

KIC 006346698

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})
006346698-01	OBS	No	1.220221	132.149443	57.7	4.583	9.0	12.6	1.83	6251	2.86	8598.22
006346698-02	OBS	No	266.314739	344.053750	484.9	5.385	8.2	8.5	1.83	6251	5.15	6.54
006346698-03	OBS	No	433.147881	209.698718	448.2	12.310	7.1	8.0	1.83	6251	4.84	3.42
006346698-04	OBS	No	534.261924	439.146878	619.2	11.980	7.9	8.2	1.83	6251	5.55	2.59
006346698-05	OBS	No	83.640271	208.582800	151.4	7.661	7.6	4.4	1.83	6251	2.48	30.65
006346698-06	OBS	No	1.220382	131.771486	71.3	7.836	10.3	11.2	1.83	6251	2.17	8596.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006346698-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006346698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
006346698-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
006346698-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

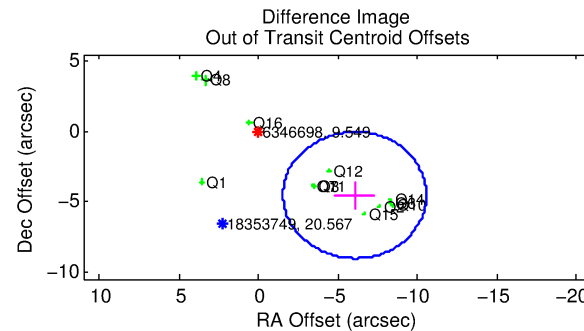
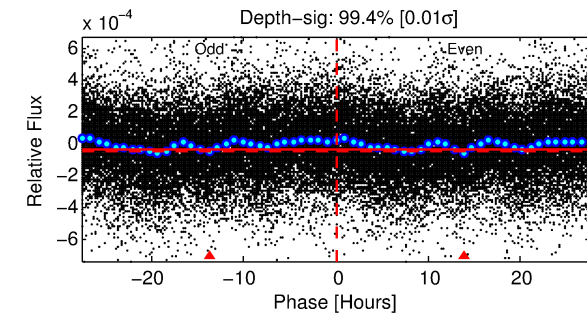
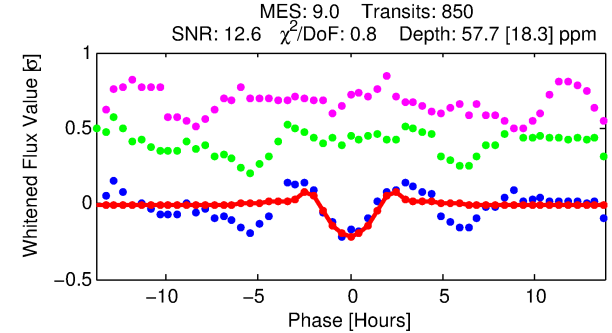
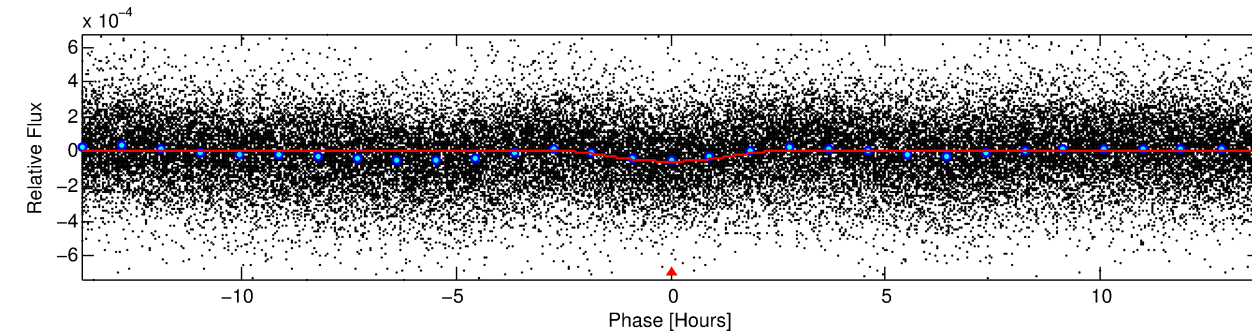
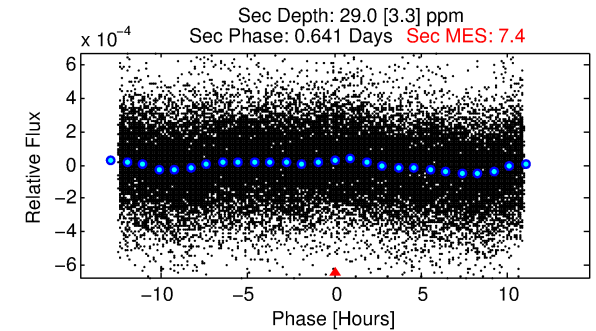
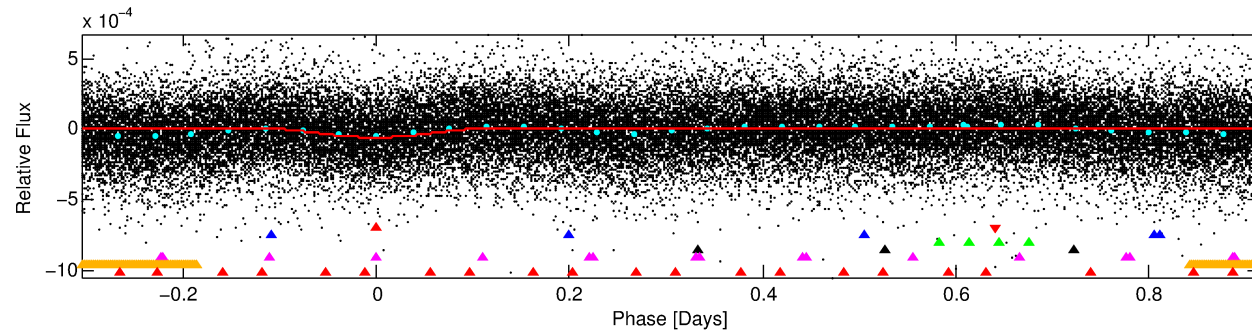
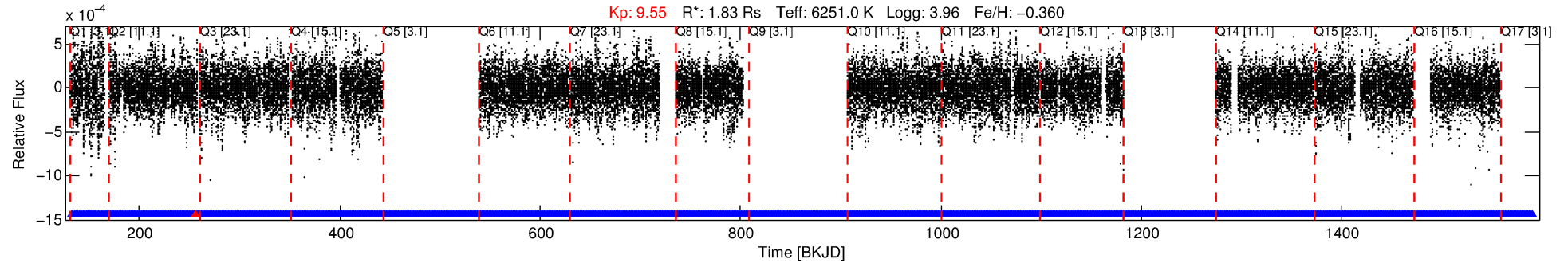
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006346698-01

No Significant Match Found

DV One-Page Summary

KIC: 6346698 Candidate: 1 of 7 Period: 1.220 d



DV Fit Results:

Period = 1.22022 [0.00001] d
Epoch = 132.1494 [0.0032] BKJD
Rp/R* = 0.0143 [0.0145]
a/R* = 1.06 [0.01]
b = 1.00 [0.02]
Seff = 8598.22 [6150.92]
Teq = 2455 [439] K
Rp = 2.86 [3.11] Re
a = 0.0231 [0.0097] AU
Ag = 1.04 [2.23] [0.02σ]
Teffp = 3833 [1945] K [0.69σ]

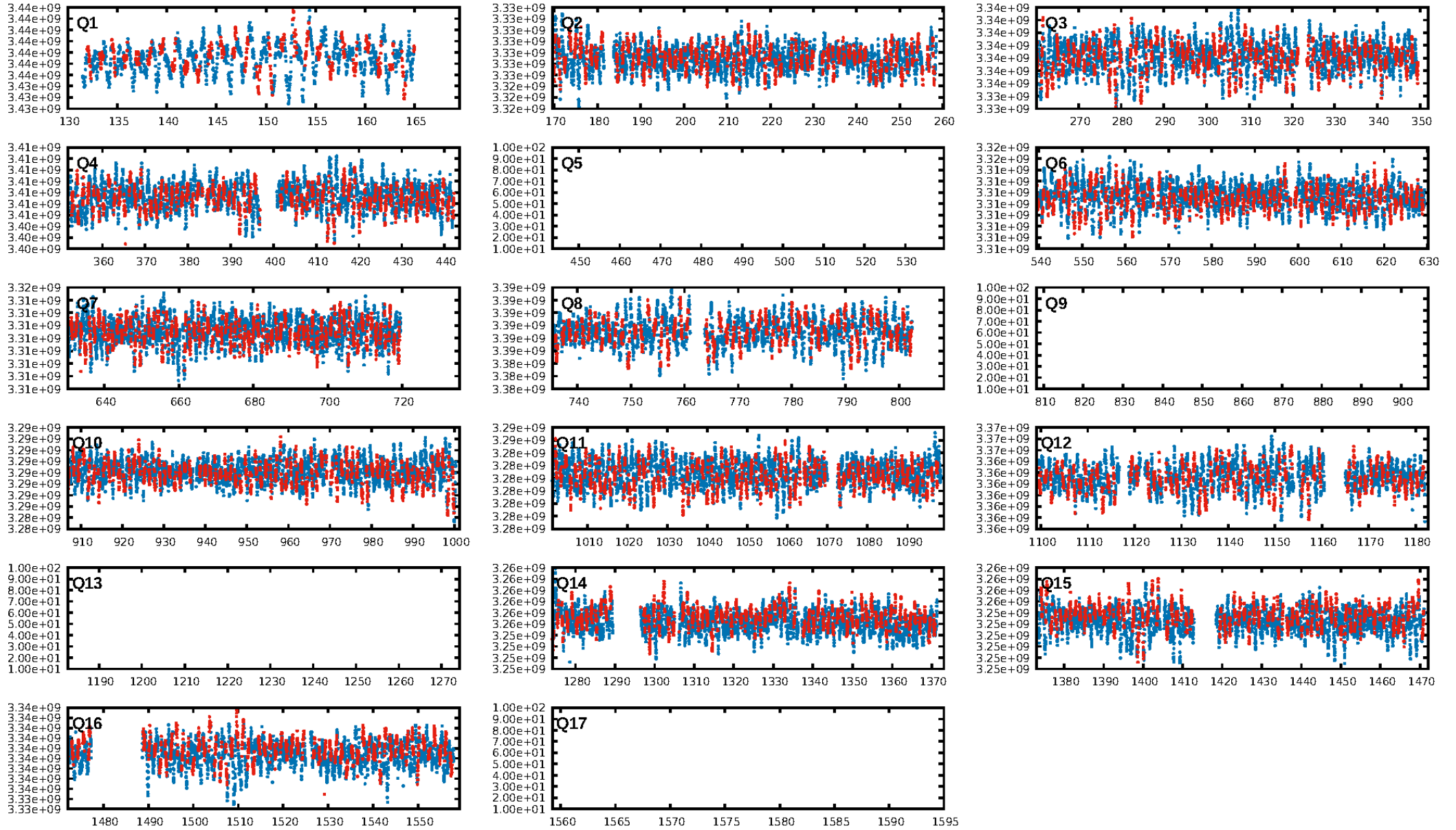
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [822/823]
GhostDiagnostic-chr: N/A
Centroid-sig: 1.1%
Centroid-so: 0.919 arcsec [2.83σ]
OotOffset-rm: 7.581 arcsec [5.05σ]
KicOffset-rm: 7.303 arcsec [5.74σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 0.00 [0/13]

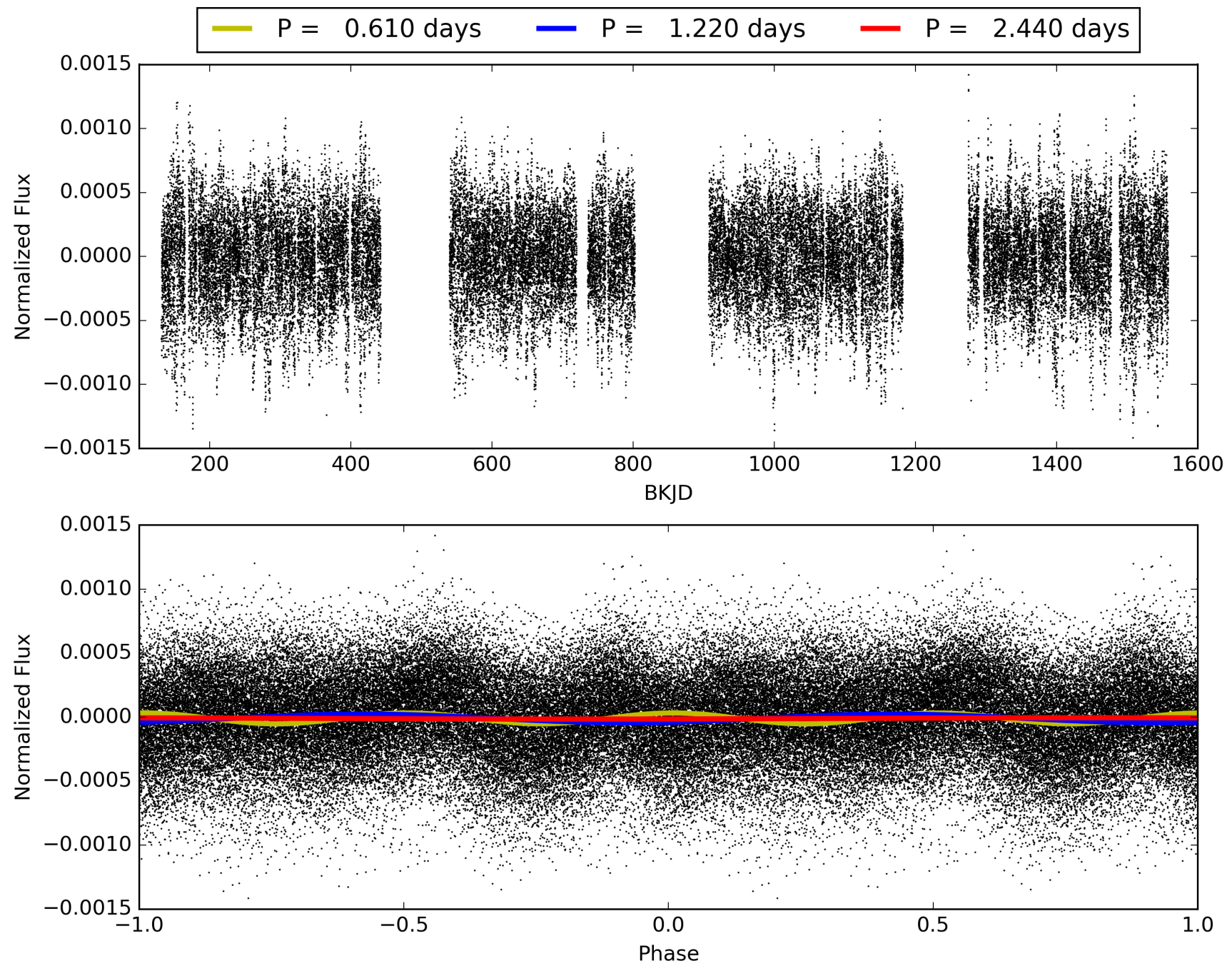
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:51:17 Z

