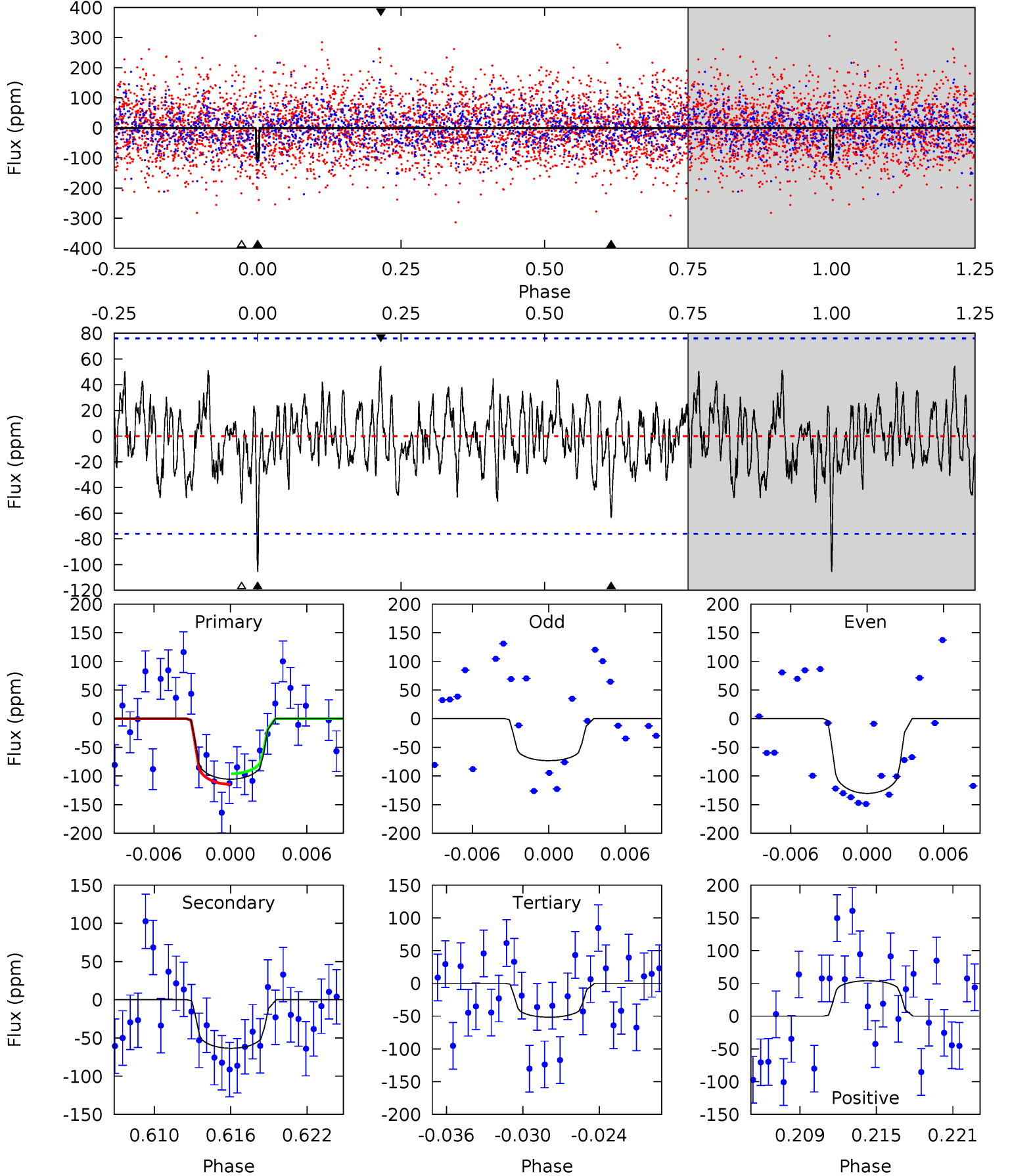
TCE 007352016-05 P= 31.583149 Days $T_0=147.523505$ (BKJD)



DV Model-Shift Uniqueness Test

007352016-05, P = 31.583942 Days, E = 115.908212 Days

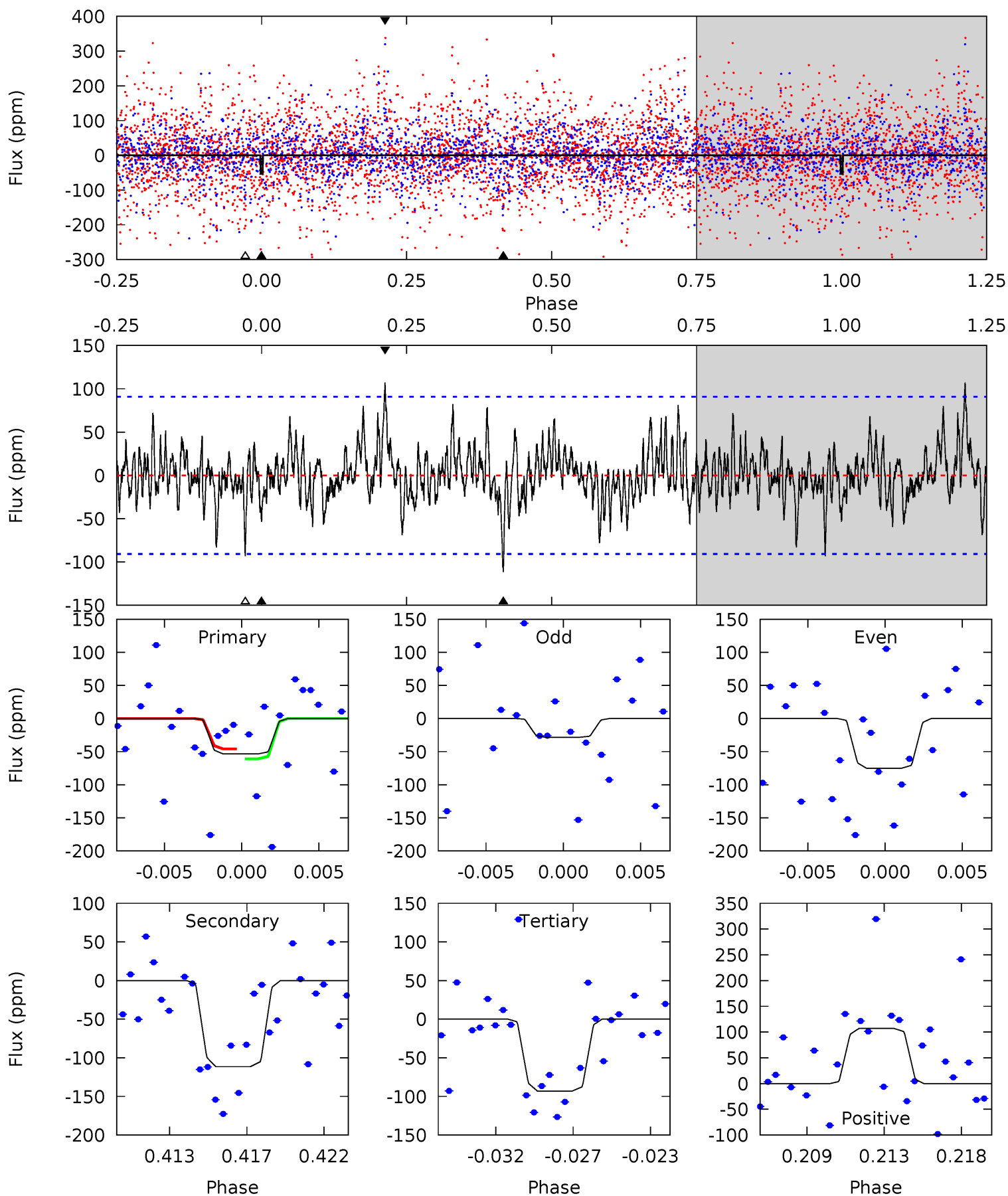
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.12	4.28	3.48	3.64	5.12	2.75	1.32	3.64	3.48	0.80	0.64	1.91	0.87	0.34	0.62



Alt Model-Shift Uniqueness Test

007352016-05, P = 31.583149 Days, E = 115.940356 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.06	6.36	5.31	6.12	5.18	2.84	1.53	-2.25	-3.06	1.05	0.24	1.32	1.31	0.49	0.43



Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-63 ± 15	$2.85^{+2.81}_{-1.82}$	1373^{+65}_{-60}	5796^{+4719}_{-1518}	226^{+1405}_{-170}
Alt.	-111 ± 18	$2.85^{+2.23}_{-1.85}$	1374^{+68}_{-64}	6648^{+6879}_{-1589}	401^{+2721}_{-280}

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 $A_{obs} \gg 1.0$

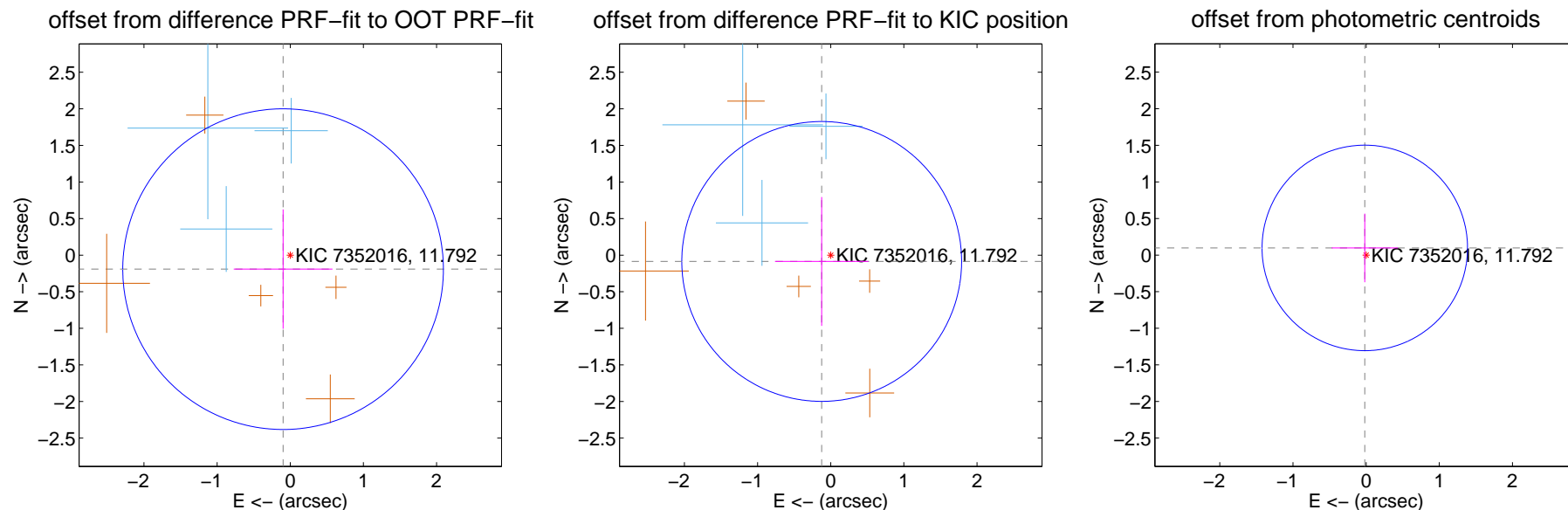
DV Centroid Data

Supplemental centroid analysis for 007352016-05. **Kepler magnitude: 11.79.** Transit SNR 12.99

There are 3 quarters with good PRF difference image offsets

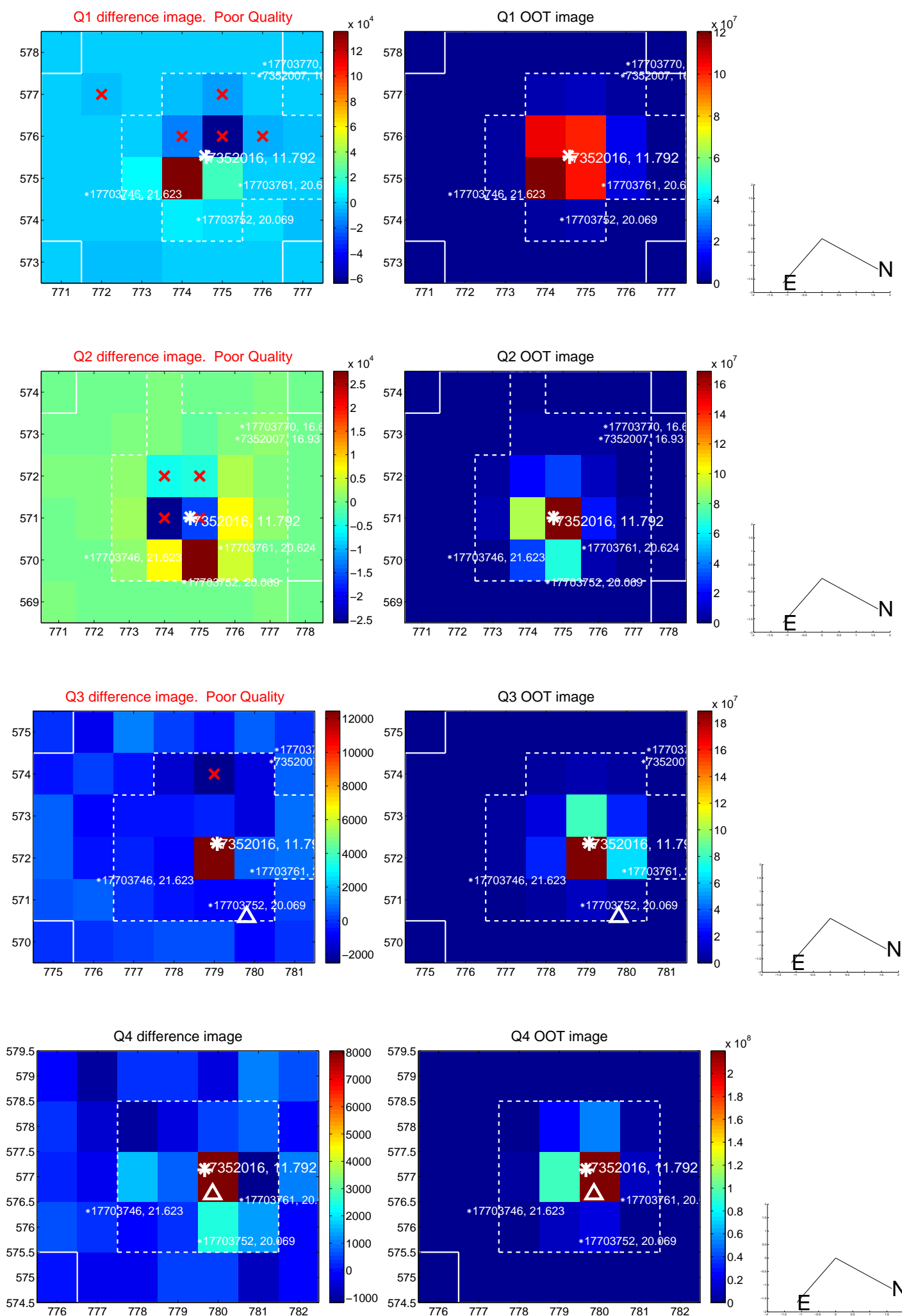
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.215 ± 0.730	0.29	0.098 ± 0.675	-0.191 ± 0.816
PRF-fit source offset from KIC position	0.150 ± 0.637	0.24	0.123 ± 0.639	-0.086 ± 0.881
photometric centroid source offset	0.10 ± 0.47	0.21	0.02 ± 0.45	0.10 ± 0.47

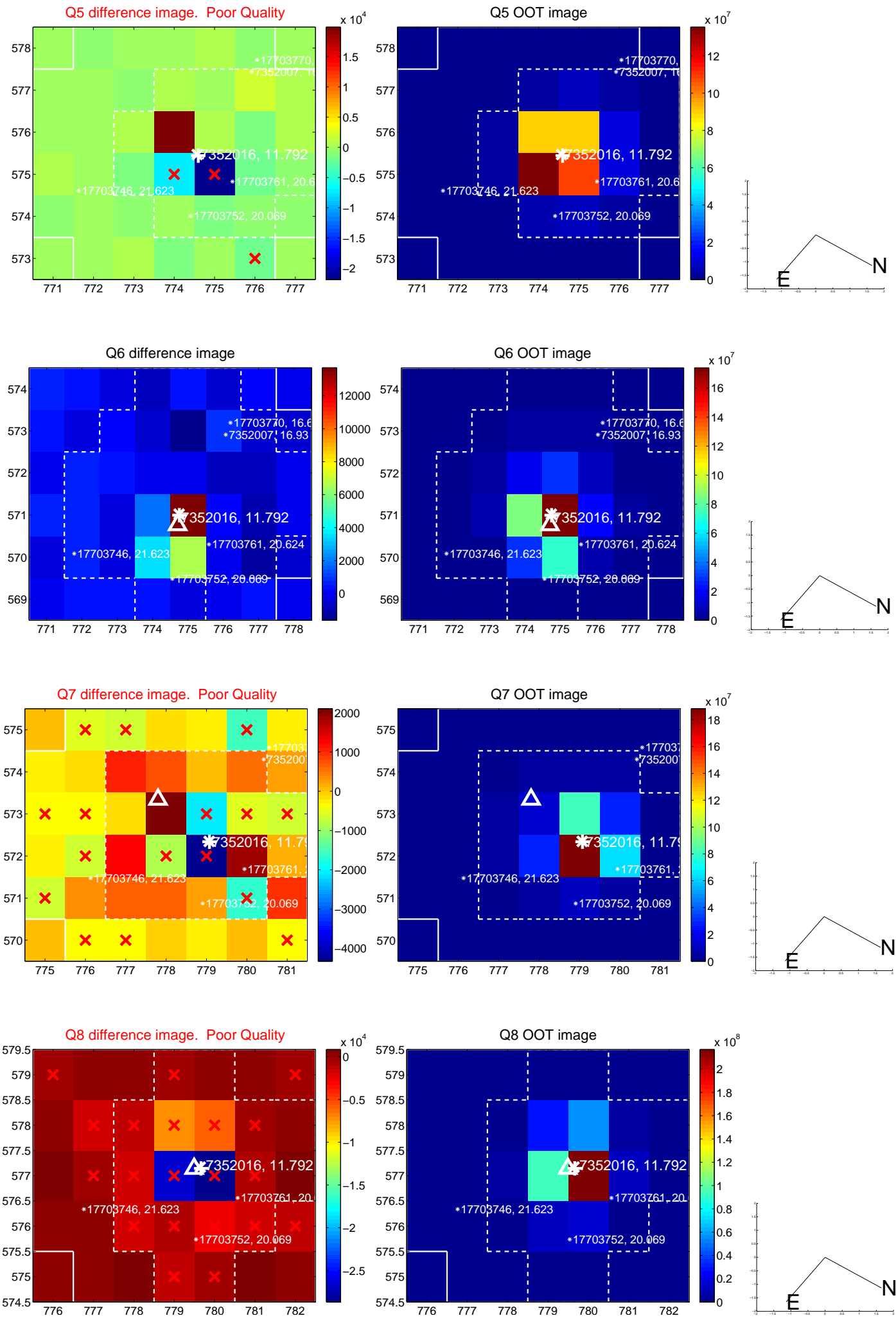


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

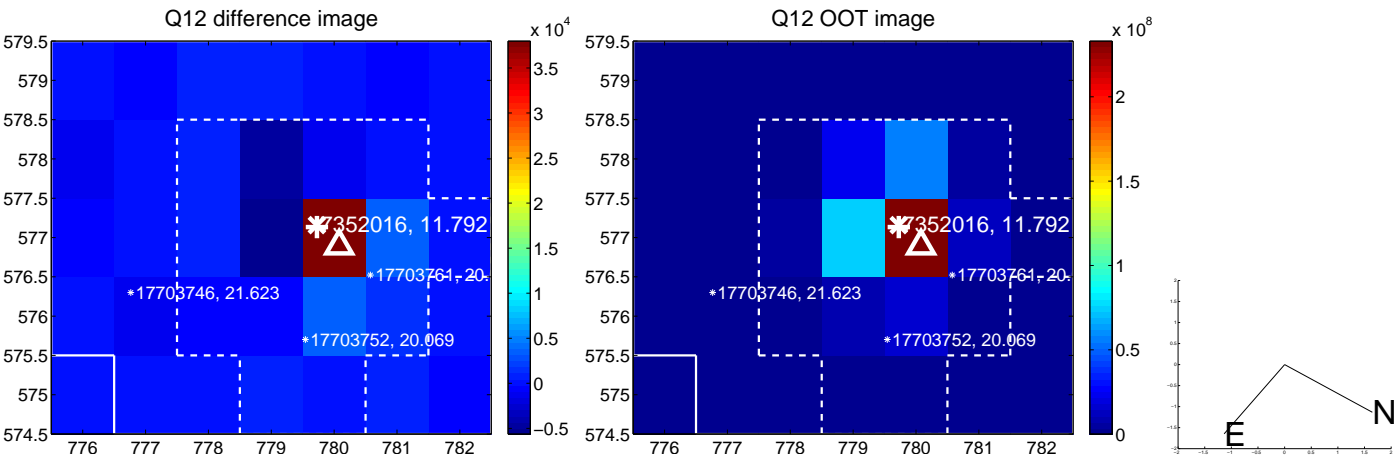
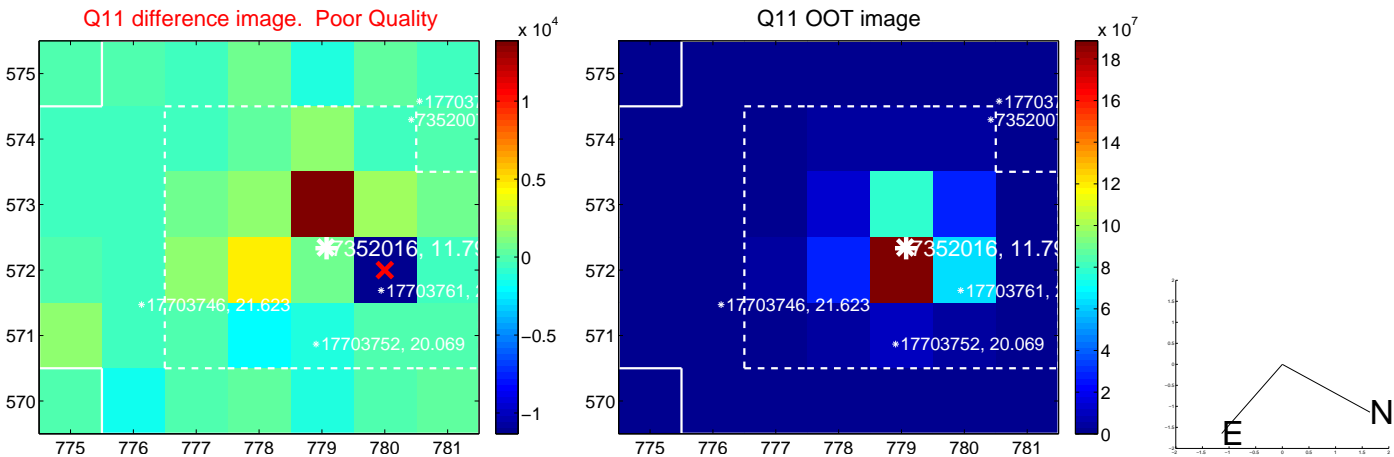
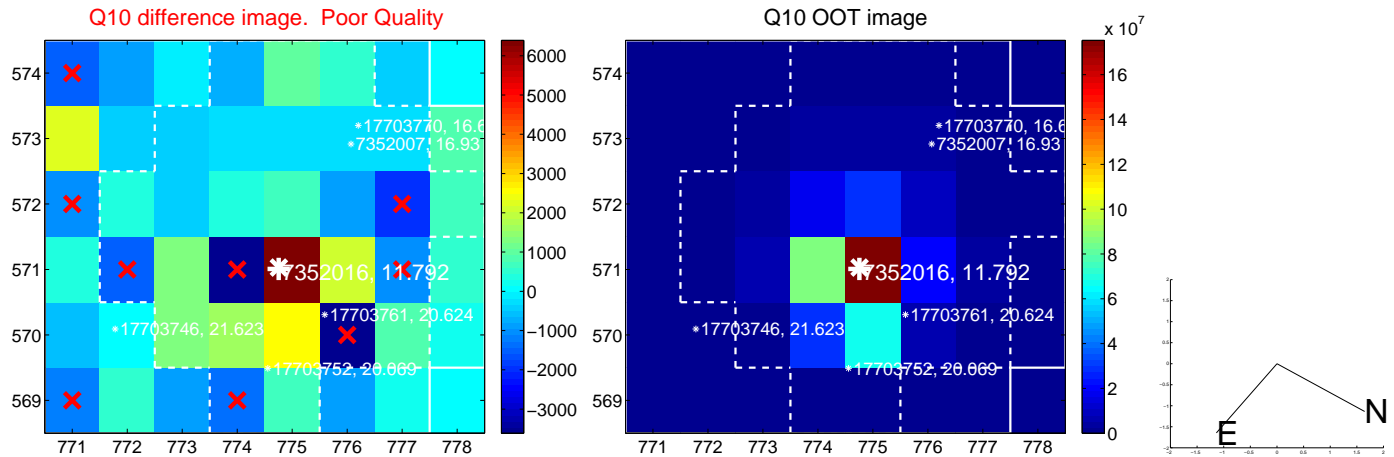
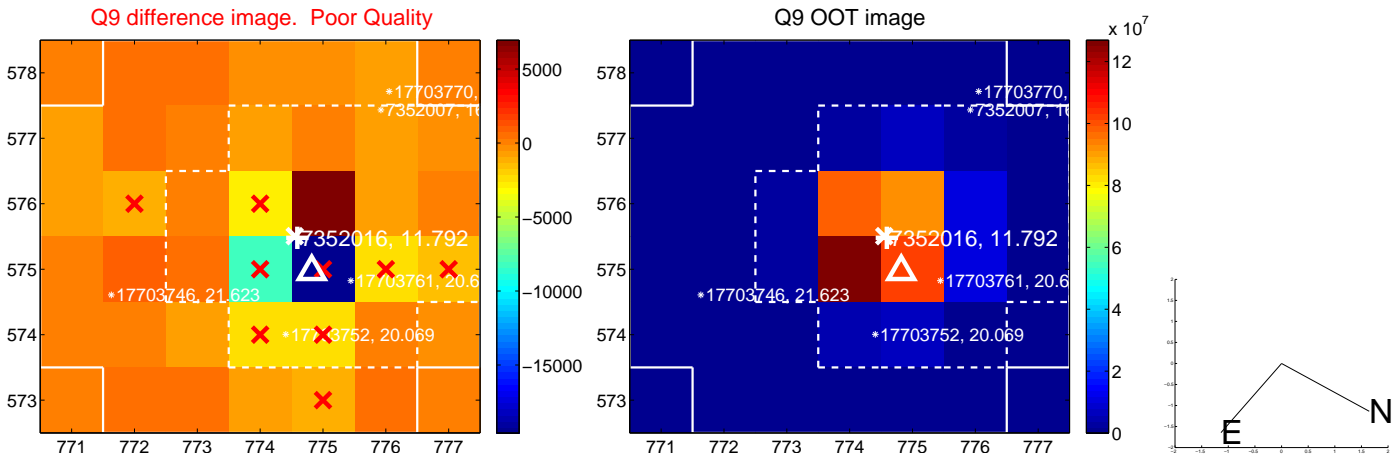
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



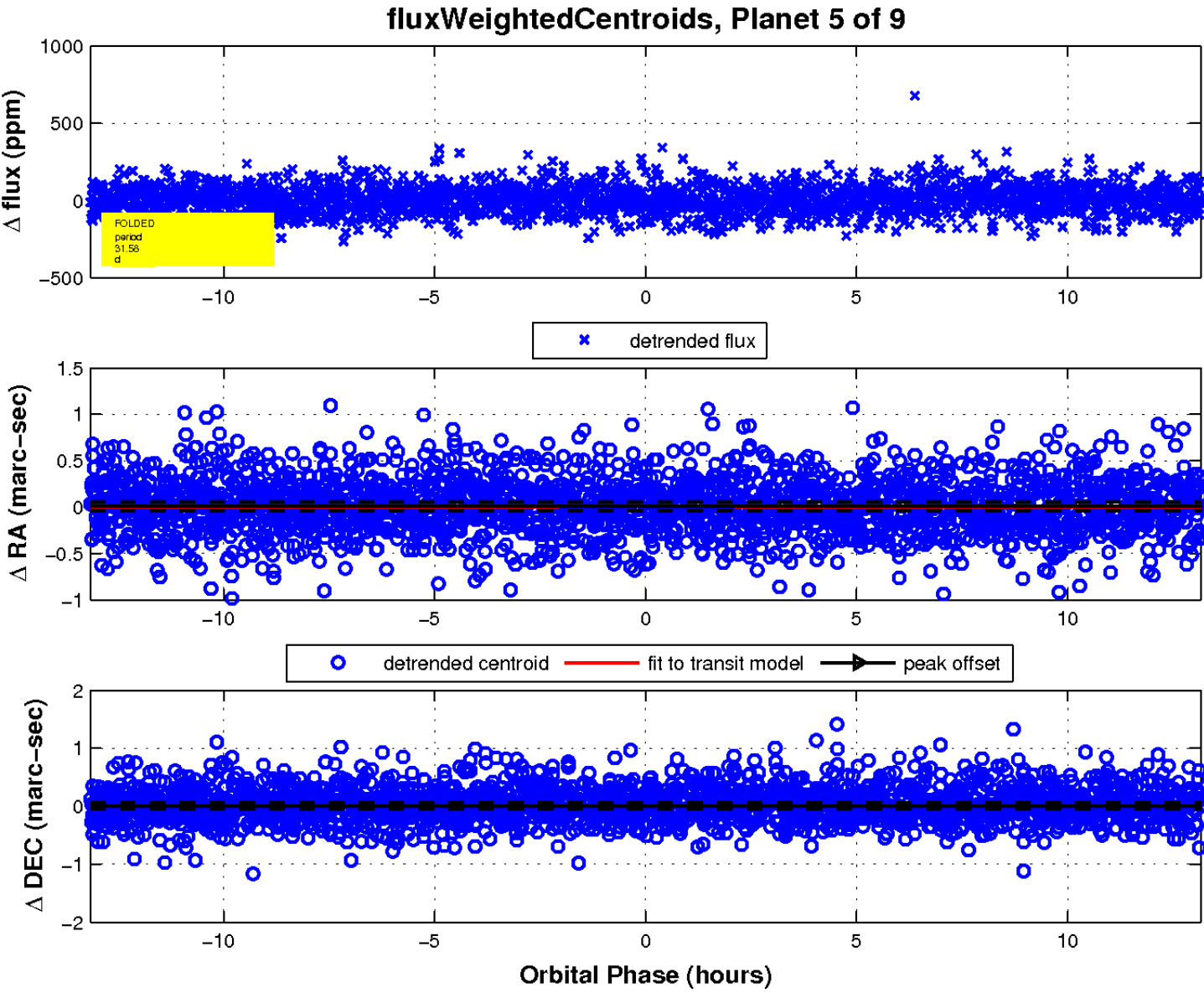
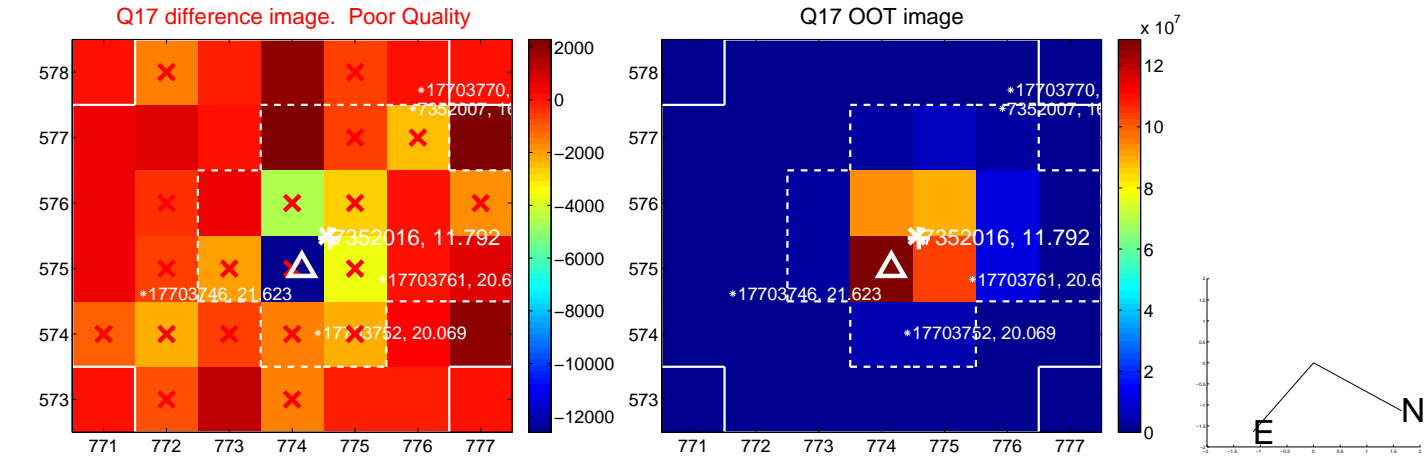
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

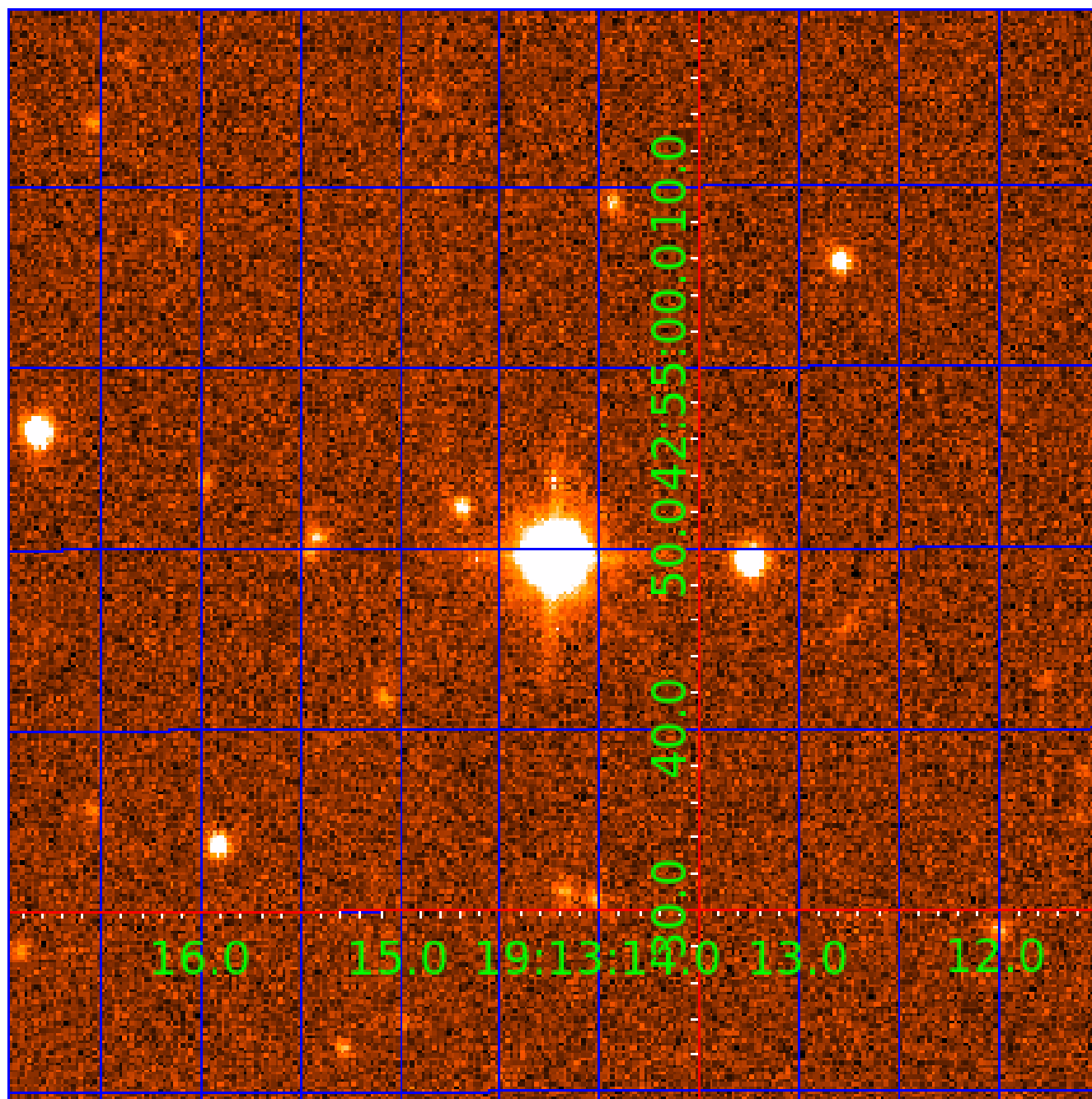


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007352016

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})
007352016-01	OBS	No	537.931366	501.151088	129.2	21.001	10.0	10.0	2.00	7542	2.67	5.09
007352016-02	OBS	No	0.919382	132.389291	5.1	6.700	8.3	5.5	2.00	7542	0.46	24891.70
007352016-03	OBS	No	25.621817	133.502165	186.4	1.138	14.8	13.0	2.00	7542	2.81	294.60
007352016-04	OBS	No	18.349737	131.543780	161.3	1.323	15.2	12.9	2.00	7542	2.66	459.77
007352016-05	OBS	No	31.583942	147.492154	109.5	4.393	11.7	13.0	2.00	7542	2.39	222.89
007352016-06	OBS	No	14.553533	136.332445	105.3	2.490	13.0	14.5	2.00	7542	2.07	626.26
007352016-07	OBS	No	6.873045	134.622509	35.6	6.035	12.0	10.3	2.00	7542	1.40	1702.88
007352016-08	OBS	No	46.925739	166.830456	156.2	1.233	12.8	12.4	2.00	7542	2.54	131.47
007352016-09	OBS	No	12.448509	138.957477	145.3	1.148	12.7	11.5	2.00	7542	2.57	771.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007352016-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