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

TCE 006346698-01, PDC Light Curves

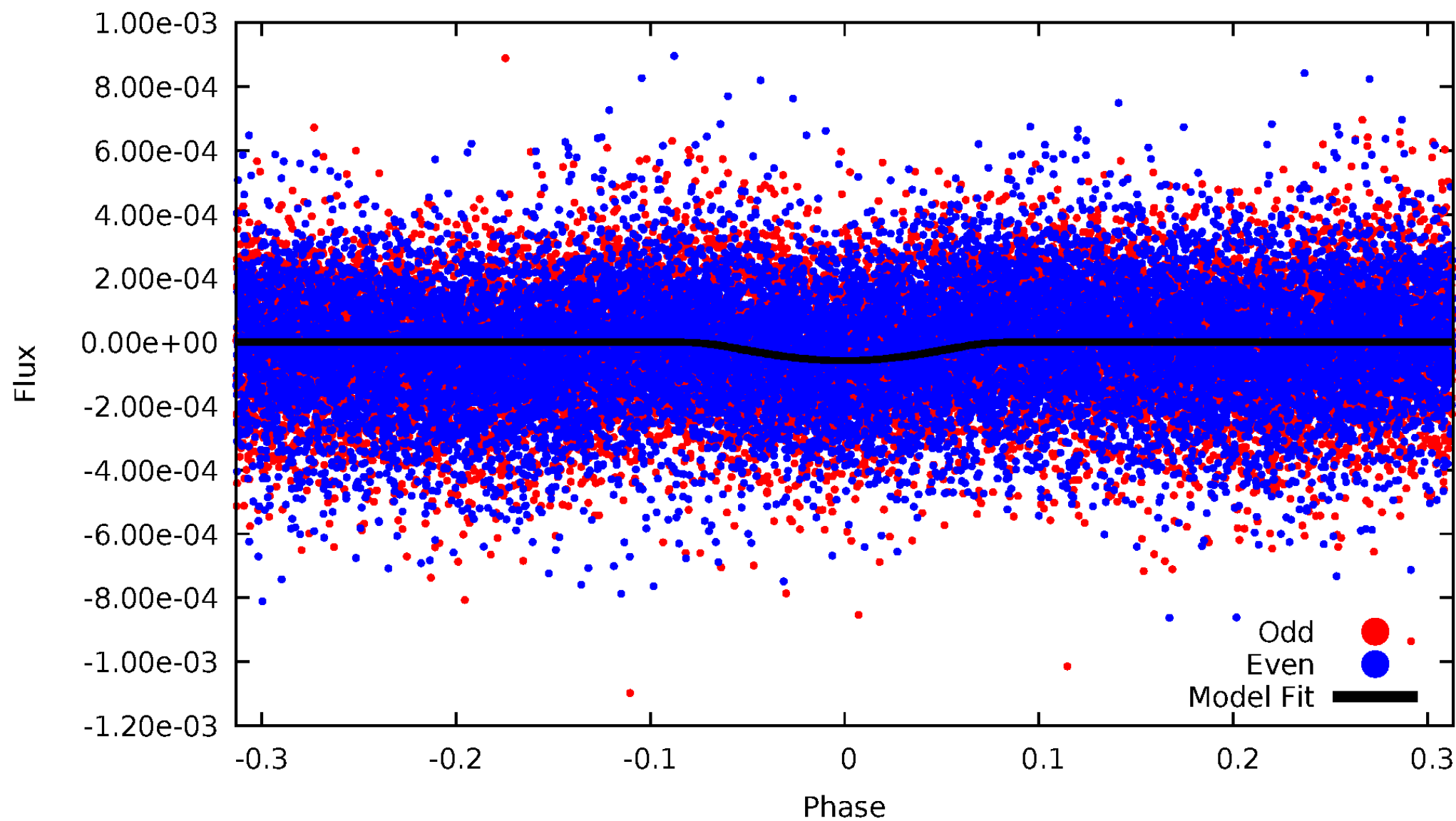


TCE 006346698-01



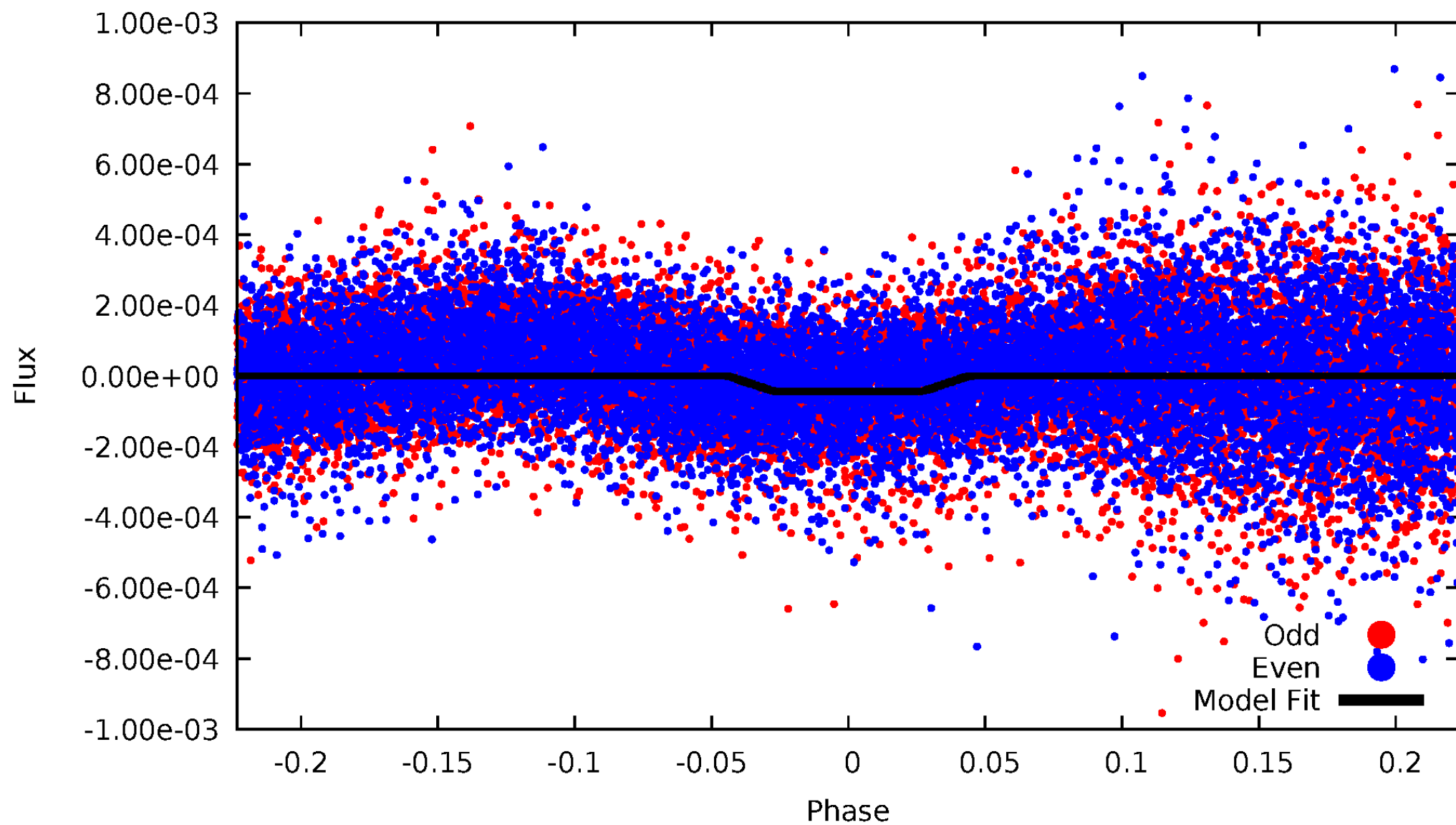
DV Odd/Even

TCE 006346698-01

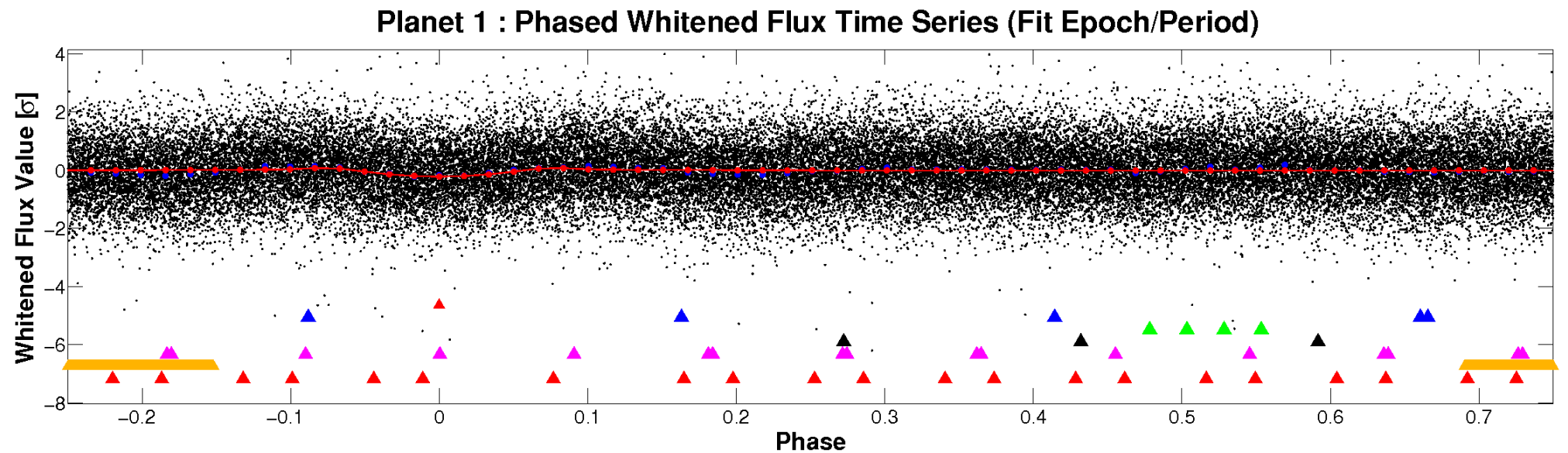
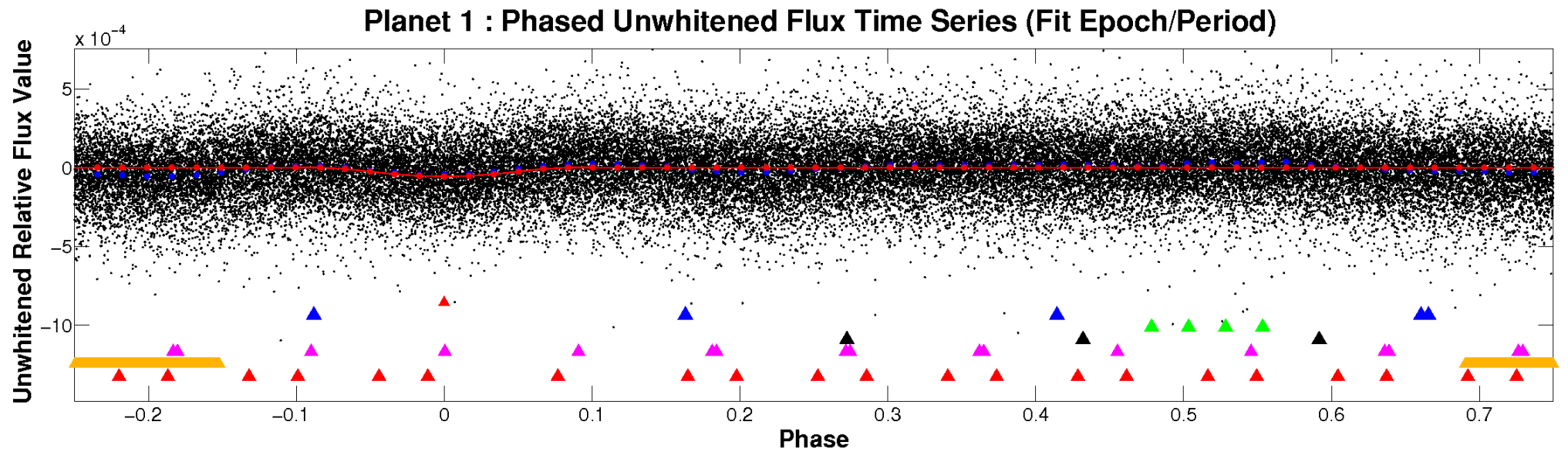


ALT Odd/Even

TCE 006346698-01

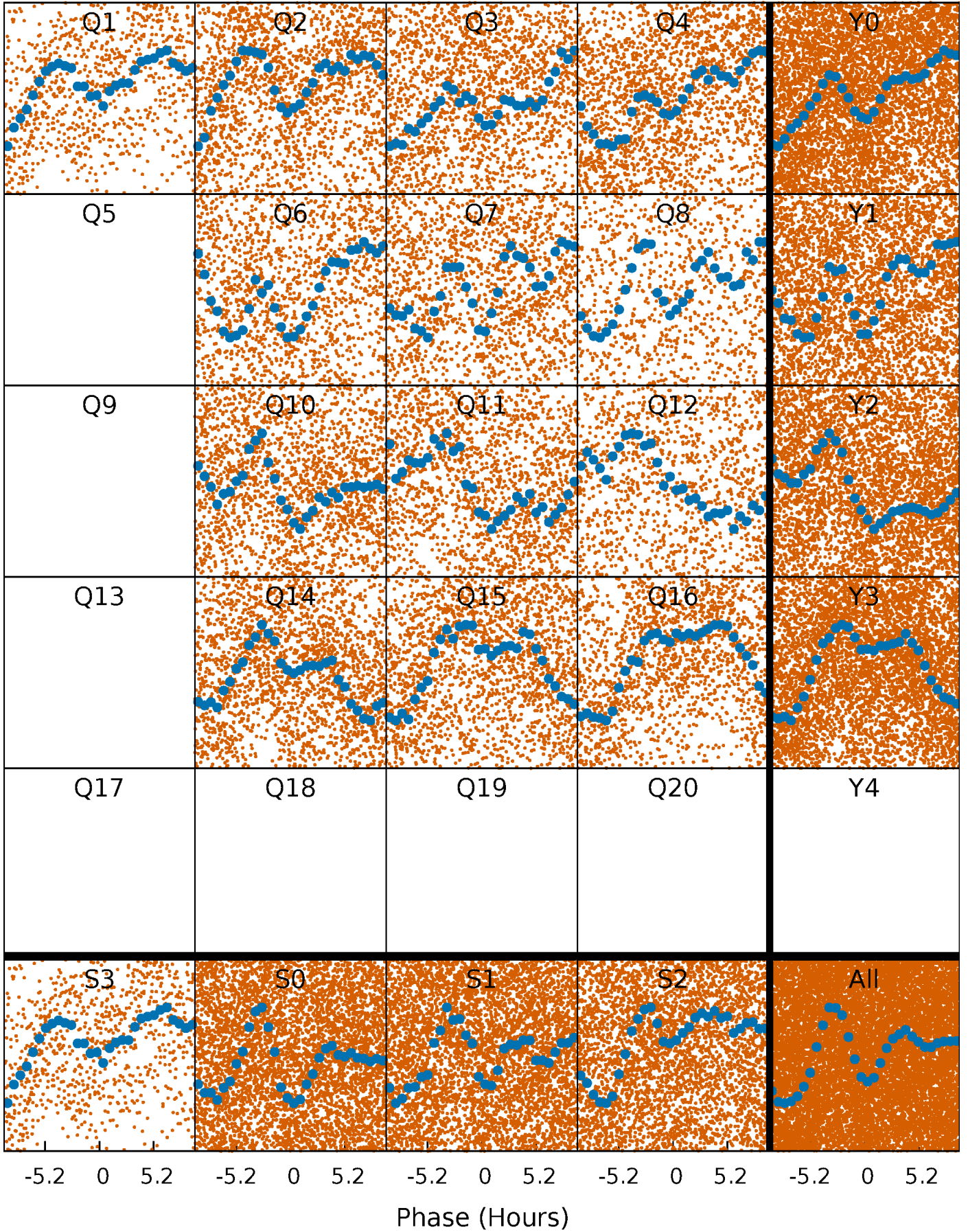


Non-Whitened Vs. Whitened Light Curve



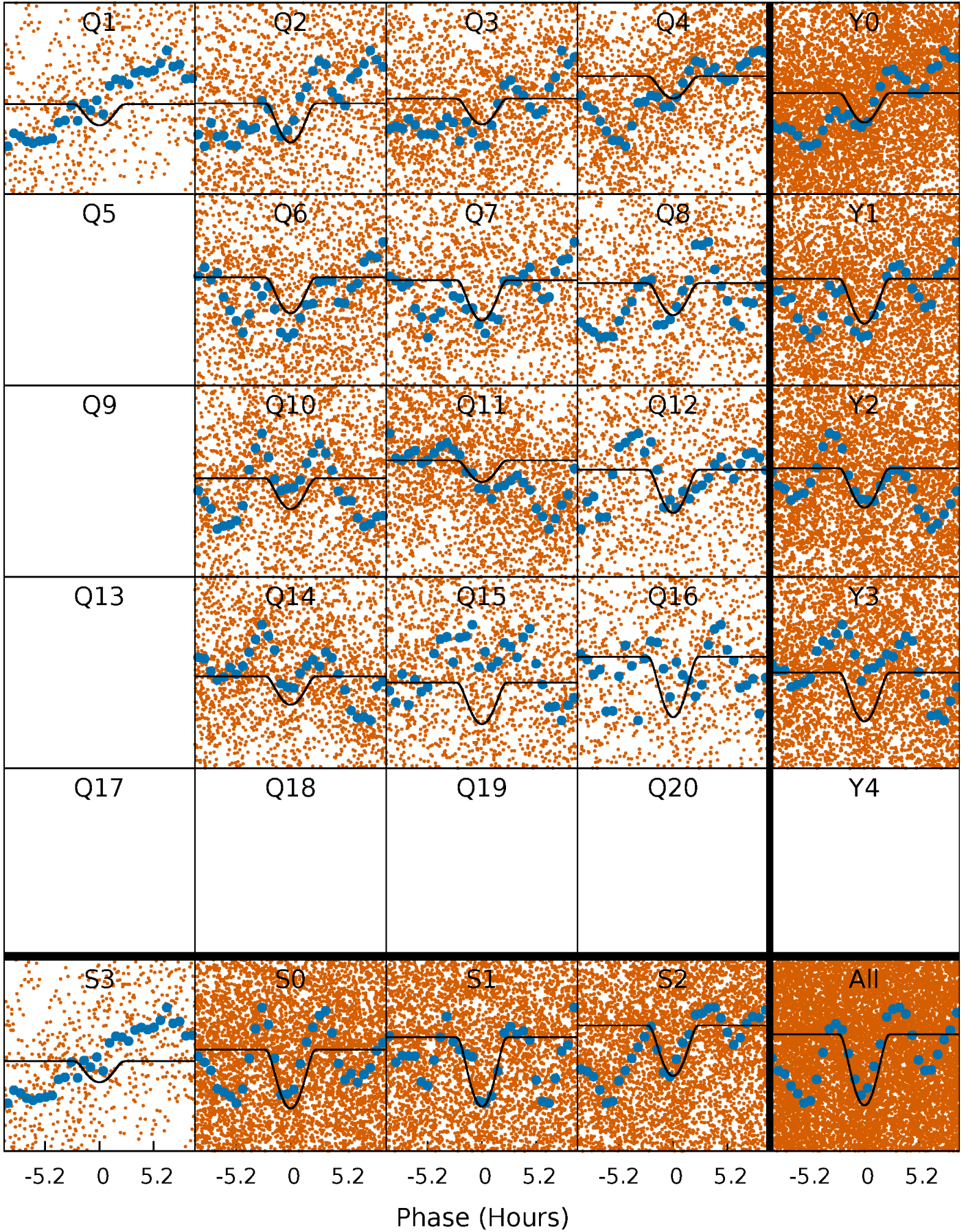
PDC Quarter-Phased Transit Curves

TCE 006346698-01 P= 1.220221 Days $T_0=132.149443$ (BKJD)



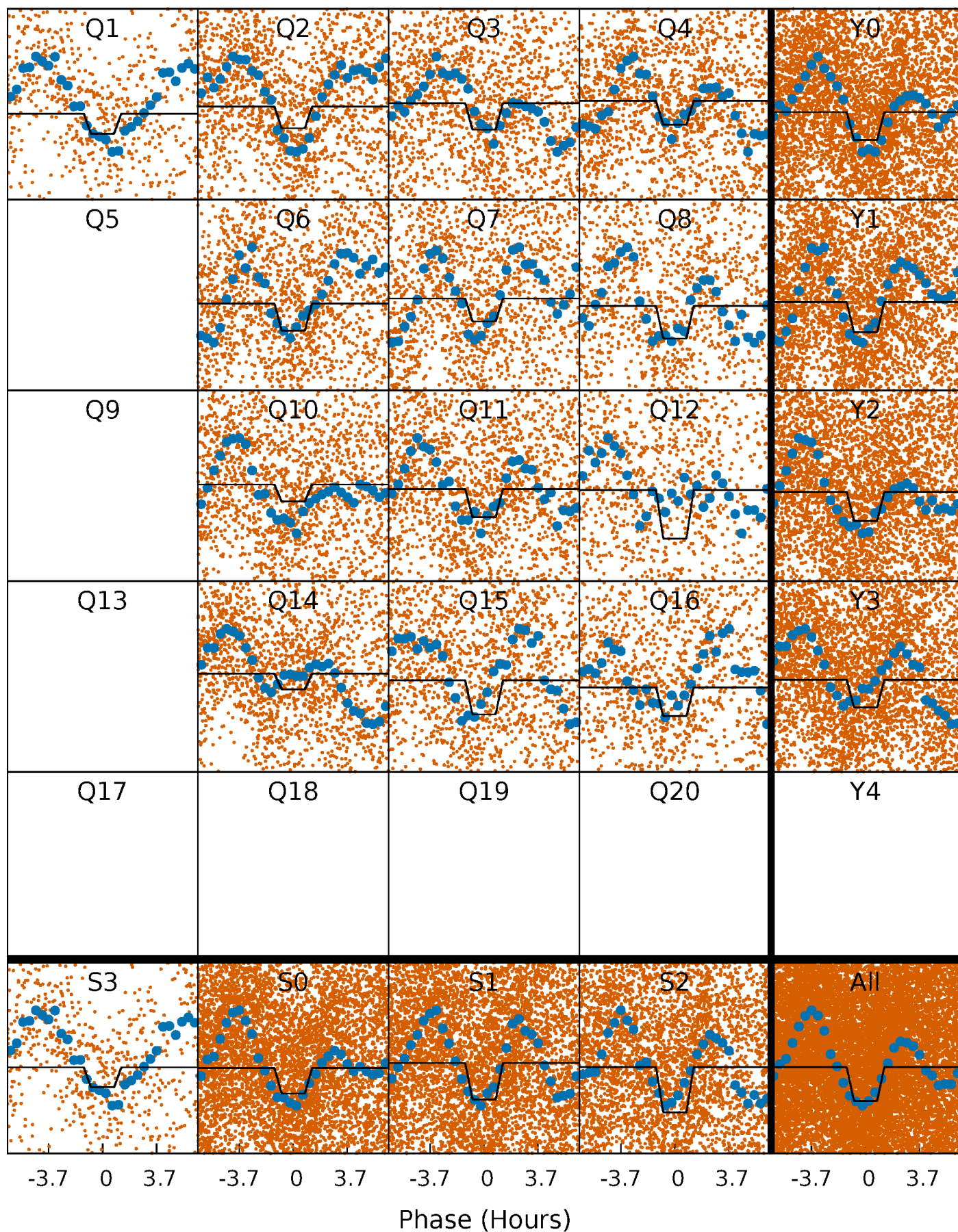
DV Quarter-Phased Transit Curves

TCE 006346698-01 P= 1.220221 Days $T_0=132.149443$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

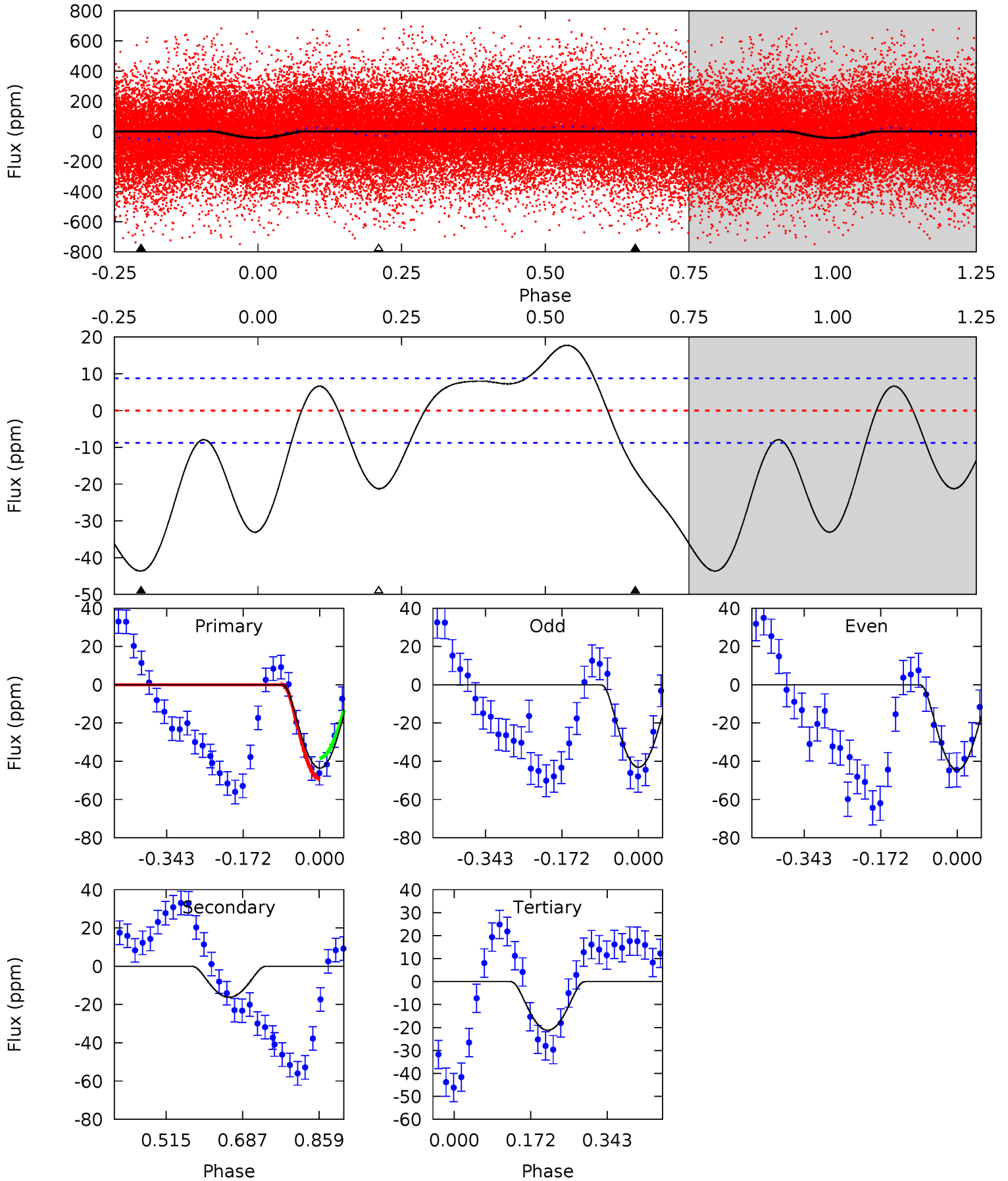
TCE 006346698-01 P= 1.220312 Days $T_0=132.131896$ (BKJD)



DV Model-Shift Uniqueness Test

006346698-01, P = 1.220221 Days, E = 130.929222 Days

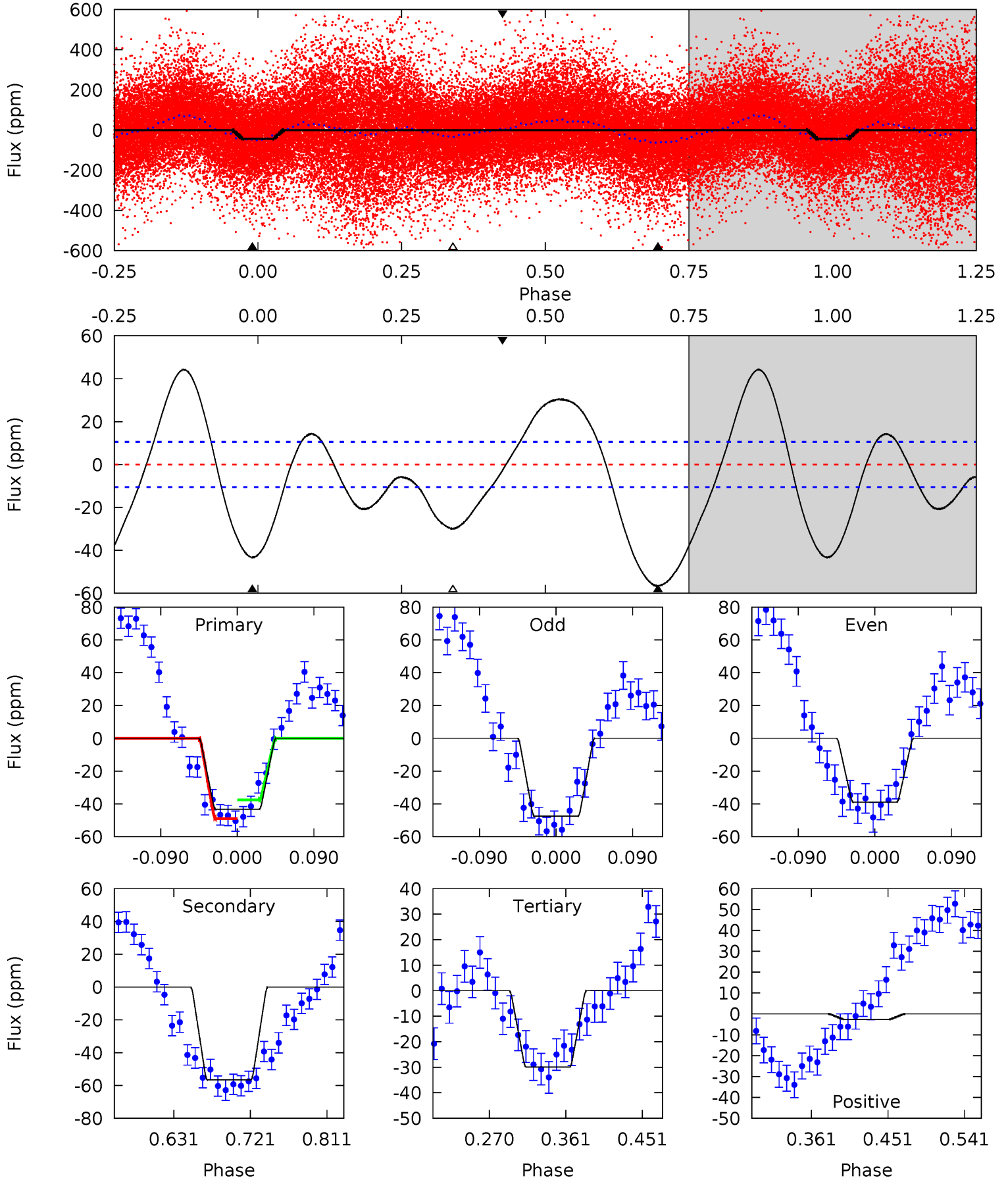
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	8.23	10.8	0	4.45	1.37	6.89	11.4	22.1	-2.55	8.23	0.35	0.98	0.29	2.69



Alt Model-Shift Uniqueness Test

006346698-01, P = 1.220312 Days, E = 130.911584 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	24.6	13.0	-1.17	4.59	1.69	9.17	5.82	20.0	11.6	25.8	1.87	1.24	0.44	2.46



Stellar Parameters For KIC 006346698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6251^{+194}_{-233}	$3.955^{+0.420}_{-0.140}$	$-0.360^{+0.300}_{-0.300}$	$1.830^{+0.435}_{-0.746}$	$1.101^{+0.174}_{-0.192}$	$0.253^{+0.844}_{-0.104}$
	+3%/-4%	+11%/-4%	+83%/-83%	+24%/-41%	+16%/-17%	+334%/-41%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006346698-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16 ± 2	$3.19^{+2.96}_{-2.02}$	3366^{+284}_{-361}	2975^{+1970}_{-6057}	$0.471^{+3.059}_{-0.345}$
Alt.	-57 ± 2	$2.17^{+2.47}_{-1.45}$	3340^{+281}_{-367}	4865^{+4478}_{-1347}	$3.438^{+29.579}_{-2.639}$

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

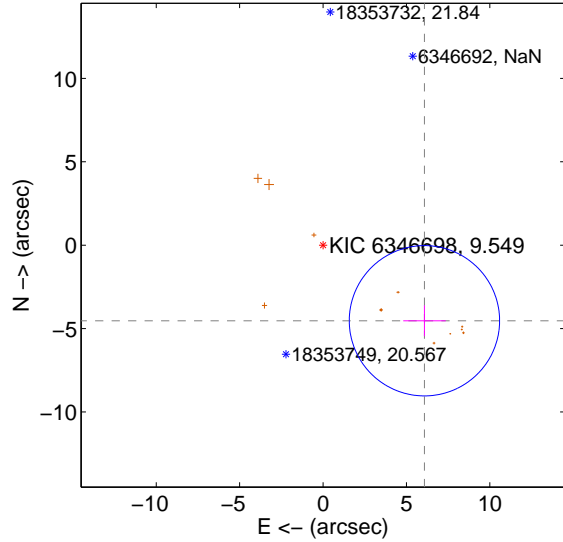
Supplemental centroid analysis for 006346698-01. **Kepler magnitude: 9.55.** Transit SNR 12.58

There are 0 quarters with good PRF difference image offsets

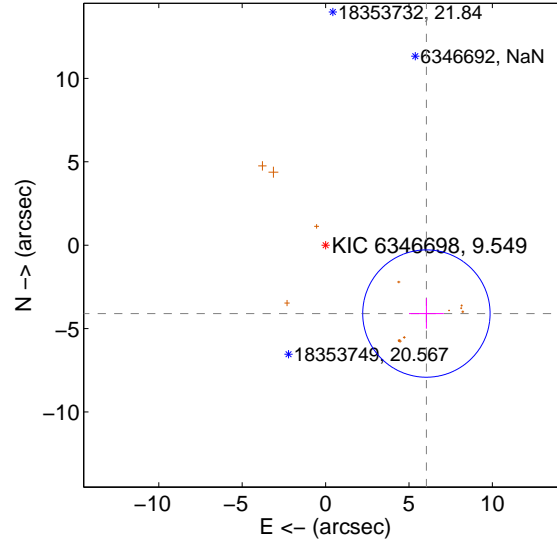
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.581 ± 1.502	5.05	-6.078 ± 1.273	-4.531 ± 0.926
PRF-fit source offset from KIC position	7.303 ± 1.272	5.74	-6.044 ± 1.046	-4.099 ± 0.909
photometric centroid source offset	0.92 ± 0.32	2.83	0.70 ± 0.35	0.59 ± 0.28