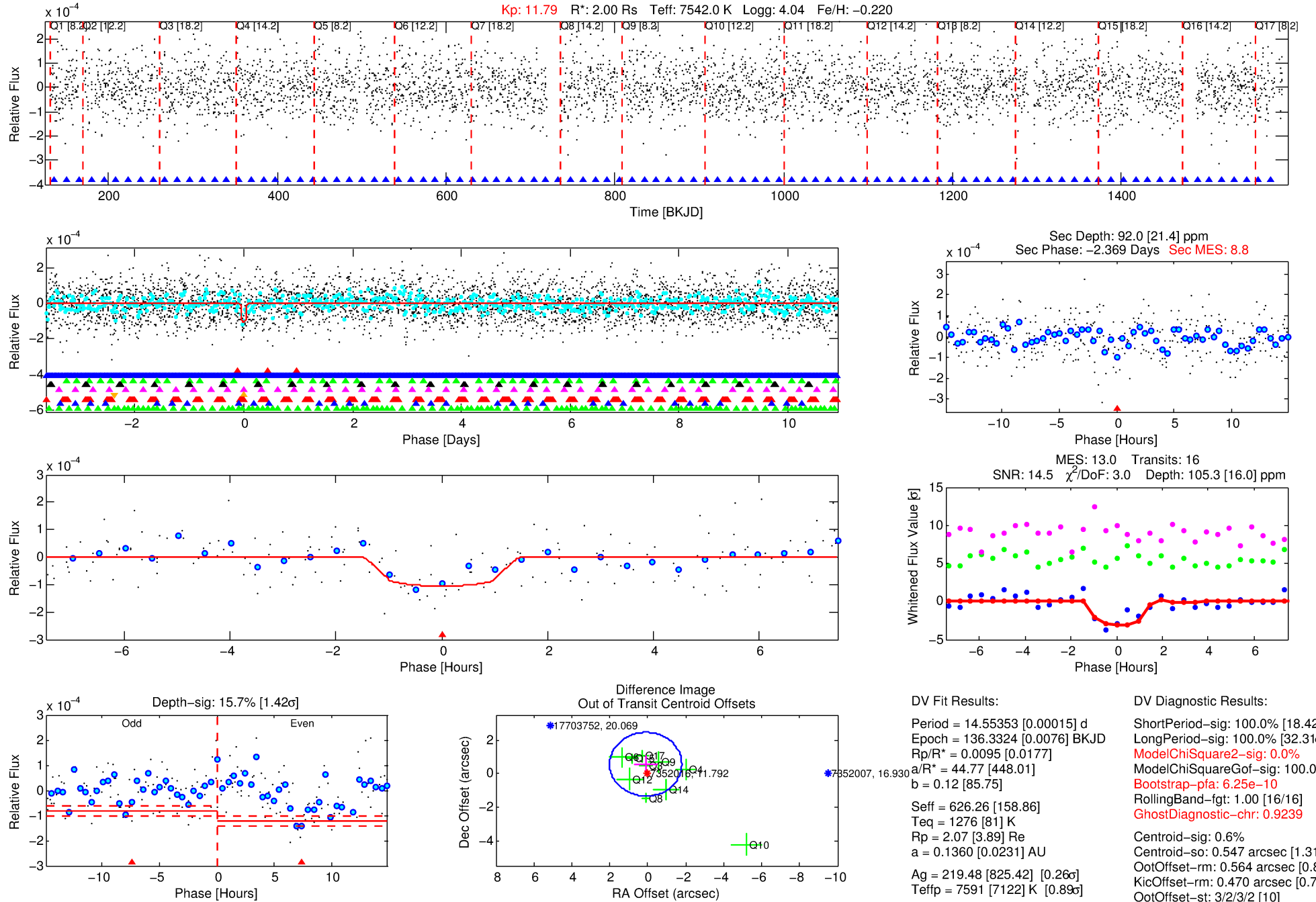
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-06

No Significant Match Found

DV One-Page Summary

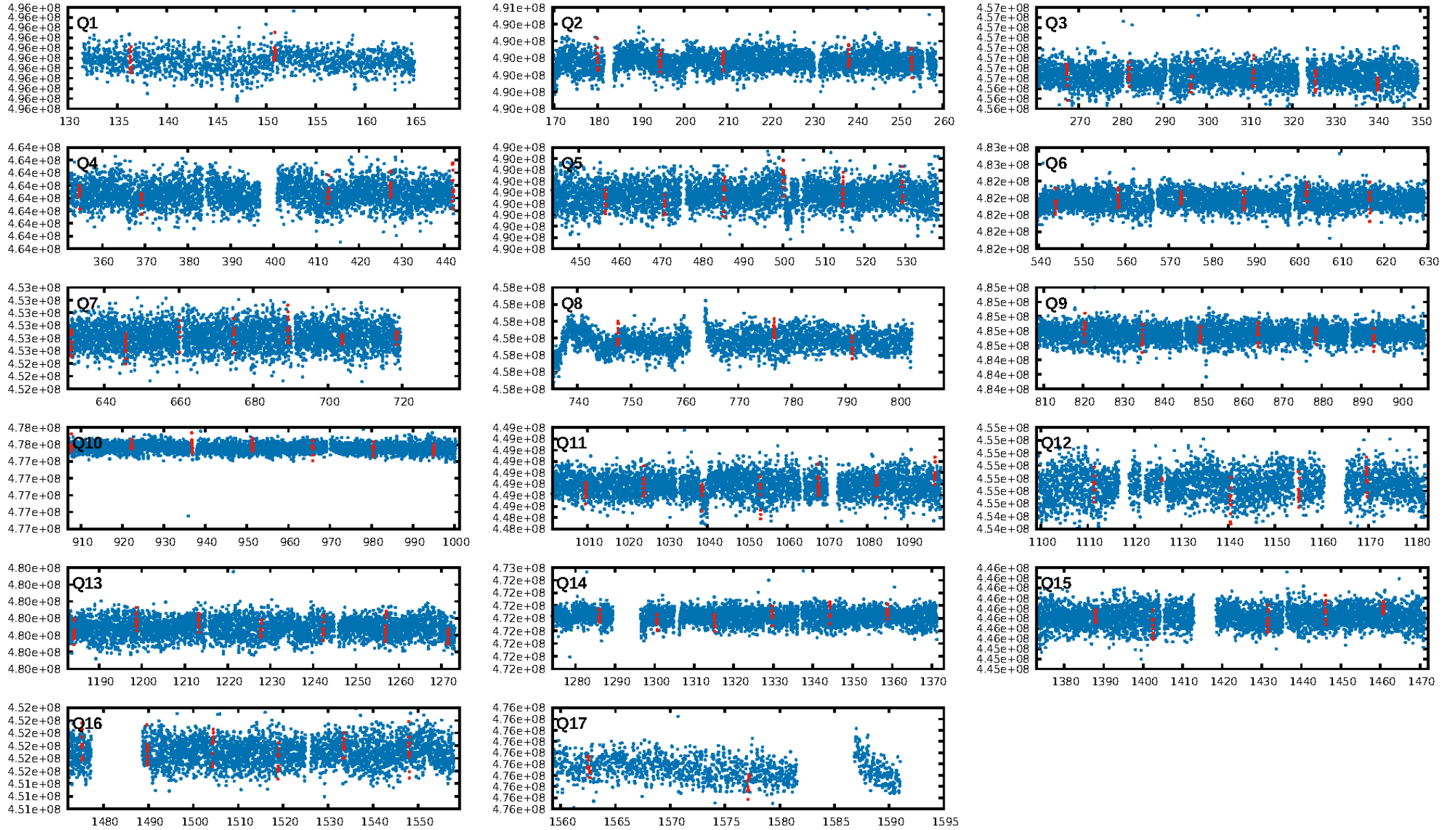
KIC: 7352016 Candidate: 6 of 9 Period: 14.554 d



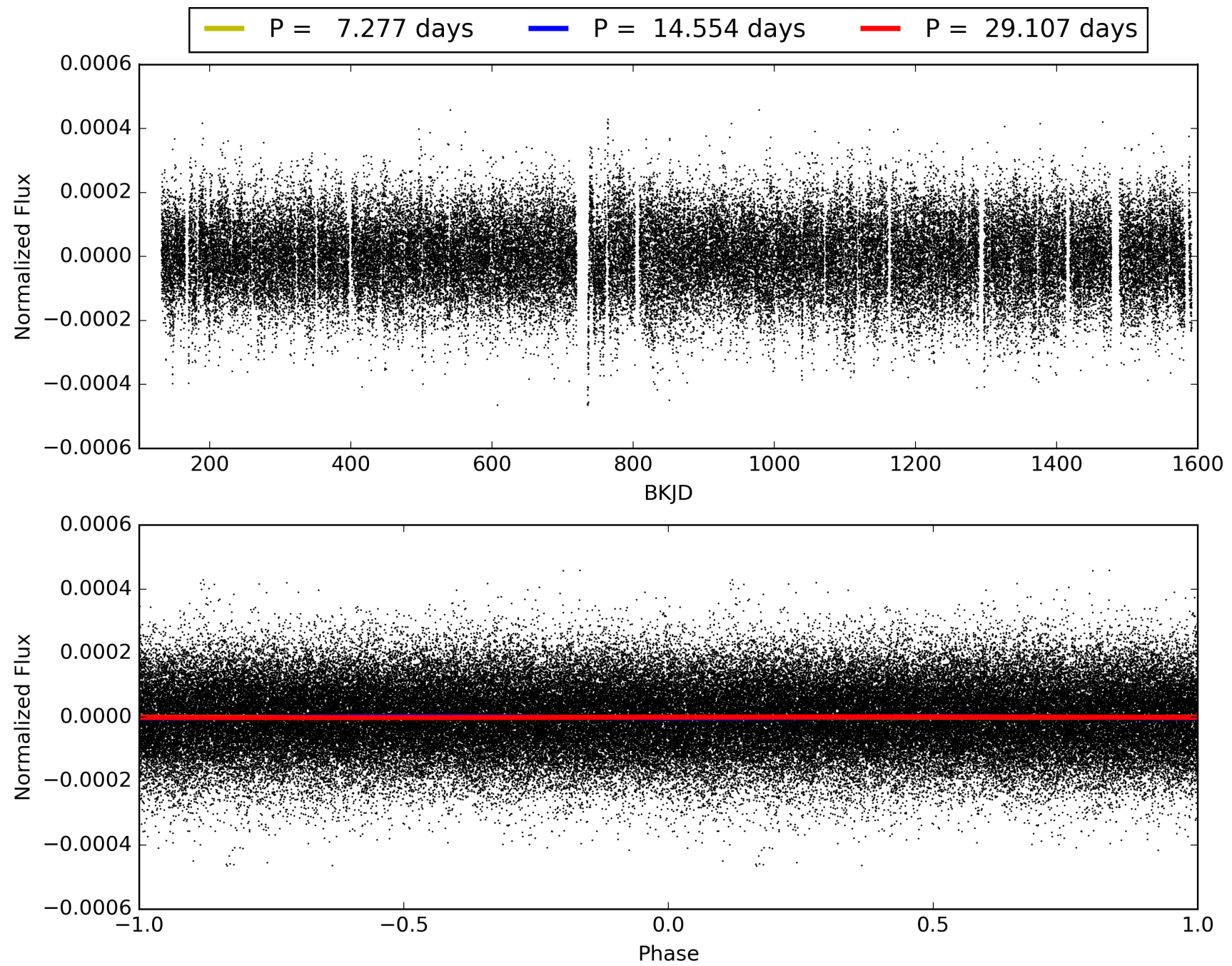
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:29:29 Z

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

TCE 007352016-06, PDC Light Curves

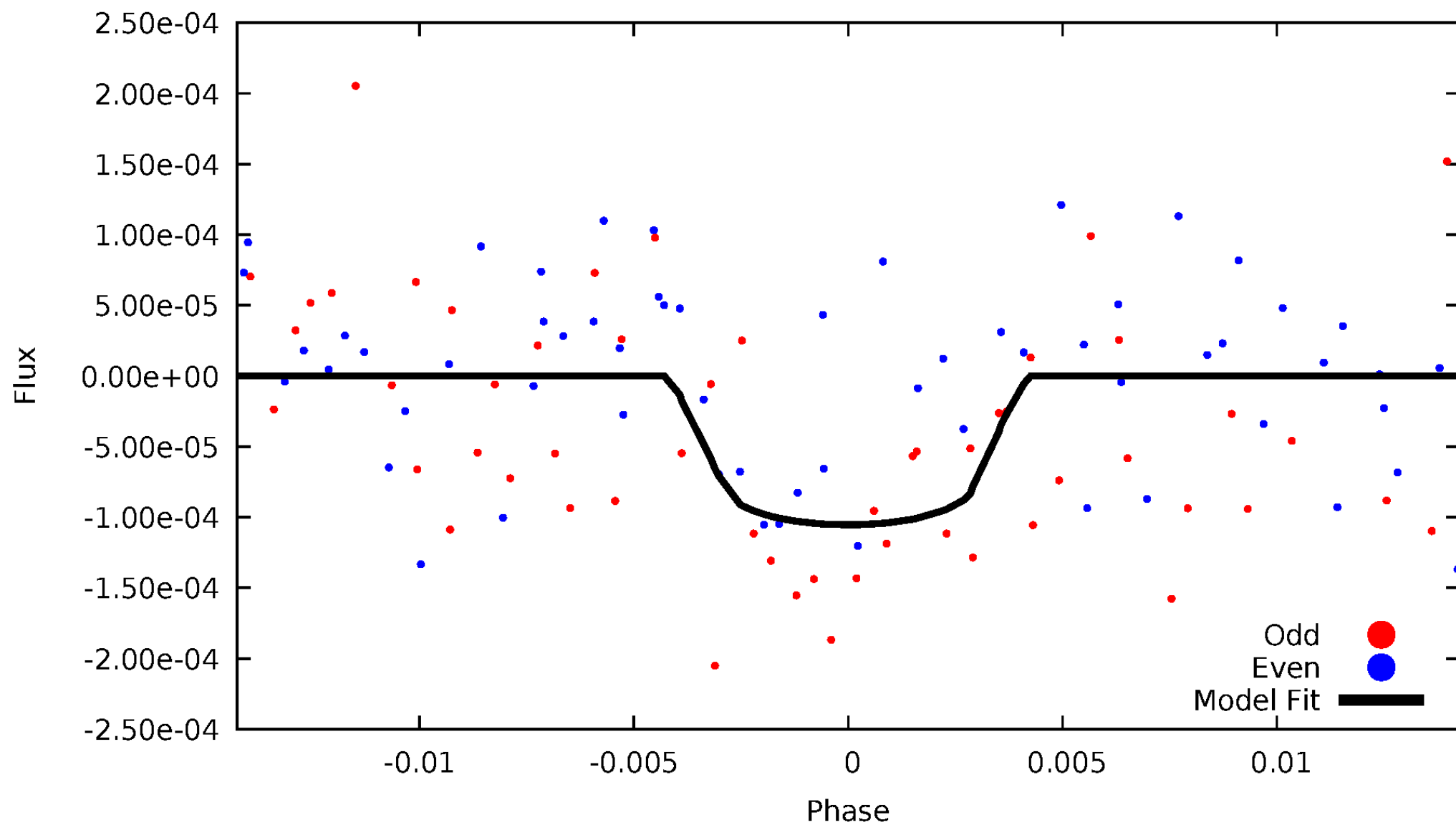


TCE 007352016-06



DV Odd/Even

TCE 007352016-06

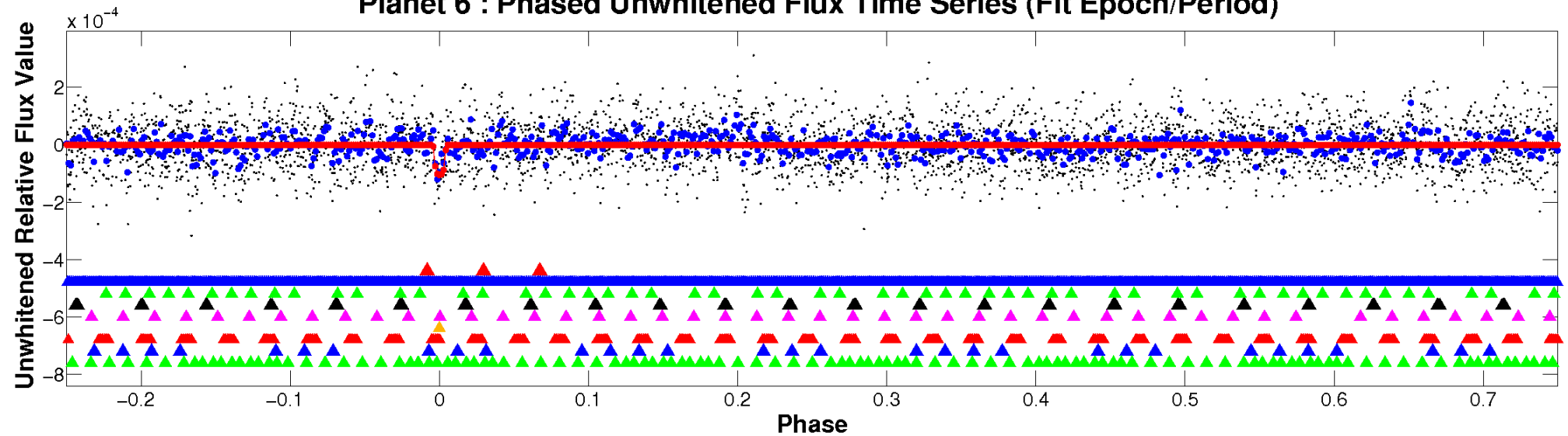


ALT Odd/Even

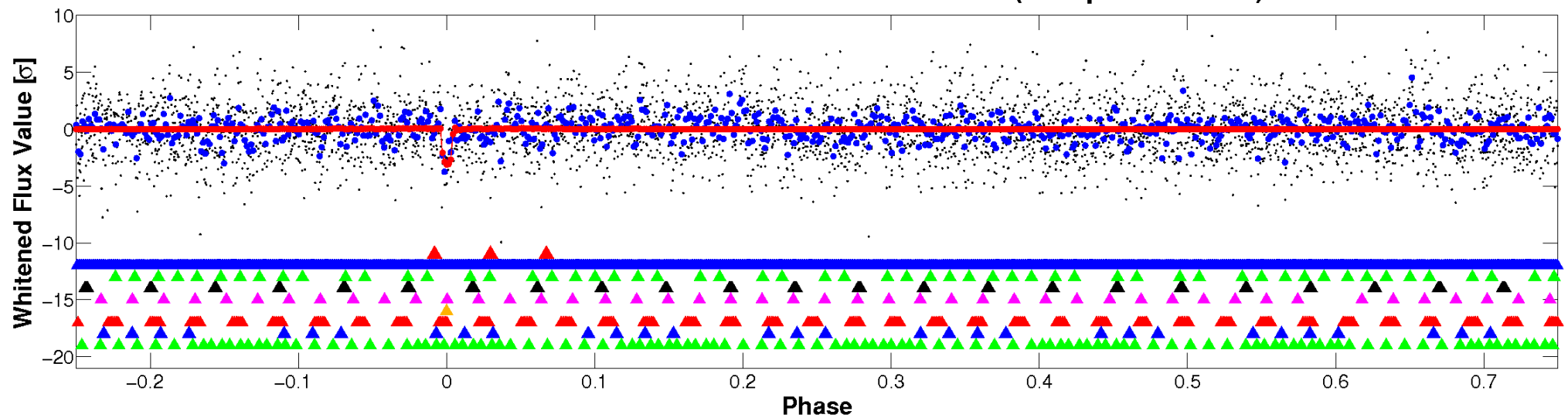
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

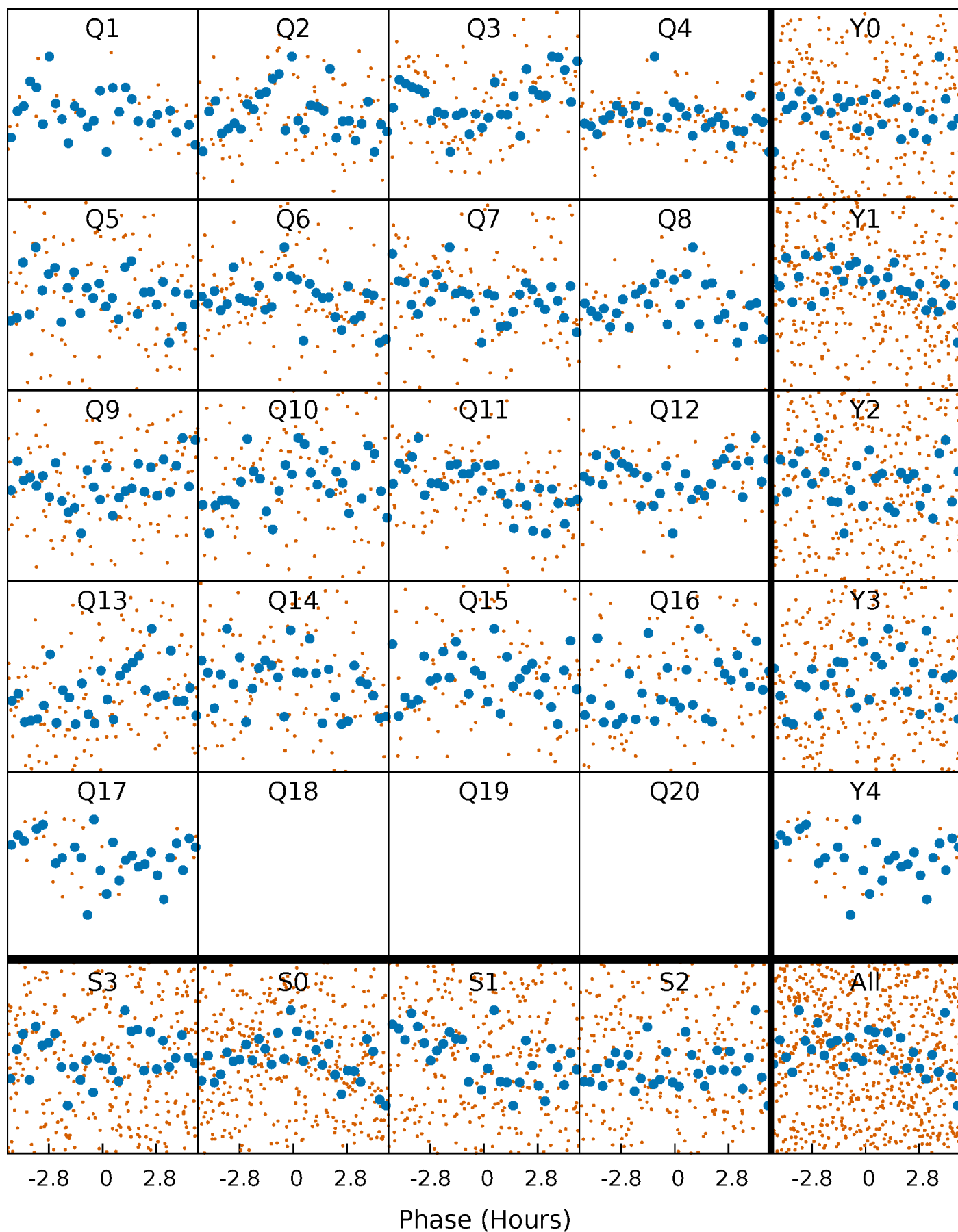


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



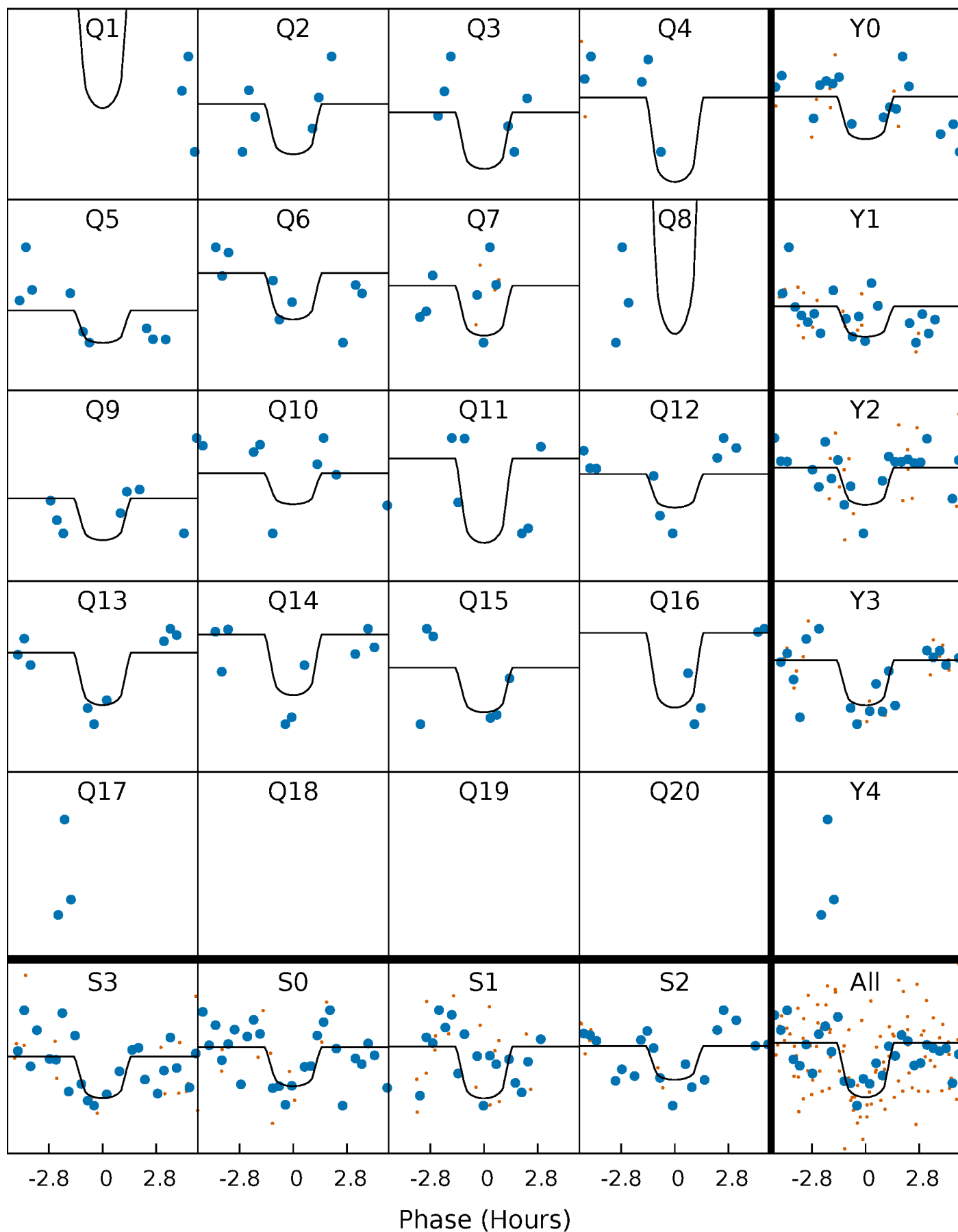
PDC Quarter-Phased Transit Curves

TCE 007352016-06 P= 14.553533 Days $T_0=136.332445$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007352016-06 P= 14.553533 Days $T_0=136.332445$ (BKJD)

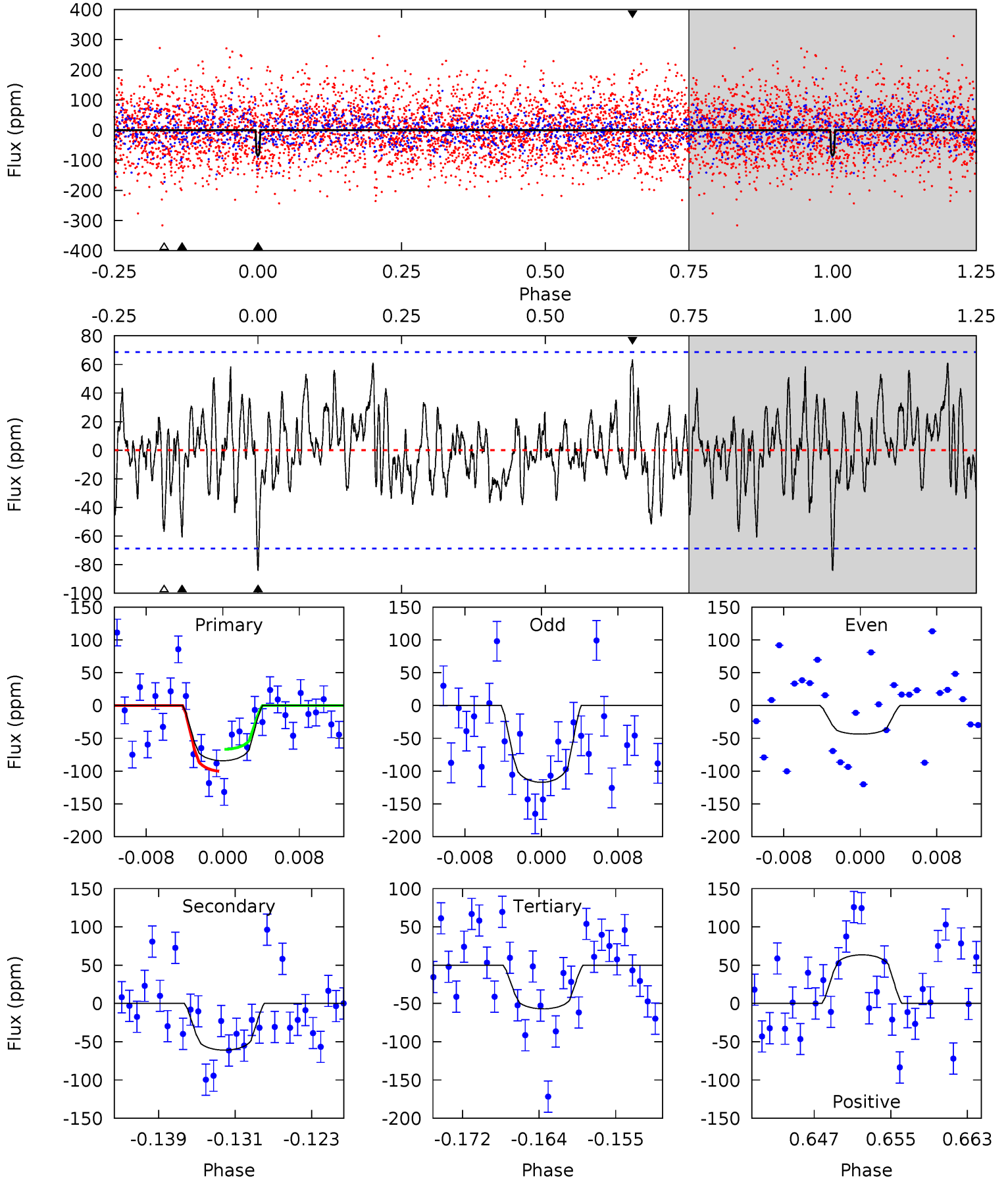


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007352016-06, P = 14.553533 Days, E = 121.778912 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.21	4.49	4.20	4.68	5.06	2.64	1.48	2.00	1.52	0.29	-0.19	2.70	0.83	0.43	1.22



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-61 ± 14	$3.57^{+3.23}_{-2.25}$	1773^{+89}_{-70}	5164^{+3701}_{-1179}	50^{+312}_{-37}
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 $A_{\text{obs}} \gg 1.0$

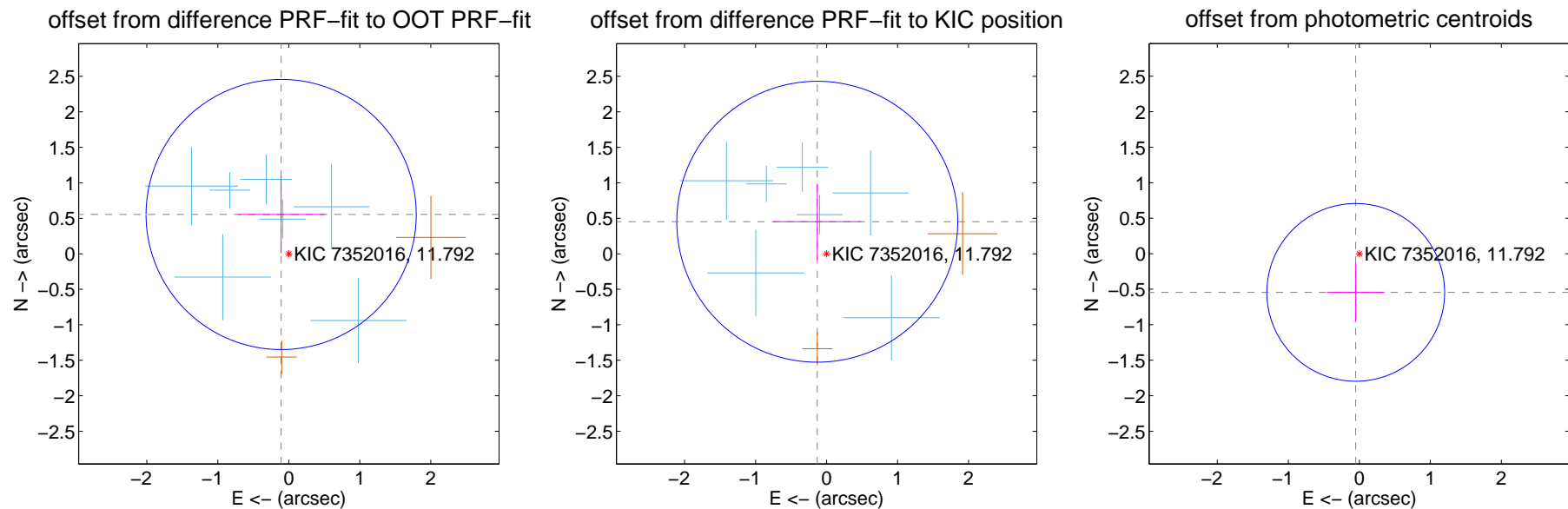
DV Centroid Data

Supplemental centroid analysis for 007352016-06. **Kepler magnitude: 11.79.** Transit SNR 14.51

There are 7 quarters with good PRF difference image offsets

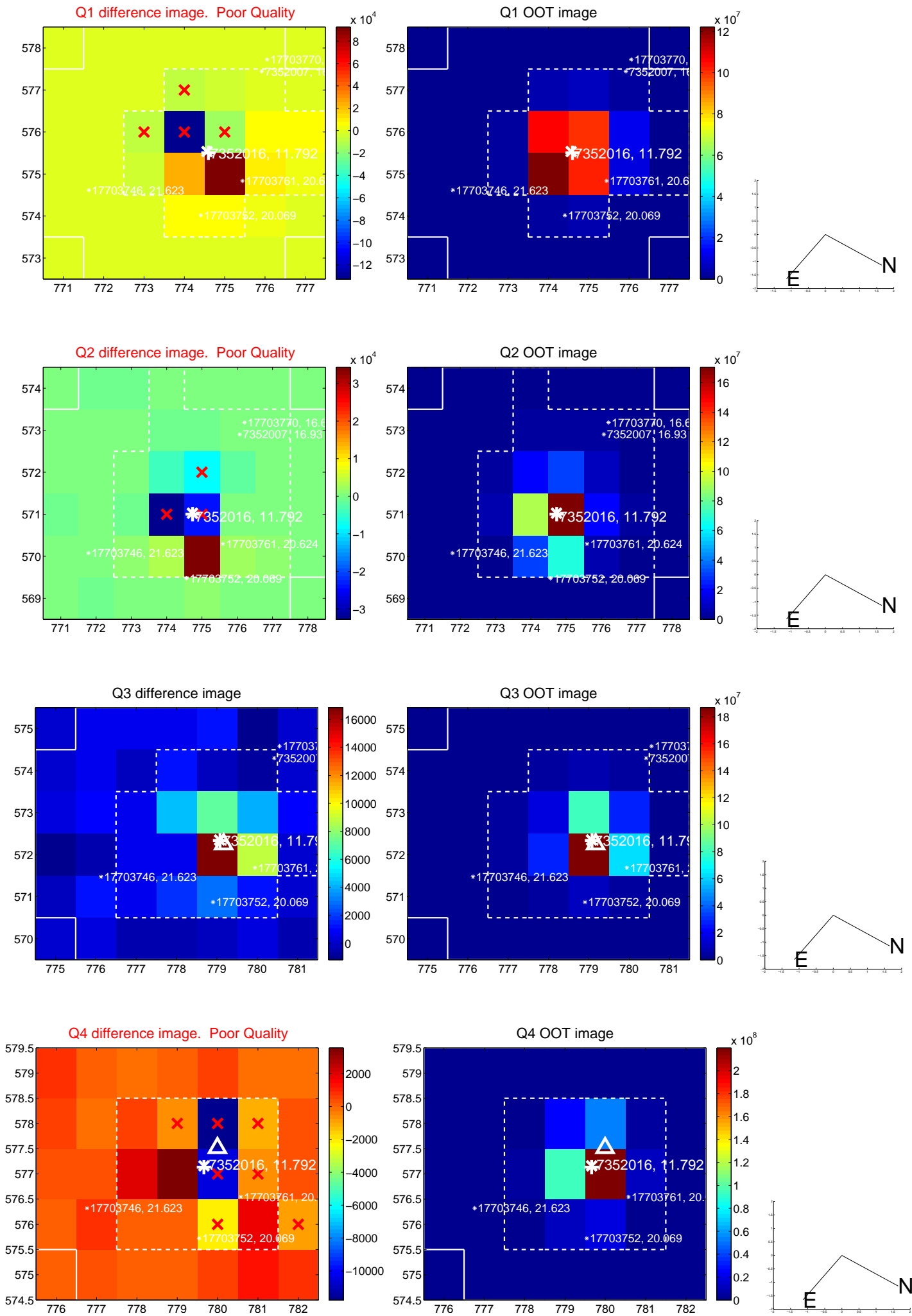
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.564 ± 0.634	0.89	0.108 ± 0.611	0.554 ± 0.546
PRF-fit source offset from KIC position	0.470 ± 0.659	0.71	0.131 ± 0.620	0.452 ± 0.538
photometric centroid source offset	0.55 ± 0.42	1.31	0.05 ± 0.40	-0.54 ± 0.42