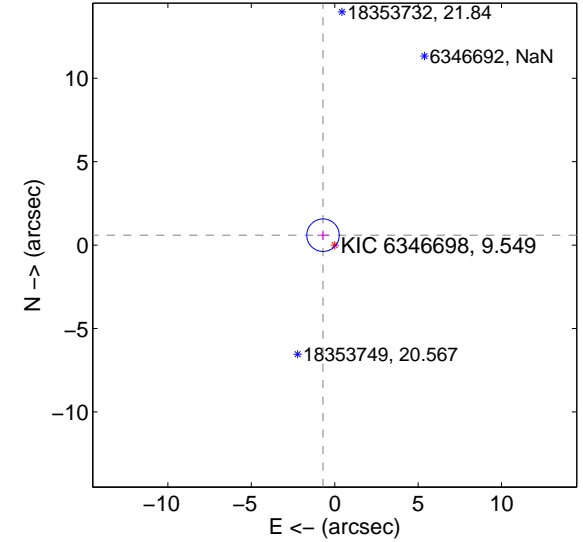
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

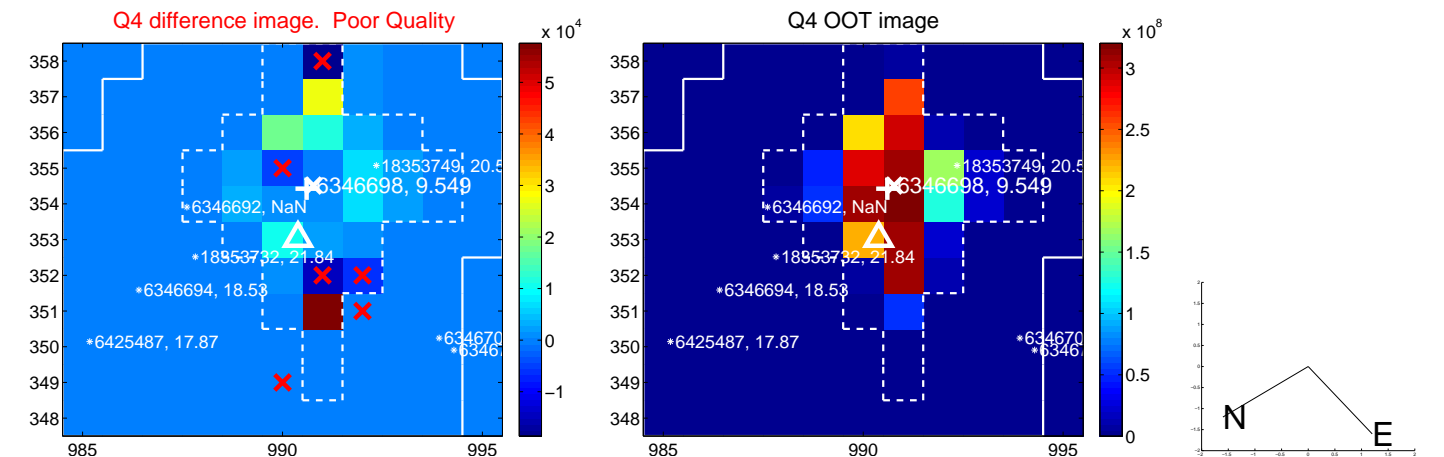
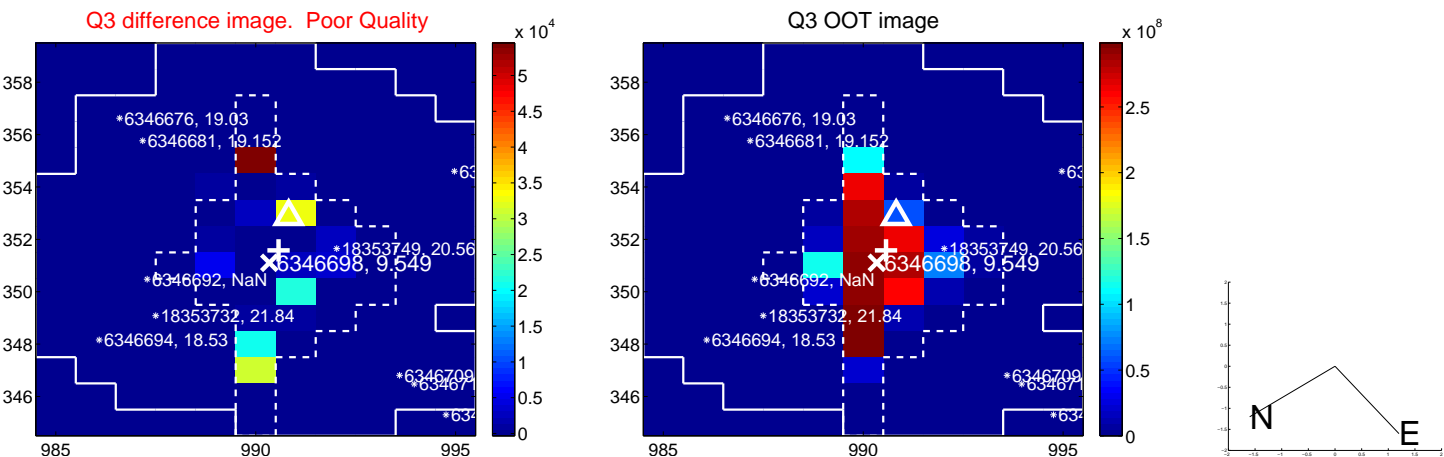
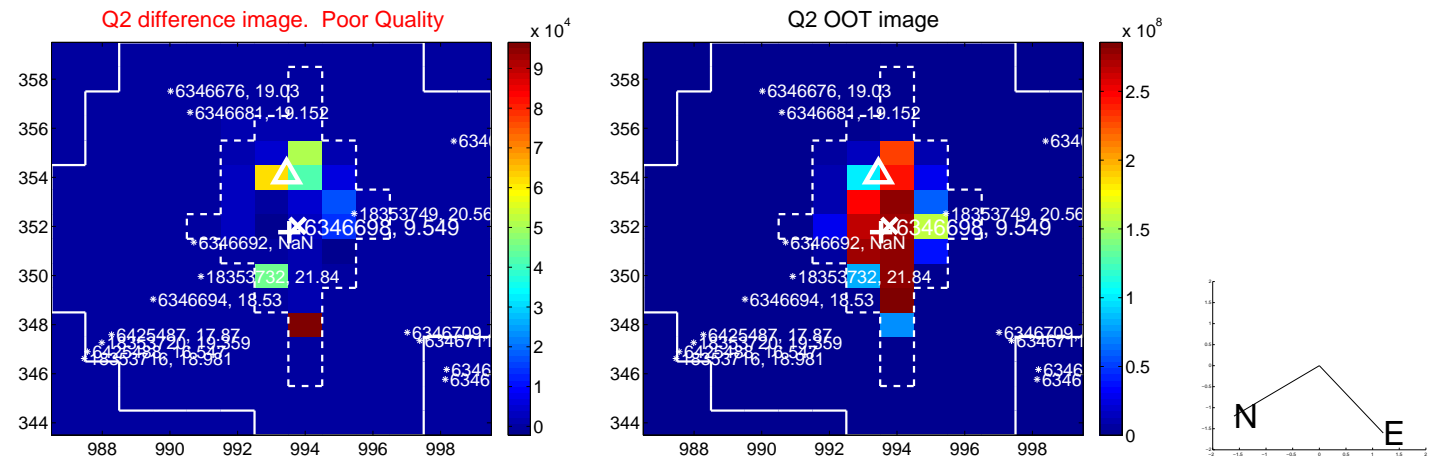
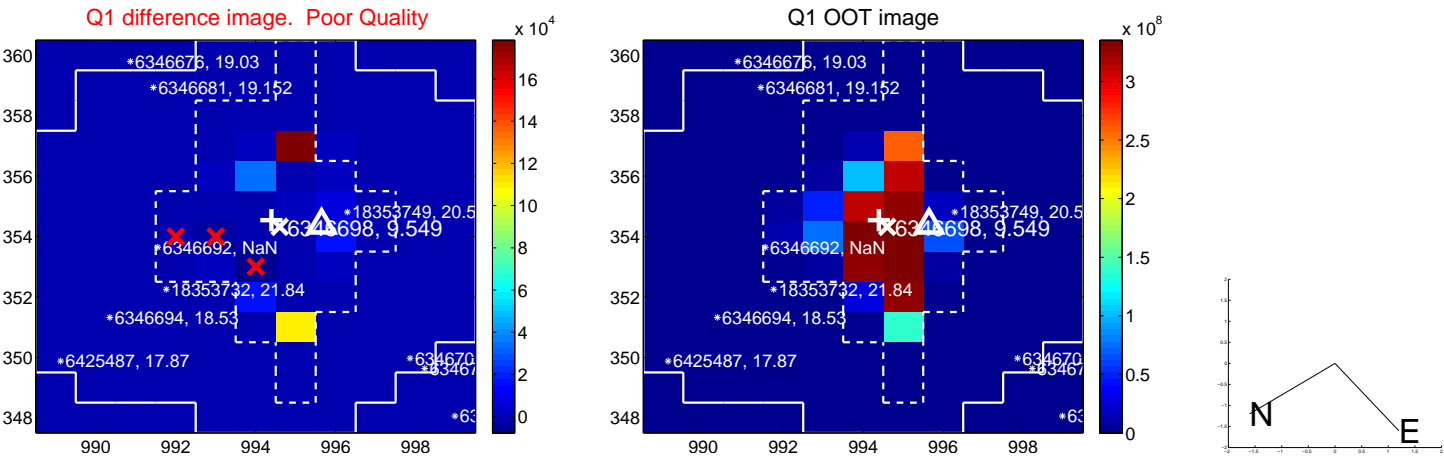


offset from photometric centroids



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.

Q5 no difference image

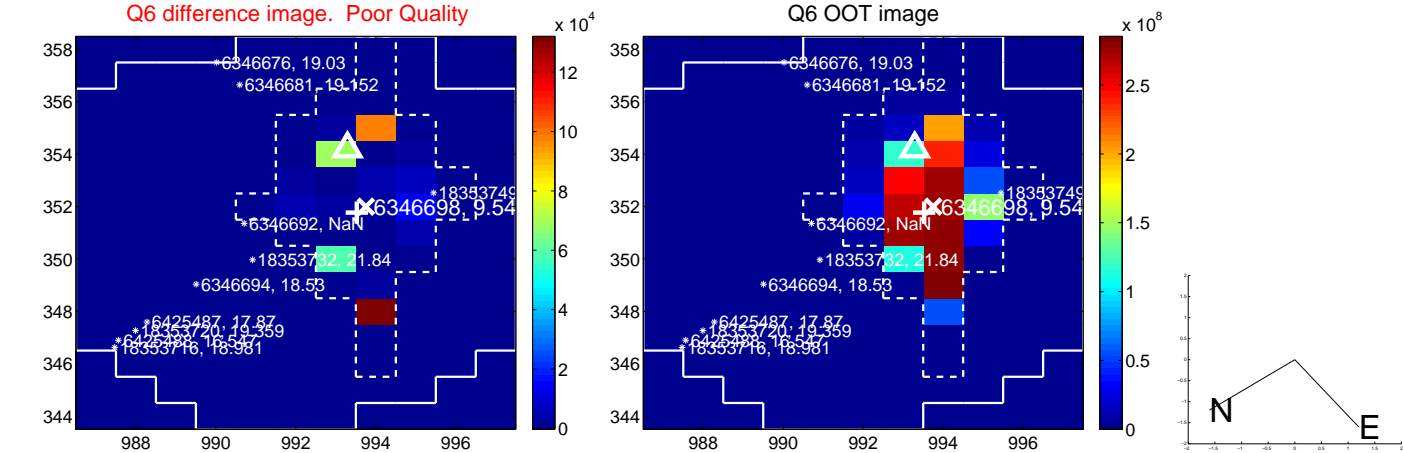


Q5 no OOT image



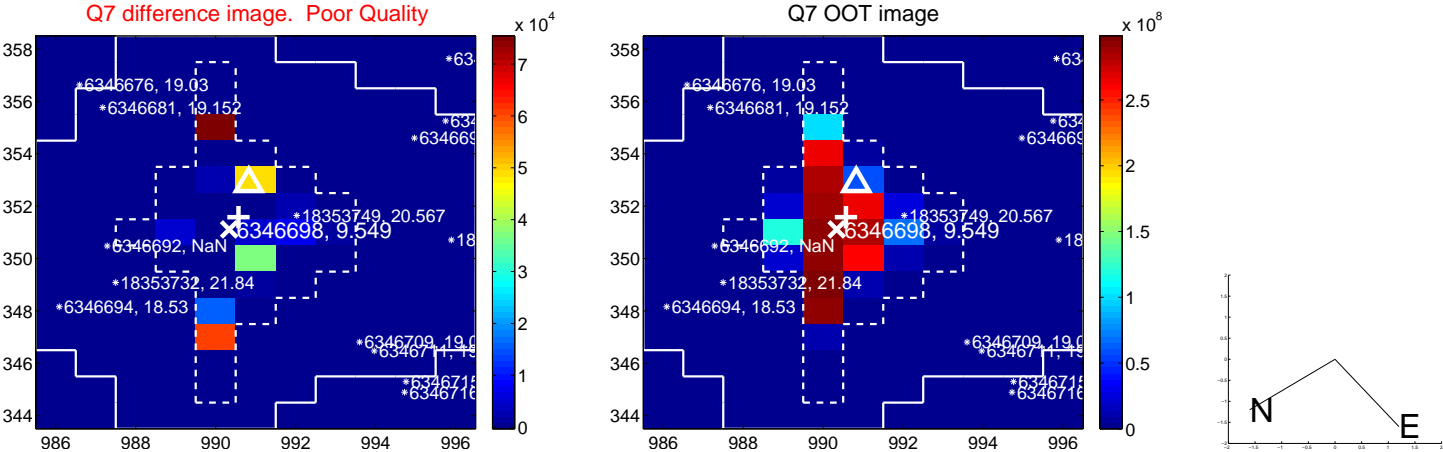
Q6 difference image. Poor Quality

Q6 OOT image



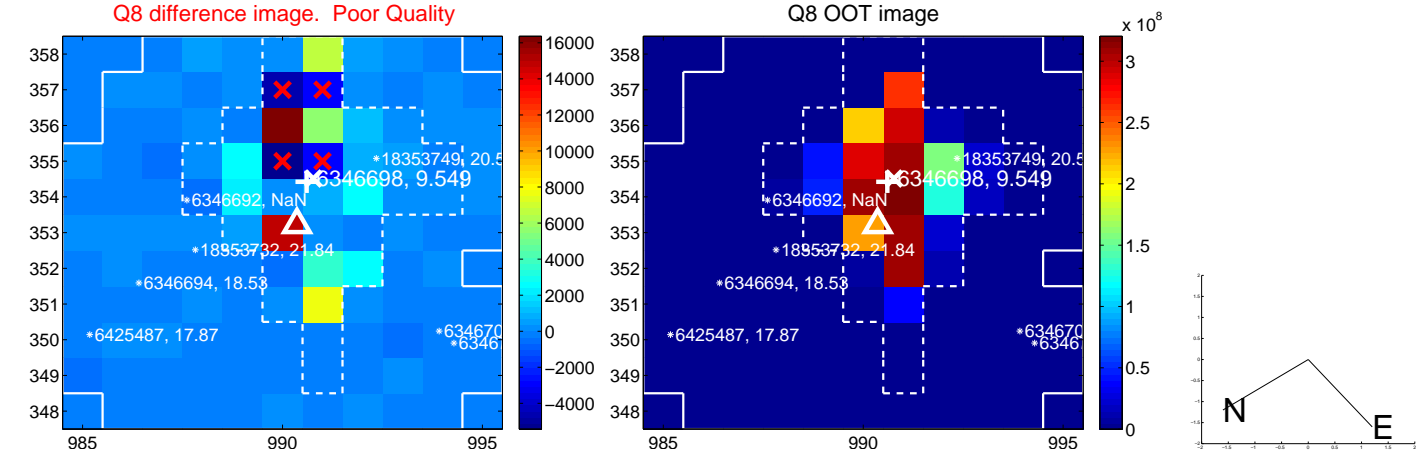
Q7 difference image. Poor Quality

Q7 OOT image



Q8 difference image. Poor Quality

Q8 OOT image



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

Q9 no difference image

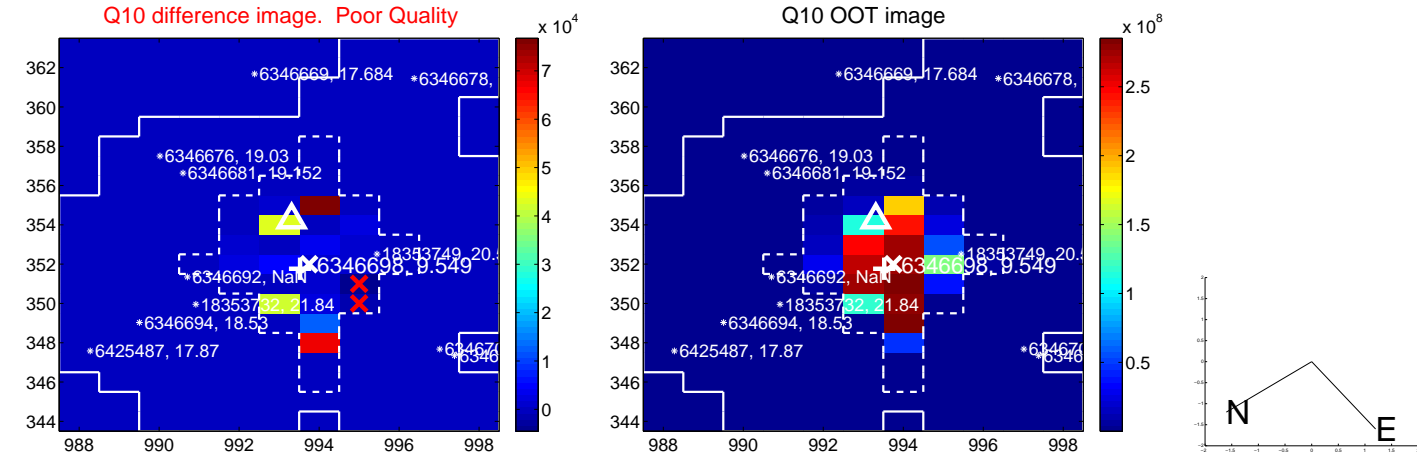


Q9 no OOT image



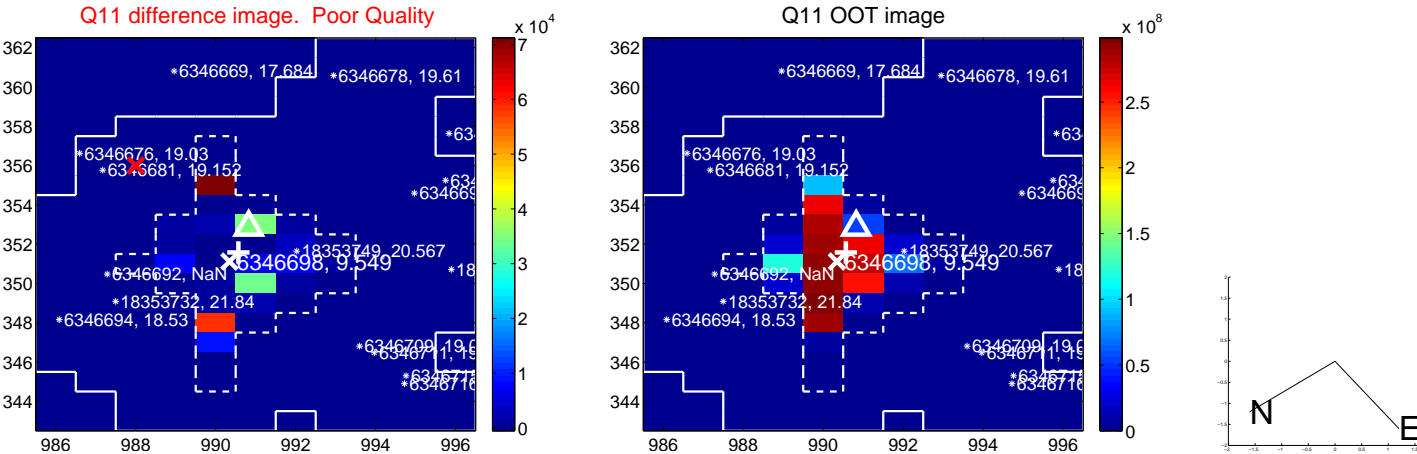
Q10 difference image. Poor Quality

Q10 OOT image



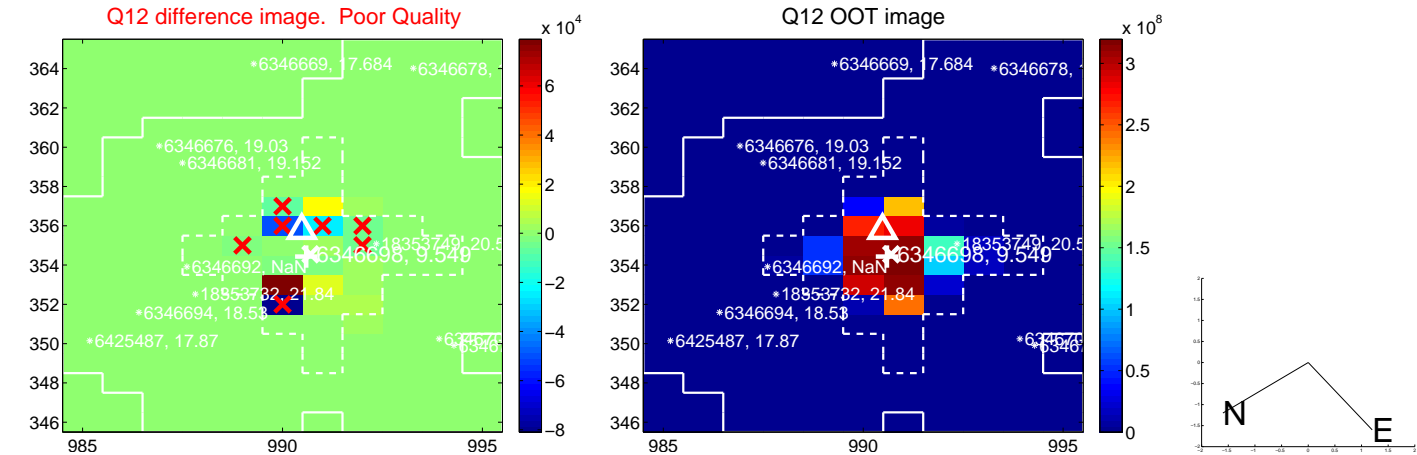
Q11 difference image. Poor Quality

Q11 OOT image



Q12 difference image. Poor Quality

Q12 OOT image



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

Q13 no difference image

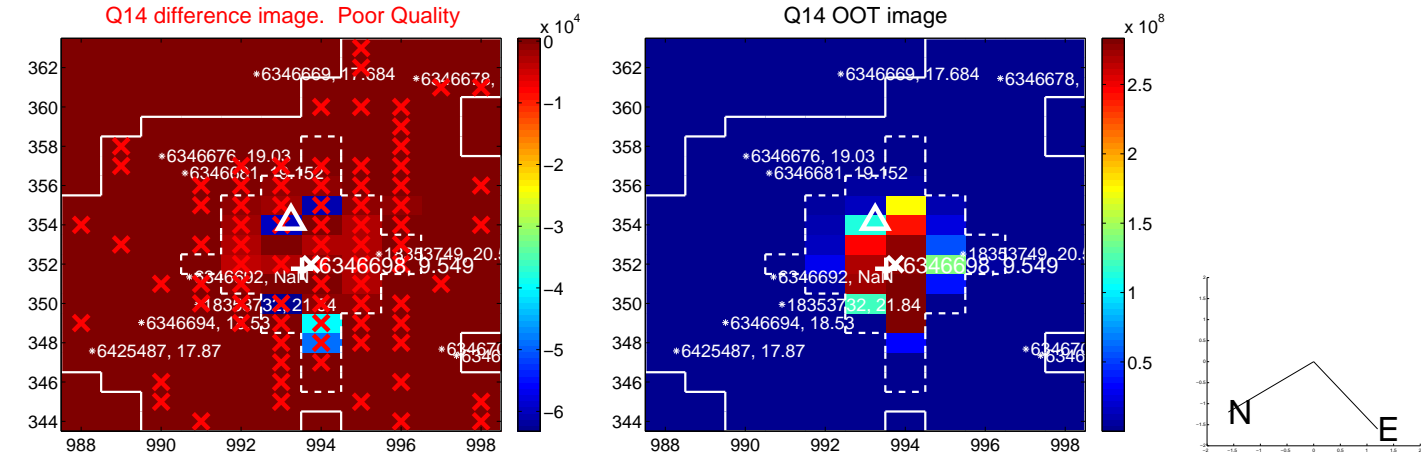


Q13 no OOT image



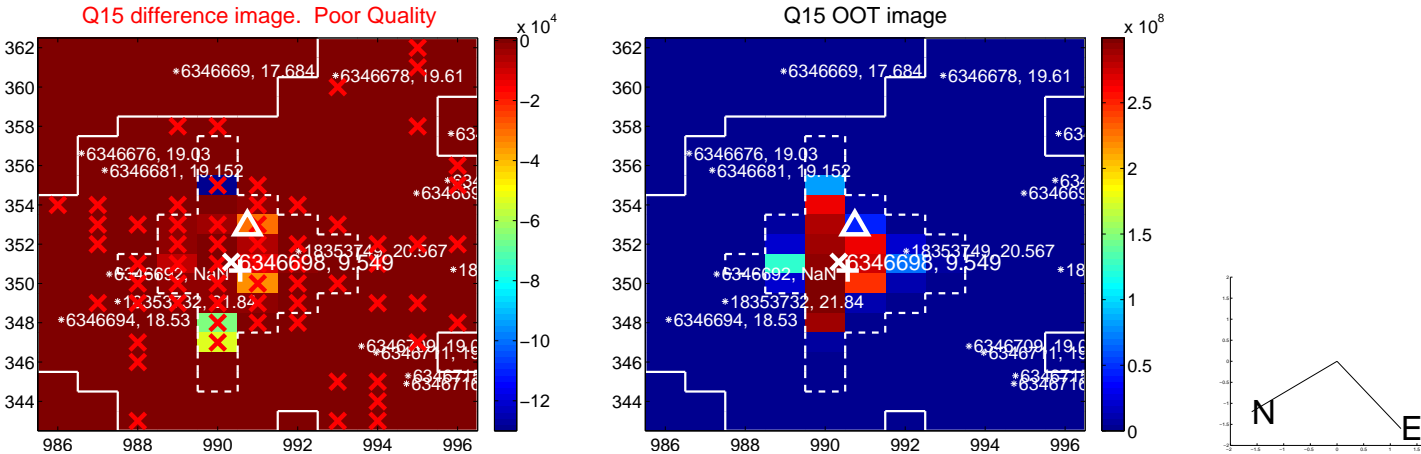
Q14 difference image. Poor Quality

Q14 OOT image



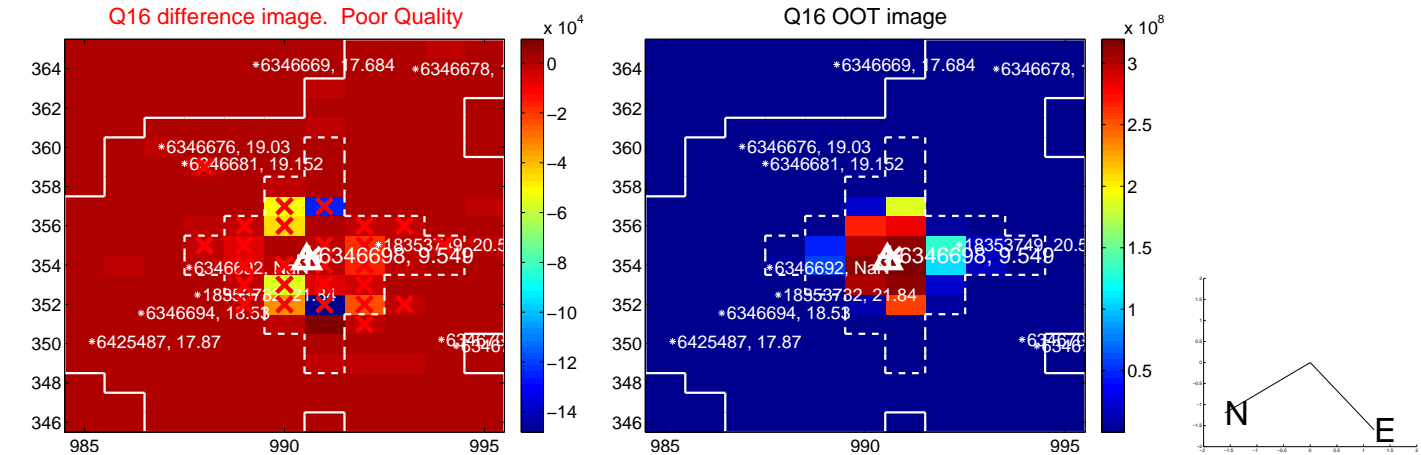
Q15 difference image. Poor Quality

Q15 OOT image

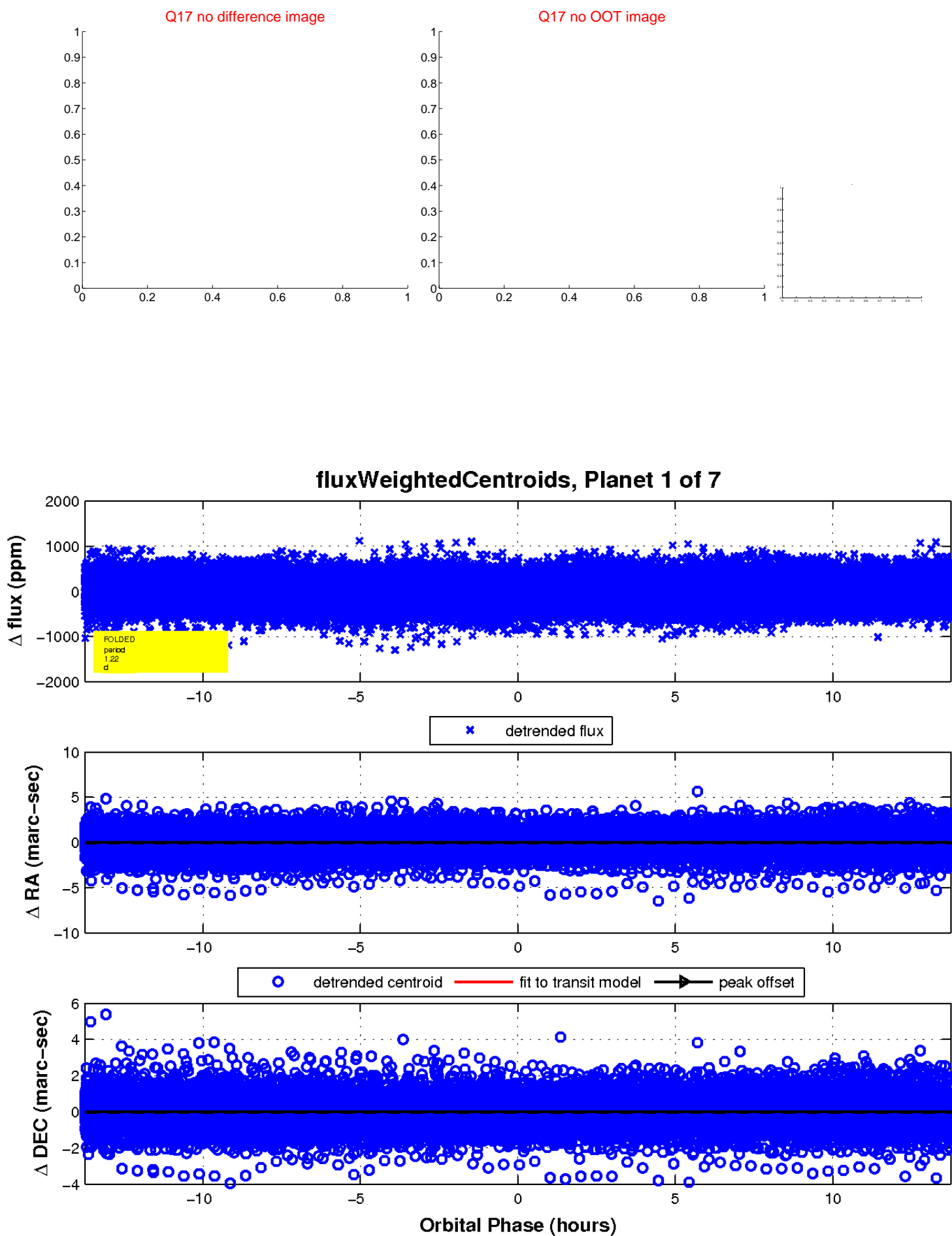


Q16 difference image. Poor Quality

Q16 OOT image

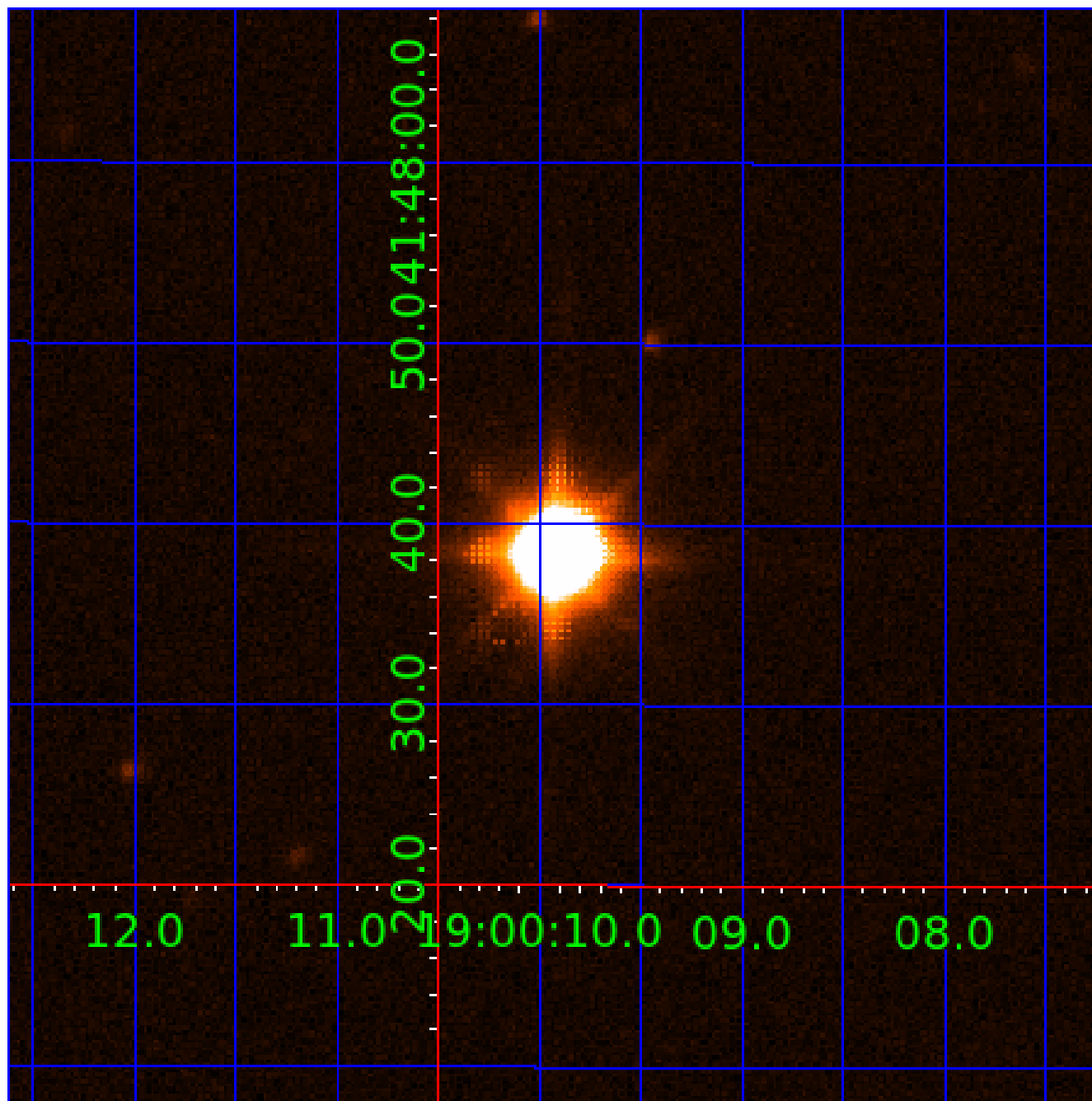


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006346698

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})
006346698-01	OBS	No	1.220221	132.149443	57.7	4.583	9.0	12.6	1.83	6251	2.86	8598.22
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006346698-05	OBS	No	83.640271	208.582800	151.4	7.661	7.6	4.4	1.83	6251	2.48	30.65
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Robovetter Results