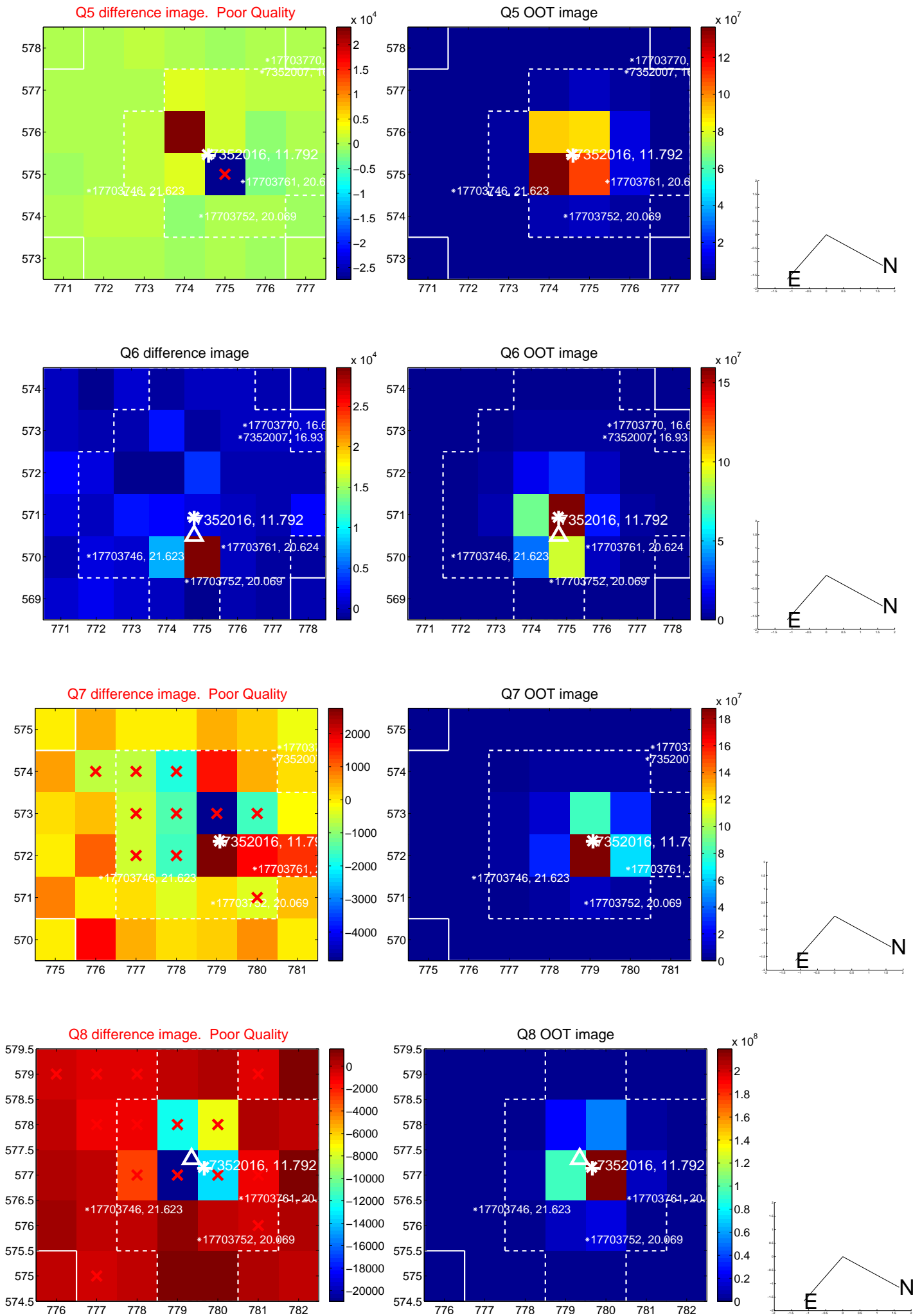


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

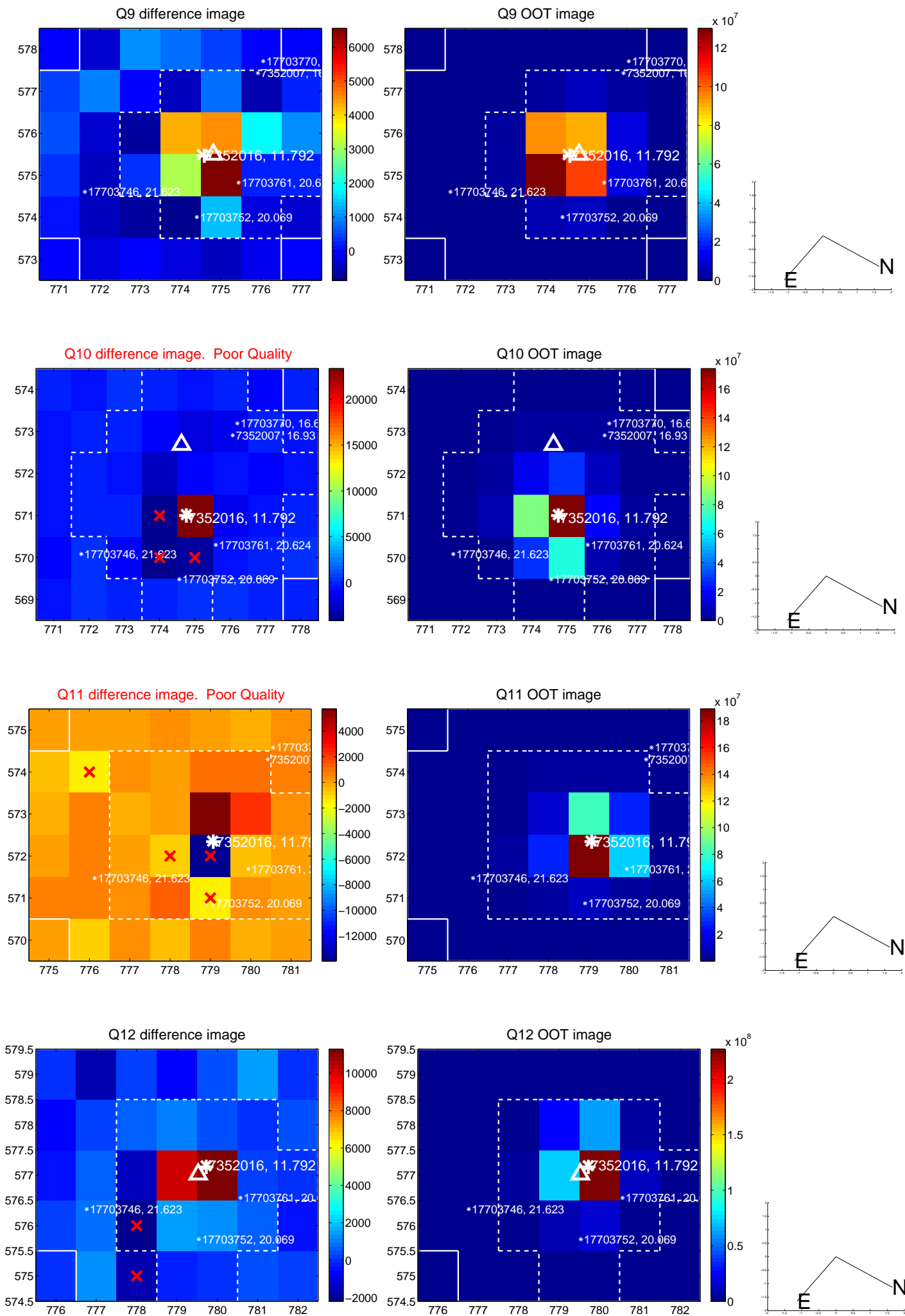
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



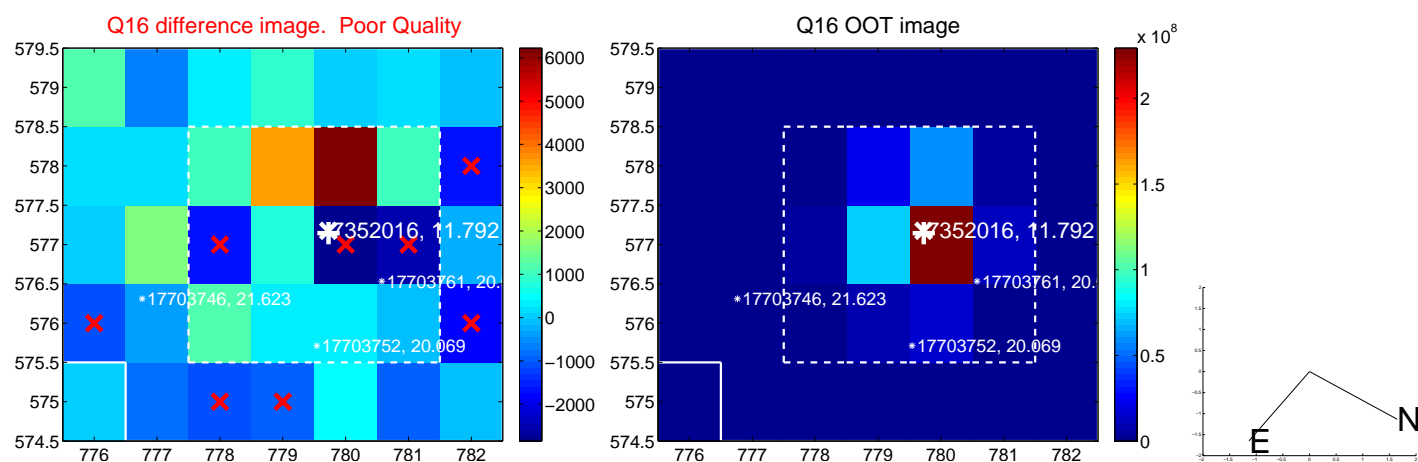
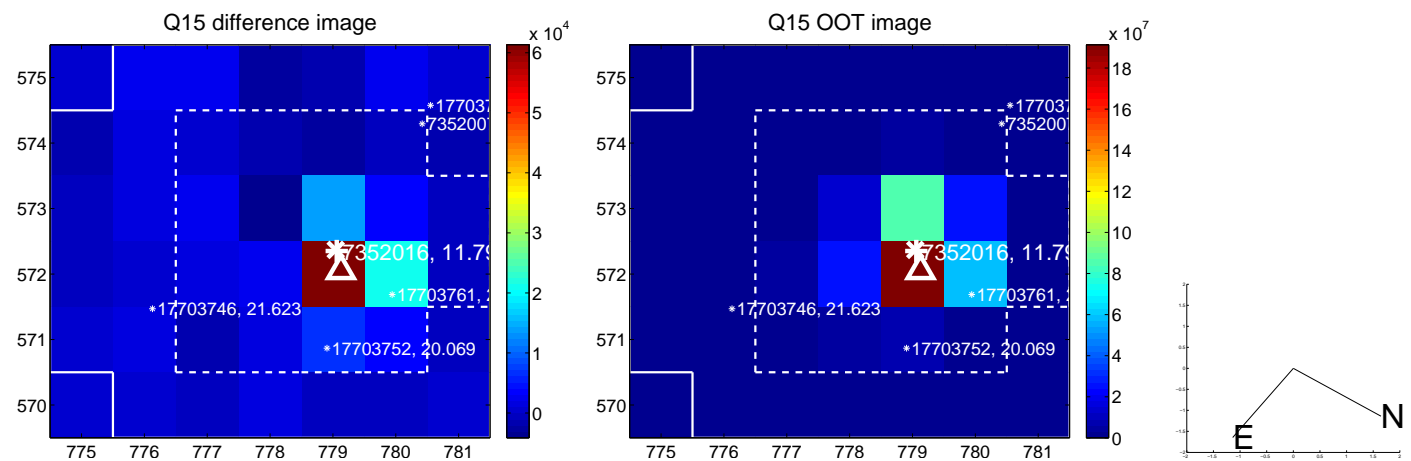
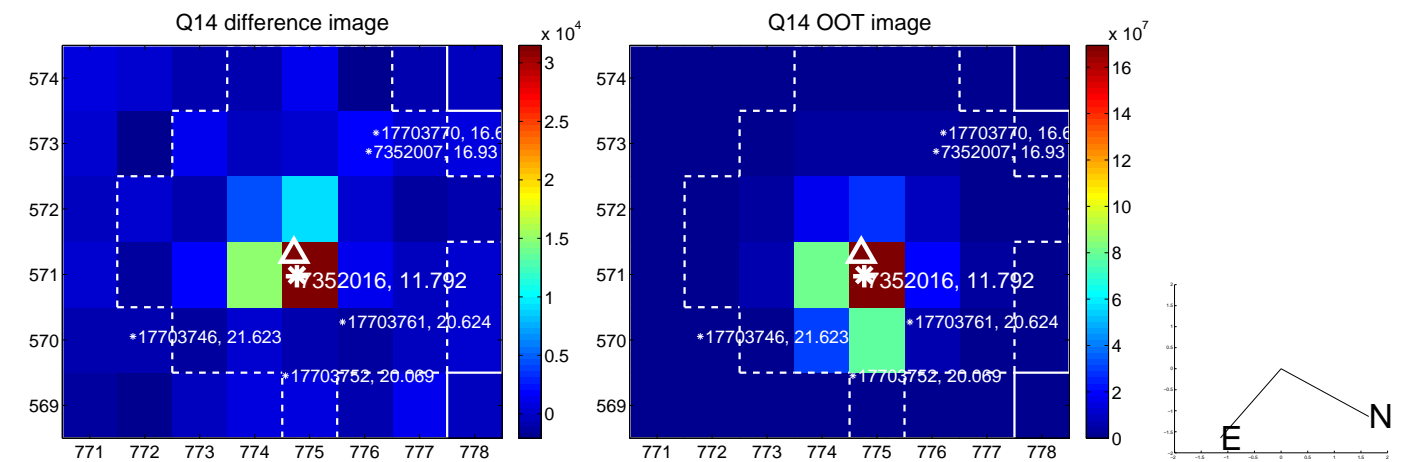
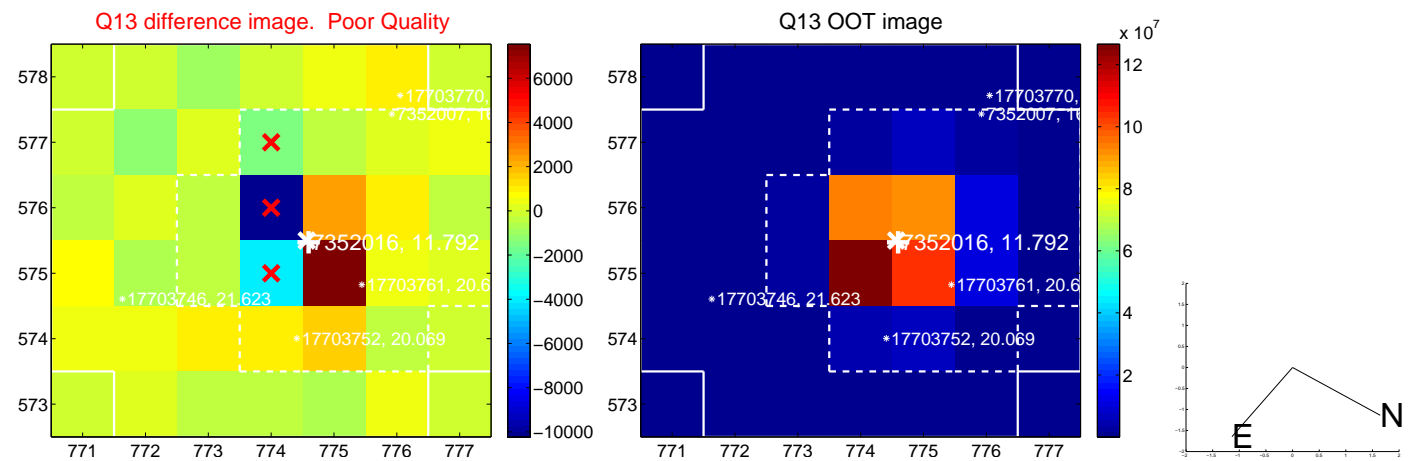
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



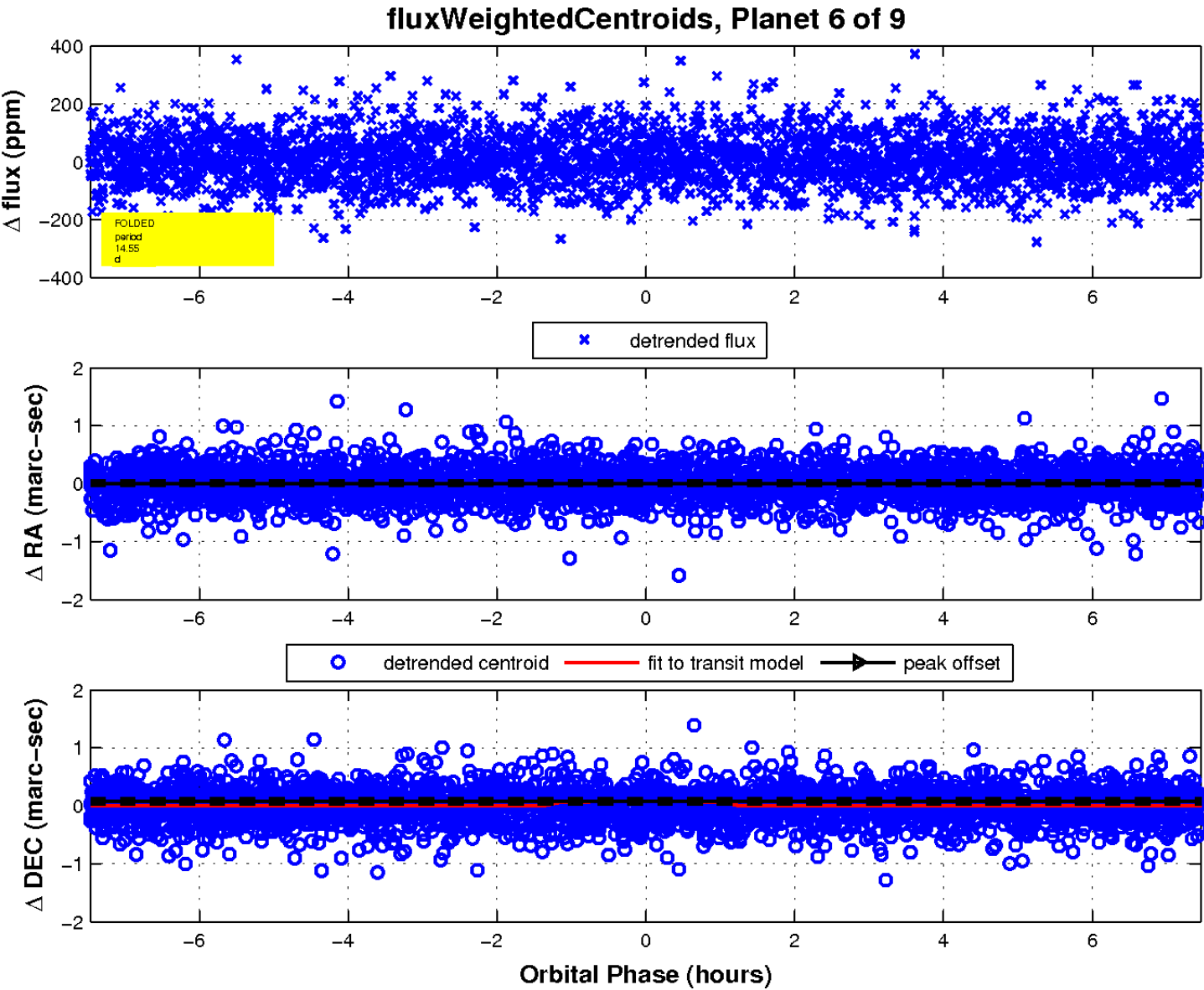
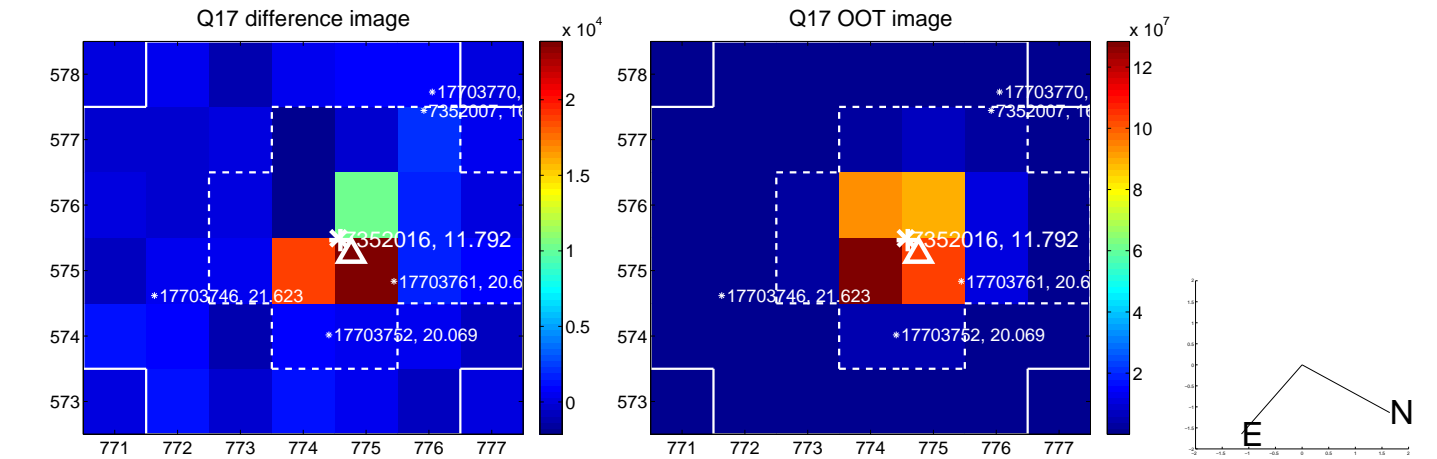
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

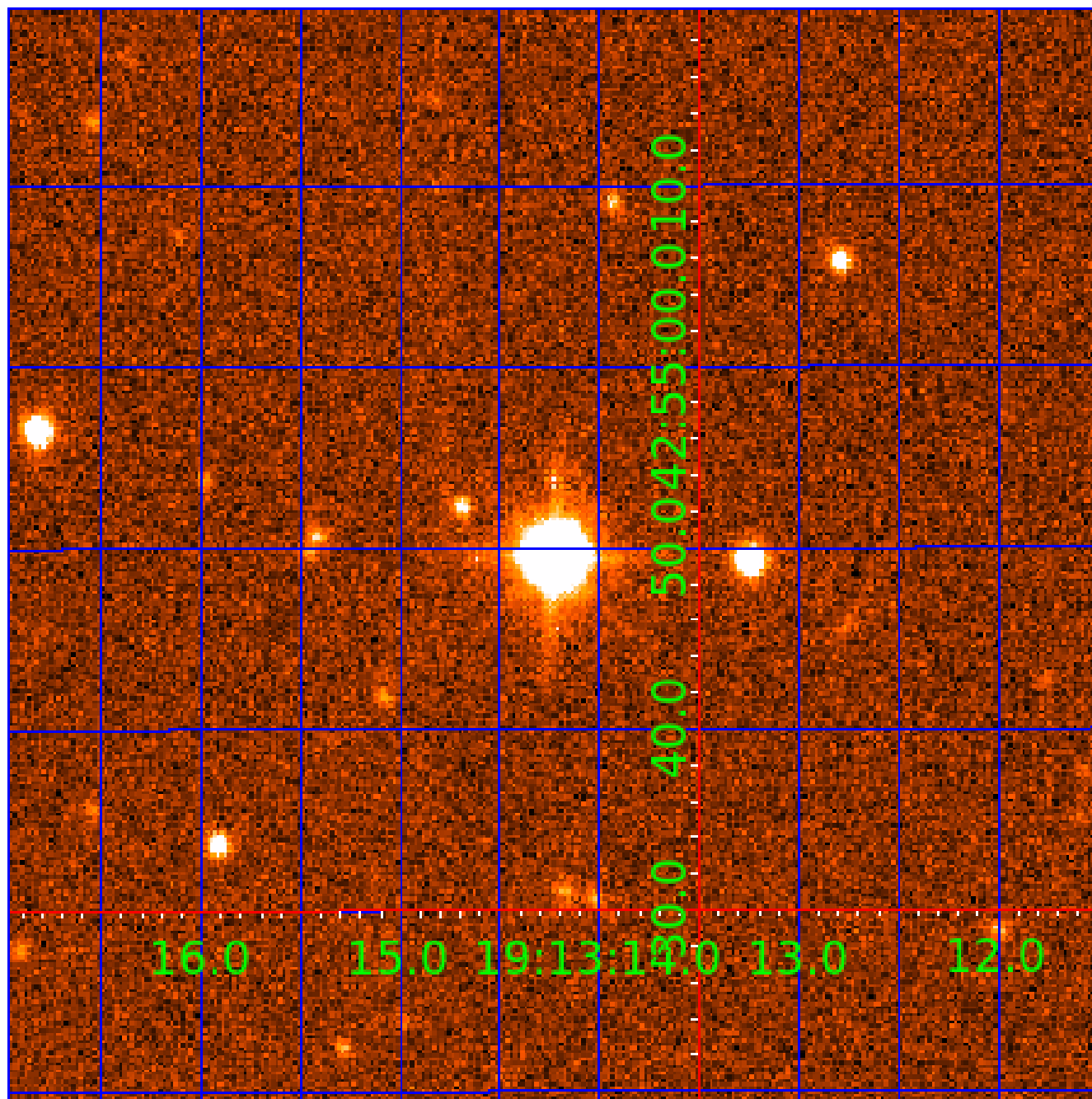


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007352016

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})
007352016-01	OBS	No	537.931366	501.151088	129.2	21.001	10.0	10.0	2.00	7542	2.67	5.09
007352016-02	OBS	No	0.919382	132.389291	5.1	6.700	8.3	5.5	2.00	7542	0.46	24891.70
007352016-03	OBS	No	25.621817	133.502165	186.4	1.138	14.8	13.0	2.00	7542	2.81	294.60
007352016-04	OBS	No	18.349737	131.543780	161.3	1.323	15.2	12.9	2.00	7542	2.66	459.77
007352016-05	OBS	No	31.583942	147.492154	109.5	4.393	11.7	13.0	2.00	7542	2.39	222.89
007352016-06	OBS	No	14.553533	136.332445	105.3	2.490	13.0	14.5	2.00	7542	2.07	626.26
007352016-07	OBS	No	6.873045	134.622509	35.6	6.035	12.0	10.3	2.00	7542	1.40	1702.88
007352016-08	OBS	No	46.925739	166.830456	156.2	1.233	12.8	12.4	2.00	7542	2.54	131.47
007352016-09	OBS	No	12.448509	138.957477	145.3	1.148	12.7	11.5	2.00	7542	2.57	771.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007352016-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

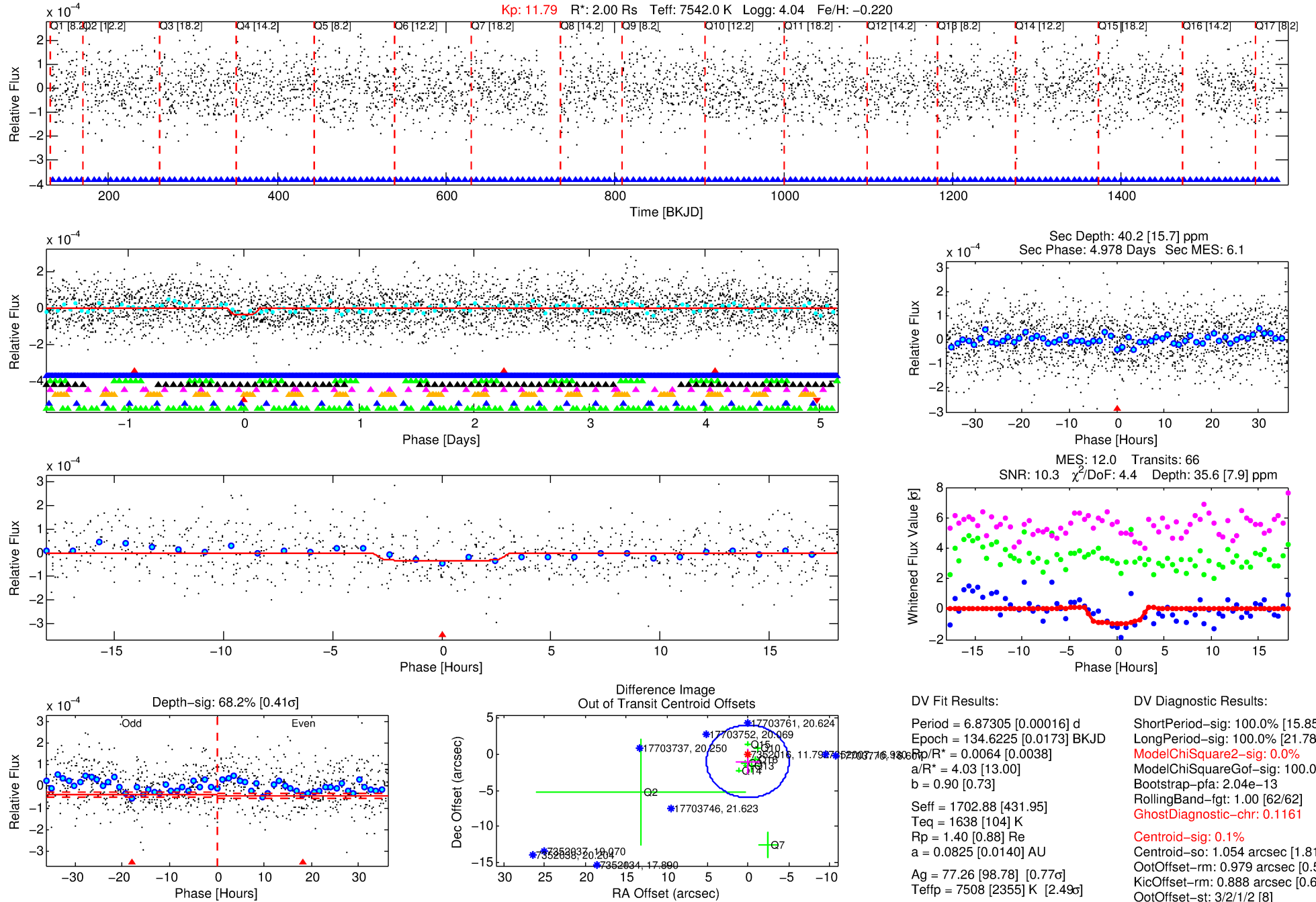
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-07

No Significant Match Found

DV One-Page Summary

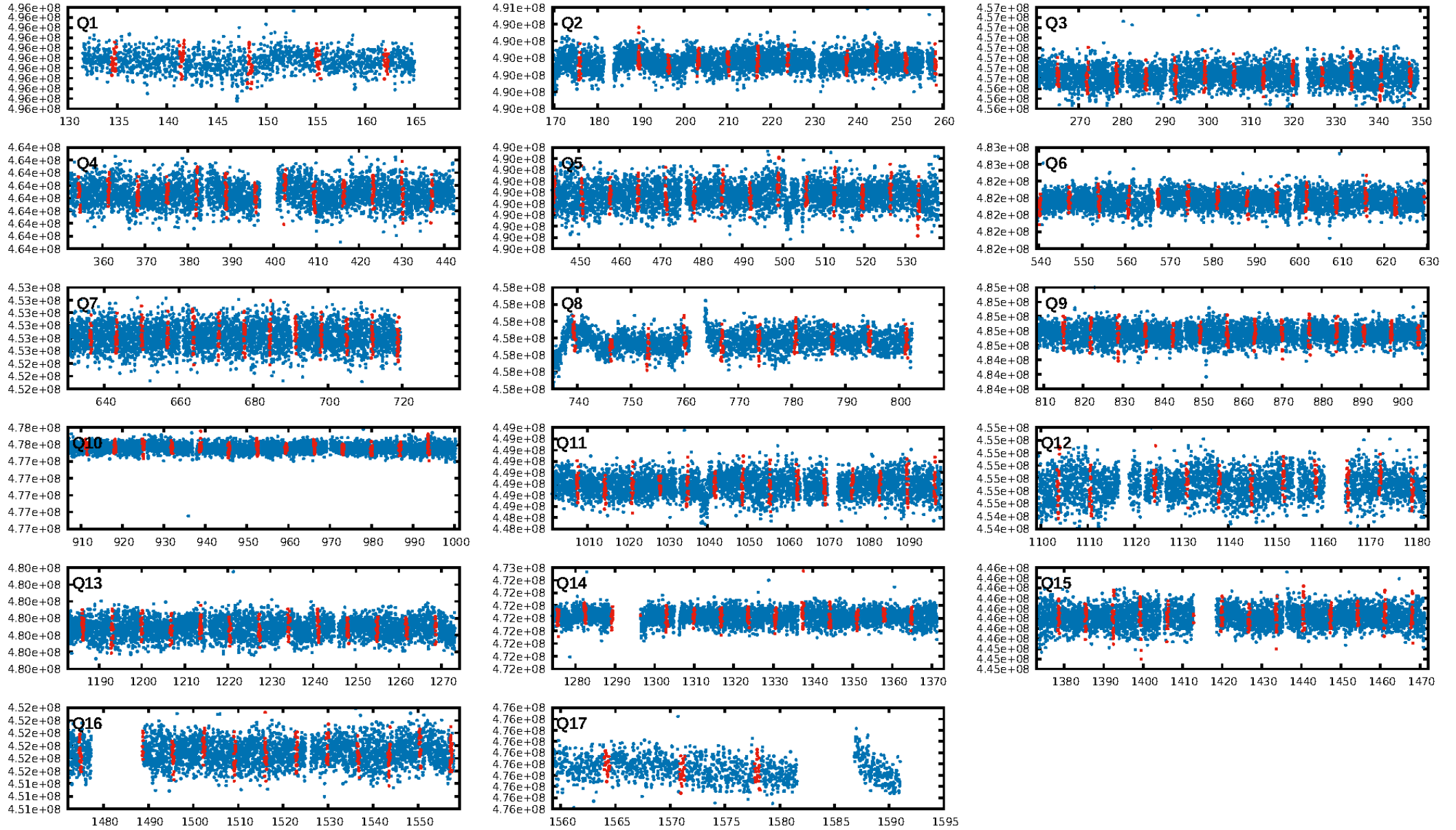
KIC: 7352016 Candidate: 7 of 9 Period: 6.873 d



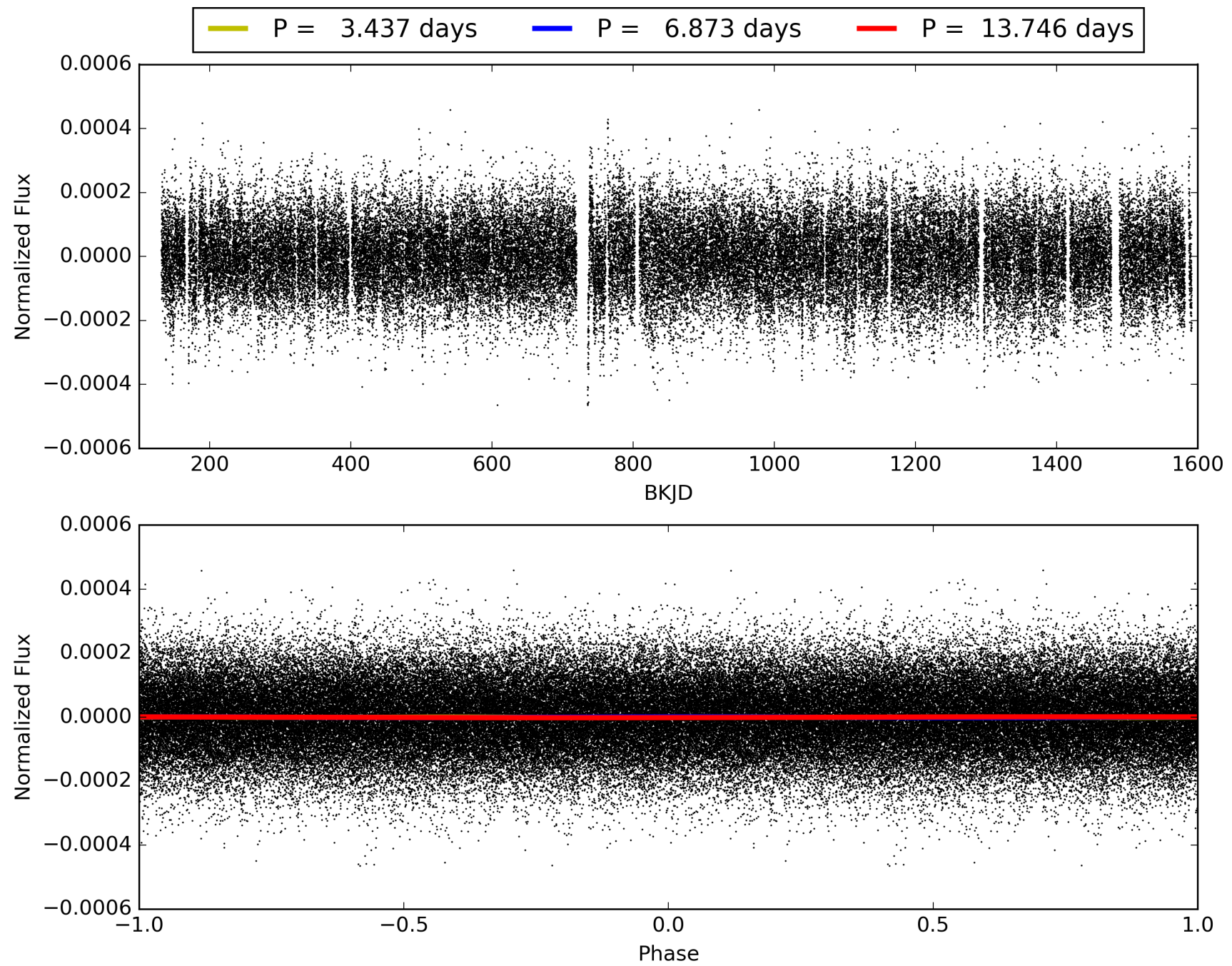
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:29:32 Z