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006346698-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006346698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
006346698-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
006346698-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

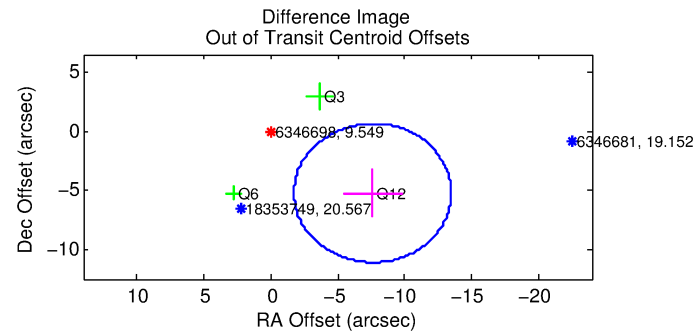
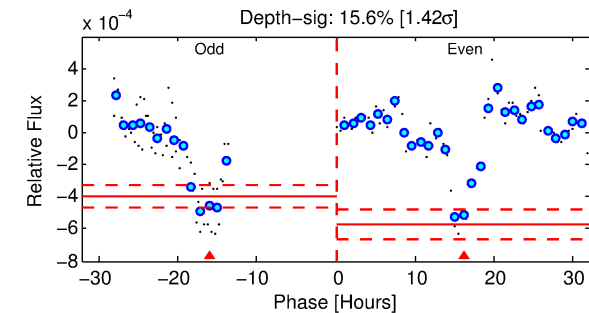
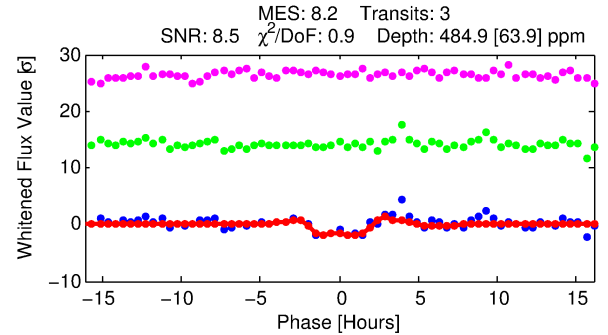
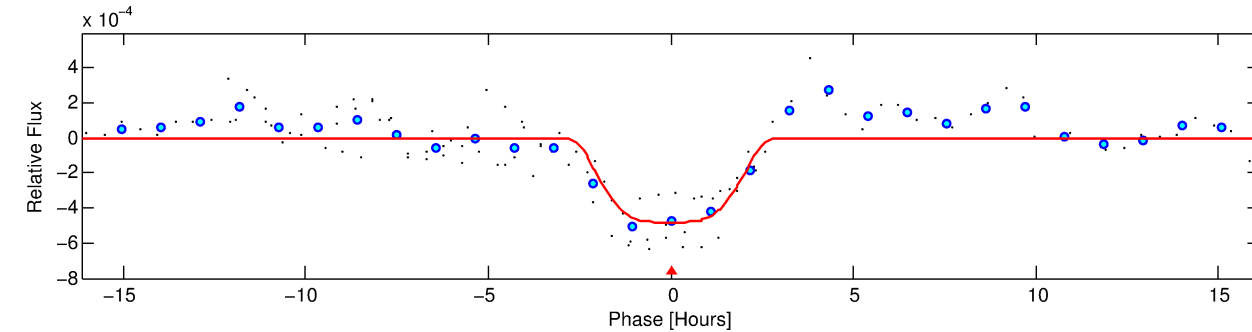
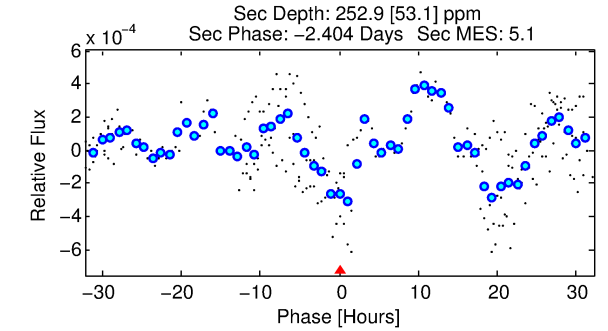
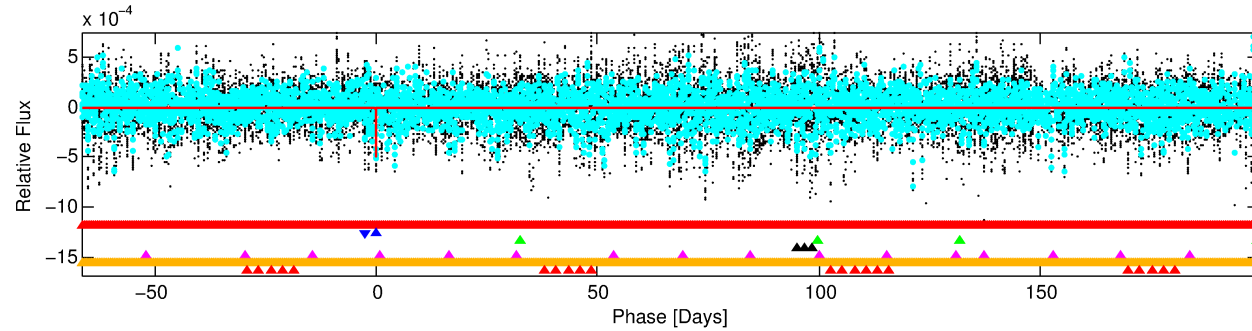
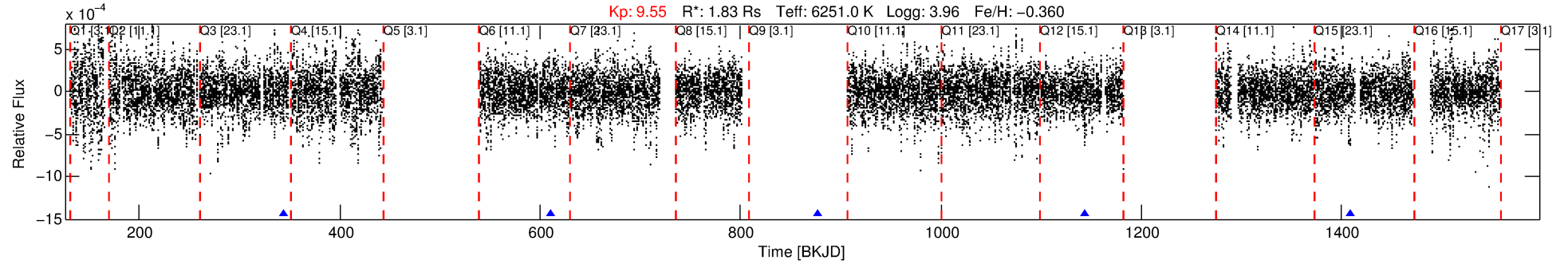
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006346698-02

No Significant Match Found

DV One-Page Summary

KIC: 6346698 Candidate: 2 of 7 Period: 266.315 d



DV Fit Results:

Period = 266.31474 [0.00265] d
Epoch = 344.0538 [0.0075] BKJD
Rp/R* = 0.0258 [0.0019]
a/R* = 131.81 [14.53]
b = 0.96 [0.01]
Seff = 6.54 [4.68]
Teq = 408 [73] K
Rp = 5.15 [2.13] Re
a = 0.8367 [0.3528] AU
Ag = 3667.88 [2732.89] [1.34 σ]
Teffp = 4907 [364] K [12.13 σ]

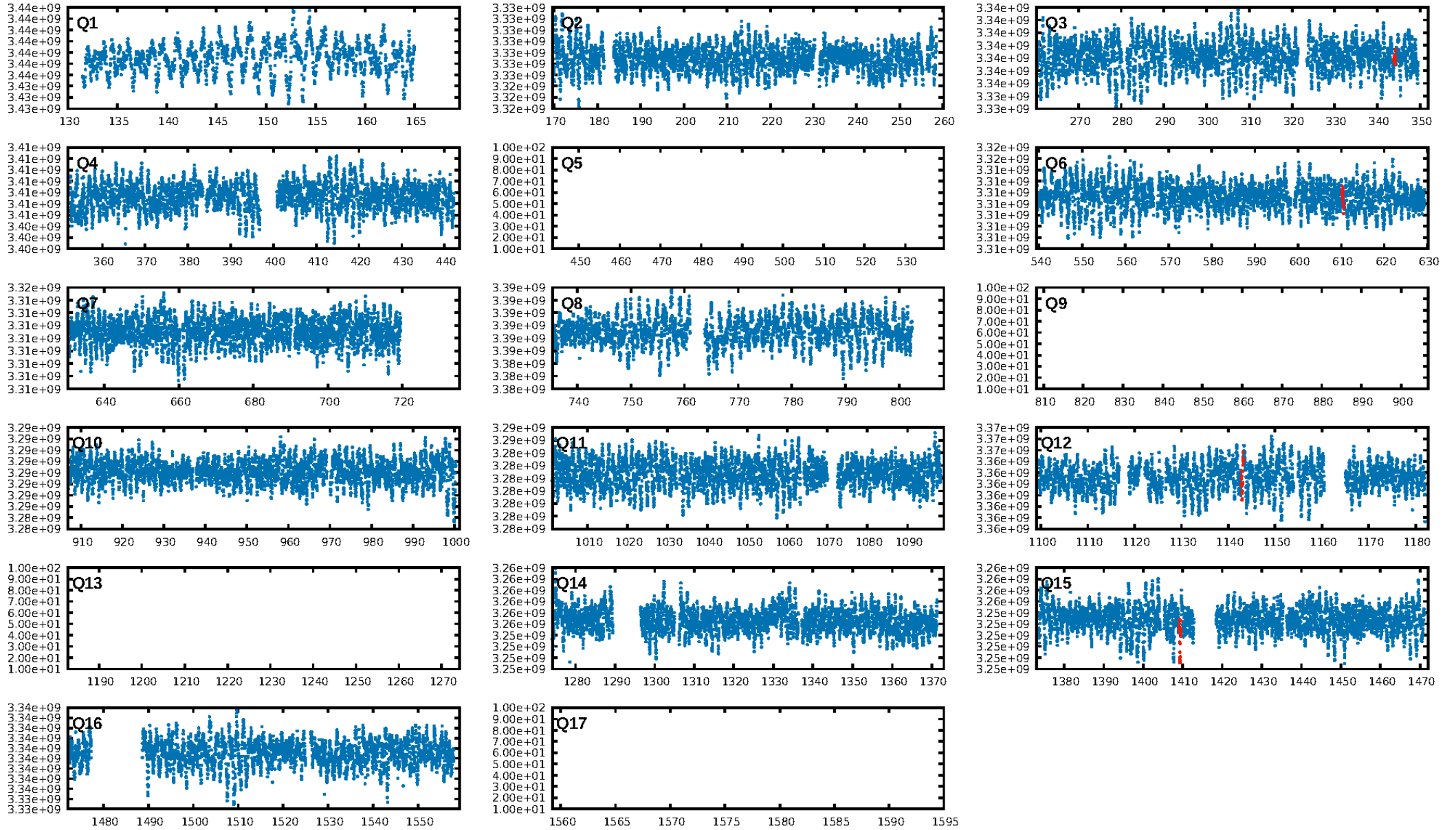
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [468.21 σ]
LongPeriod-sig: 100.0% [298.00 σ]
ModelChiSquare2-sig: 6.0%
ModelChiSquareGof-sig: 97.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.4%
Centroid-so: 0.814 arcsec [1.62 σ]
OotOffset-rm: 9.236 arcsec [4.72 σ]
KicOffset-rm: 8.869 arcsec [3.65 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

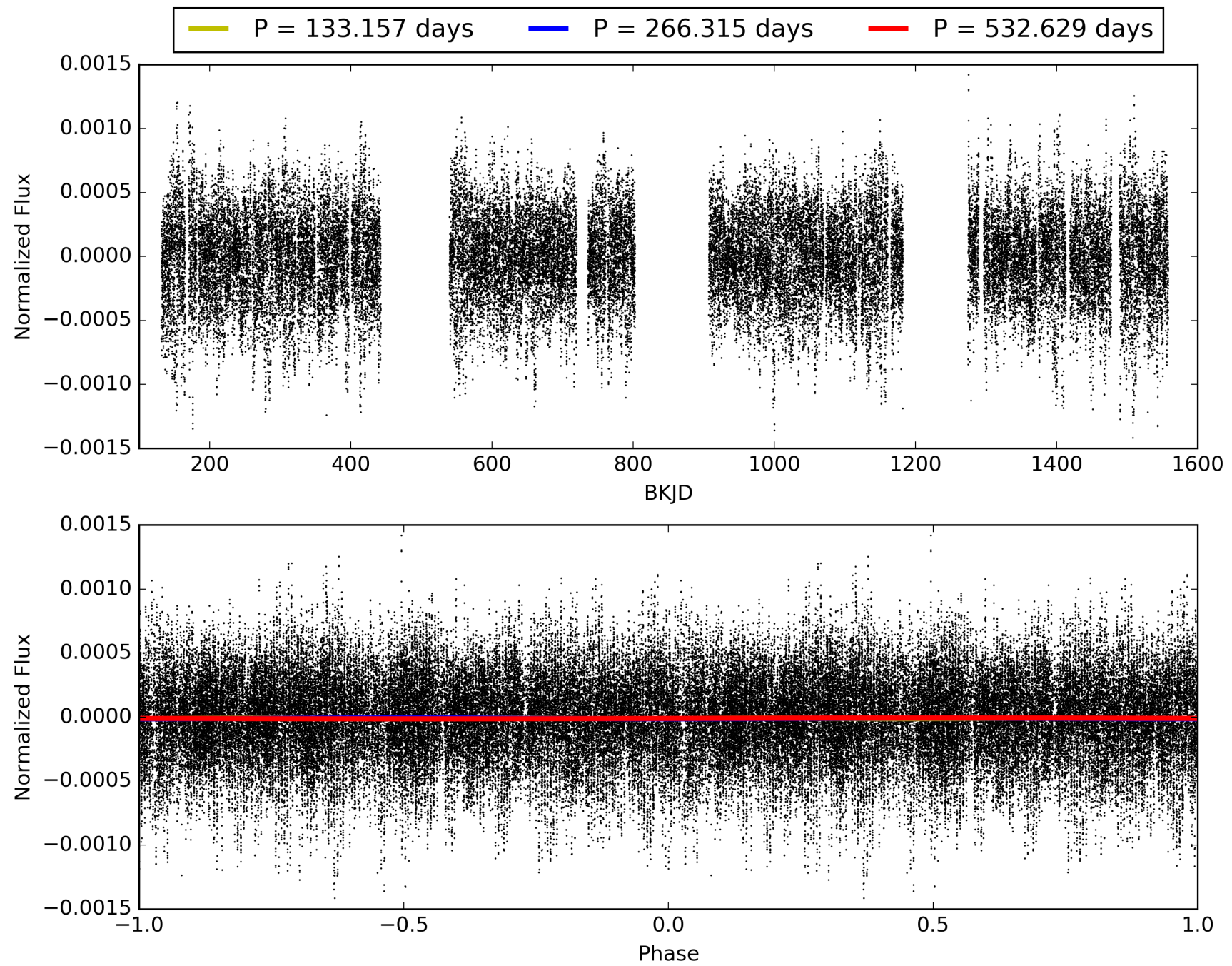
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:51:27 Z