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

TCE 007352016-07, PDC Light Curves

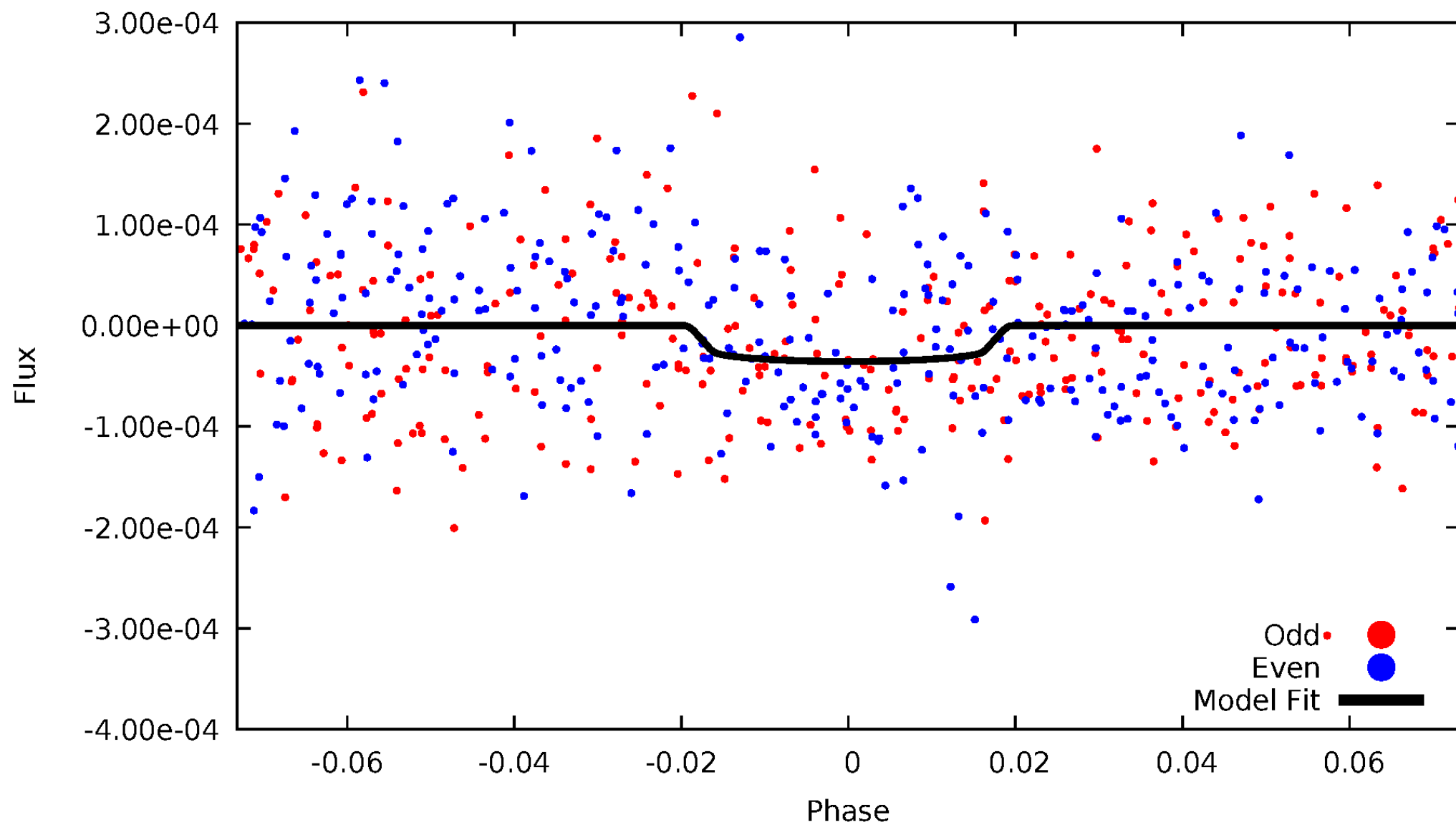


TCE 007352016-07



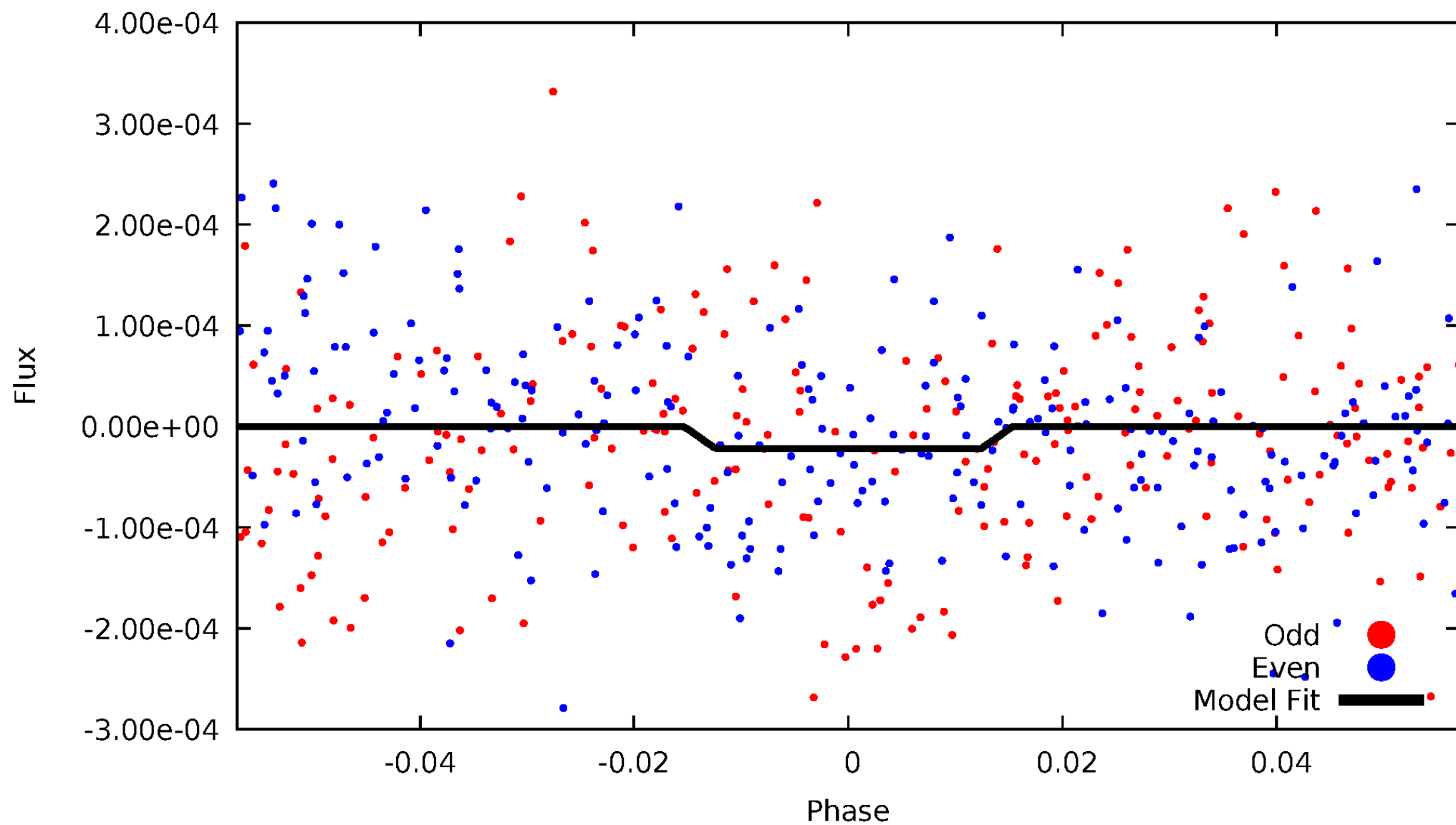
DV Odd/Even

TCE 007352016-07



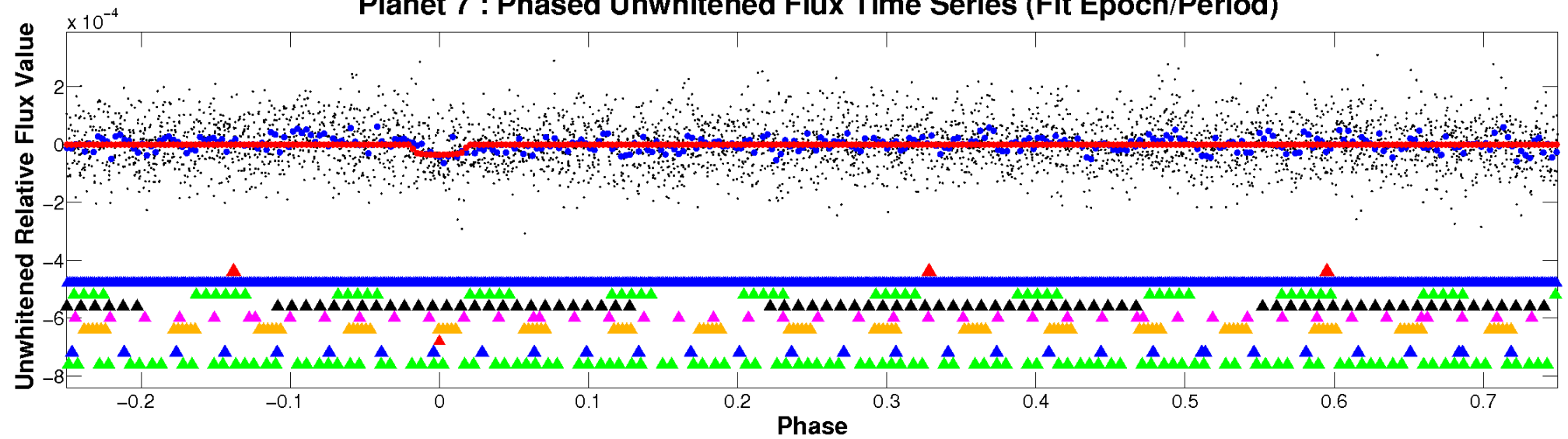
ALT Odd/Even

TCE 007352016-07

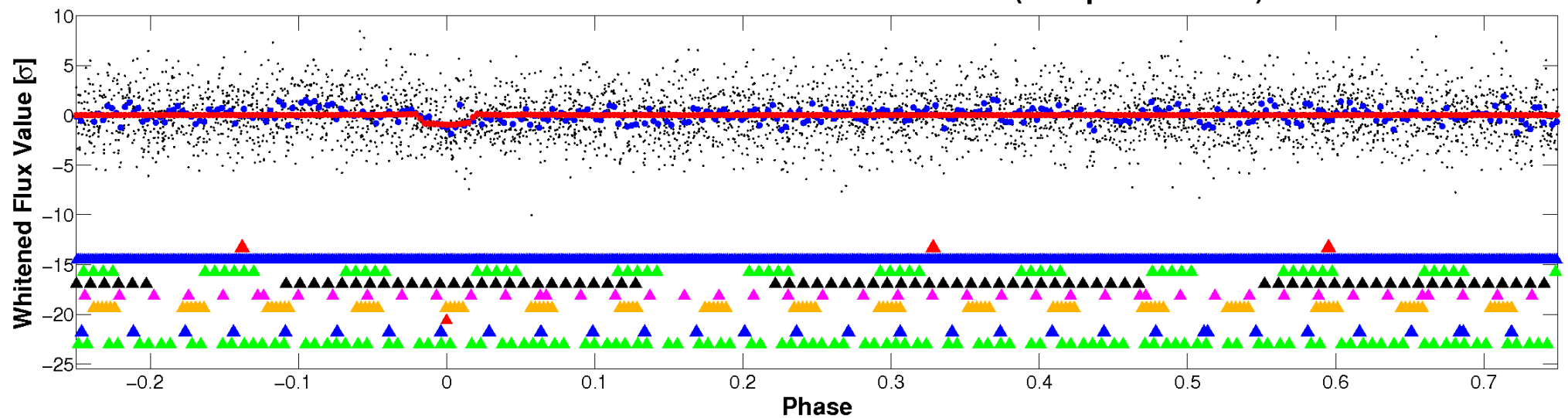


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

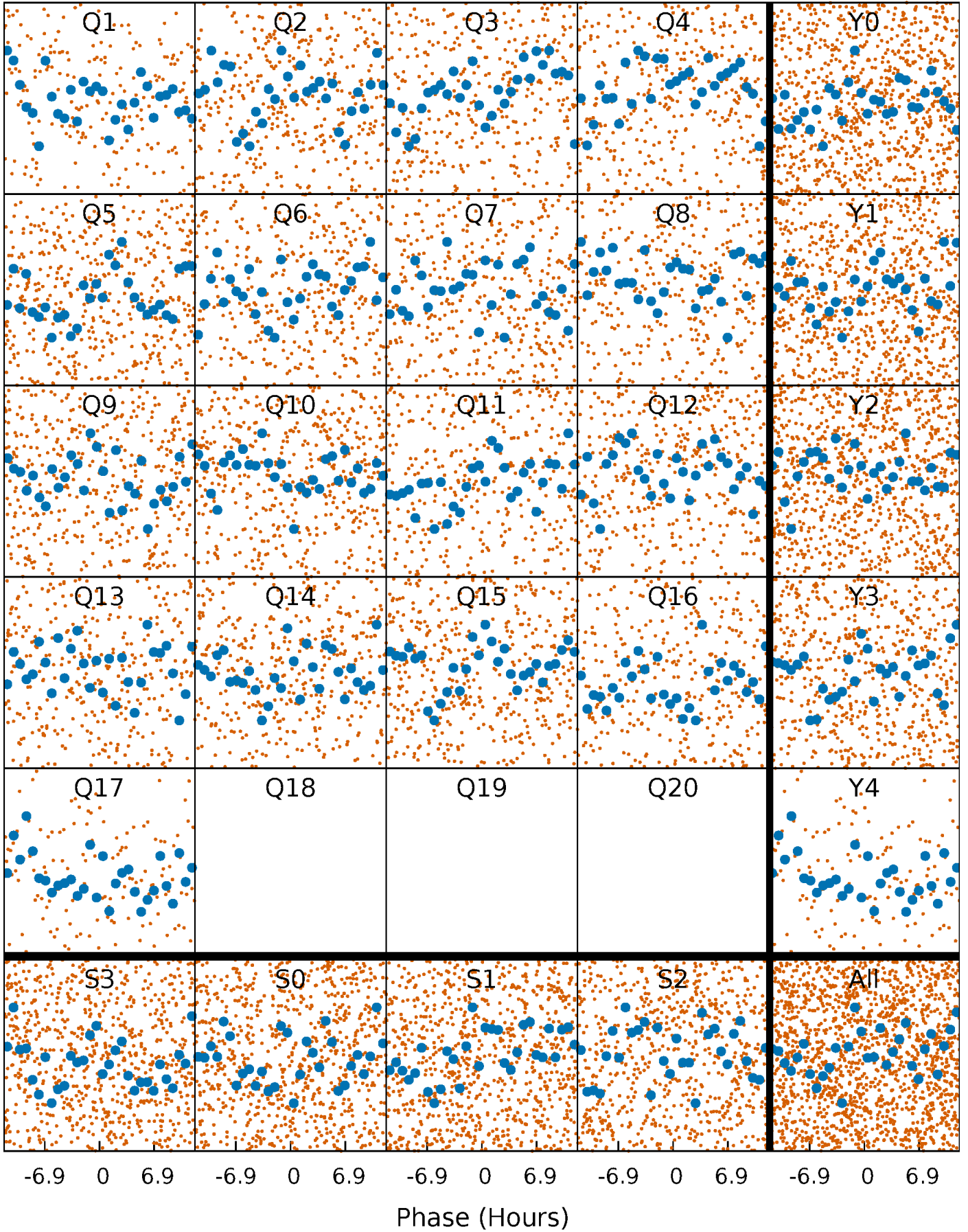


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



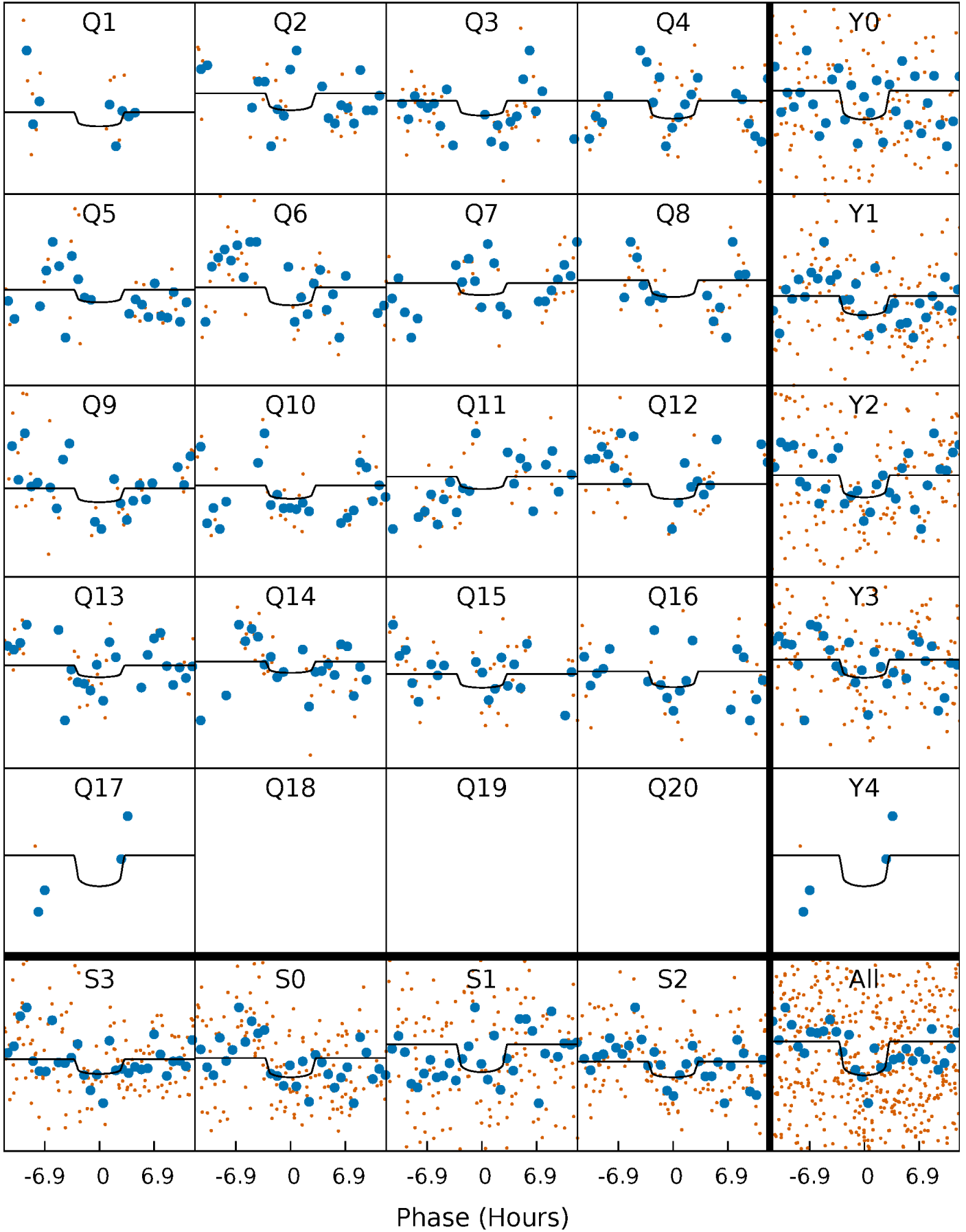
PDC Quarter-Phased Transit Curves

TCE 007352016-07 P= 6.873045 Days $T_0=134.622509$ (BKJD)



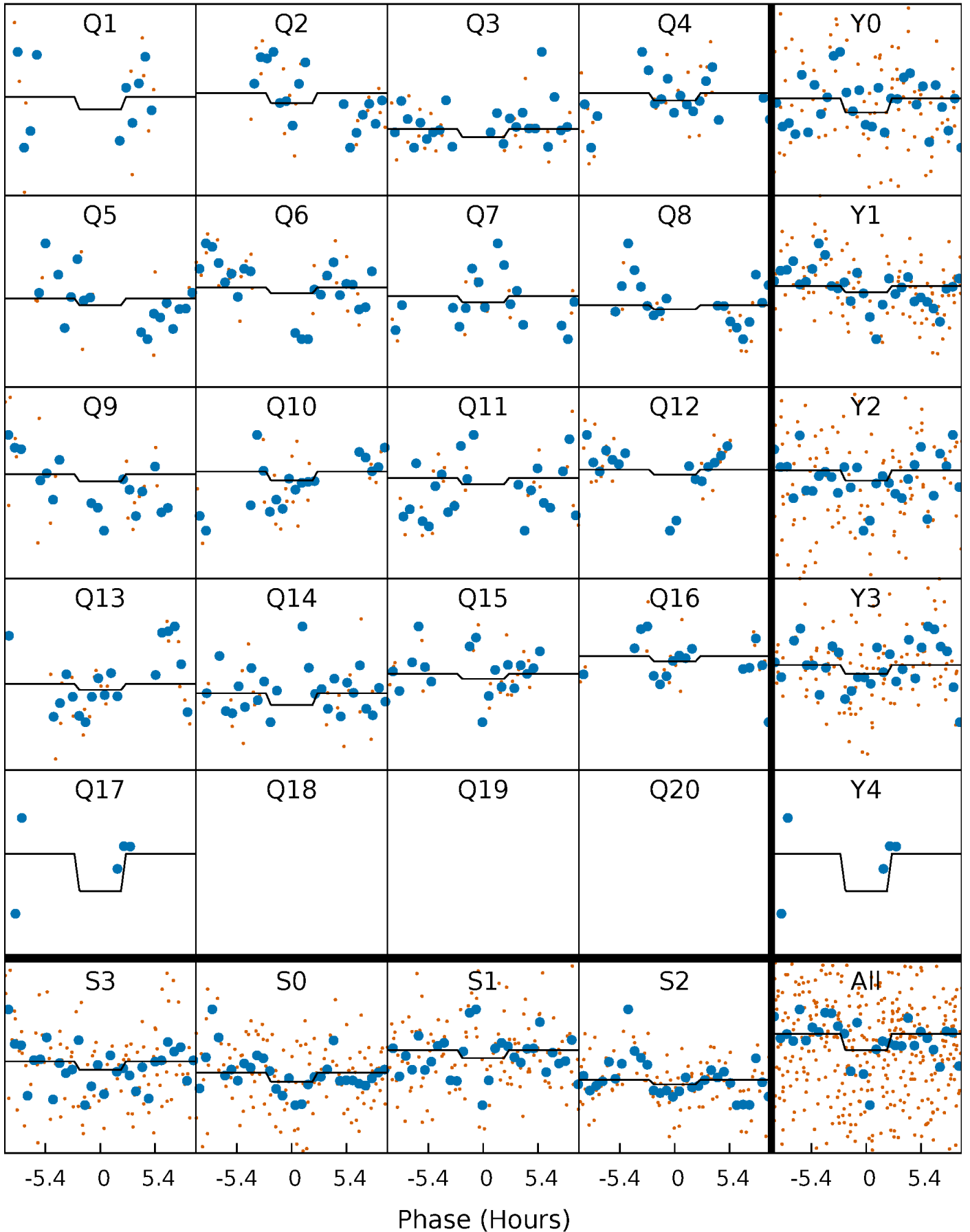
DV Quarter-Phased Transit Curves

TCE 007352016-07 P= 6.873045 Days $T_0=134.622509$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

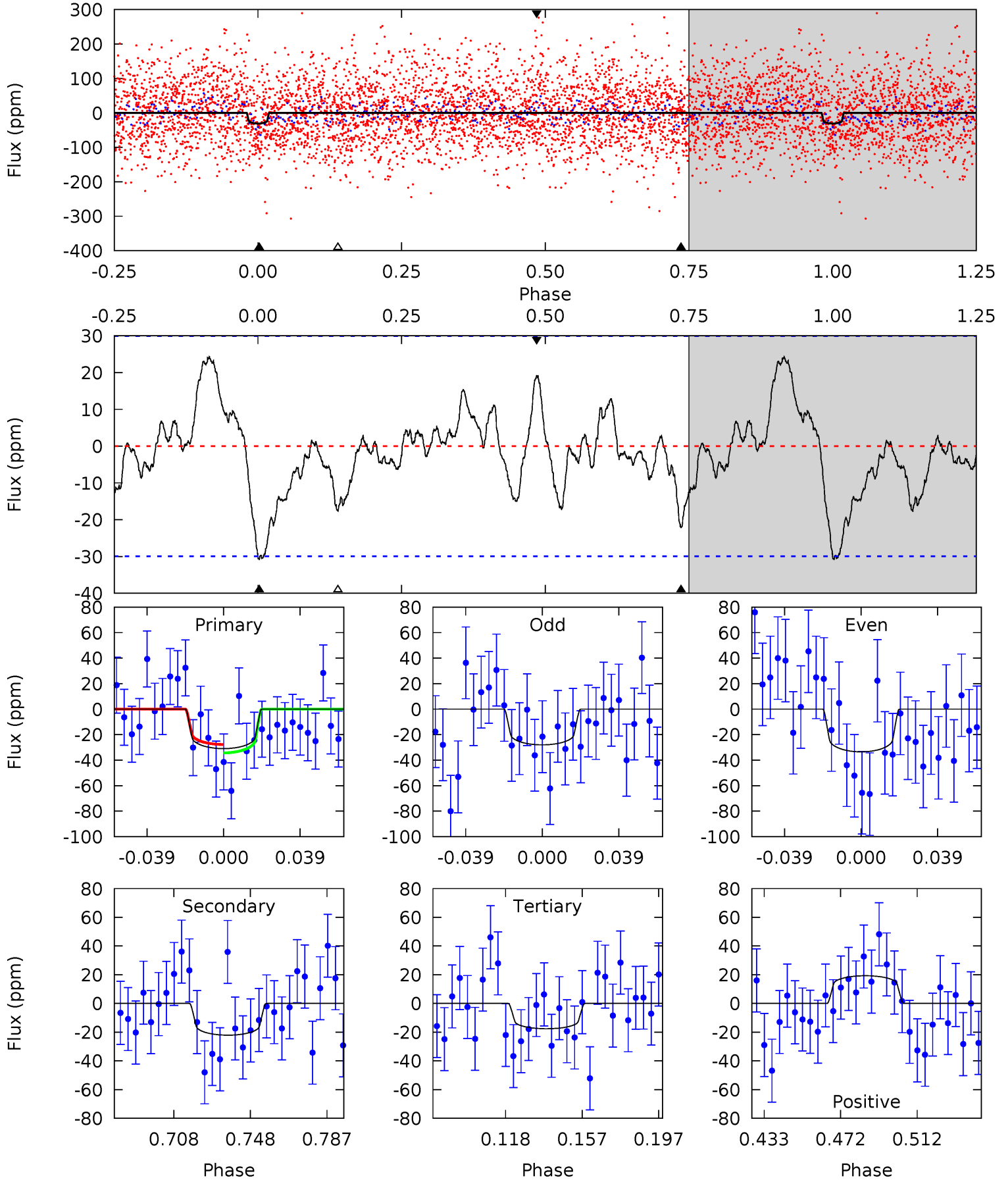
TCE 007352016-07 P= 6.873386 Days $T_0=134.574199$ (BKJD)



DV Model-Shift Uniqueness Test

007352016-07, P = 6.873045 Days, E = 127.749464 Days

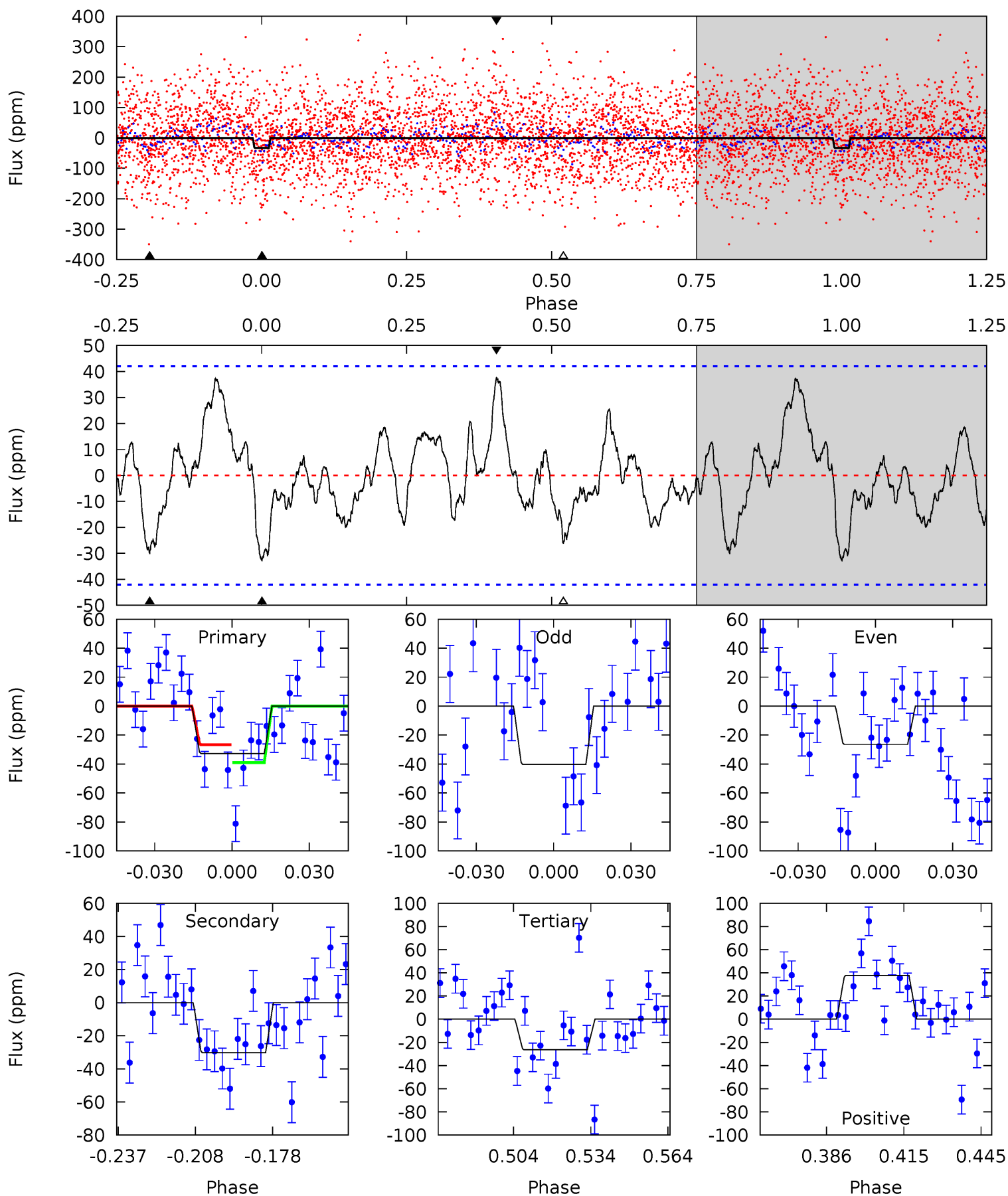
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.92	3.51	2.80	3.07	4.76	2.06	1.36	2.12	1.85	0.71	0.45	0.44	0.84	0.44	0.52



Alt Model-Shift Uniqueness Test

007352016-07, P = 6.873386 Days, E = 127.700813 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.75	3.46	3.02	4.31	4.81	2.17	1.49	0.74	-0.56	0.45	-0.85	0.79	2.40	0.53	0.71



Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-22 ± 6	$1.37^{+0.84}_{-0.75}$	2277^{+106}_{-108}	6320^{+3887}_{-1315}	44^{+166}_{-29}
Alt.	-30 ± 9	$1.11^{+0.80}_{-0.70}$	2281^{+96}_{-98}	7788^{+9011}_{-2047}	85^{+548}_{-56}

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

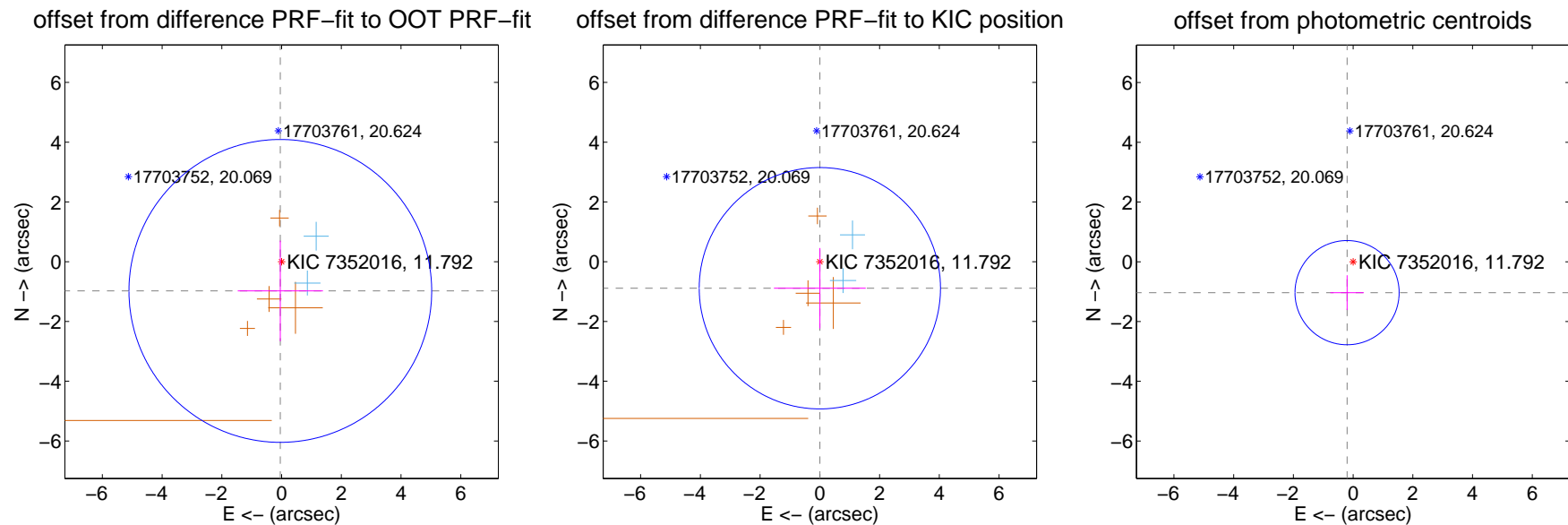
DV Centroid Data

Supplemental centroid analysis for 007352016-07. **Kepler magnitude: 11.79.** Transit SNR 10.30

There are 2 quarters with good PRF difference image offsets

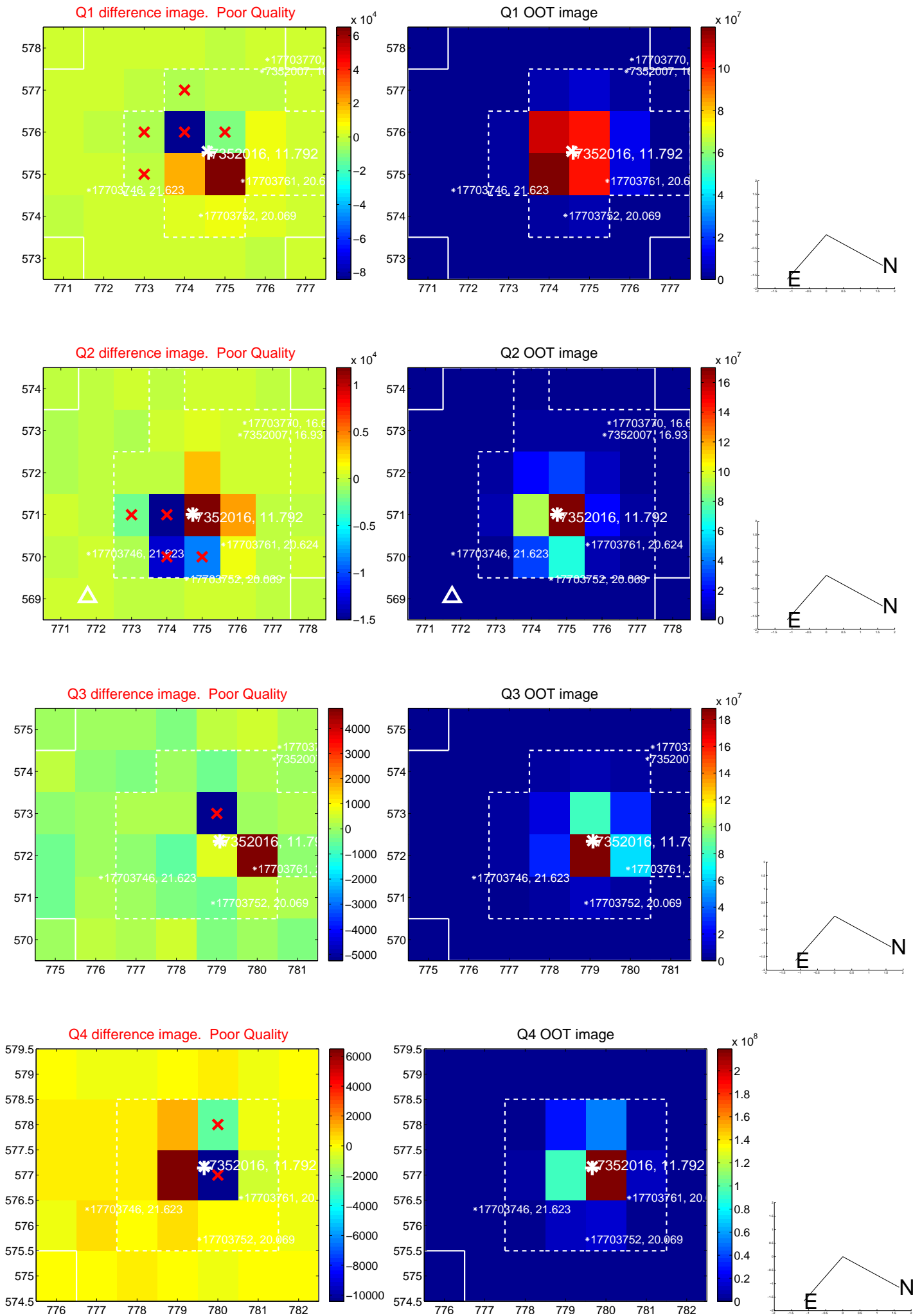
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.979 ± 1.689	0.58	0.042 ± 1.426	-0.978 ± 1.685
PRF-fit source offset from KIC position	0.888 ± 1.346	0.66	-0.000 ± 1.537	-0.888 ± 1.346
photometric centroid source offset	1.05 ± 0.58	1.81	0.20 ± 0.56	-1.03 ± 0.58

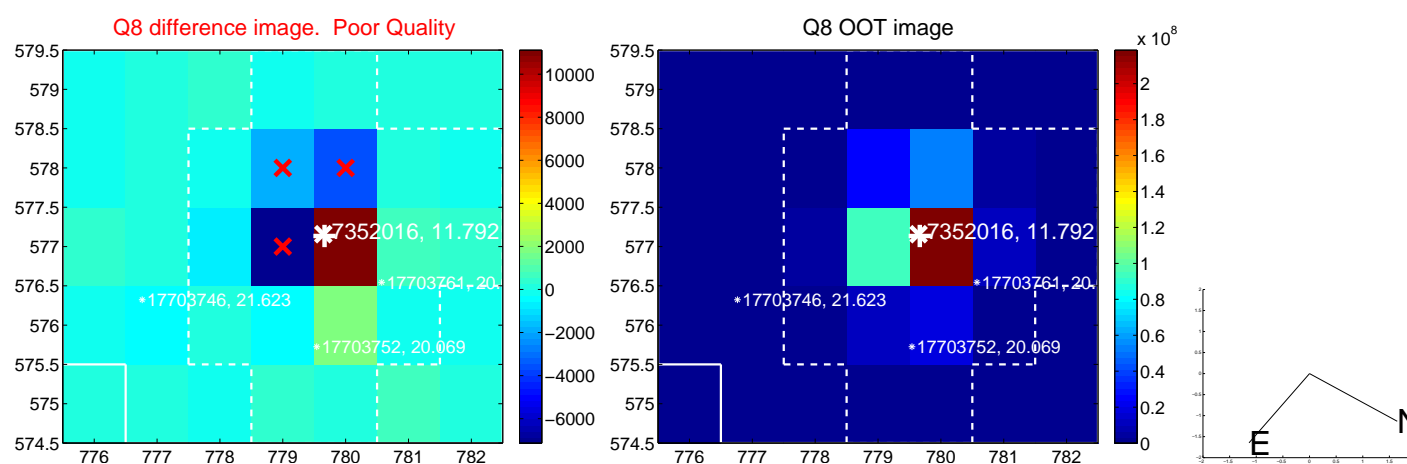
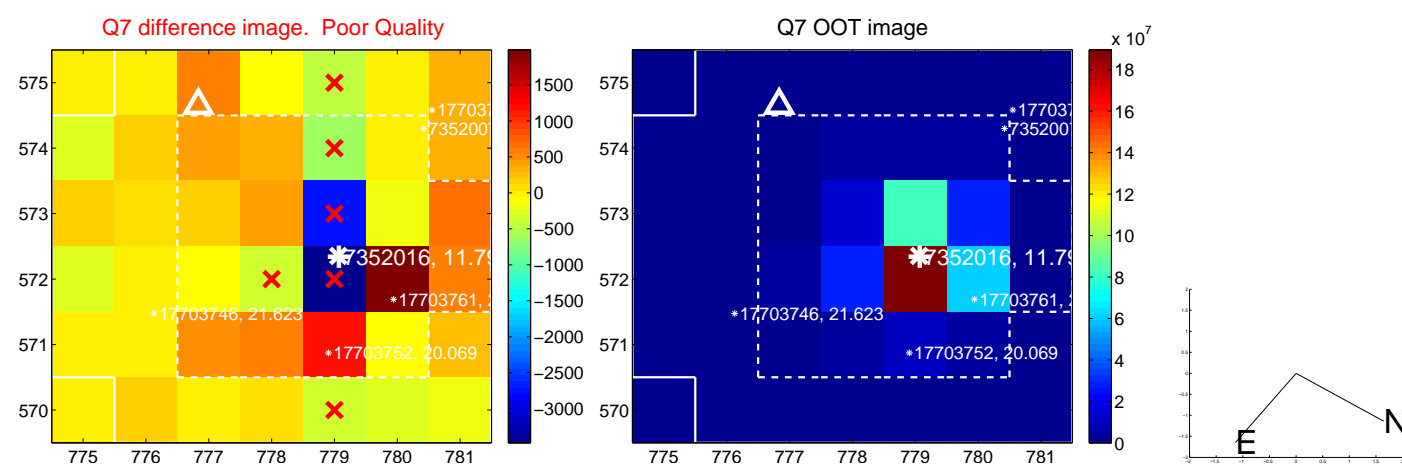
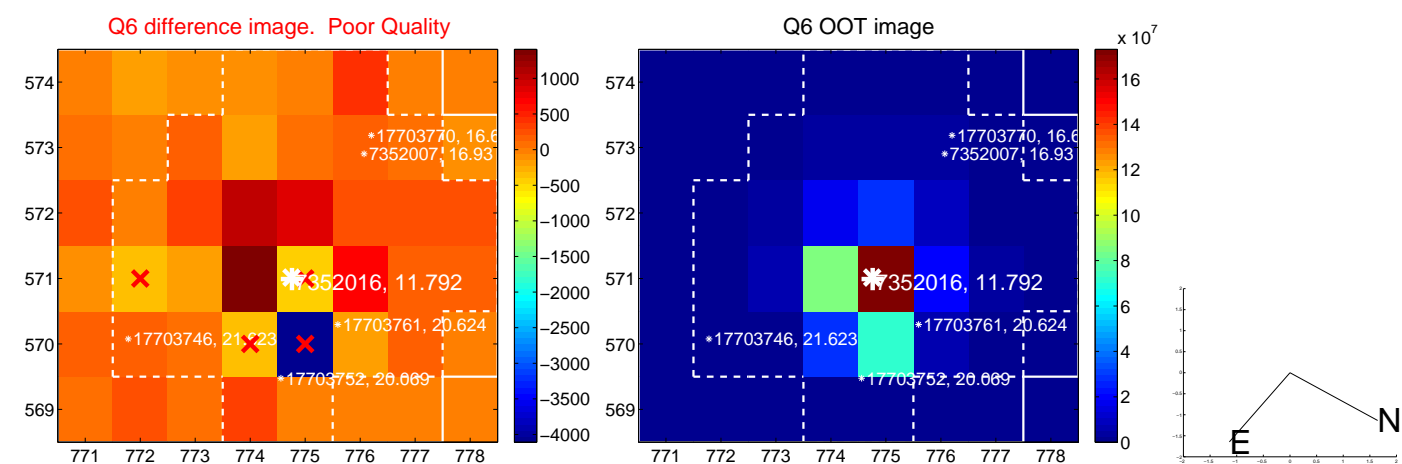
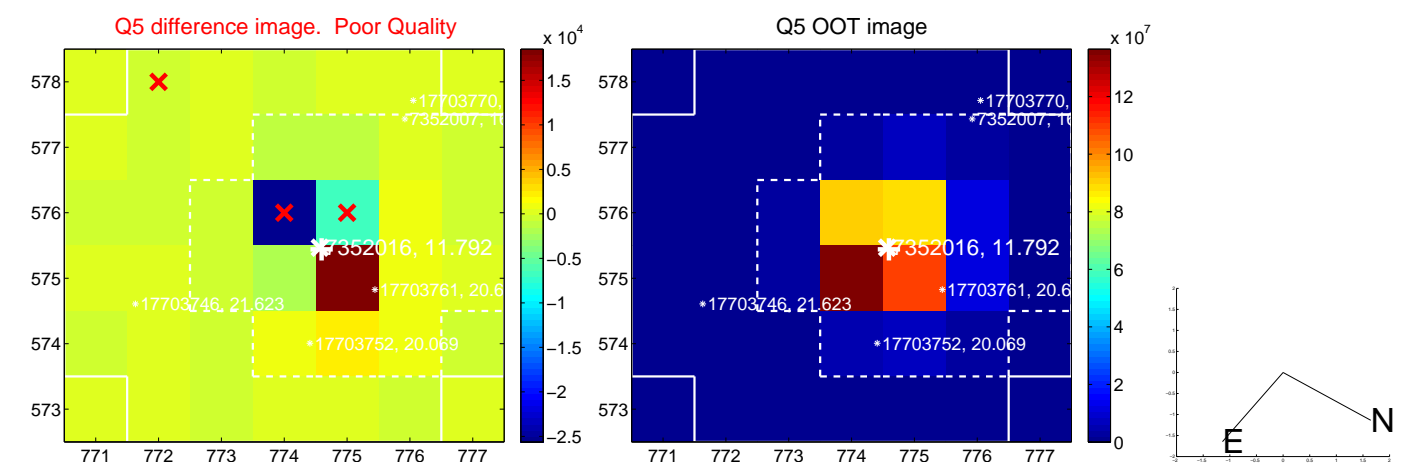


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

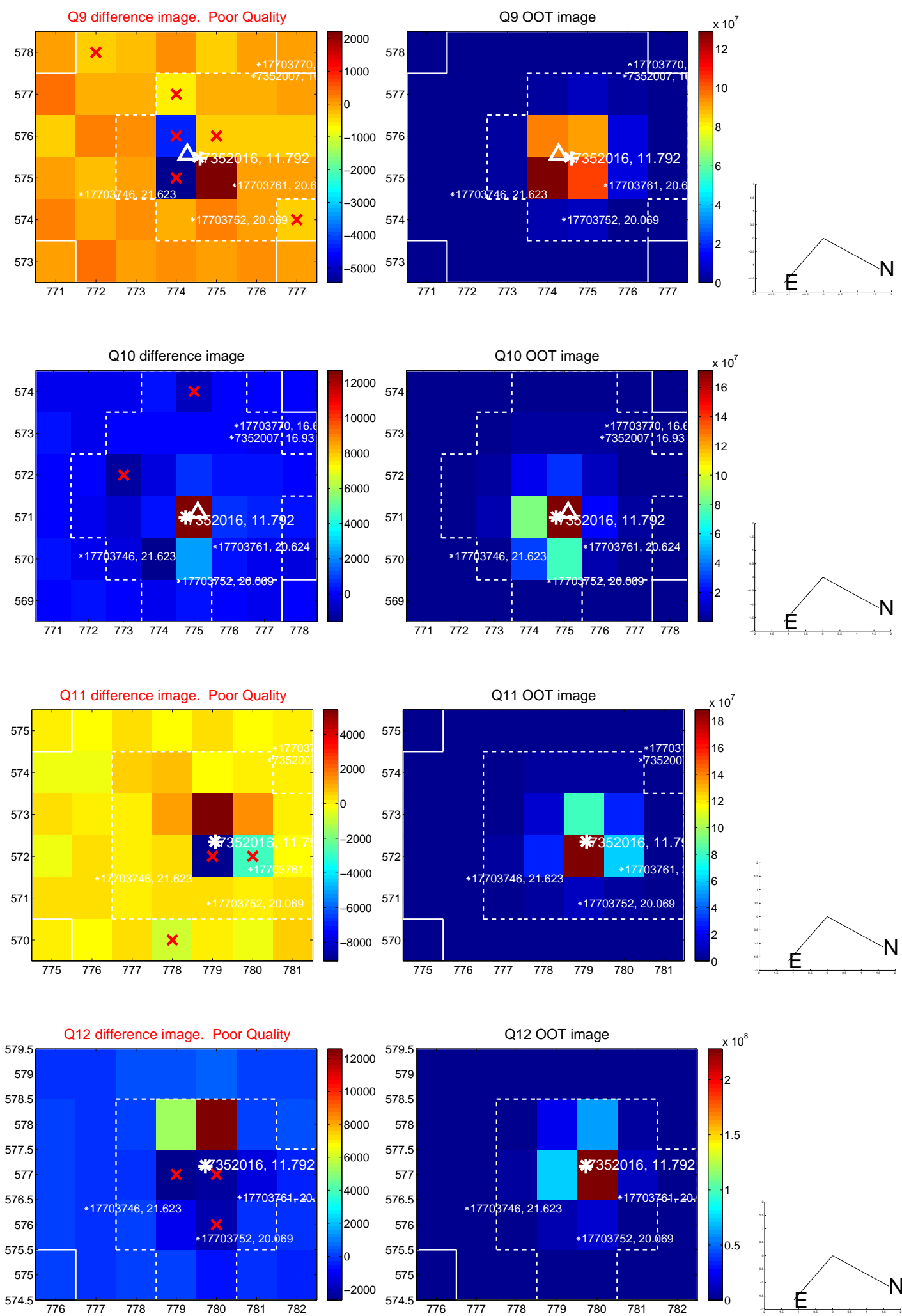
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



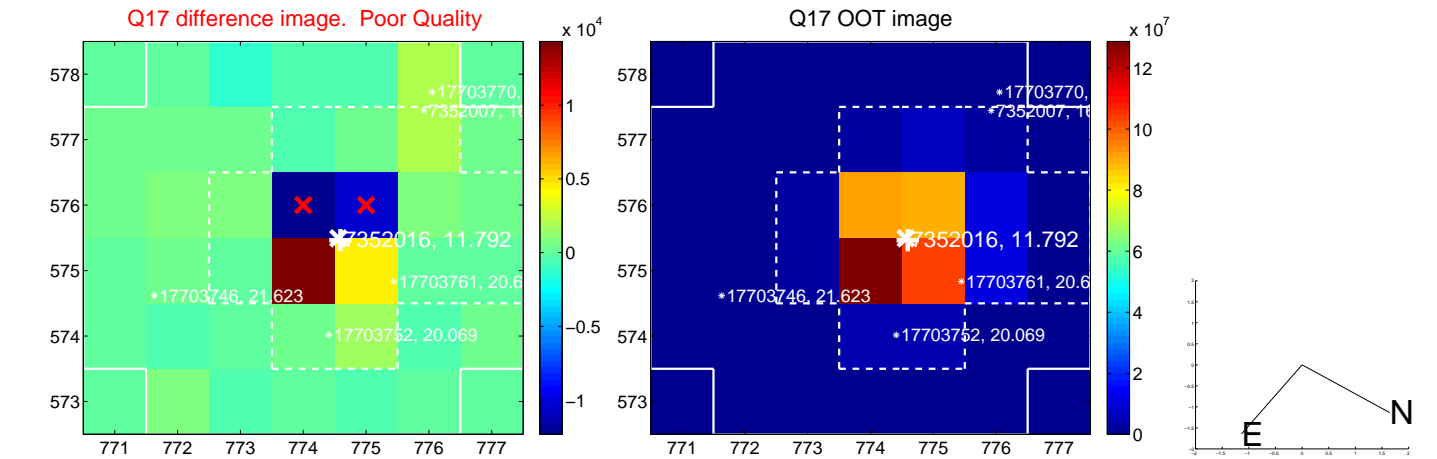
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



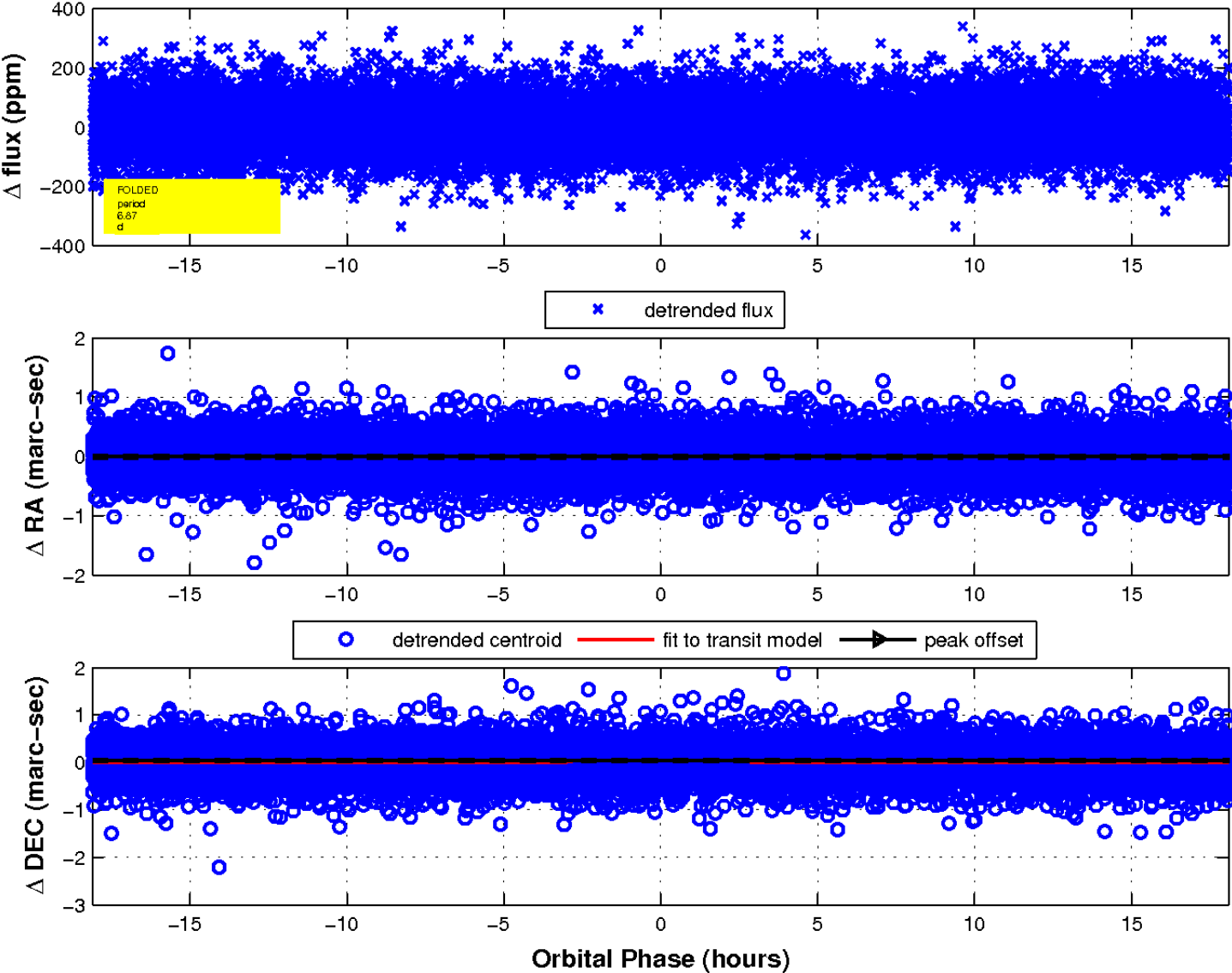
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



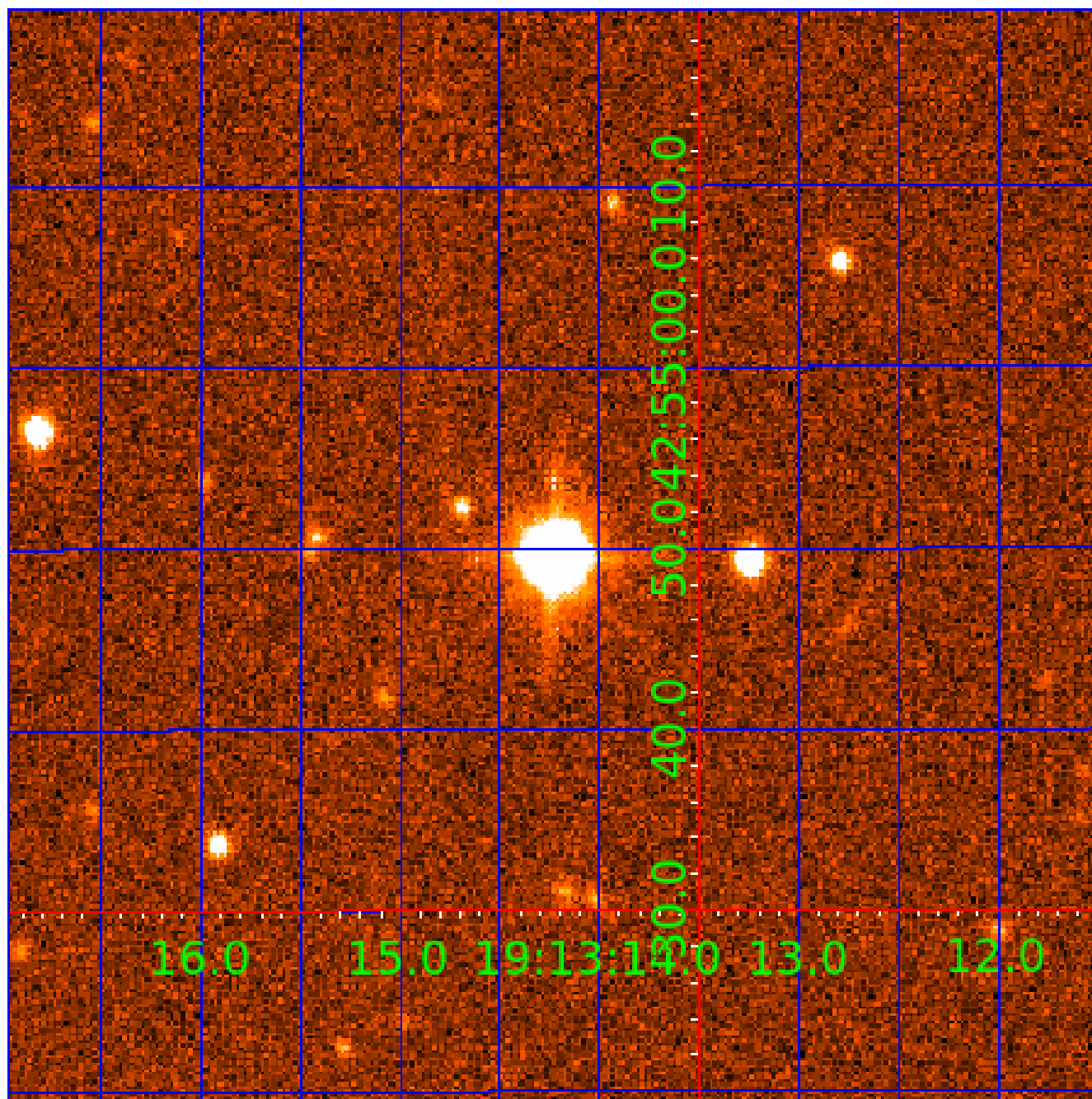
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 7 of 9



UKIRT Image



KIC 007352016

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})
007352016-01	OBS	No	537.931366	501.151088	129.2	21.001	10.0	10.0	2.00	7542	2.67	5.09
007352016-02	OBS	No	0.919382	132.389291	5.1	6.700	8.3	5.5	2.00	7542	0.46	24891.70
007352016-03	OBS	No	25.621817	133.502165	186.4	1.138	14.8	13.0	2.00	7542	2.81	294.60
007352016-04	OBS	No	18.349737	131.543780	161.3	1.323	15.2	12.9	2.00	7542	2.66	459.77
007352016-05	OBS	No	31.583942	147.492154	109.5	4.393	11.7	13.0	2.00	7542	2.39	222.89
007352016-06	OBS	No	14.553533	136.332445	105.3	2.490	13.0	14.5	2.00	7542	2.07	626.26
007352016-07	OBS	No	6.873045	134.622509	35.6	6.035	12.0	10.3	2.00	7542	1.40	1702.88
007352016-08	OBS	No	46.925739	166.830456	156.2	1.233	12.8	12.4	2.00	7542	2.54	131.47
007352016-09	OBS	No	12.448509	138.957477	145.3	1.148	12.7	11.5	2.00	7542	2.57	771.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007352016-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

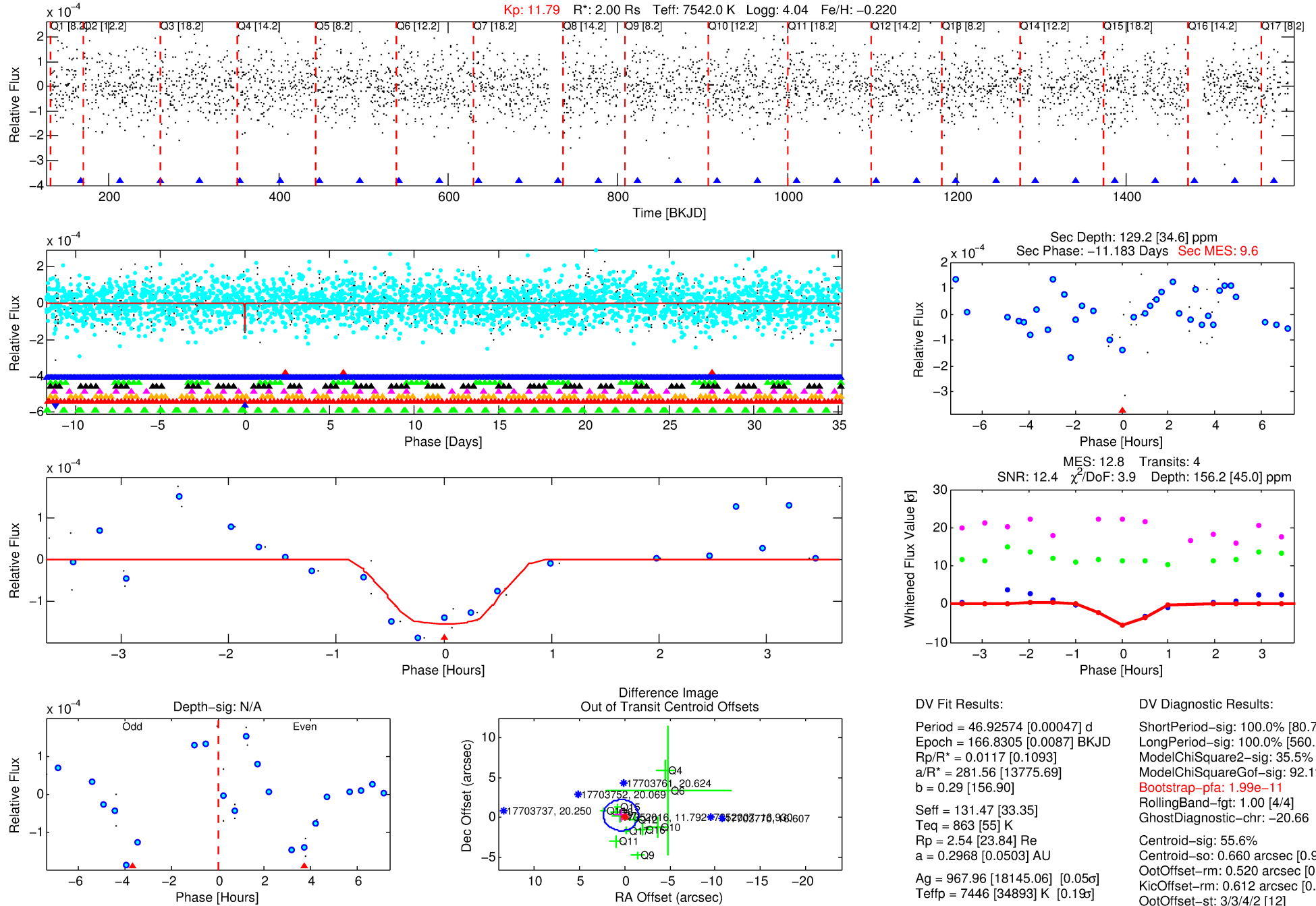
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-08

No Significant Match Found

DV One-Page Summary

KIC: 7352016 Candidate: 8 of 9 Period: 46.926 d



DV Fit Results:

Period = 46.92574 [0.00047] d
Epoch = 166.8305 [0.0087] BKJD
Rp/R* = 0.0117 [0.1093]
a/R* = 281.56 [13775.69]
b = 0.29 [156.90]
Seff = 131.47 [33.35]
Teq = 863 [55] K
Rp = 2.54 [23.84] Re
a = 0.2968 [0.0503] AU
Ag = 967.96 [18145.06] [0.05σ]
Teffp = 7446 [34893] K [0.19σ]

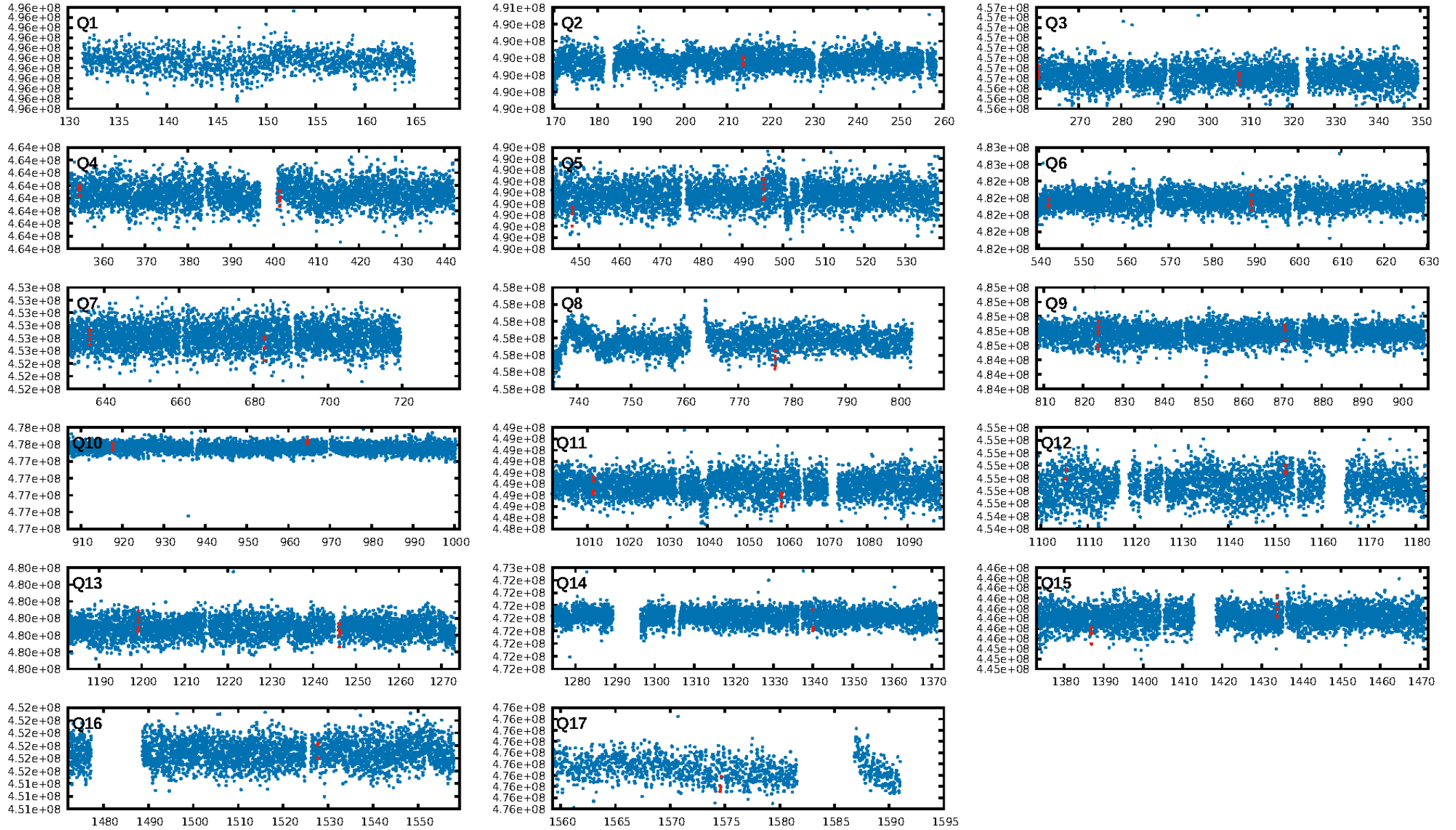
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [80.70σ]
LongPeriod-sig: 100.0% [560.15σ]
ModelChiSquare2-sig: 35.5%
ModelChiSquareGof-sig: 92.1%
Bootstrap-pfa: 1.99e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -20.66
Centroid-sig: 55.6%
Centroid-so: 0.660 arcsec [0.97σ]
OotOffset-rm: 0.520 arcsec [0.80σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-rm: 0.612 arcsec [0.92σ]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.19 [3/16]

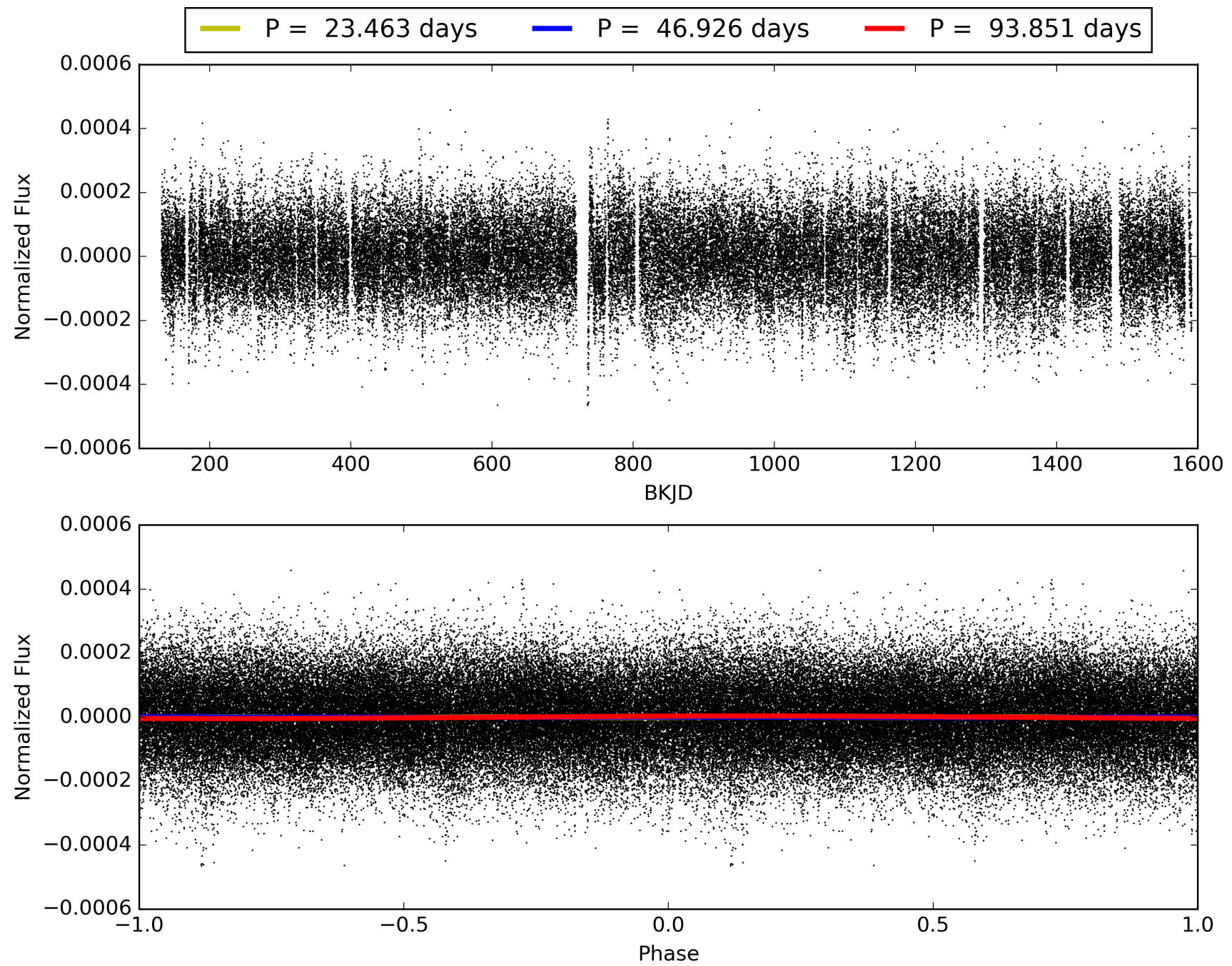
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:29:36 Z

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

TCE 007352016-08, PDC Light Curves

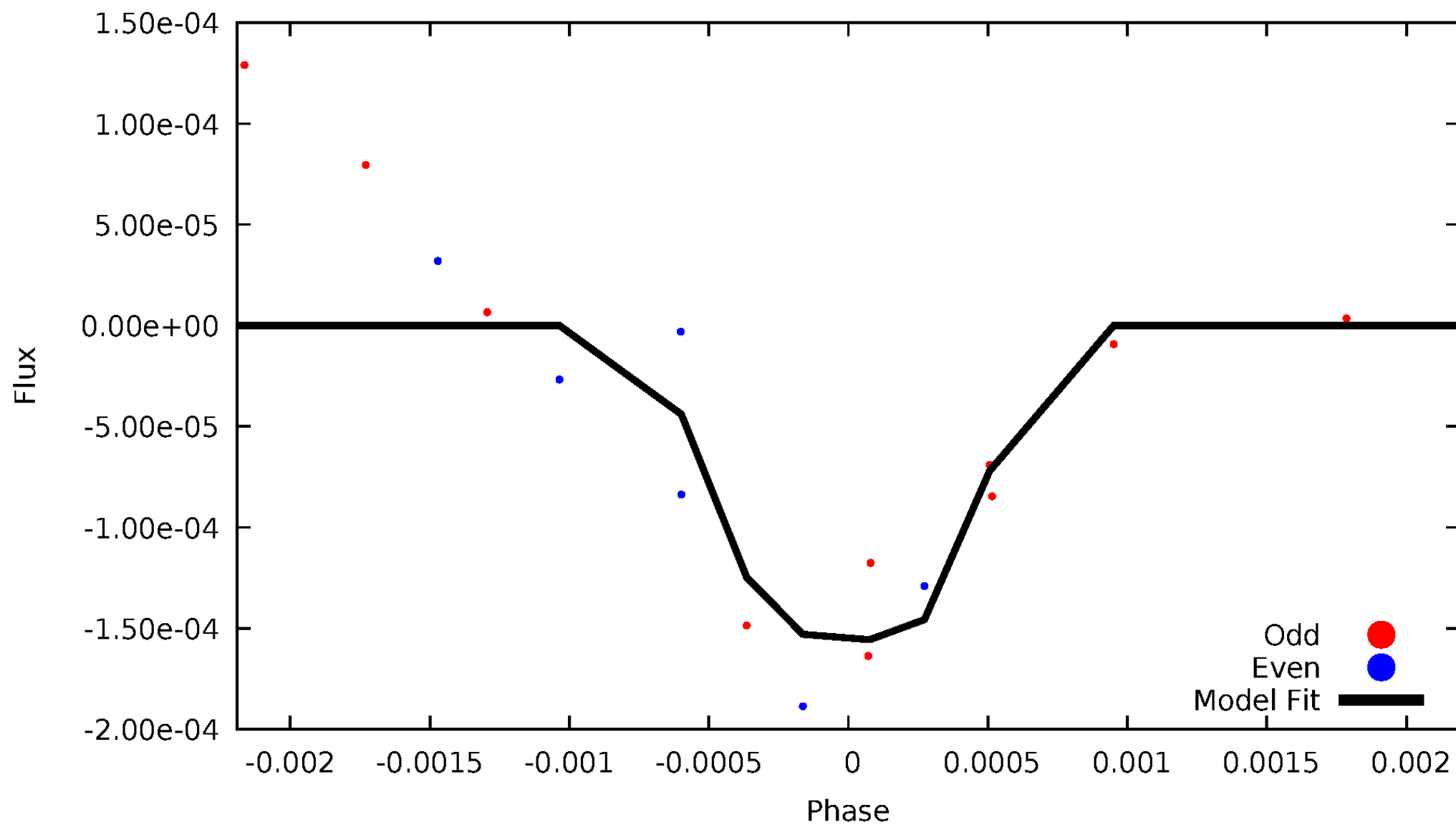


TCE 007352016-08



DV Odd/Even

TCE 007352016-08

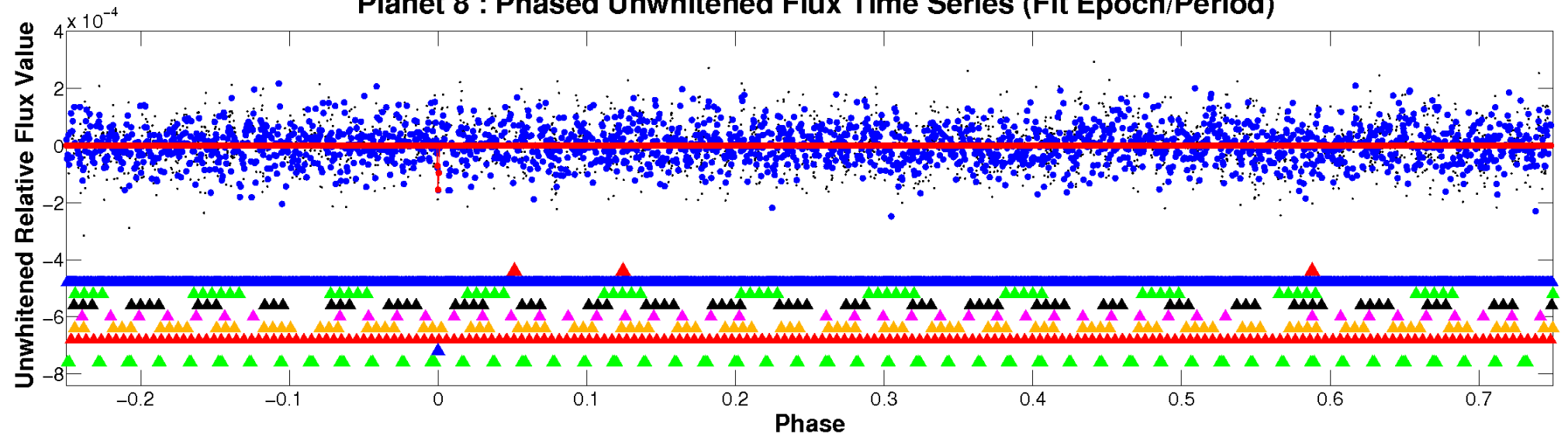


ALT Odd/Even

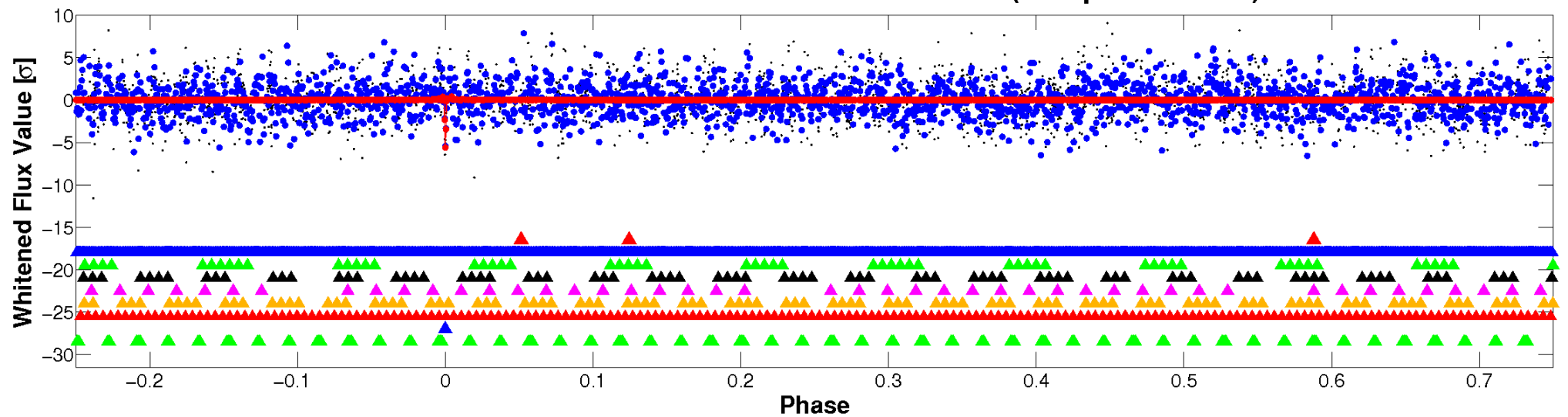
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