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

TCE 006346698-02, PDC Light Curves

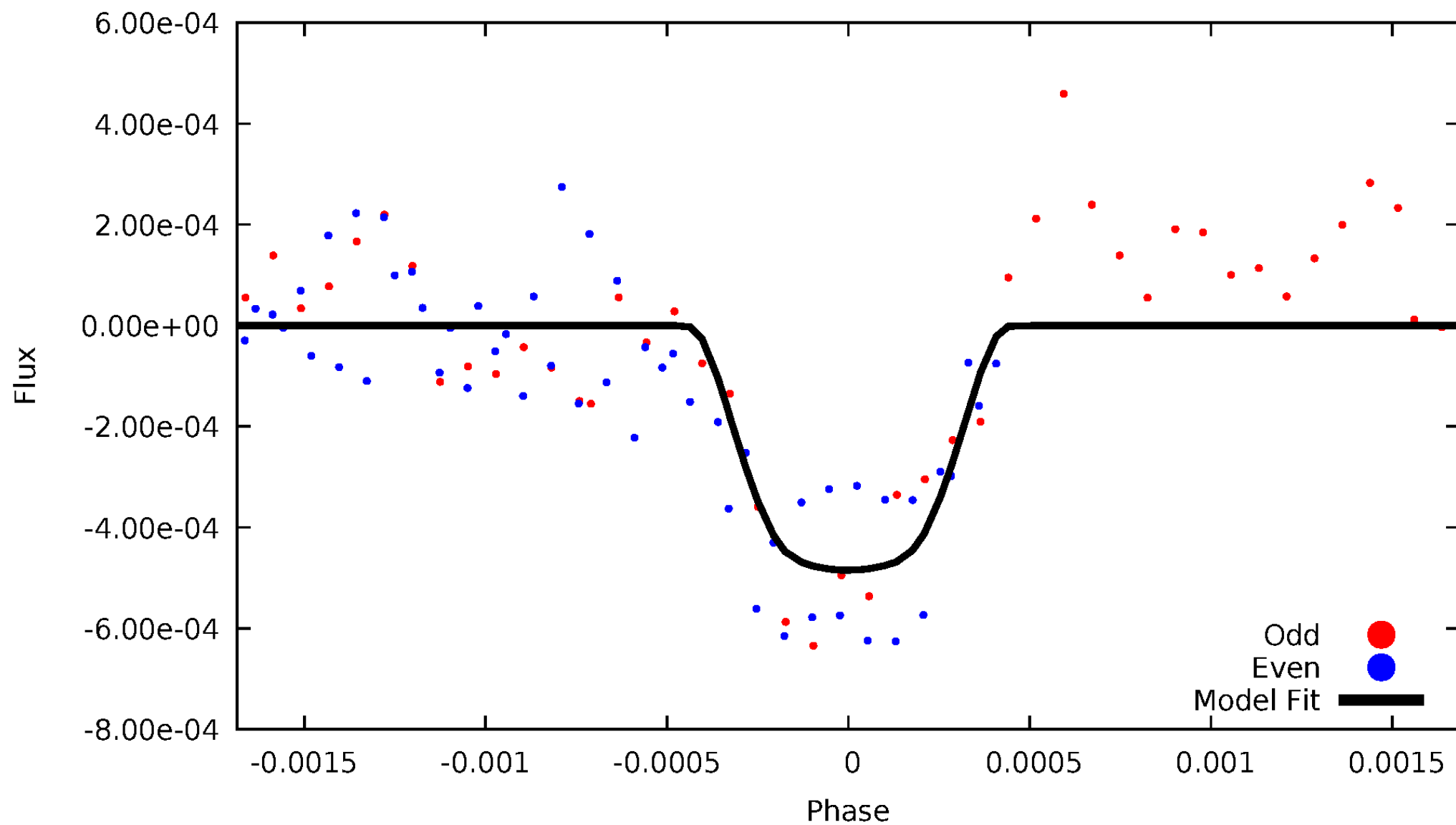


TCE 006346698-02



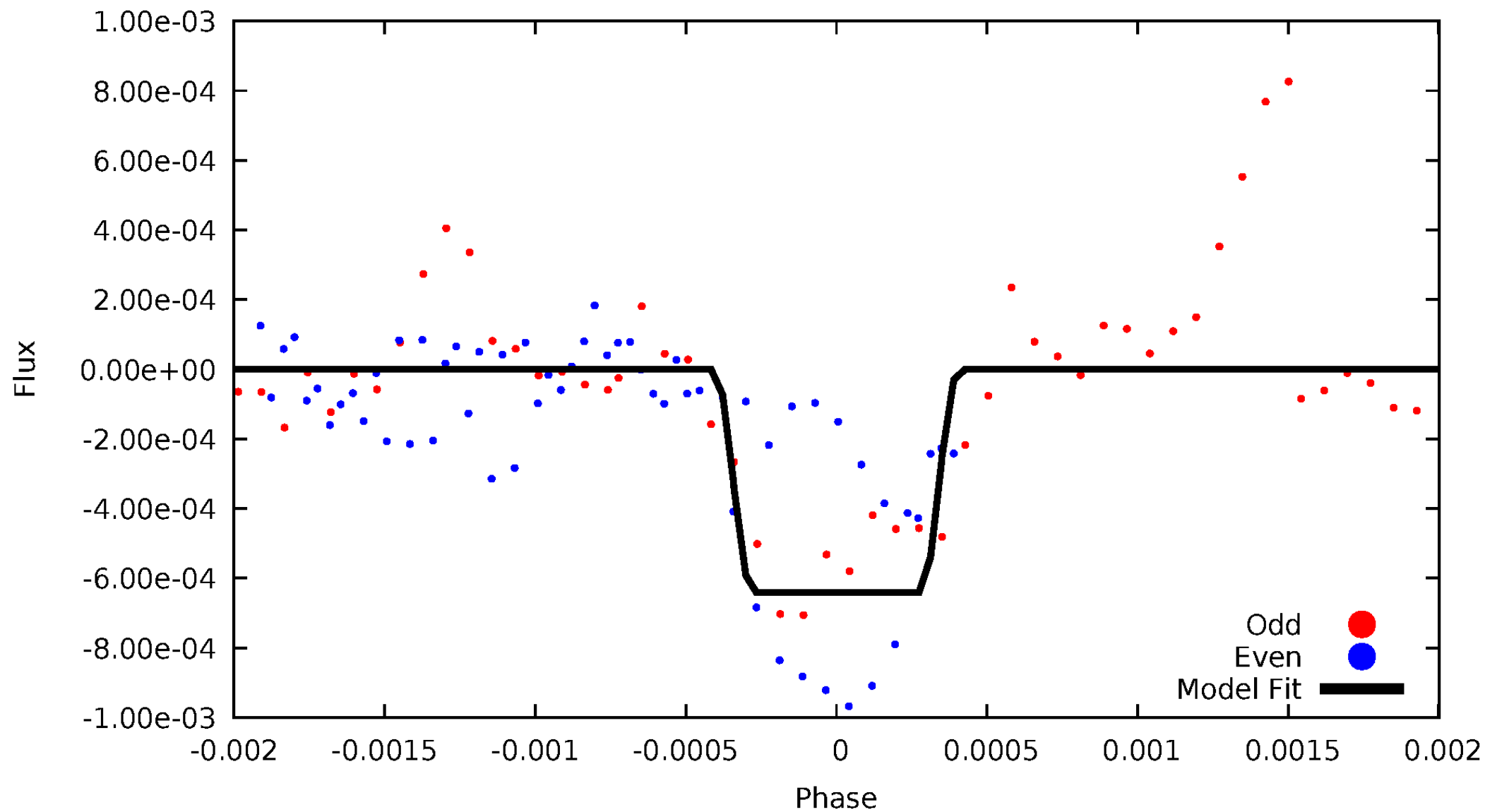
DV Odd/Even

TCE 006346698-02



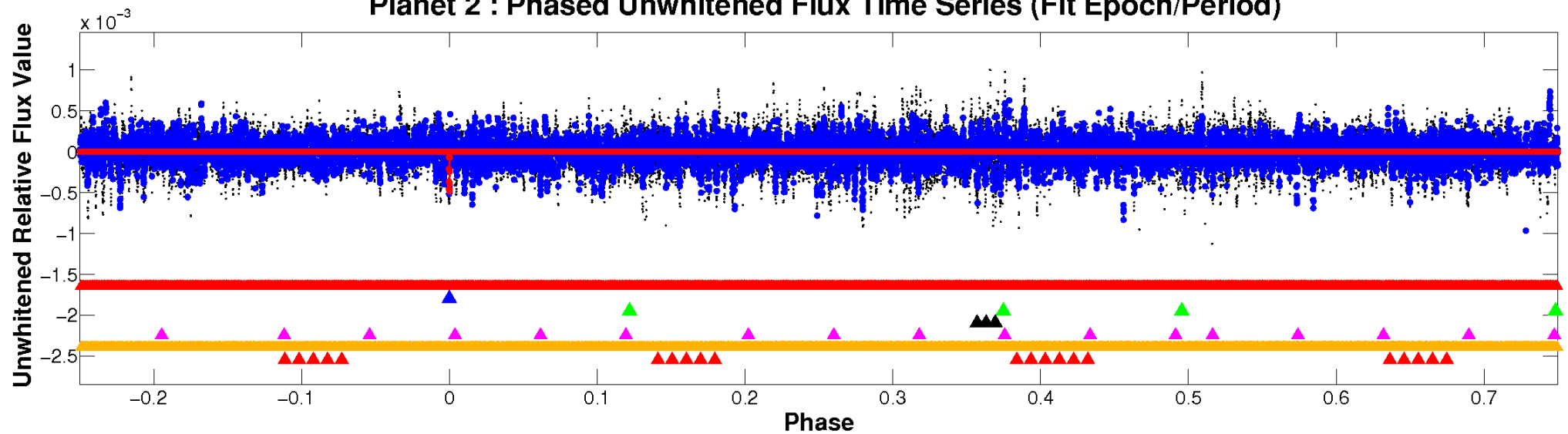
ALT Odd/Even

TCE 006346698-02

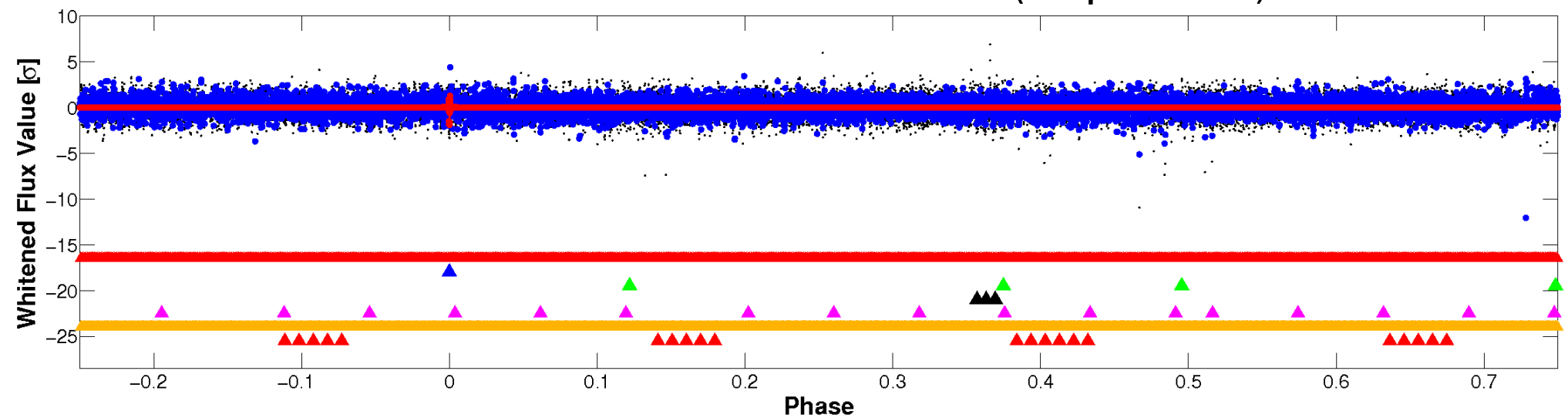


Non-Whitened Vs. Whitened Light Curve

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

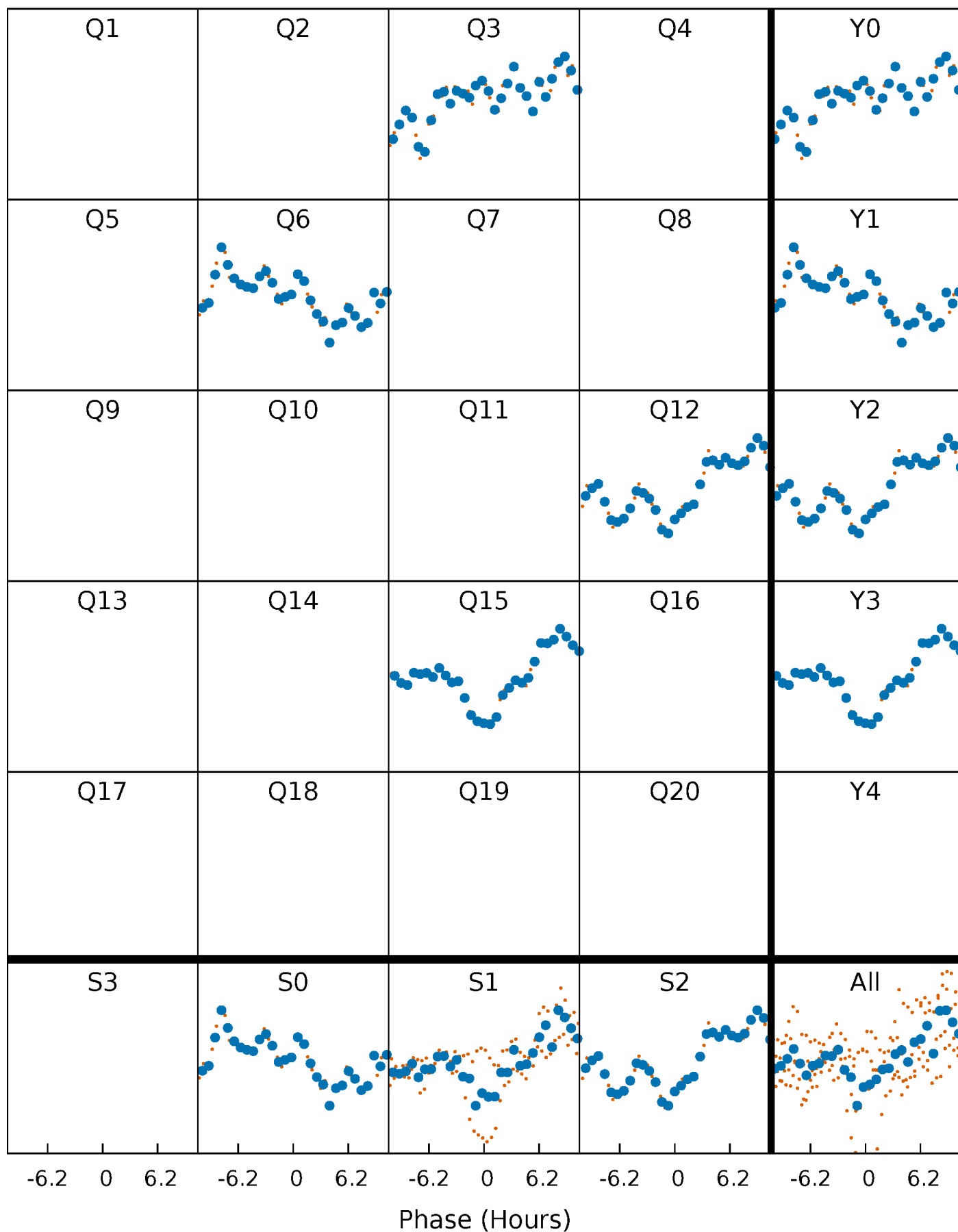


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



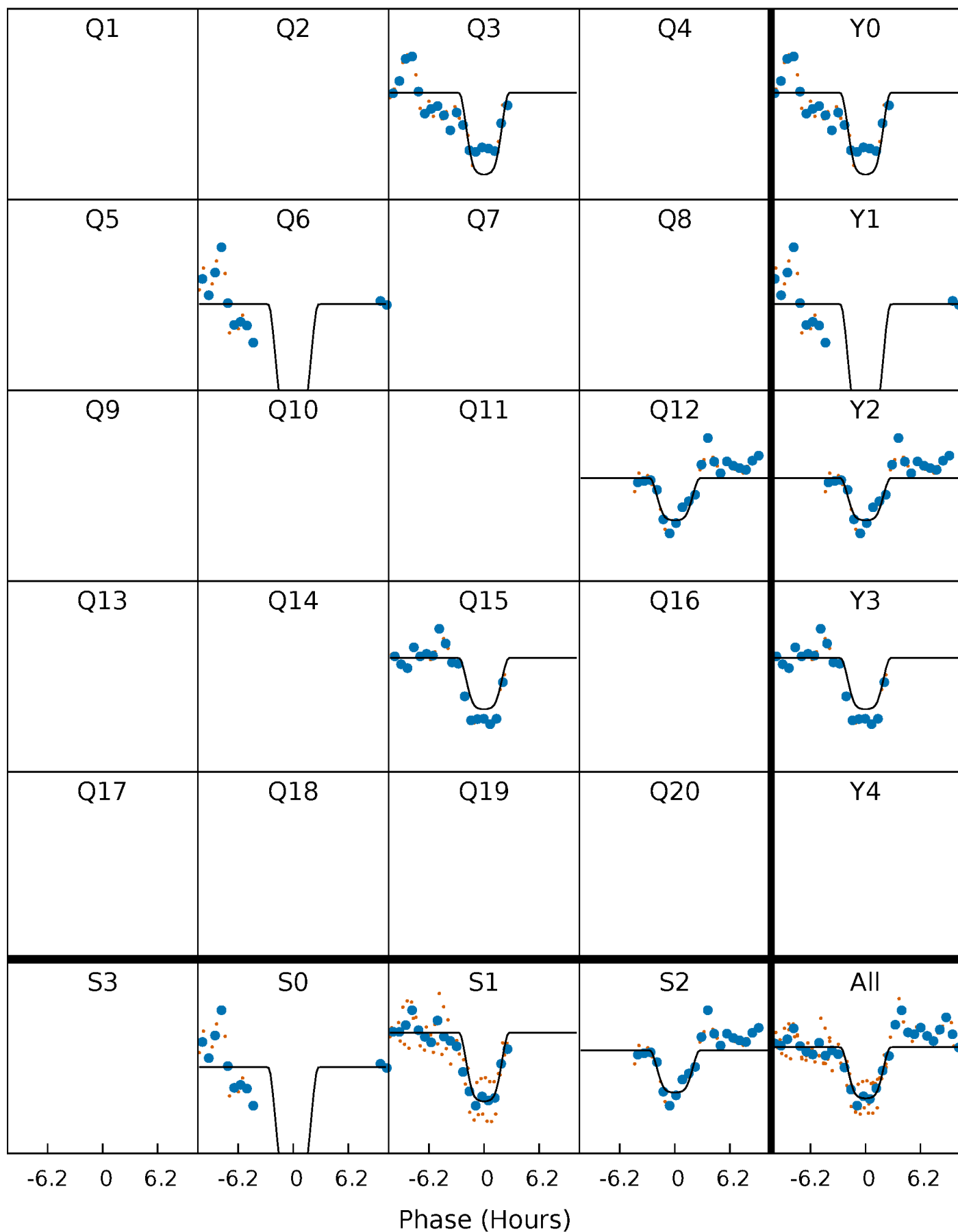
PDC Quarter-Phased Transit Curves

TCE 006346698-02 $P=266.314739$ Days $T_0=344.053750$ (BKJD)



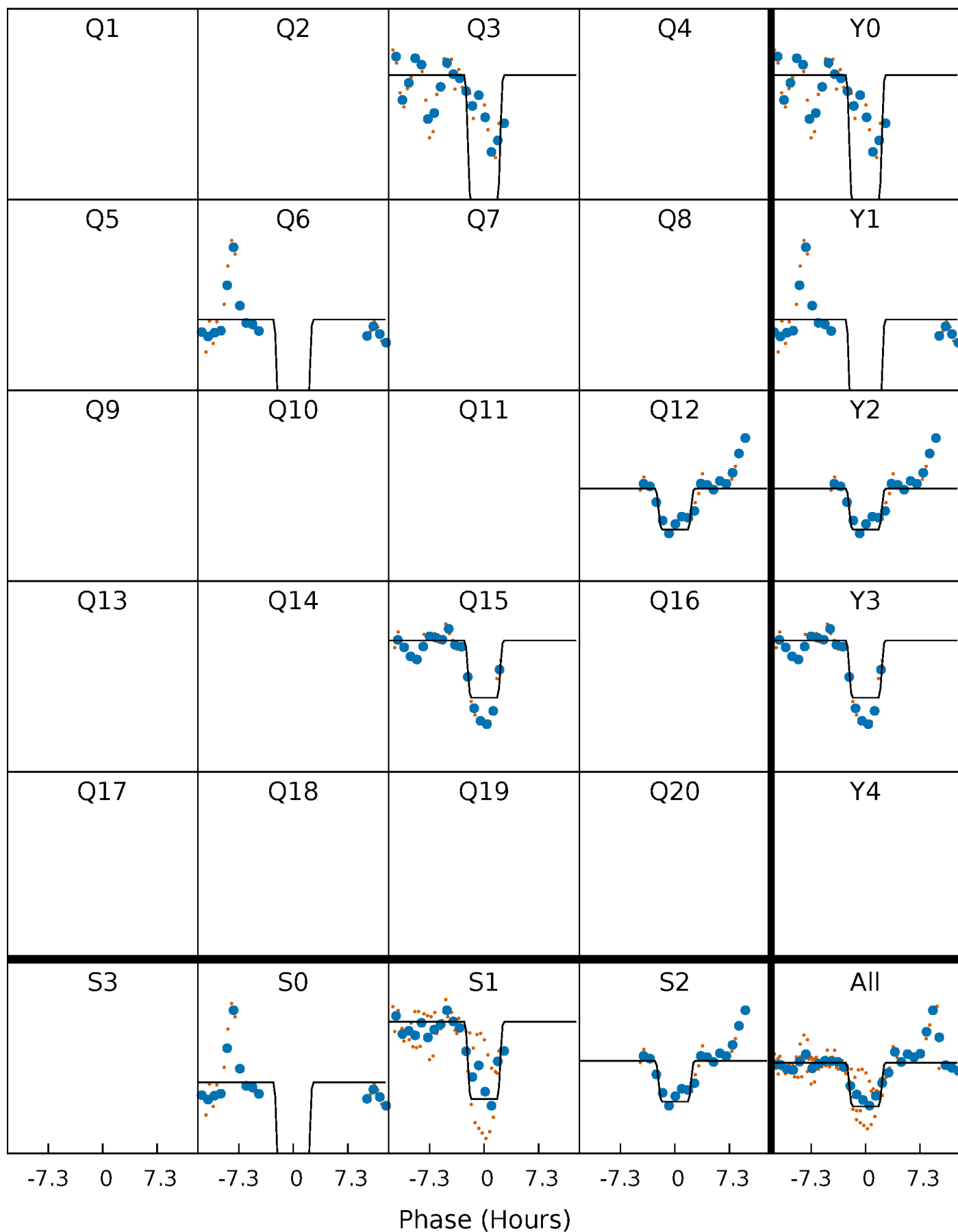
DV Quarter-Phased Transit Curves

TCE 006346698-02 P=266.314739 Days $T_0=344.053750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

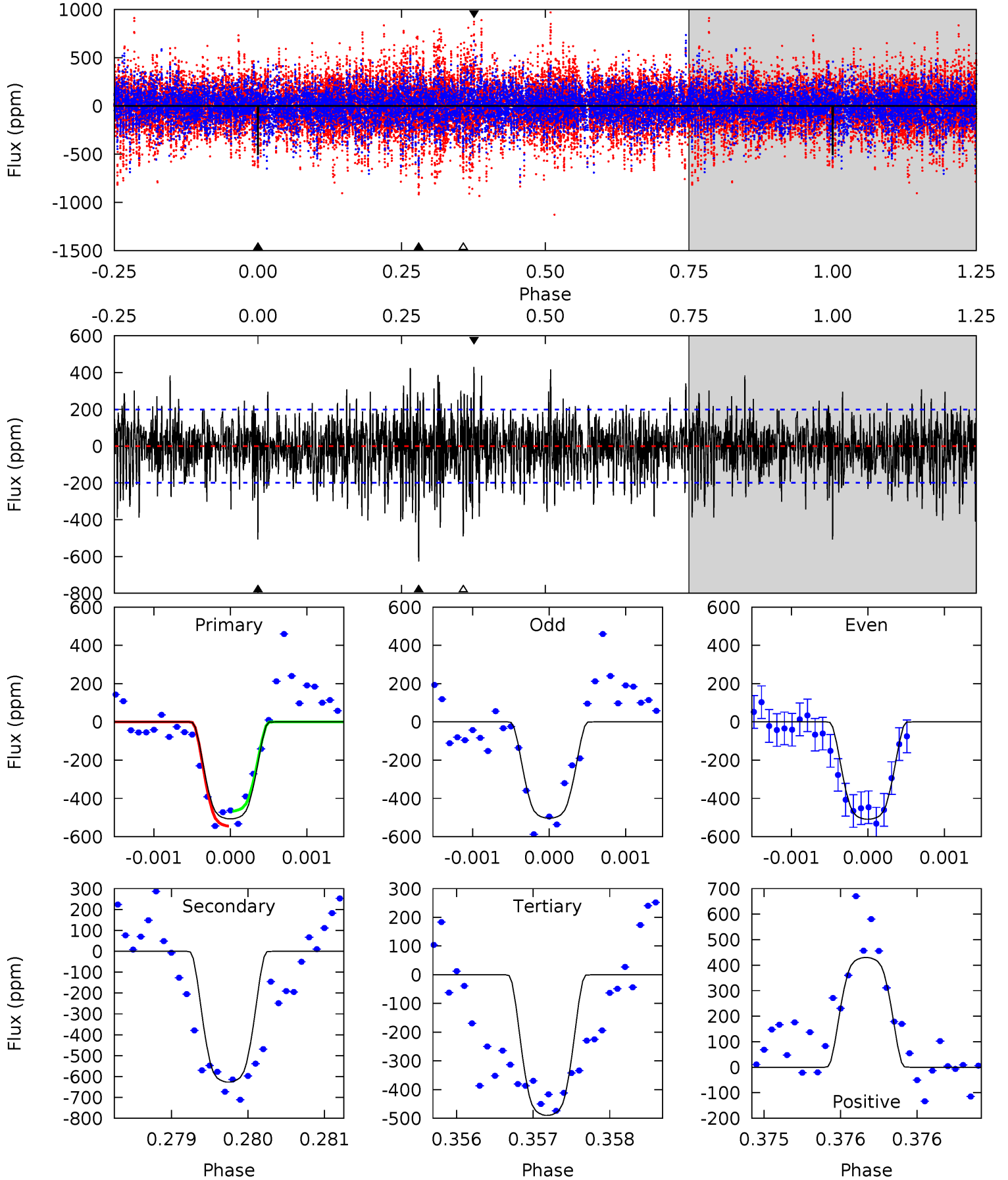
TCE 006346698-02 P=266.314334 Days $T_0=344.058609$ (BKJD)



DV Model-Shift Uniqueness Test

006346698-02, P = 266.314739 Days, E = 77.739011 Days