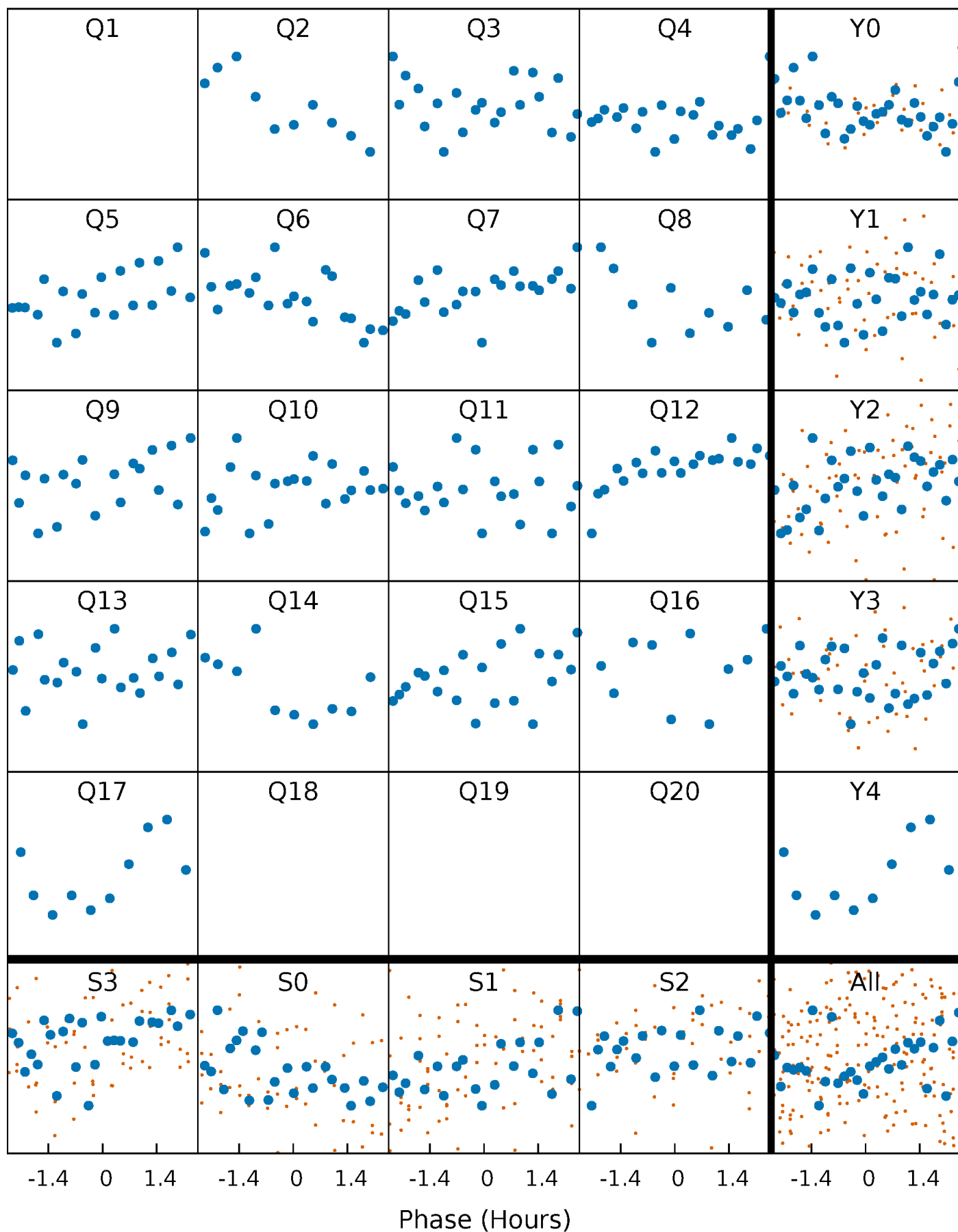


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



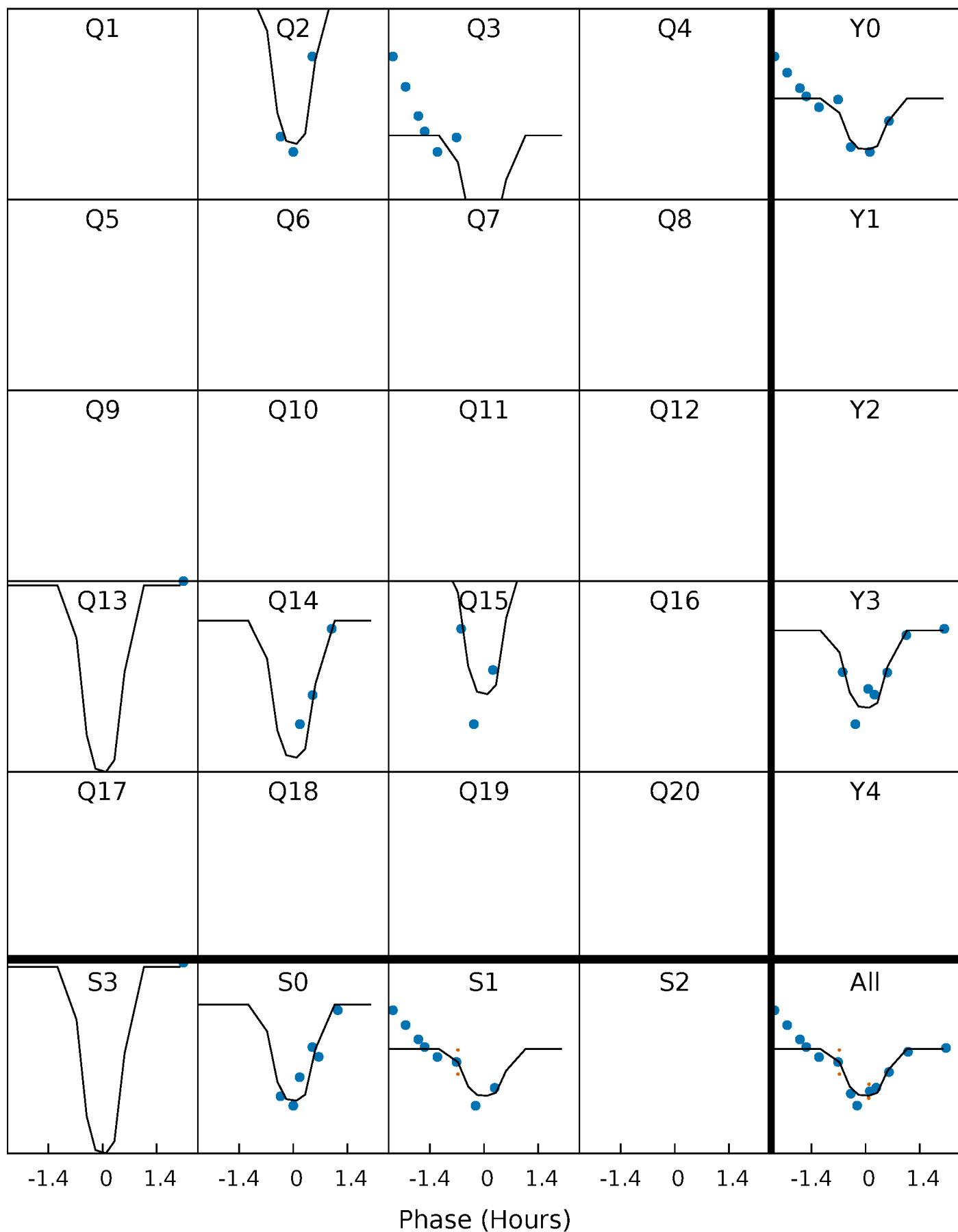
PDC Quarter-Phased Transit Curves

TCE 007352016-08 P= 46.925739 Days $T_0=166.830456$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007352016-08 P= 46.925739 Days $T_0=166.830456$ (BKJD)

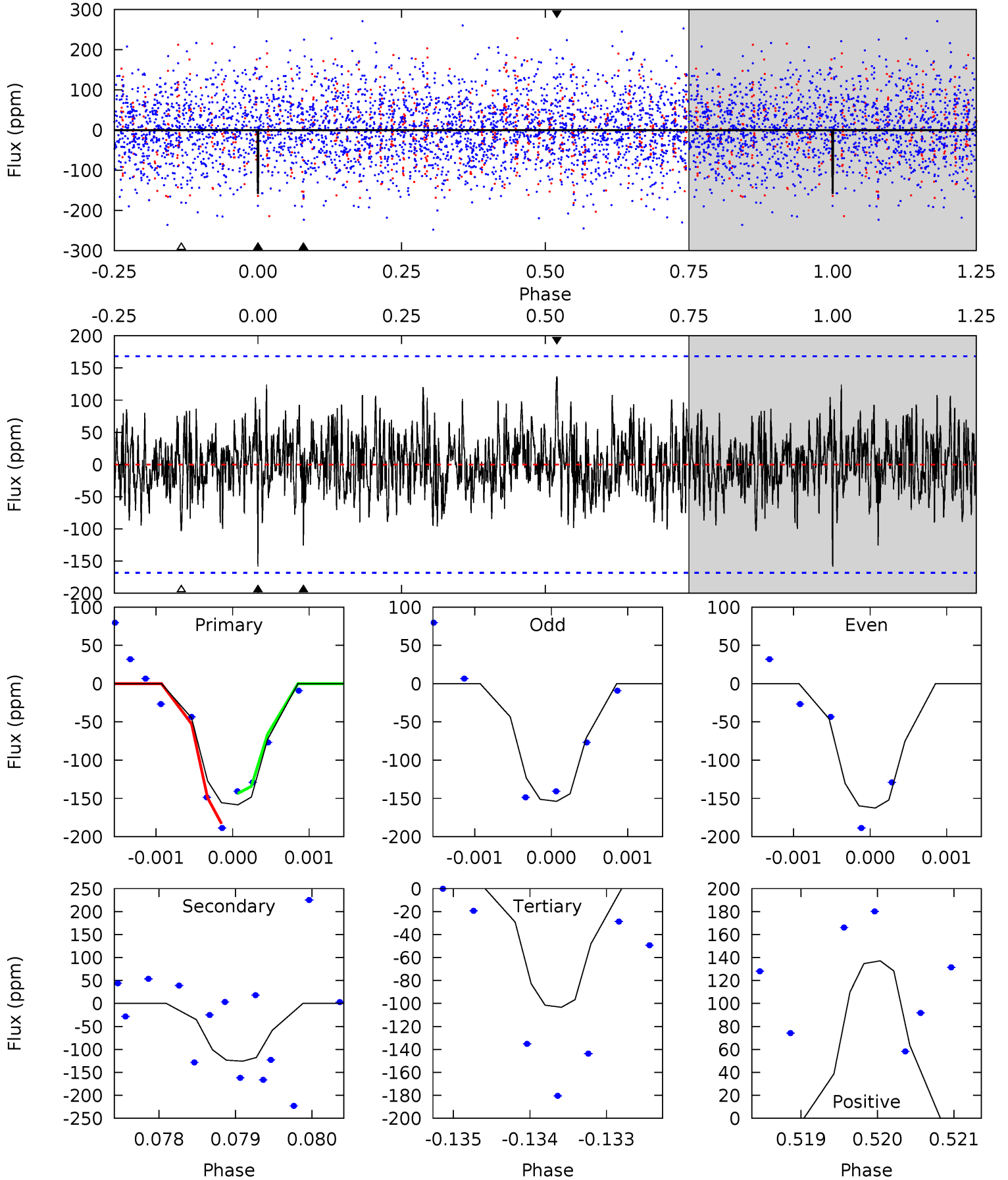


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007352016-08, P = 46.925739 Days, E = 119.904717 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.11	4.06	3.33	4.42	5.43	3.26	1.23	1.78	0.69	0.72	-0.37	0.13	0.93	0.46	0.60



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-126 ± 31	$16.02^{+17.93}_{-11.36}$	1203^{+58}_{-54}	3381^{+1901}_{-674}	23^{+233}_{-18}
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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

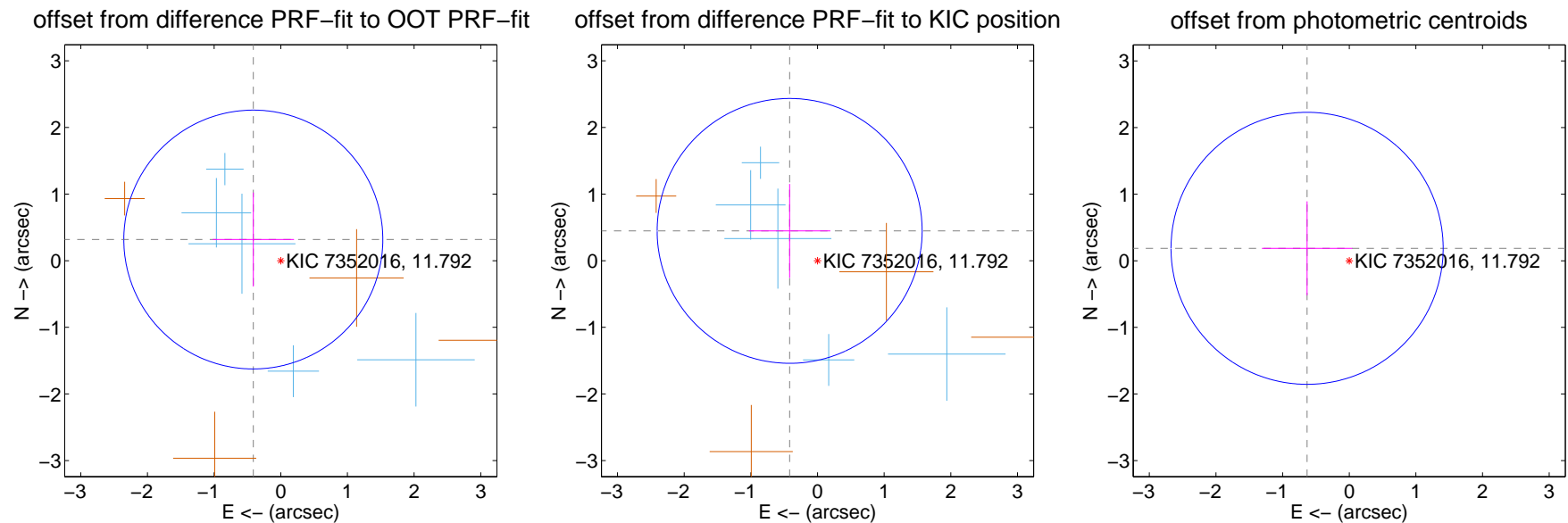
DV Centroid Data

Supplemental centroid analysis for 007352016-08. **Kepler magnitude: 11.79.** Transit SNR 12.40

There are 5 quarters with good PRF difference image offsets

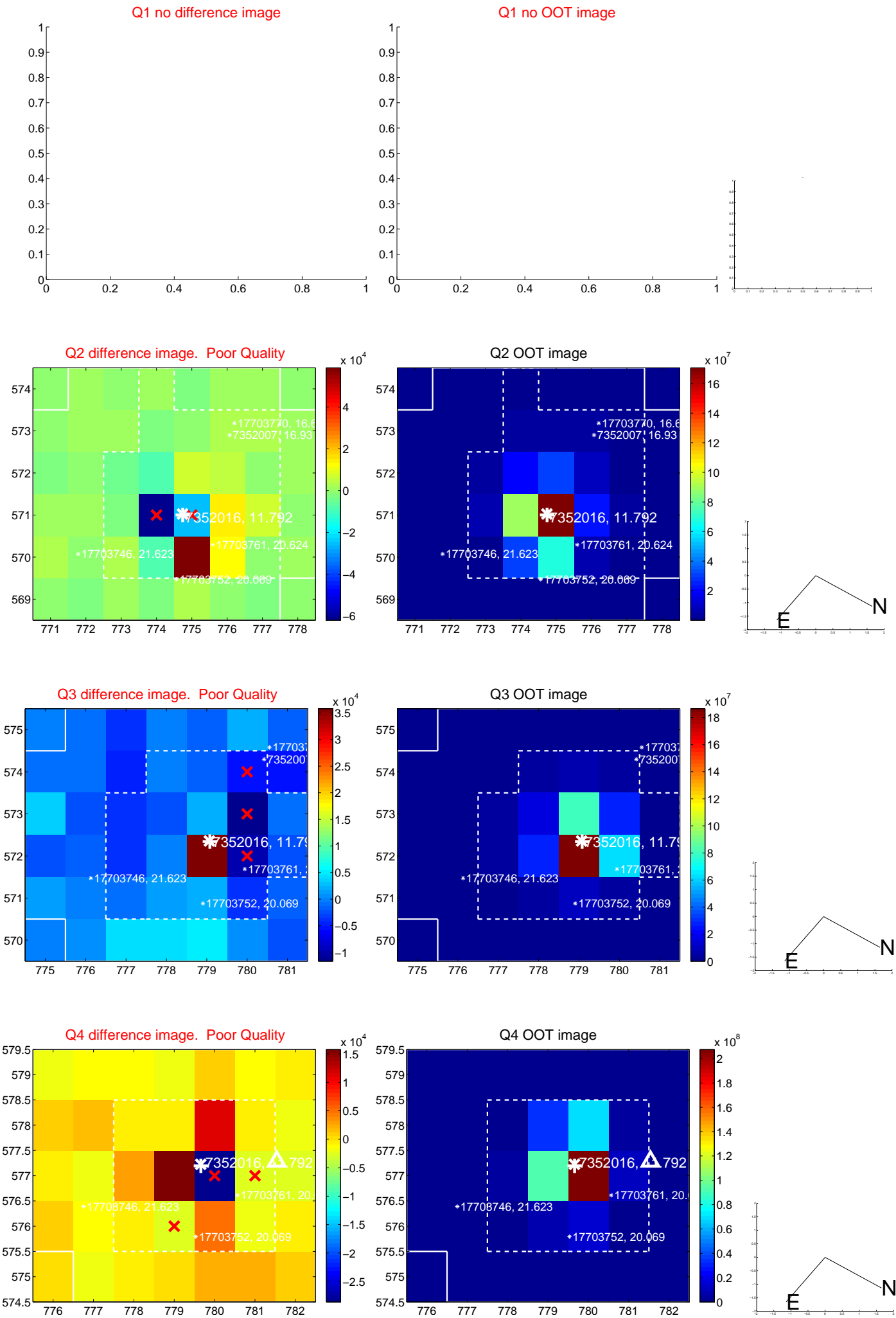
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.520 ± 0.648	0.80	0.412 ± 0.611	0.318 ± 0.704
PRF-fit source offset from KIC position	0.612 ± 0.663	0.92	0.418 ± 0.611	0.447 ± 0.704
photometric centroid source offset	0.66 ± 0.68	0.97	0.63 ± 0.68	0.19 ± 0.71

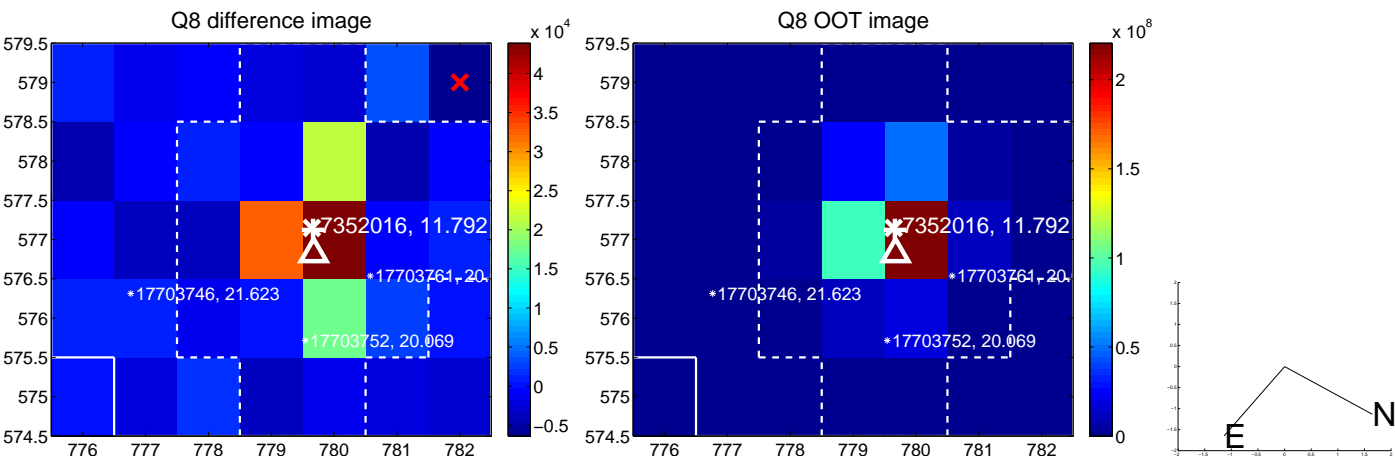
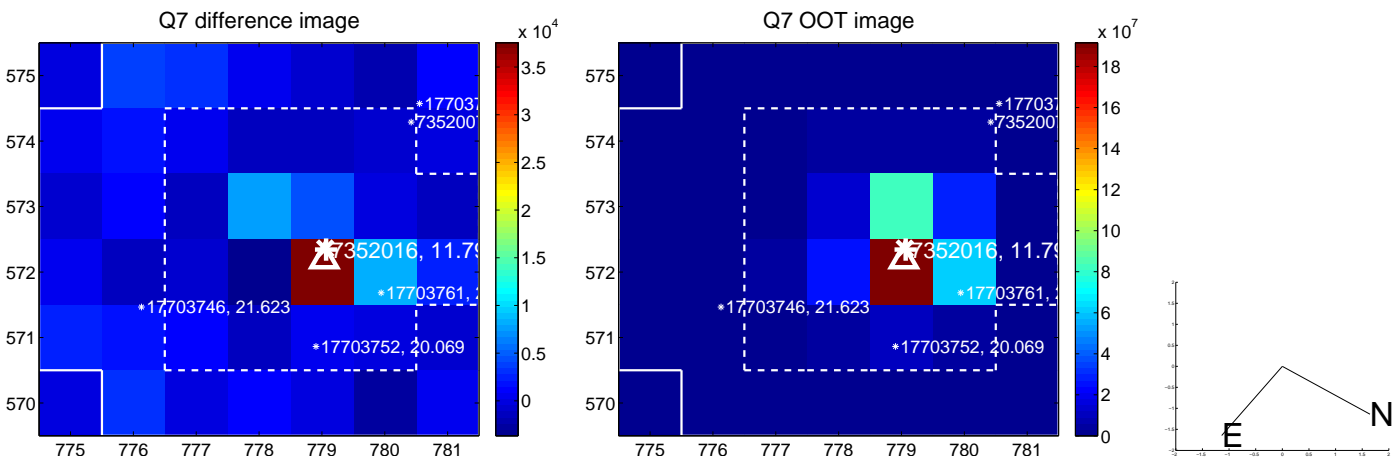
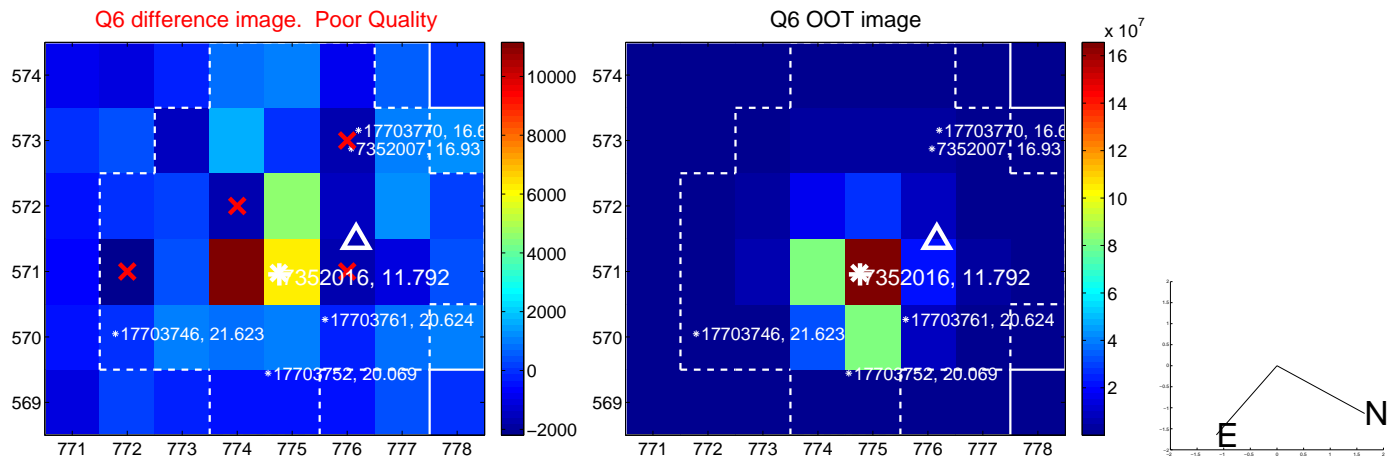
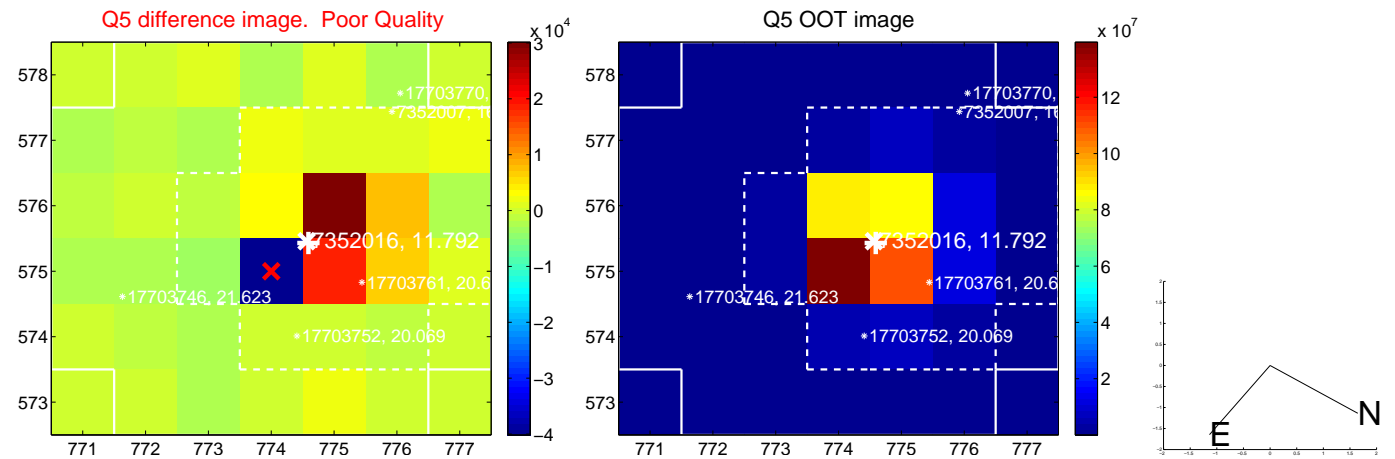


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

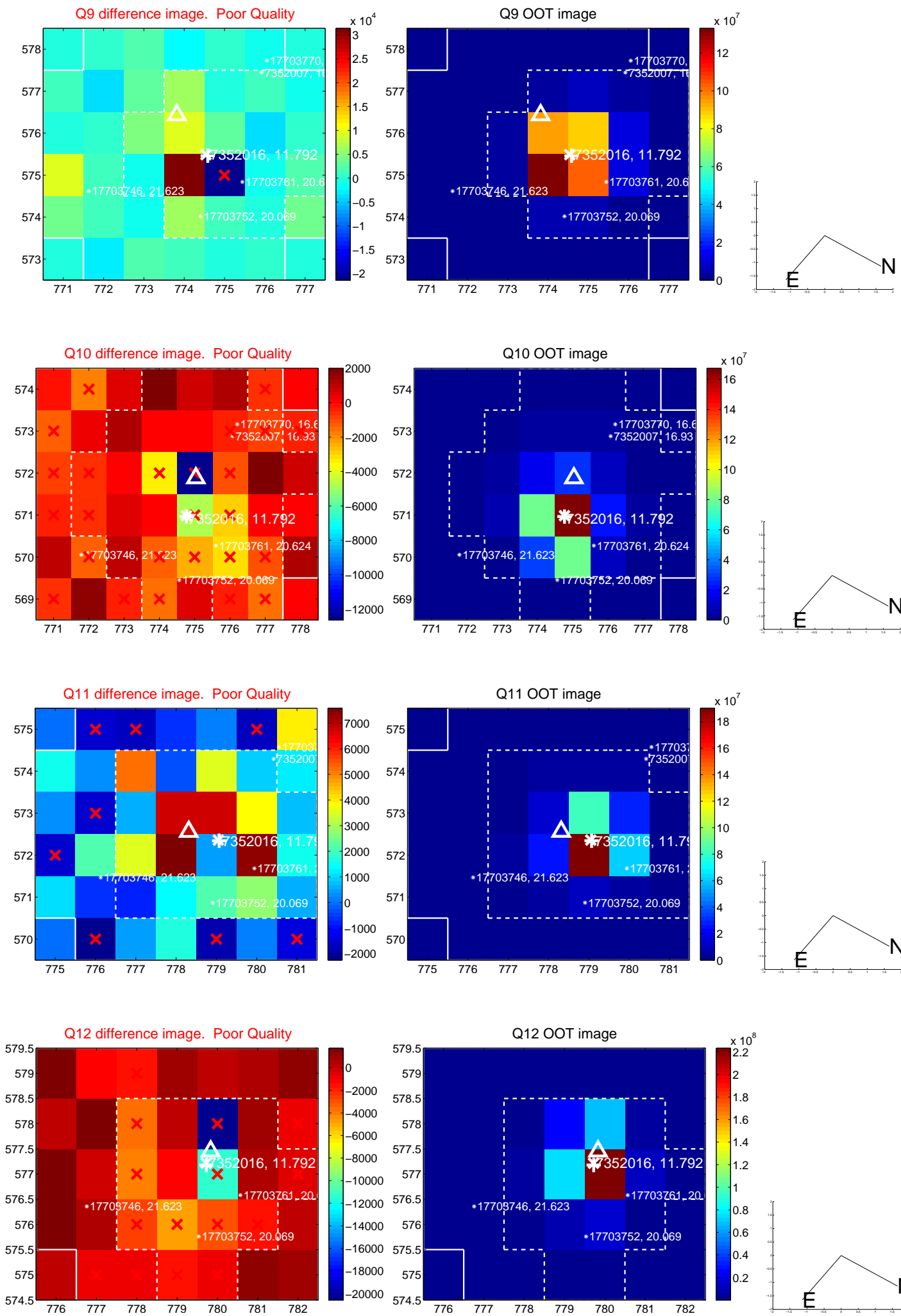
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



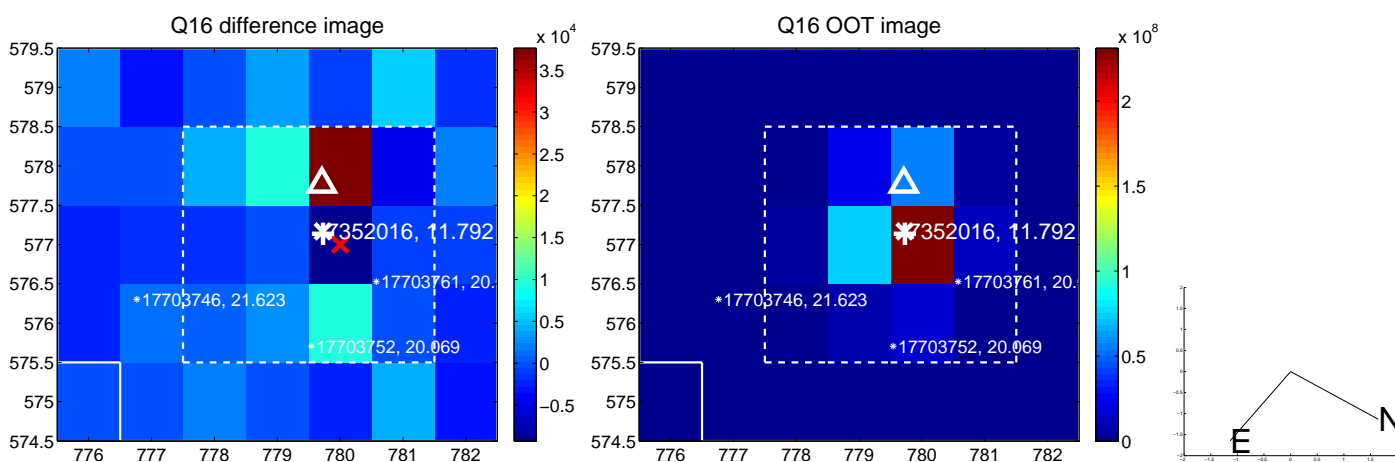
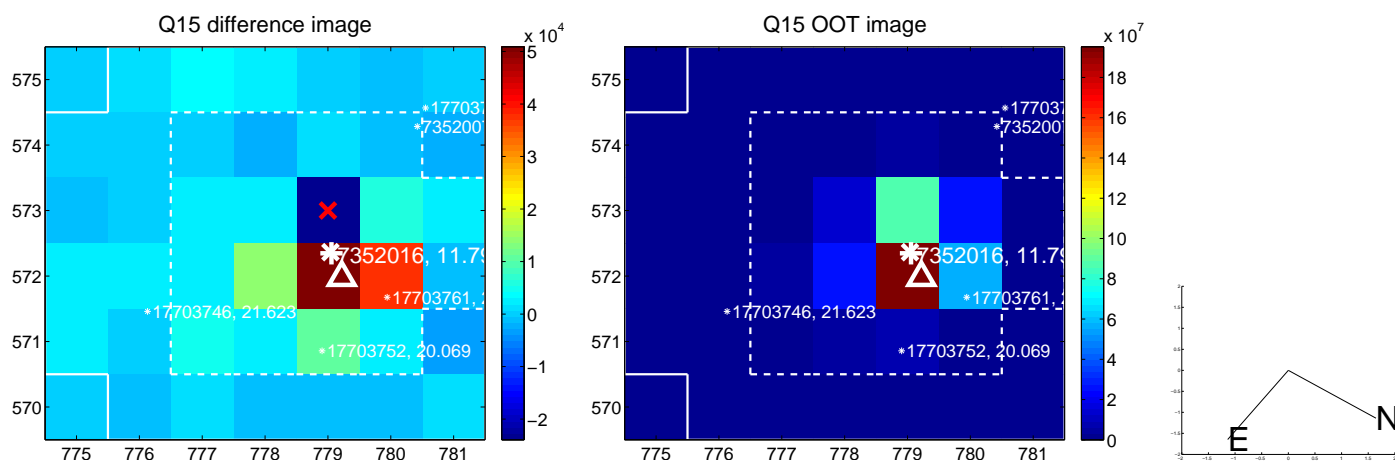
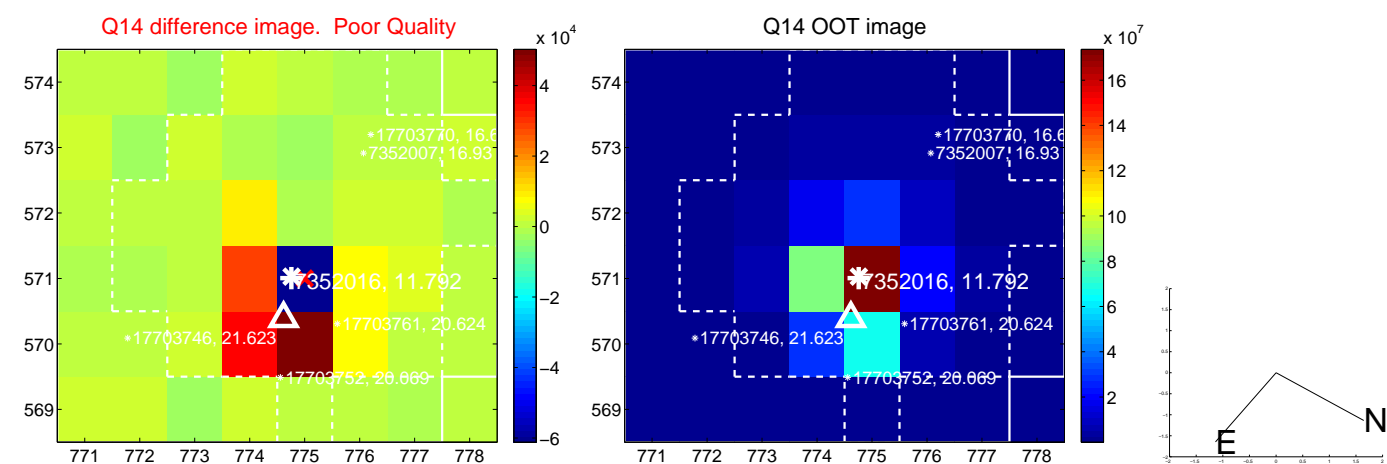
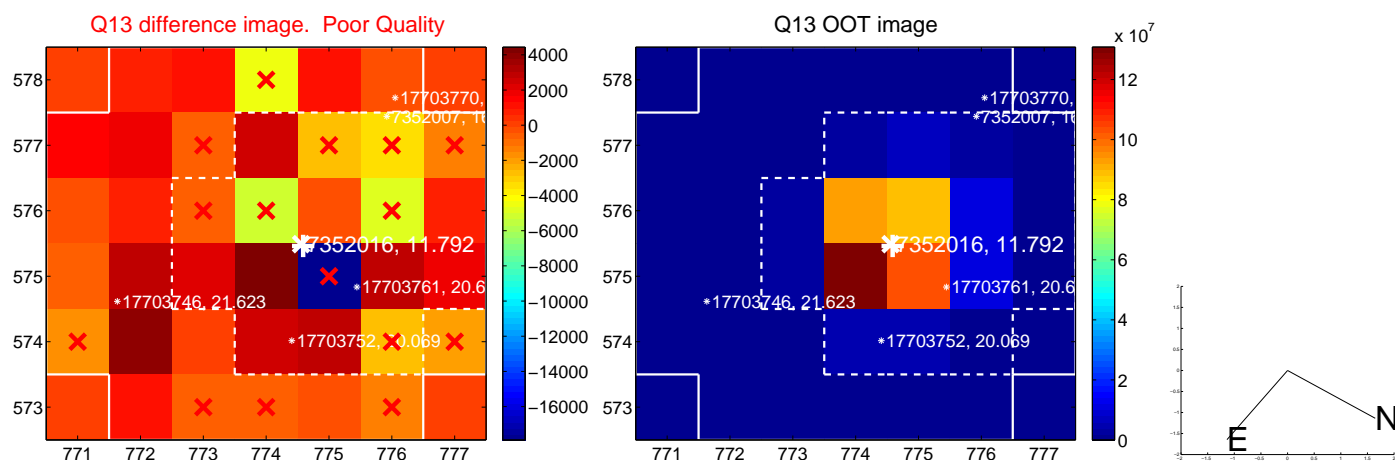
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



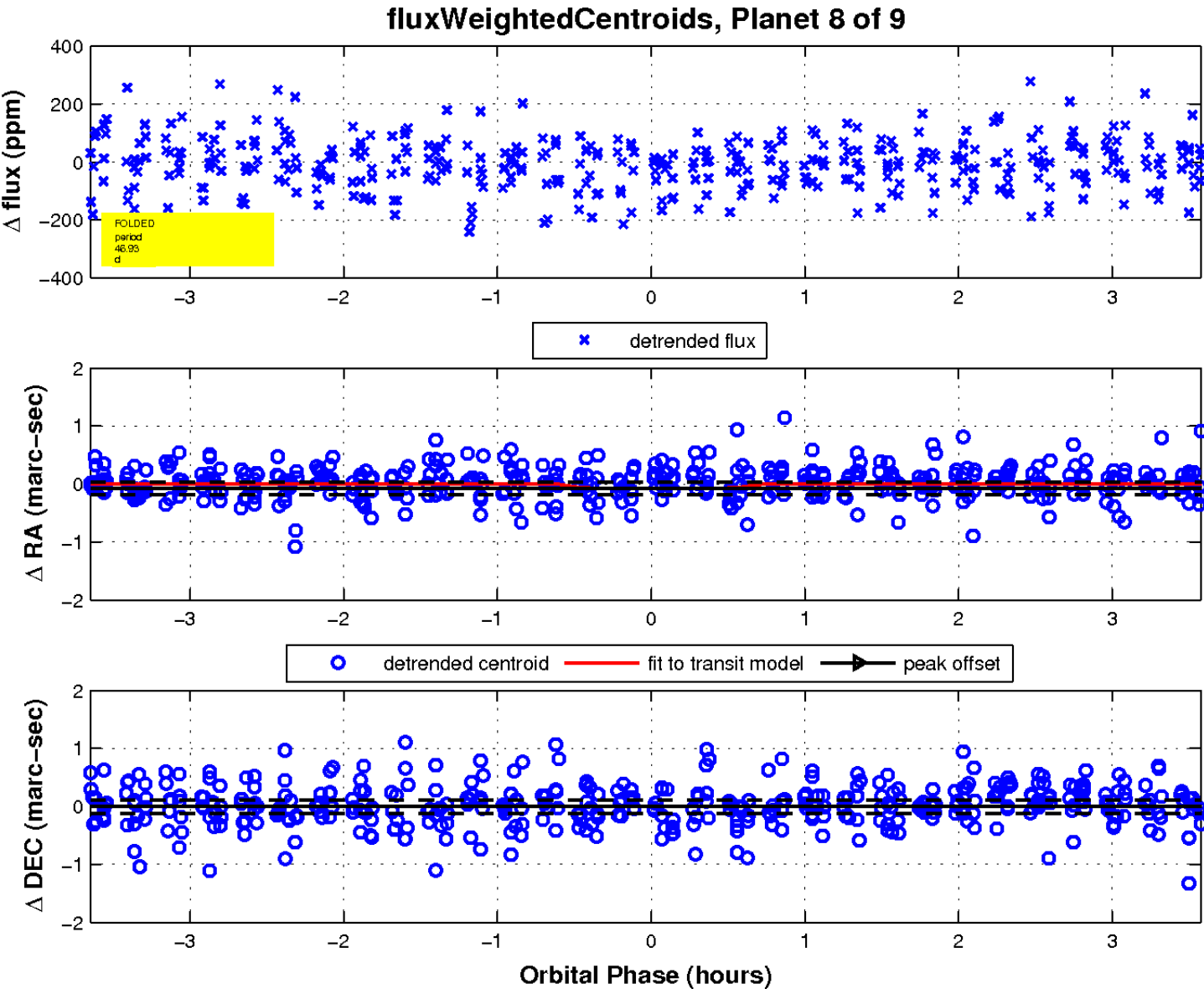
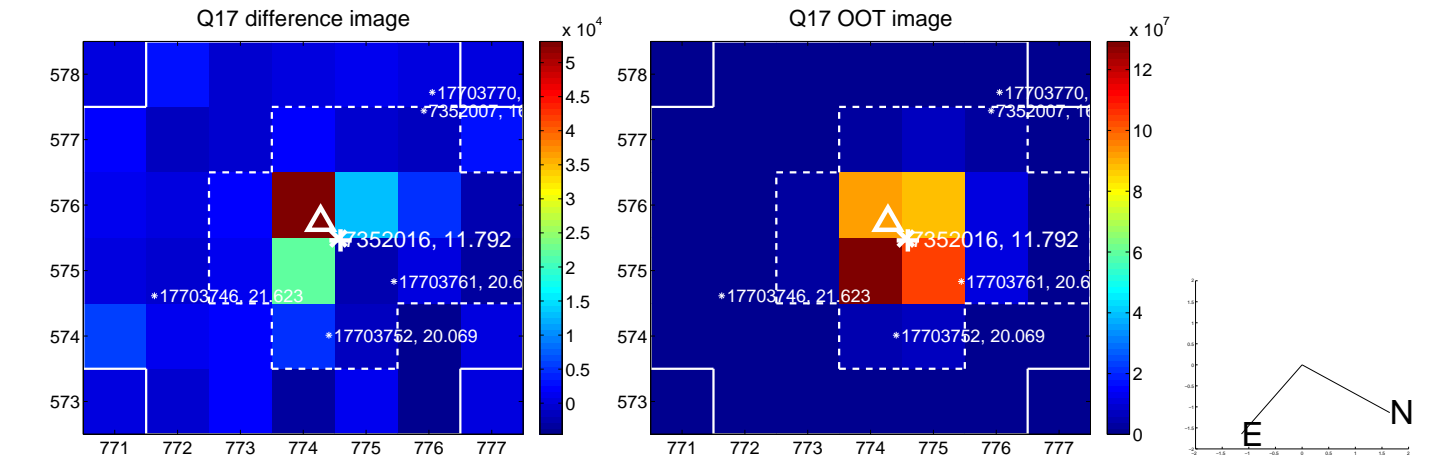
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

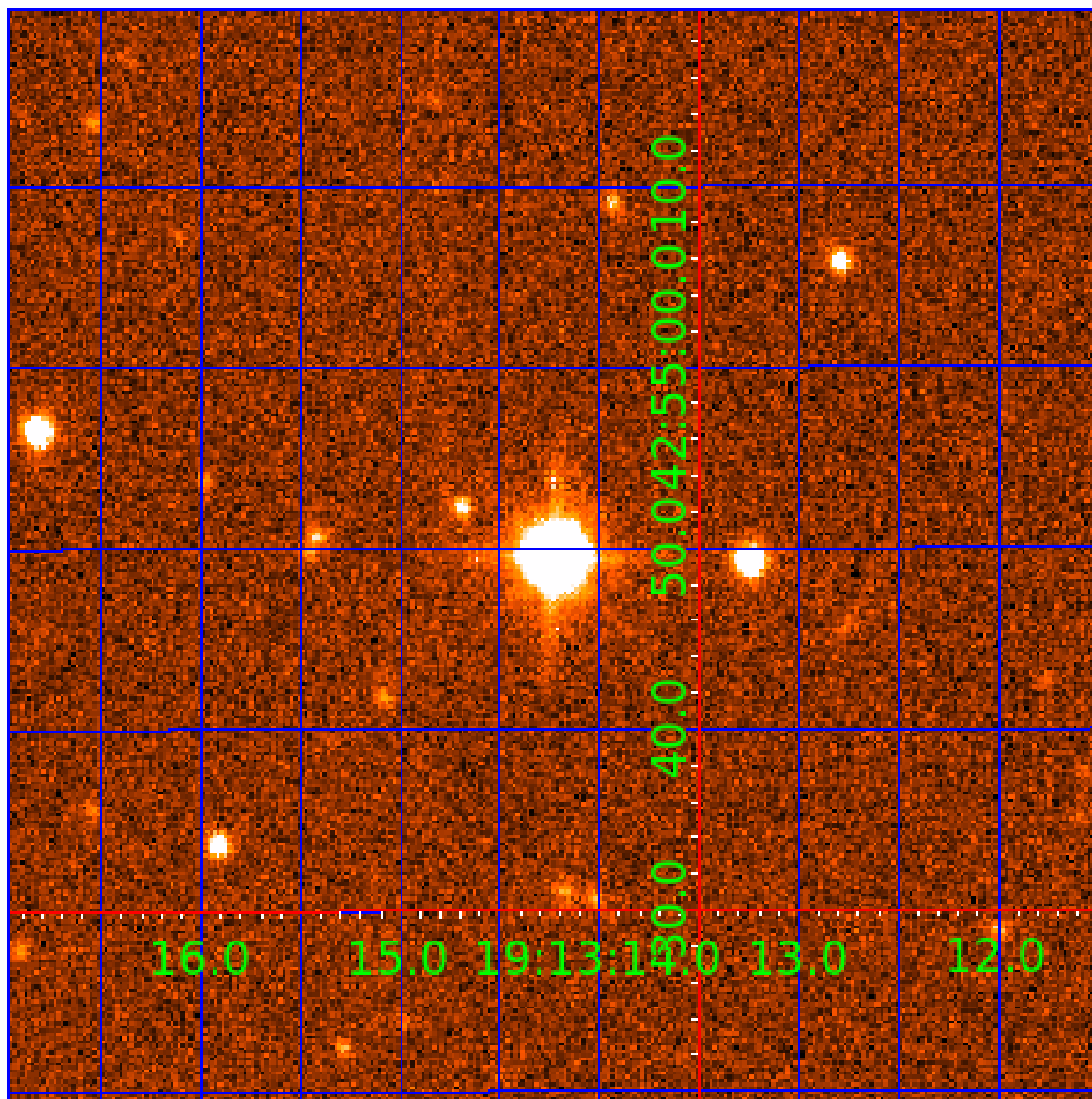


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007352016

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})
007352016-01	OBS	No	537.931366	501.151088	129.2	21.001	10.0	10.0	2.00	7542	2.67	5.09
007352016-02	OBS	No	0.919382	132.389291	5.1	6.700	8.3	5.5	2.00	7542	0.46	24891.70
007352016-03	OBS	No	25.621817	133.502165	186.4	1.138	14.8	13.0	2.00	7542	2.81	294.60
007352016-04	OBS	No	18.349737	131.543780	161.3	1.323	15.2	12.9	2.00	7542	2.66	459.77
007352016-05	OBS	No	31.583942	147.492154	109.5	4.393	11.7	13.0	2.00	7542	2.39	222.89
007352016-06	OBS	No	14.553533	136.332445	105.3	2.490	13.0	14.5	2.00	7542	2.07	626.26
007352016-07	OBS	No	6.873045	134.622509	35.6	6.035	12.0	10.3	2.00	7542	1.40	1702.88
007352016-08	OBS	No	46.925739	166.830456	156.2	1.233	12.8	12.4	2.00	7542	2.54	131.47
007352016-09	OBS	No	12.448509	138.957477	145.3	1.148	12.7	11.5	2.00	7542	2.57	771.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007352016-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007352016-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
007352016-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007352016-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007352016-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007352016-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007352016-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
007352016-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—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.

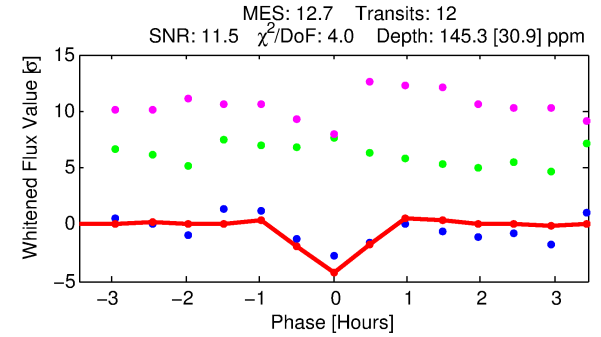
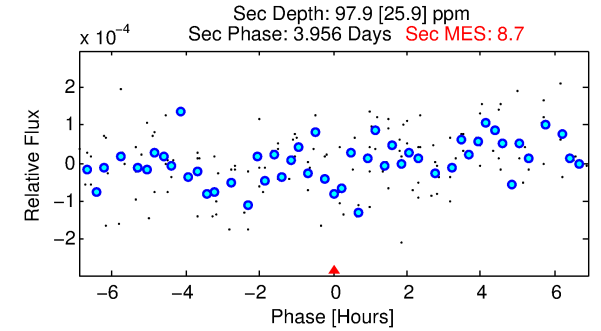
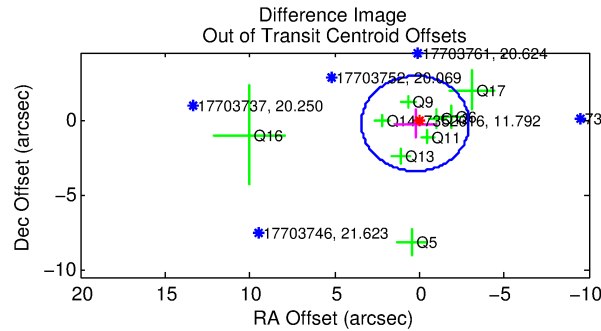
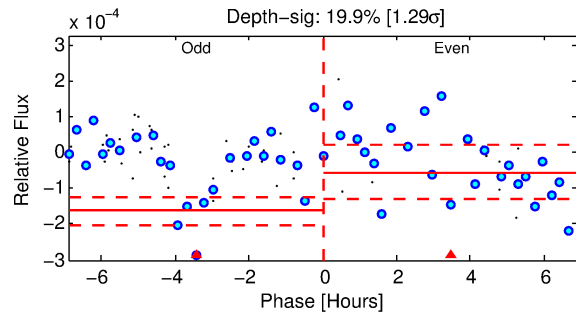
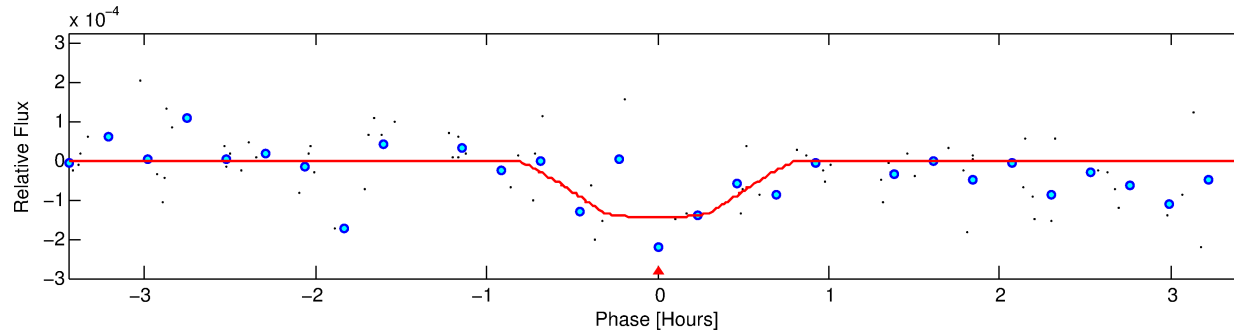
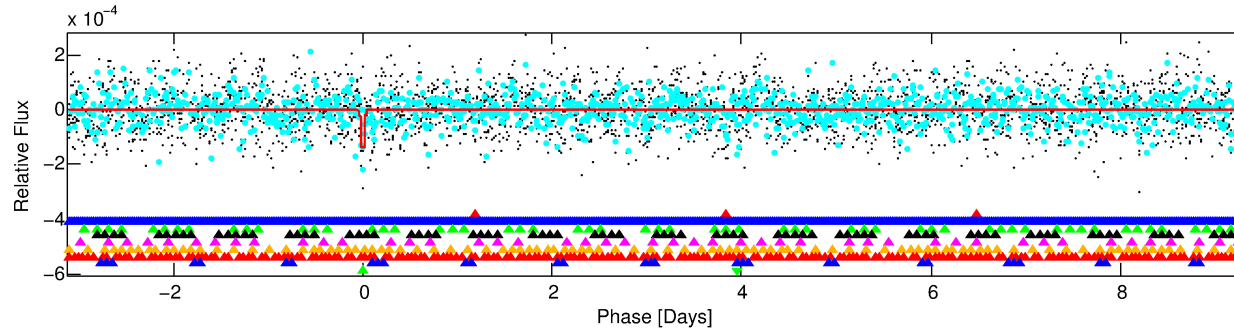
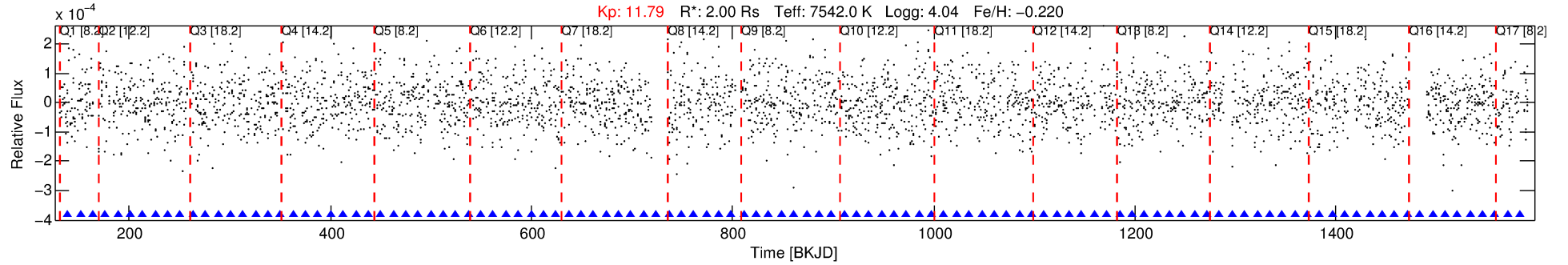
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007352016-09

No Significant Match Found

DV One-Page Summary

KIC: 7352016 Candidate: 9 of 9 Period: 12.449 d



DV Fit Results:

Period = 12.44851 [0.00014] d
Epoch = 138.9575 [0.0100] BKJD
Rp/R* = 0.0118 [0.0356]
a/R* = 63.89 [982.99]
b = 0.65 [13.86]
Seff = 771.30 [195.65]
Teq = 1344 [85] K
Rp = 2.57 [7.78] Re
a = 0.1226 [0.0208] AU
Ag = 122.87 [744.85] [0.16 σ]
Teffp = 6917 [10475] K [0.53 σ]

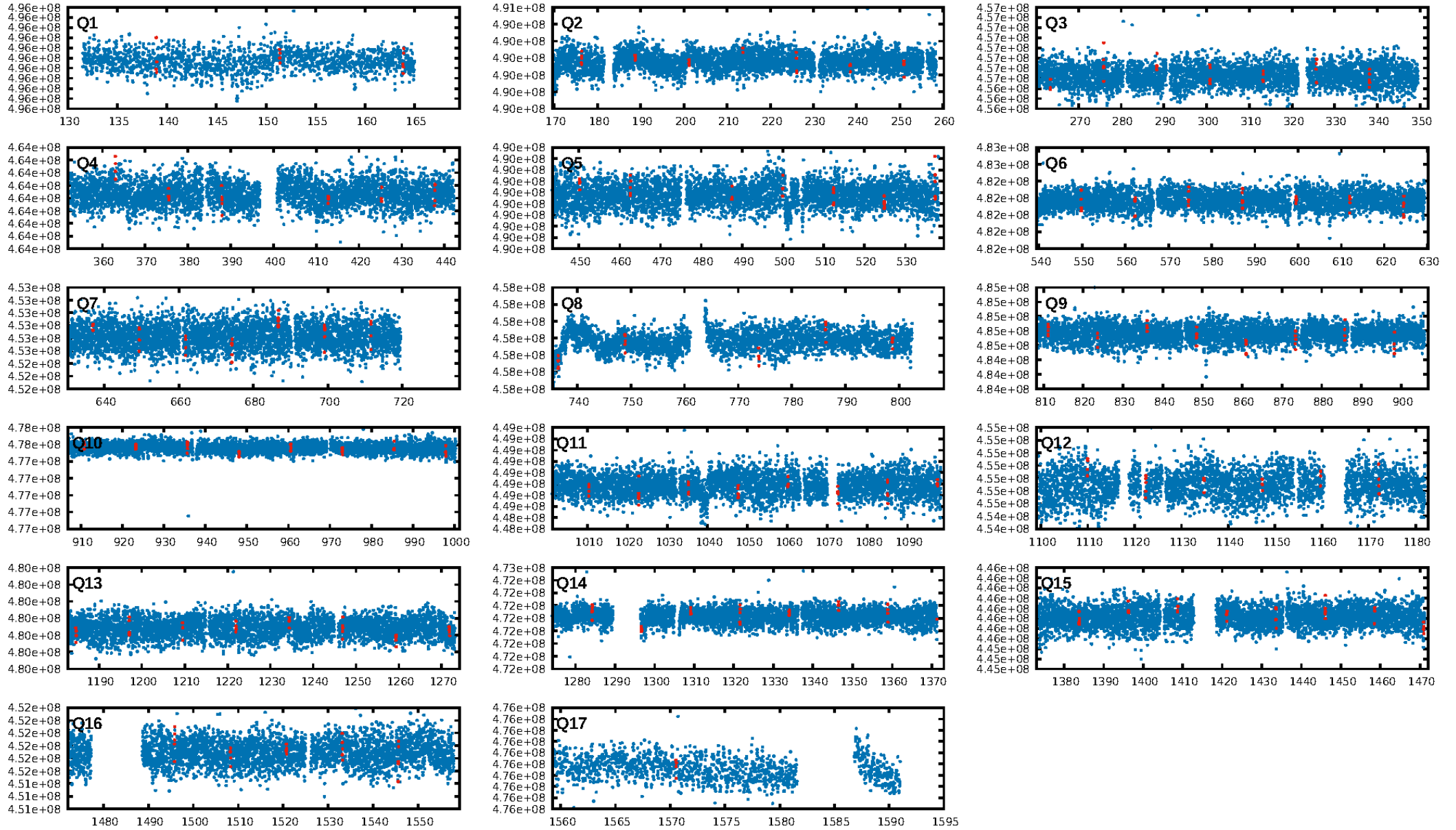
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.78 σ]
LongPeriod-sig: 100.0% [18.42 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 40.4%
Bootstrap-pfa: 9.70e-10
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: -0.9992
Centroid-sig: 54.2%
Centroid-so: 0.464 arcsec [1.19 σ]
OotOffset-rm: 0.355 arcsec [0.33 σ]
KicOffset-rm: 0.343 arcsec [0.27 σ]
OotOffset-st: 2/1/2/4 [9]
KicOffset-st: 2/1/2/4 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.71 [12/17]

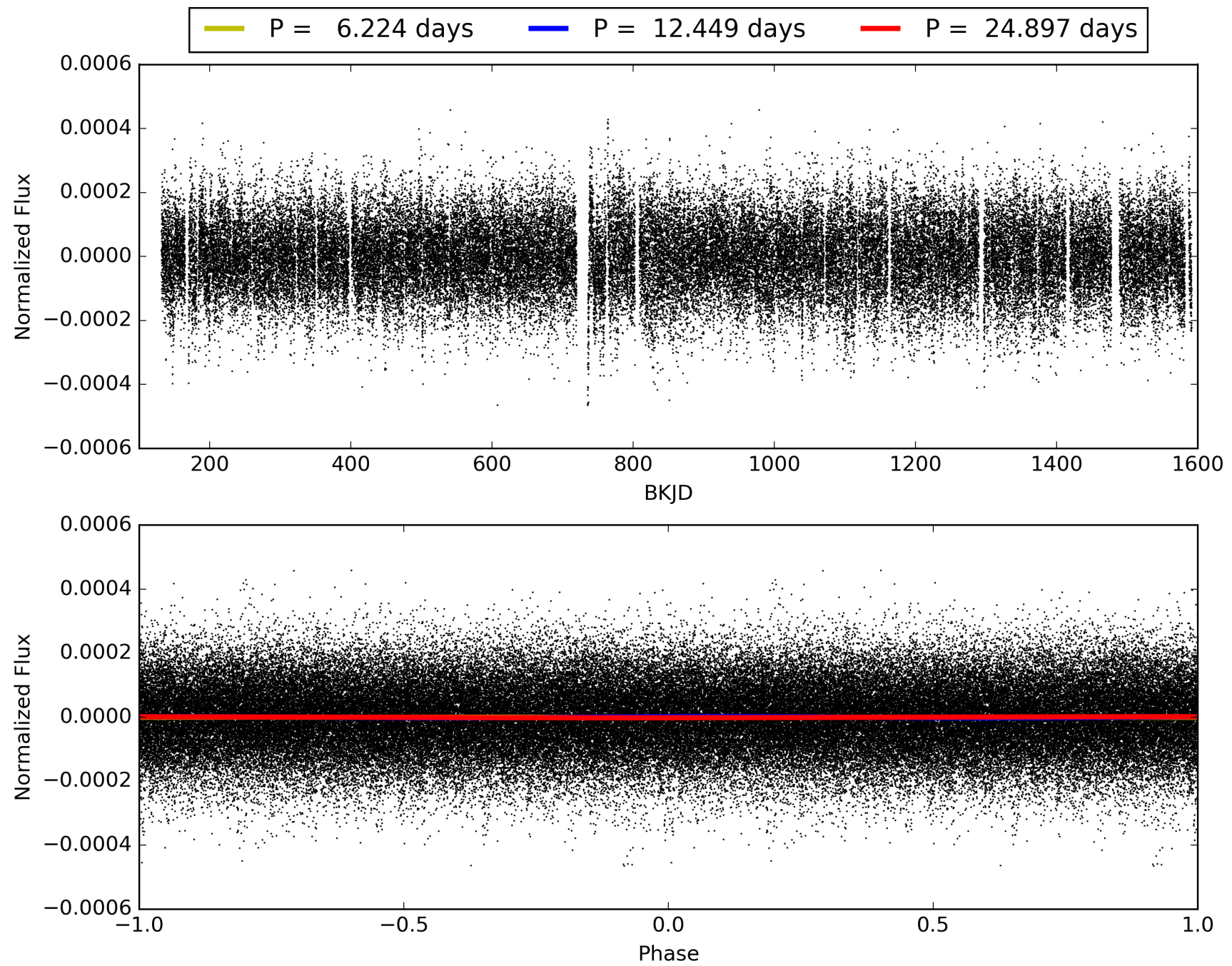
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:29:39 Z

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

TCE 007352016-09, PDC Light Curves

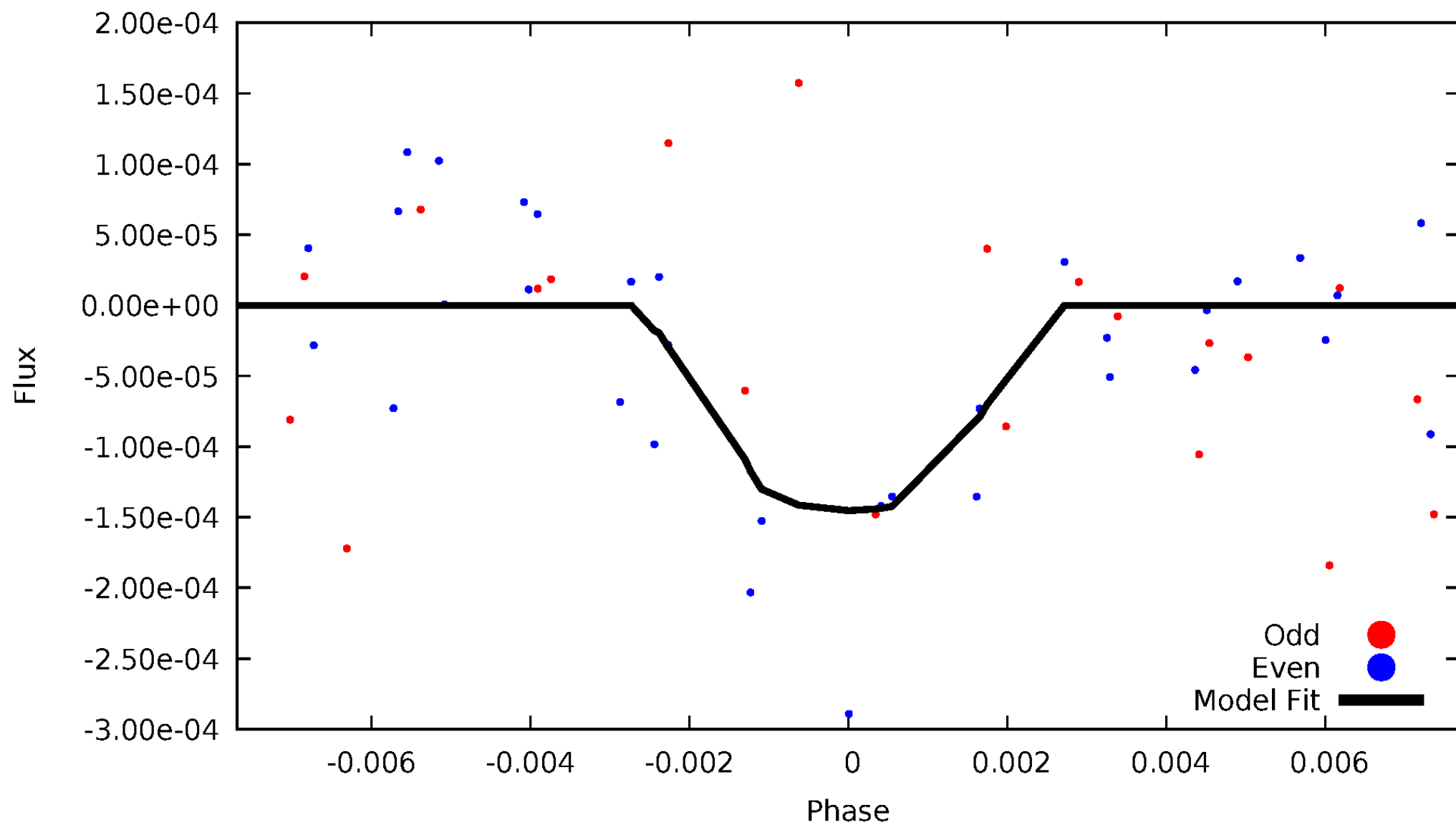


TCE 007352016-09



DV Odd/Even

TCE 007352016-09

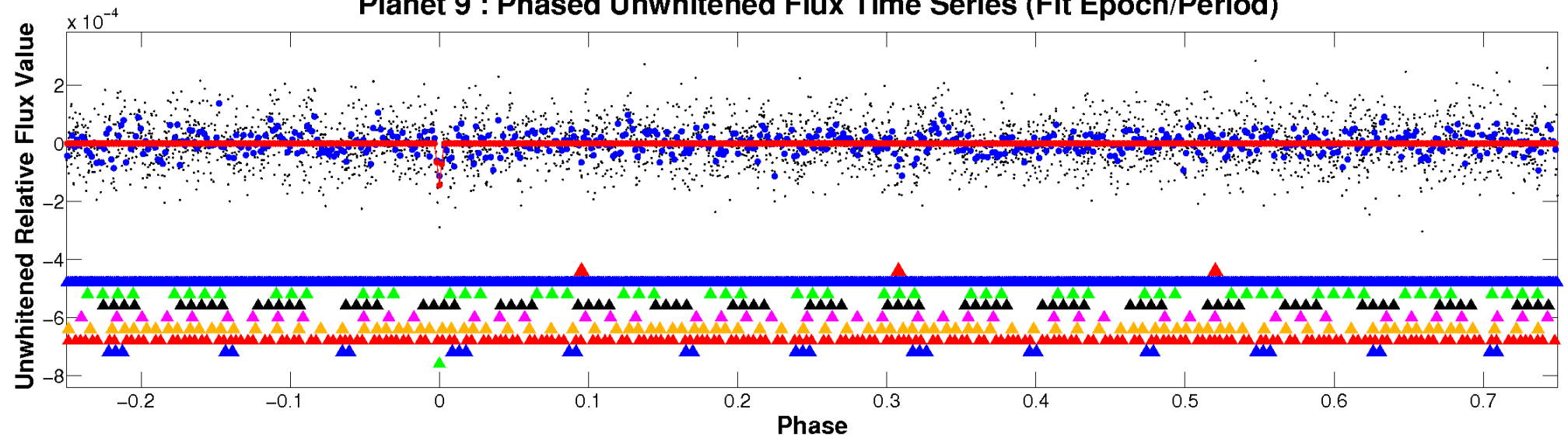


ALT Odd/Even

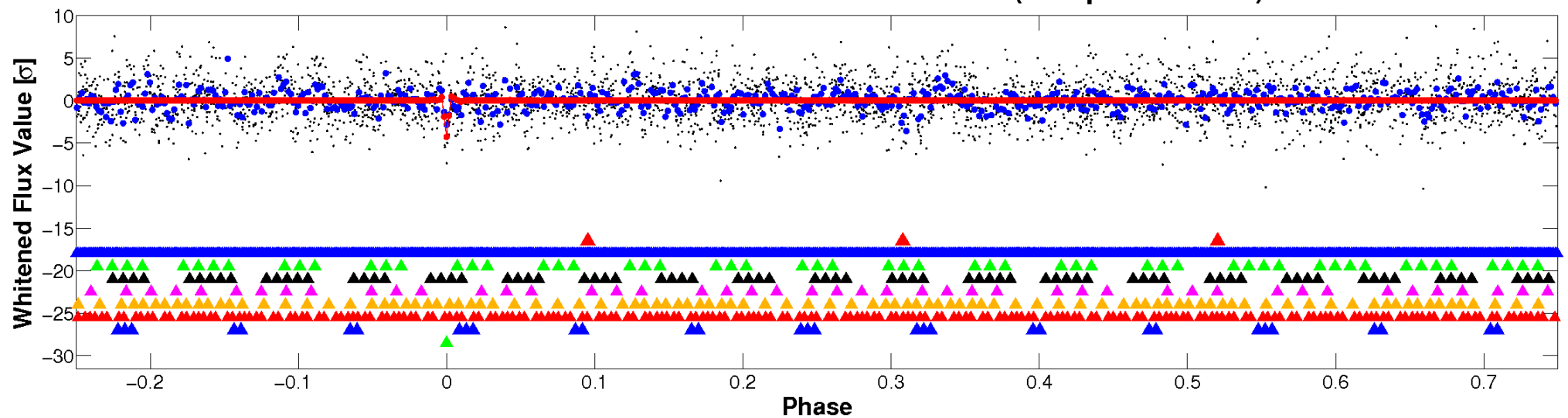
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

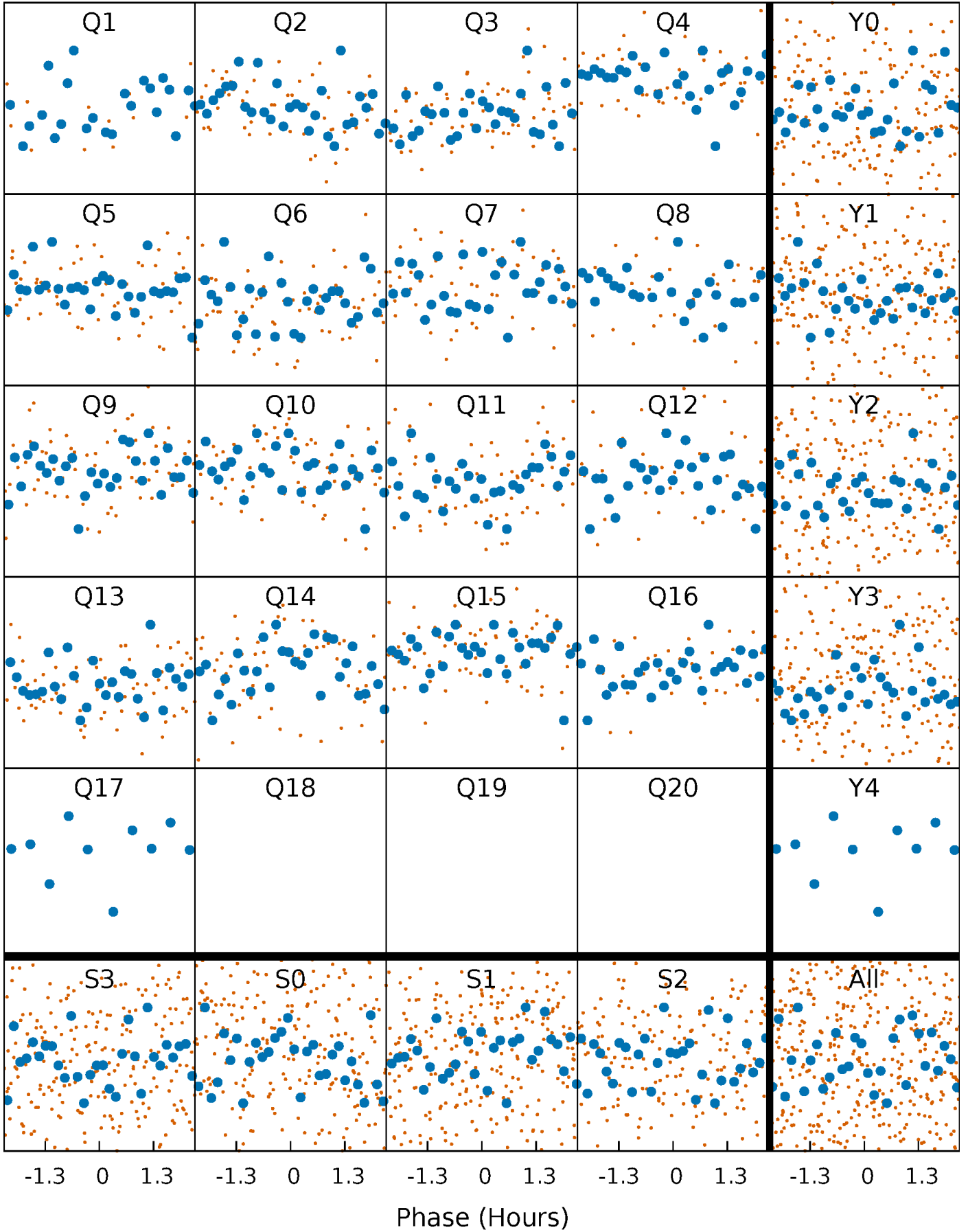


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



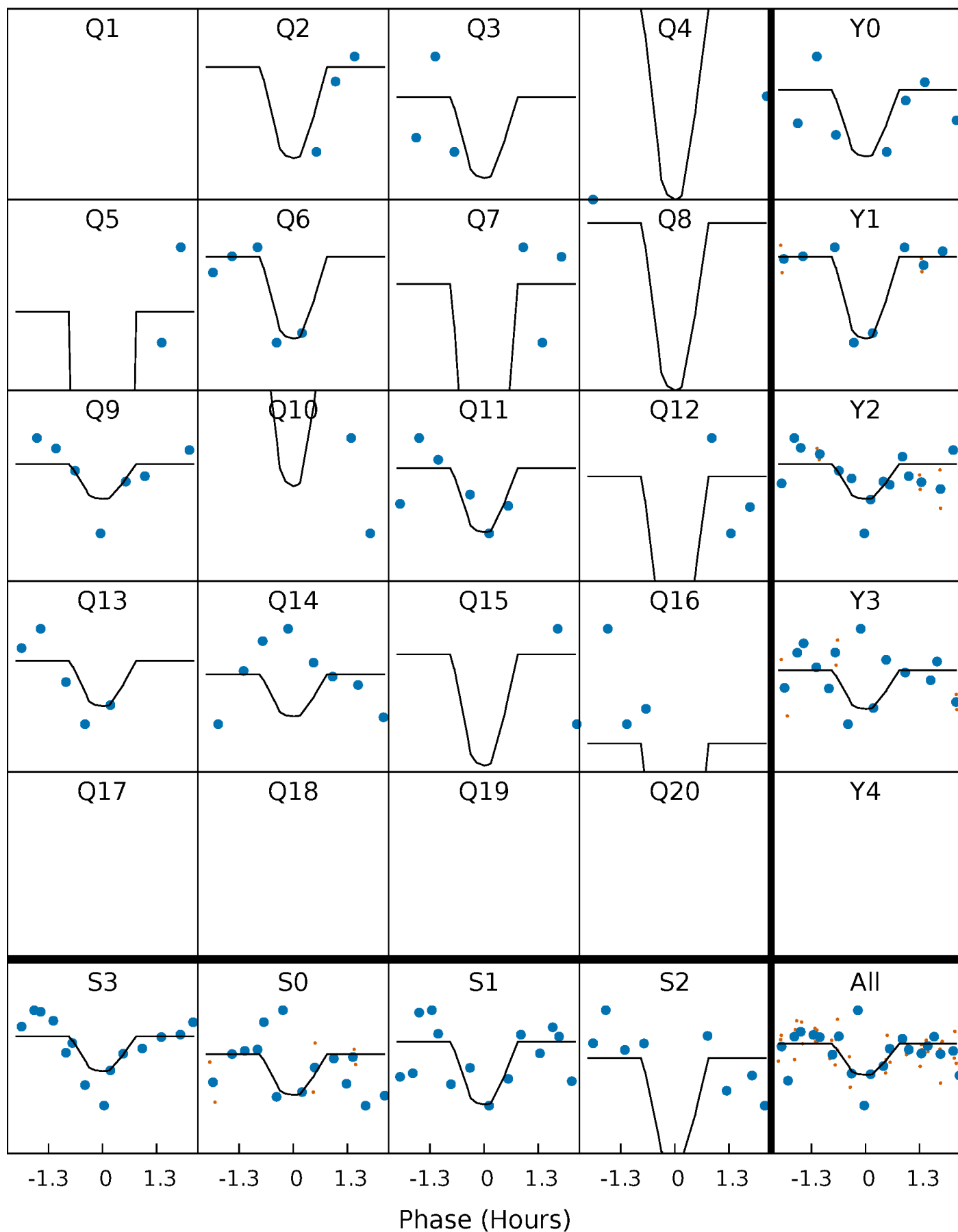
PDC Quarter-Phased Transit Curves

TCE 007352016-09 P= 12.448509 Days $T_0=138.957477$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007352016-09 P= 12.448509 Days $T_0=138.957477$ (BKJD)

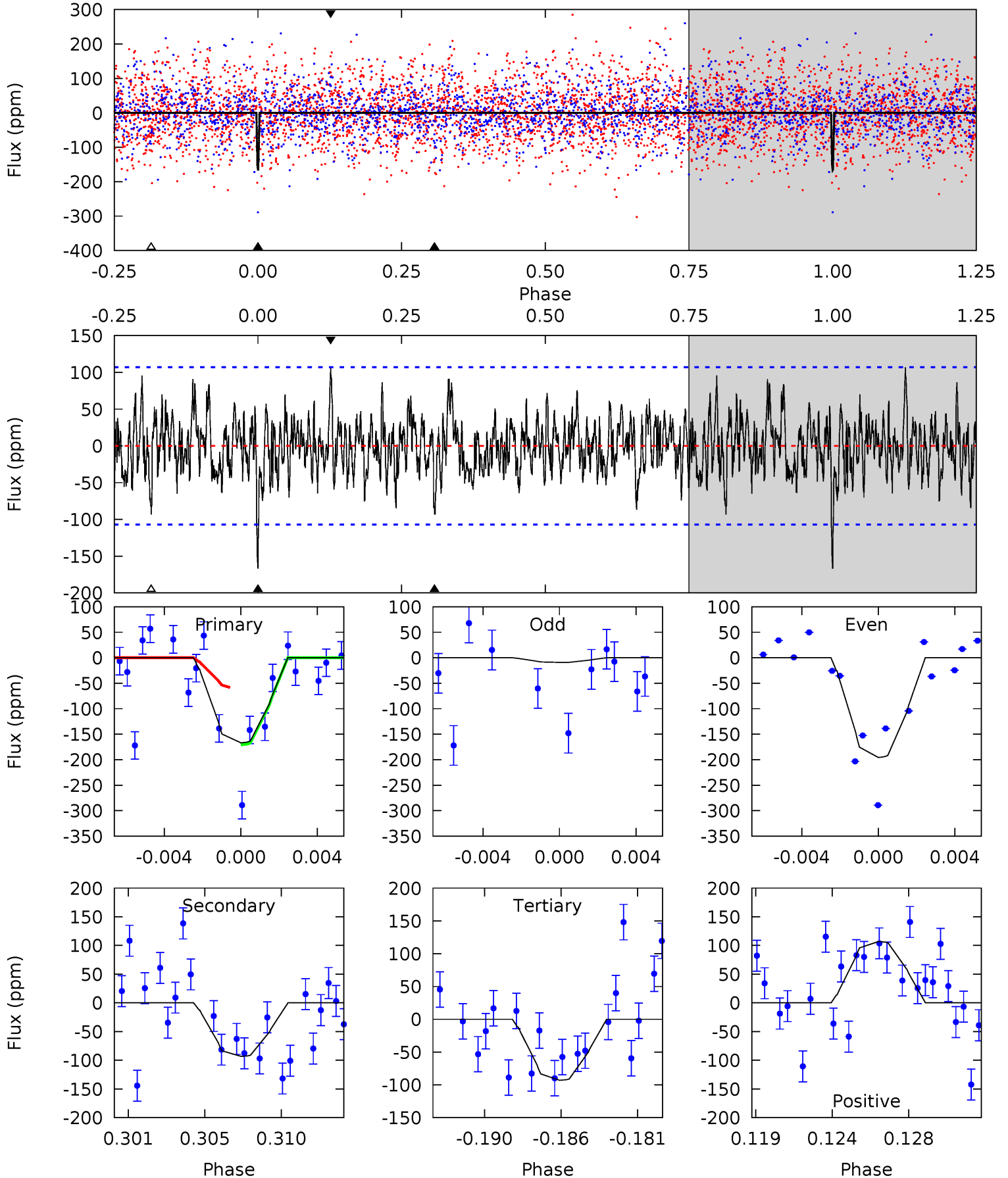


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007352016-09, P = 12.448509 Days, E = 126.508968 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.08	4.52	4.51	5.18	5.18	2.85	1.52	3.58	2.90	0.01	-0.66	4.50	0.72	0.39	2.83



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007352016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7542^{+83}_{-75}	$4.036^{+0.138}_{-0.113}$	$-0.220^{+0.150}_{-0.150}$	$1.999^{+0.397}_{-0.325}$	$1.582^{+0.158}_{-0.118}$	$0.279^{+0.164}_{-0.104}$
	+1%/-1%	+3%/-3%	+68%/-68%	+20%/-16%	+10%/-7%	+59%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007352016-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-93 ± 21	$6.49^{+6.37}_{-4.38}$	1873^{+89}_{-88}	4422^{+3022}_{-987}	19^{+151}_{-14}
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

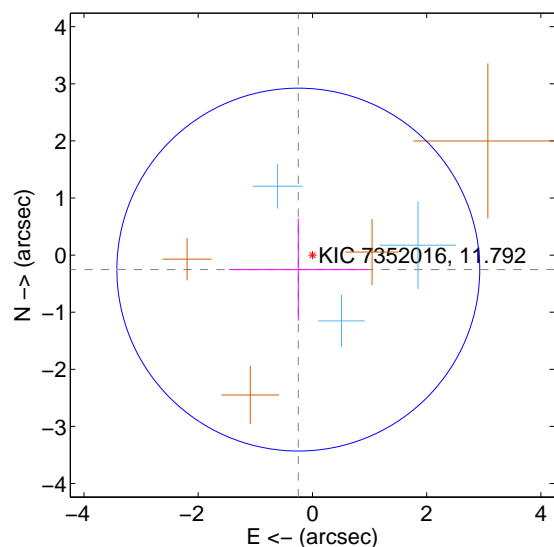
Supplemental centroid analysis for 007352016-09. **Kepler magnitude: 11.79.** Transit SNR 11.53

There are 3 quarters with good PRF difference image offsets

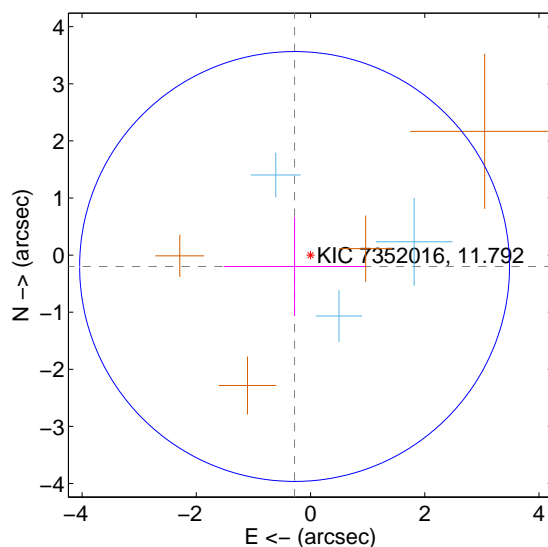
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.355 ± 1.059	0.33	0.247 ± 1.214	-0.254 ± 0.895
PRF-fit source offset from KIC position	0.343 ± 1.255	0.27	0.279 ± 1.239	-0.200 ± 0.864
photometric centroid source offset	0.46 ± 0.39	1.19	0.32 ± 0.38	0.34 ± 0.39

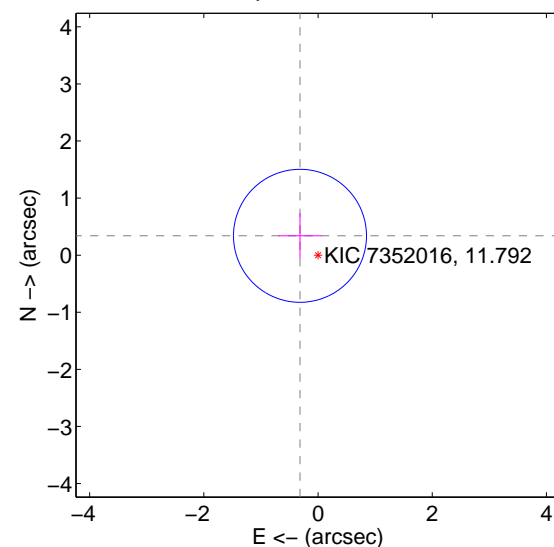
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

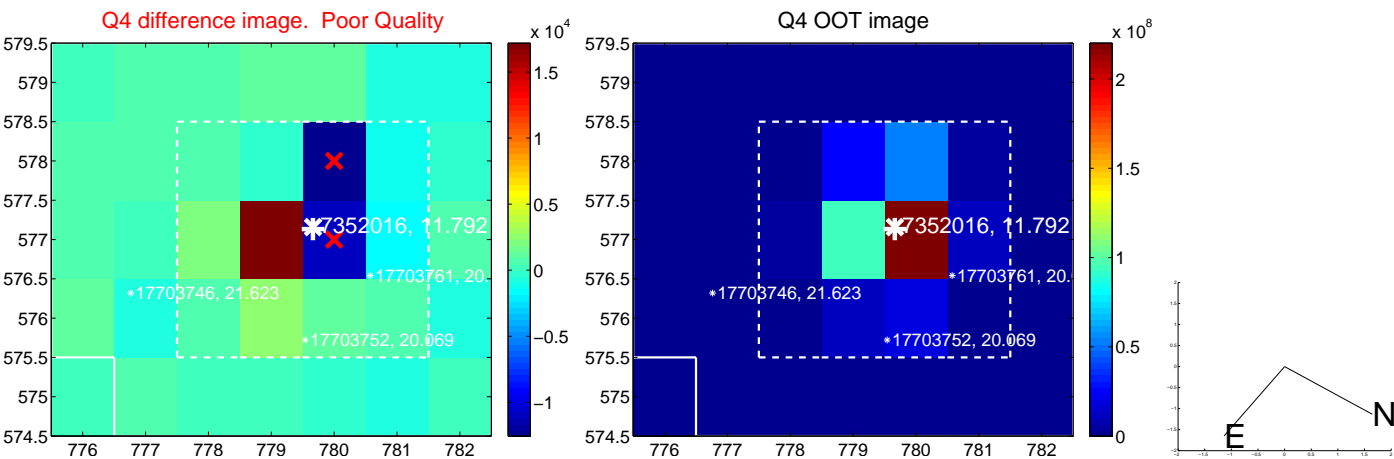
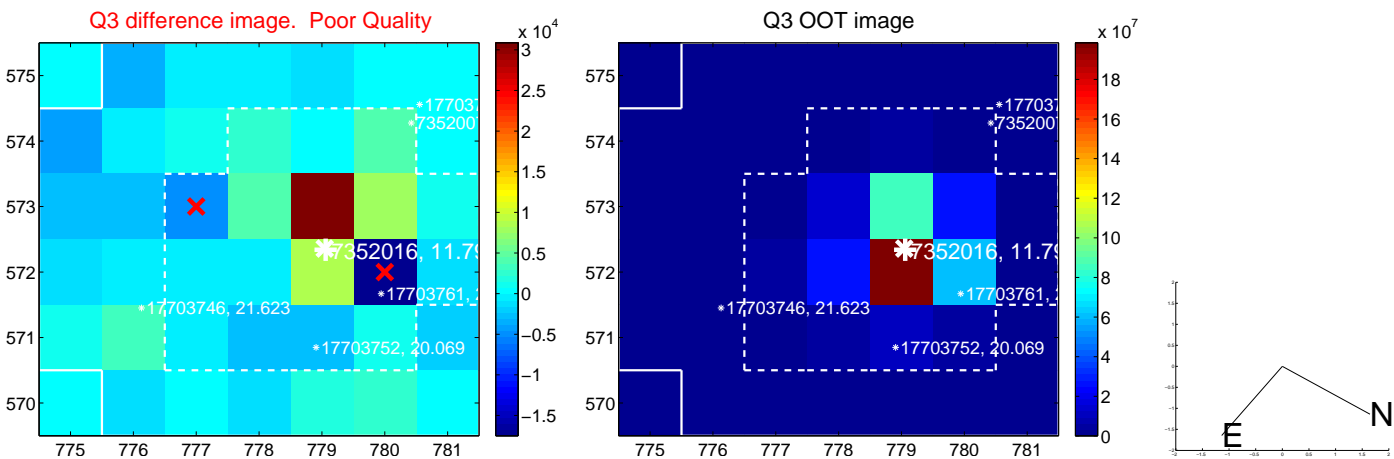
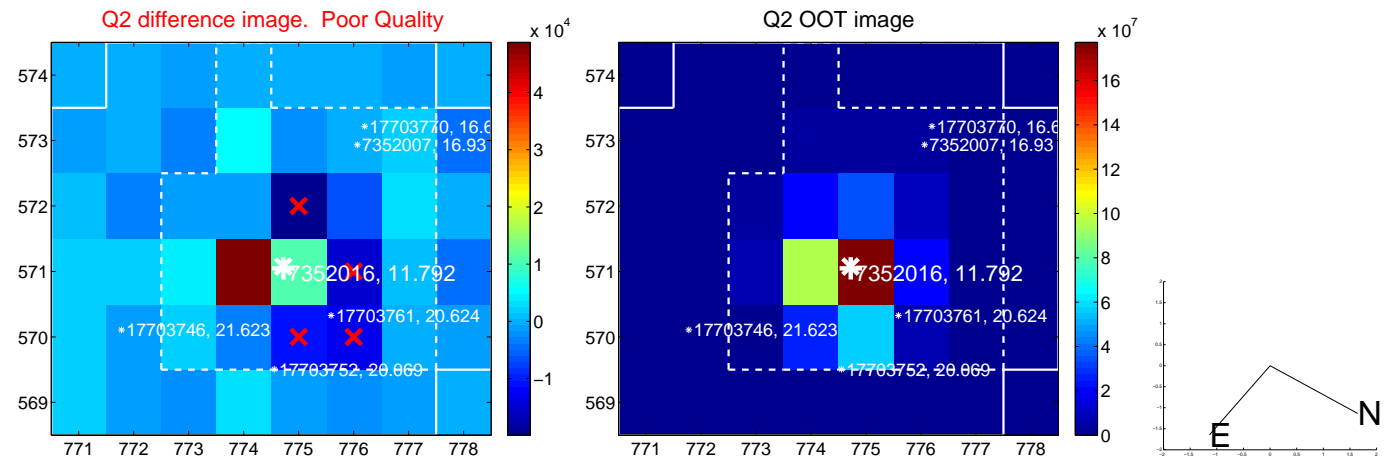
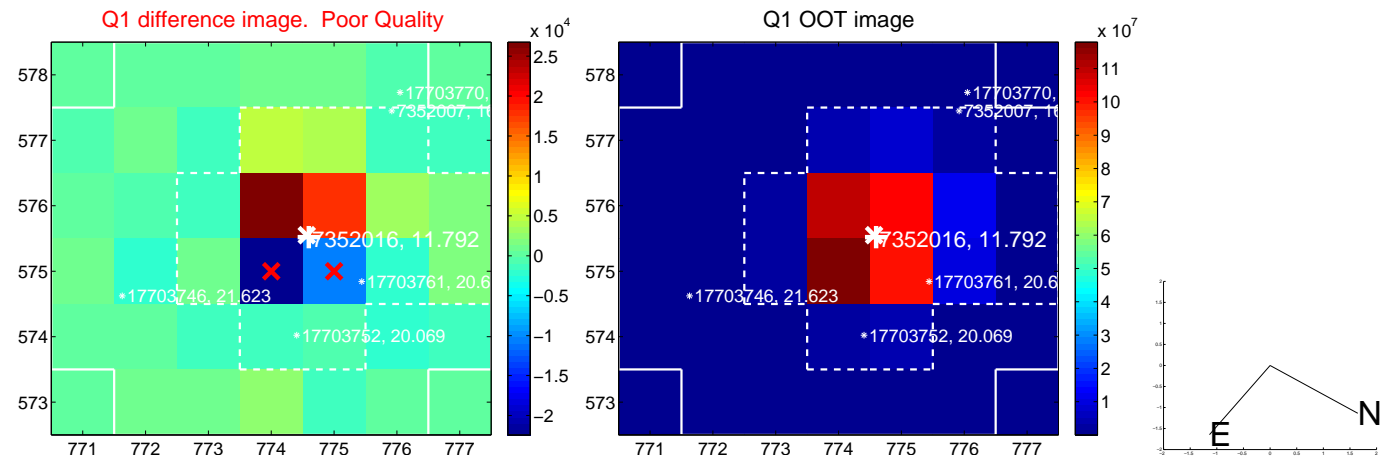


offset from photometric centroids

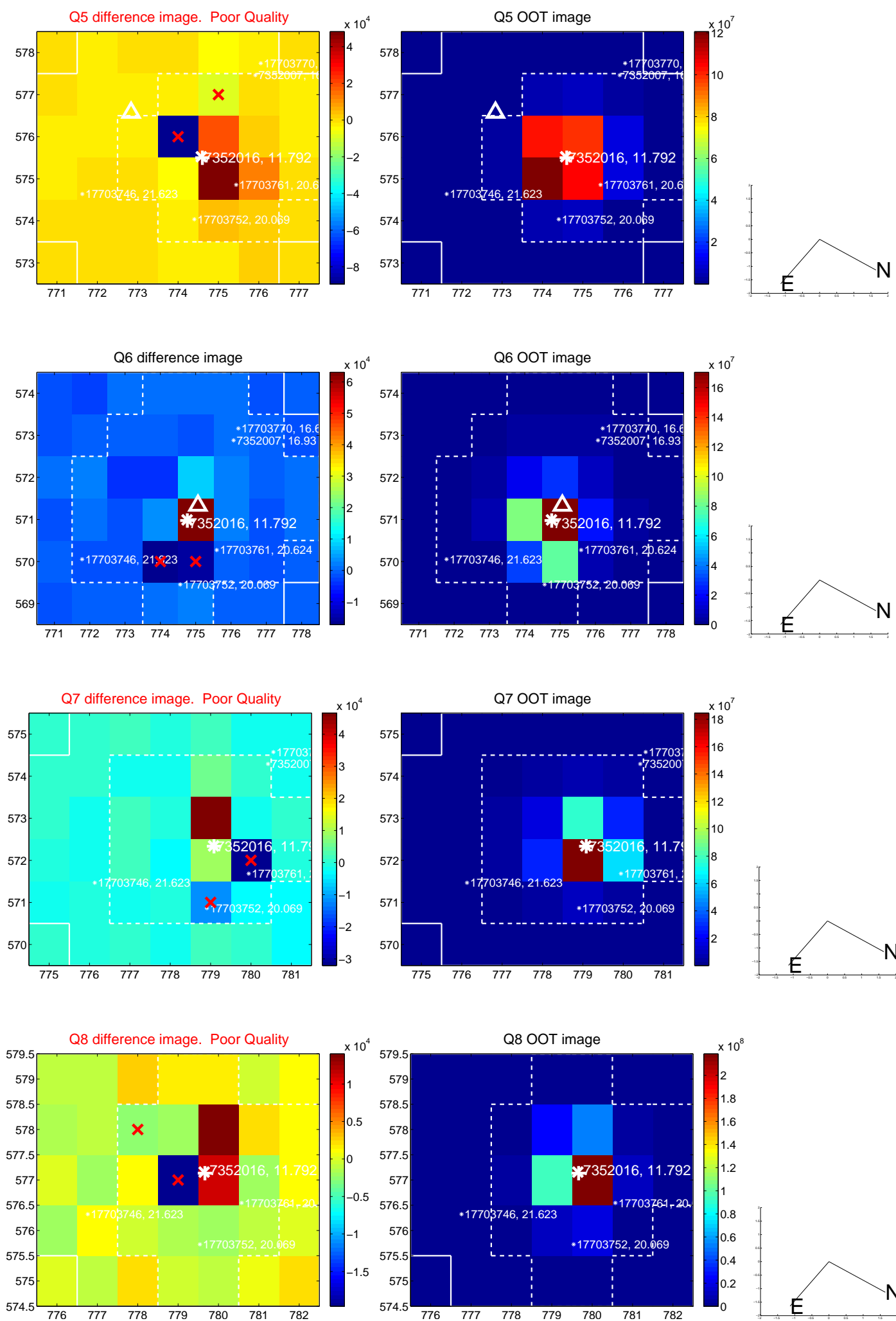


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

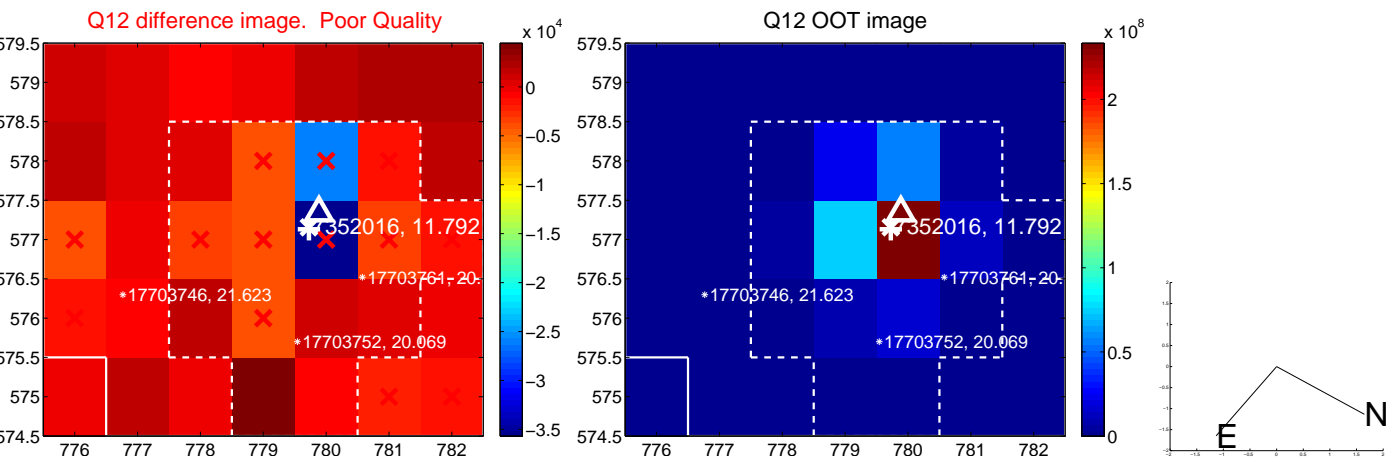
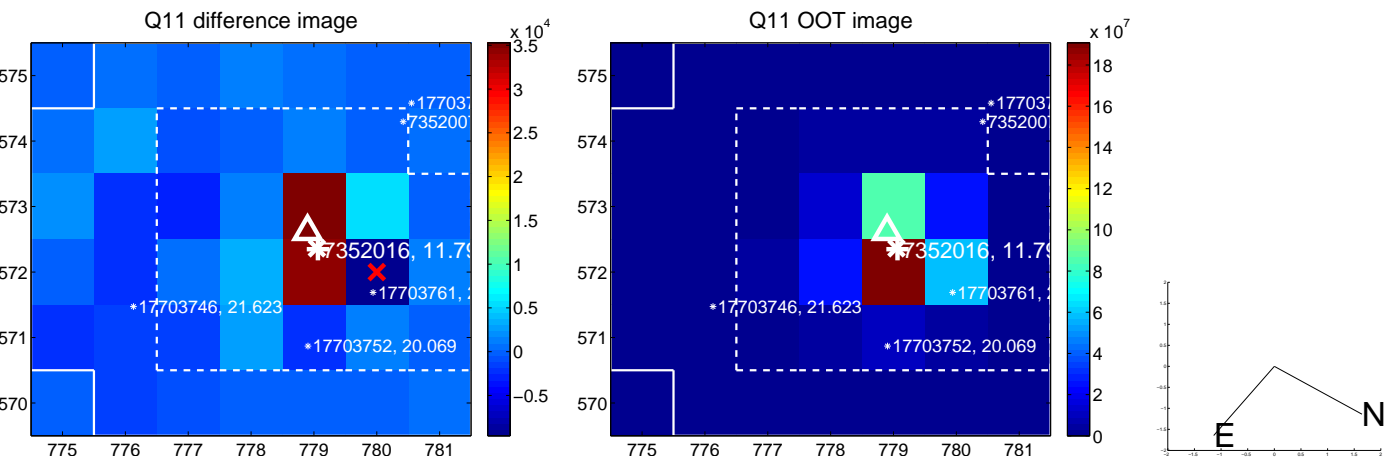
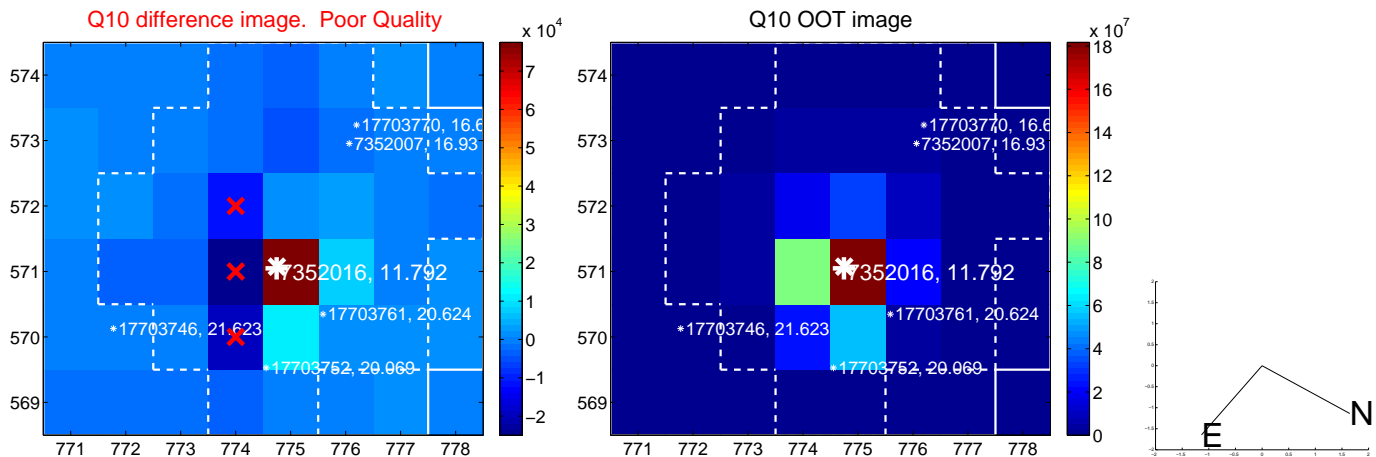
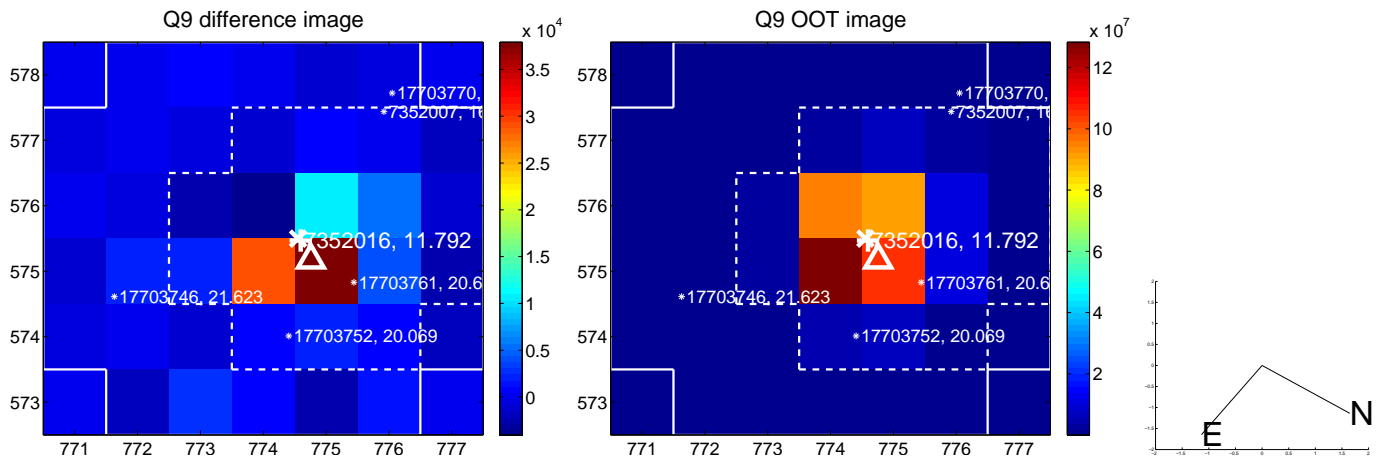
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



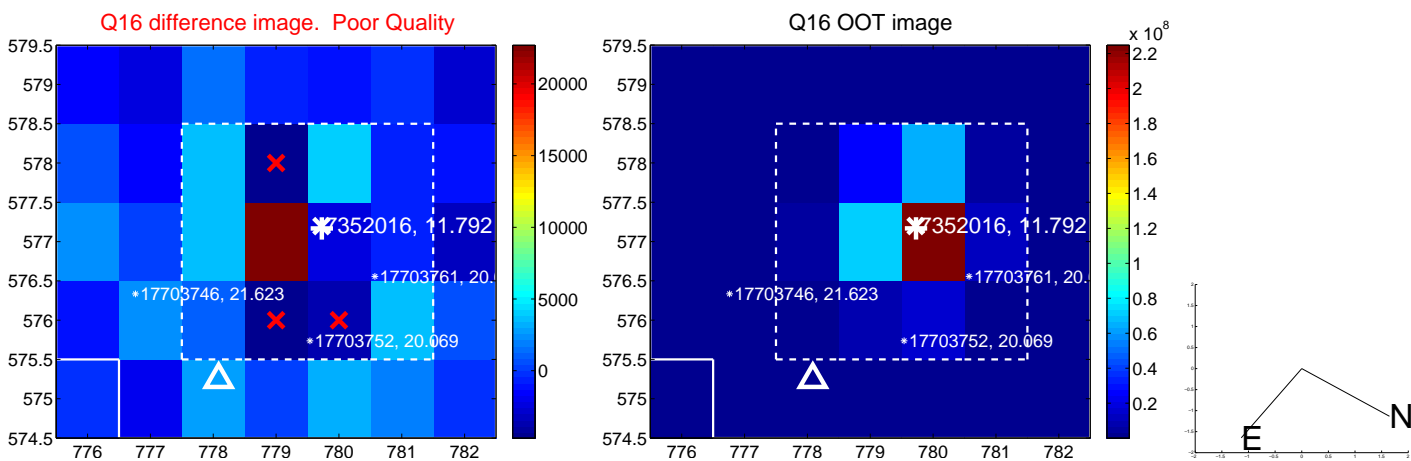
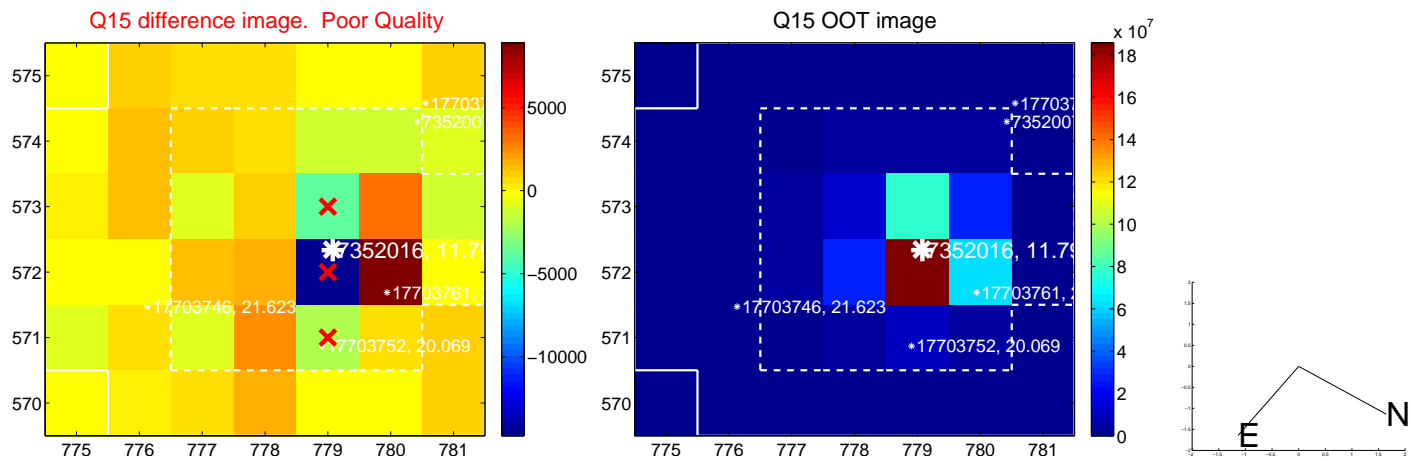
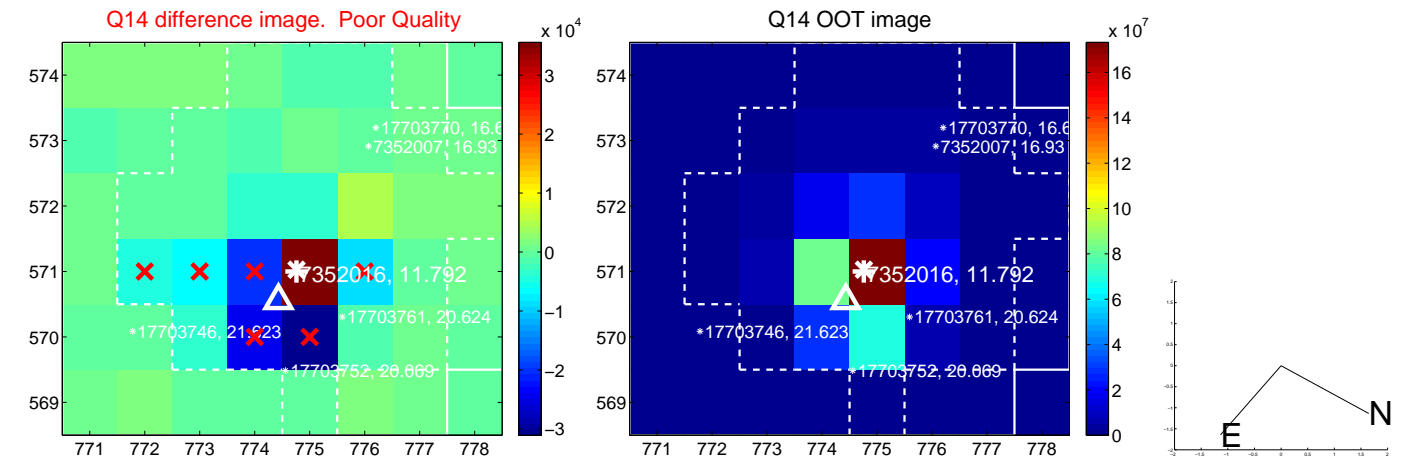
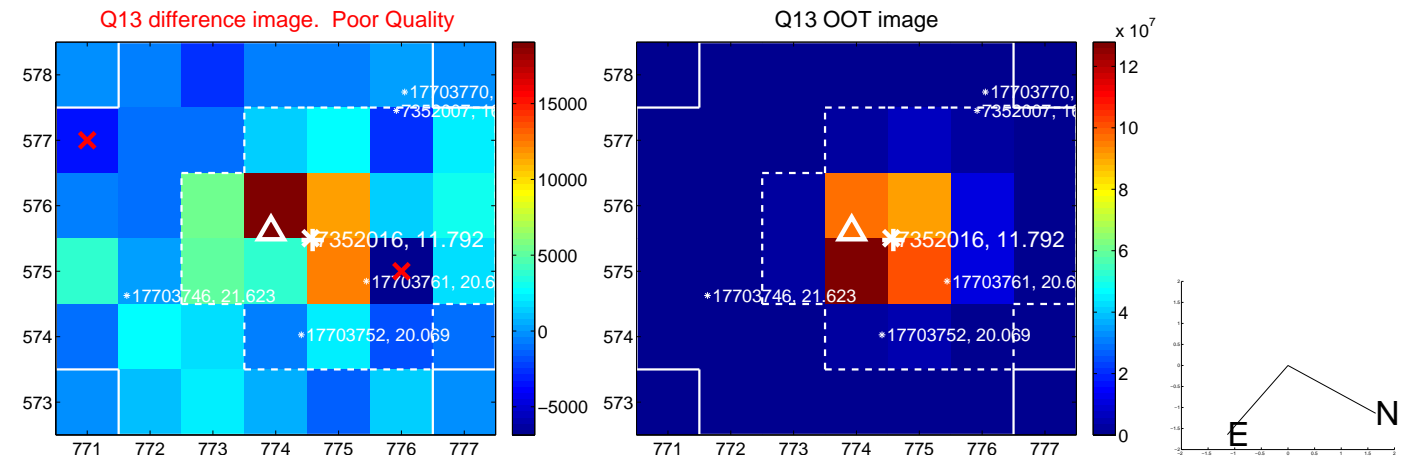
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



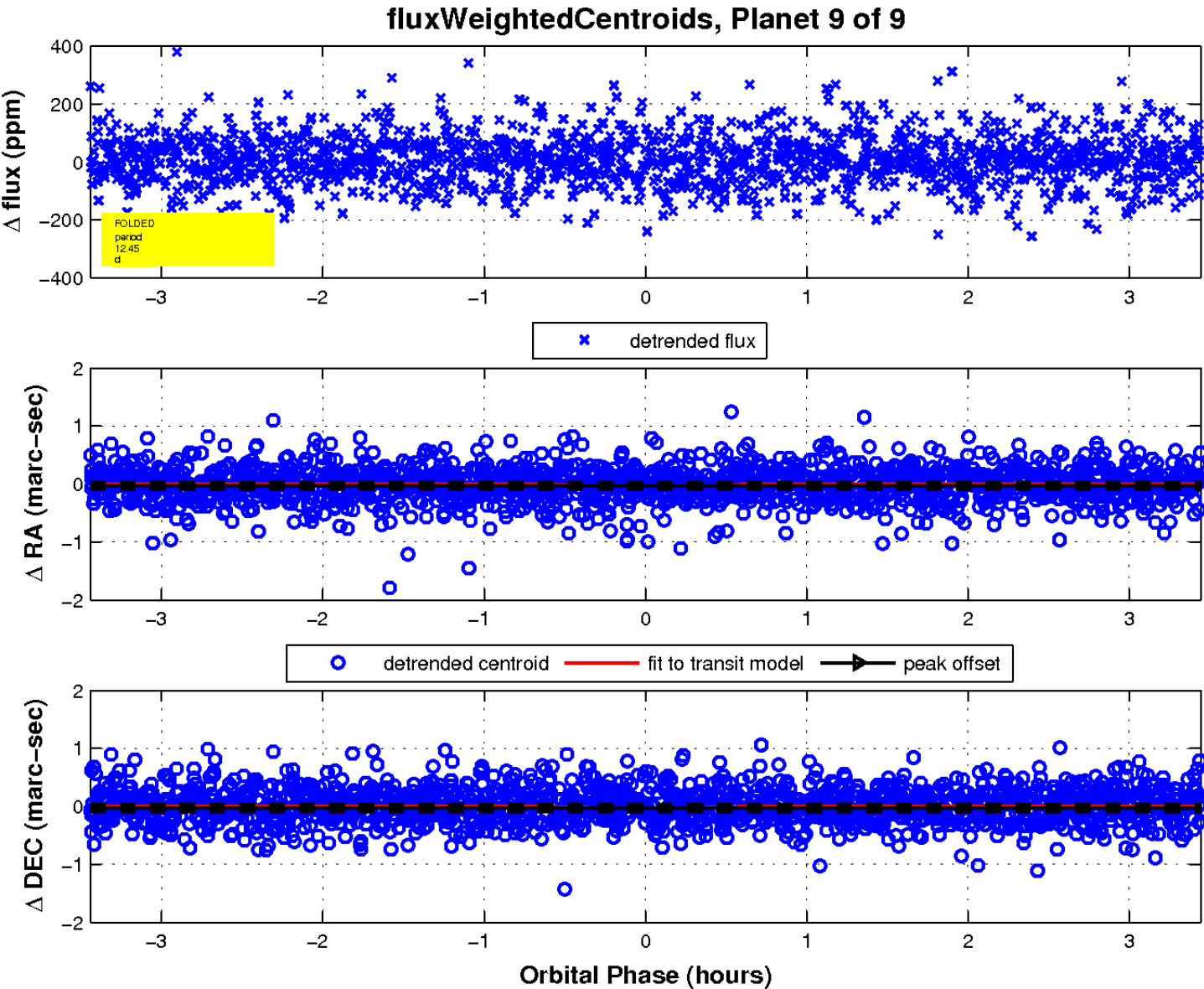
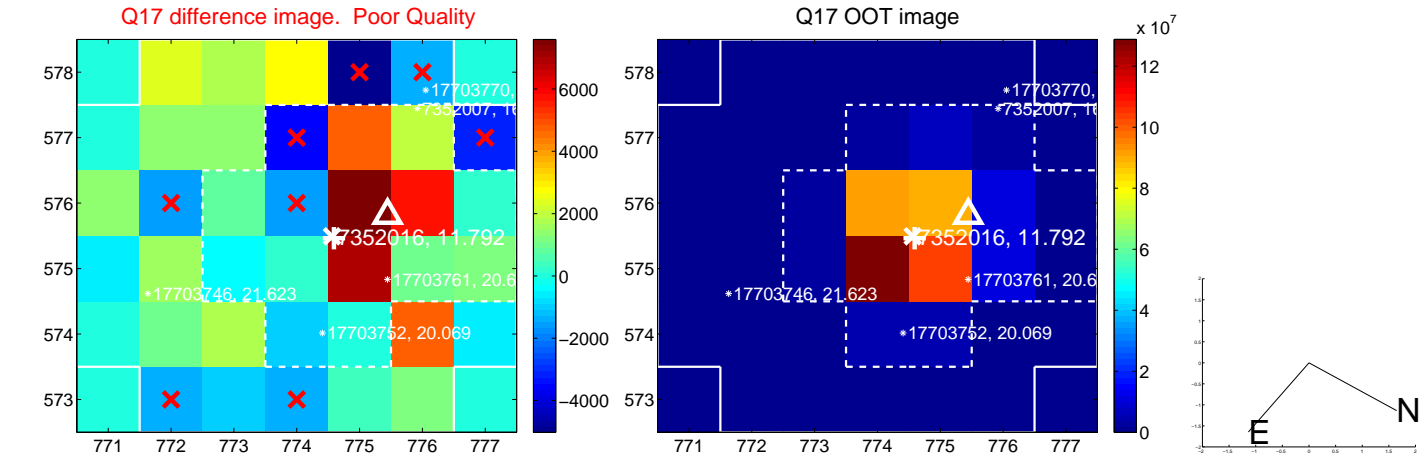
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