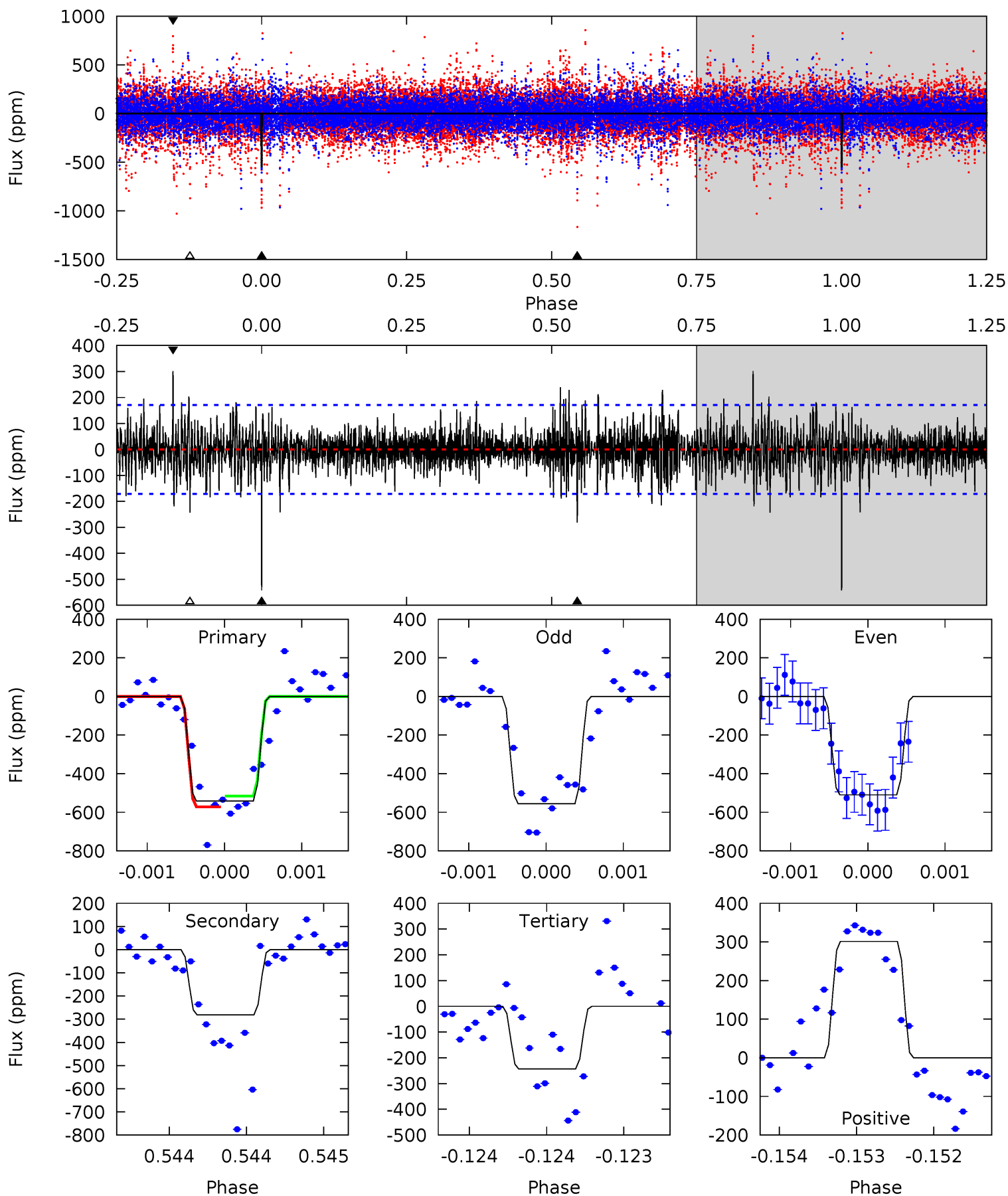
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	17.3	13.5	11.8	5.47	3.33	3.33	0.47	2.12	3.77	5.42	0.07	1.01	0.41	1.08



Alt Model-Shift Uniqueness Test

006346698-02, P = 266.314334 Days, E = 77.744275 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	9.04	7.83	9.70	5.51	3.38	1.83	9.61	7.75	1.21	-0.65	0.72	0.95	0.36	0.89



Stellar Parameters For KIC 006346698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6251^{+194}_{-233}	$3.955^{+0.420}_{-0.140}$	$-0.360^{+0.300}_{-0.300}$	$1.830^{+0.435}_{-0.746}$	$1.101^{+0.174}_{-0.192}$	$0.253^{+0.844}_{-0.104}$
	+3%/-4%	+11%/-4%	+83%/-83%	+24%/-41%	+16%/-17%	+334%/-41%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006346698-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-627 ± 36	$4.95^{+0.86}_{-1.09}$	555^{+46}_{-59}	6144^{+338}_{-313}	10012^{+5657}_{-2813}
Alt.	-281 ± 31	$4.86^{+0.89}_{-1.04}$	559^{+45}_{-66}	5141^{+269}_{-259}	4716^{+2806}_{-1474}

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

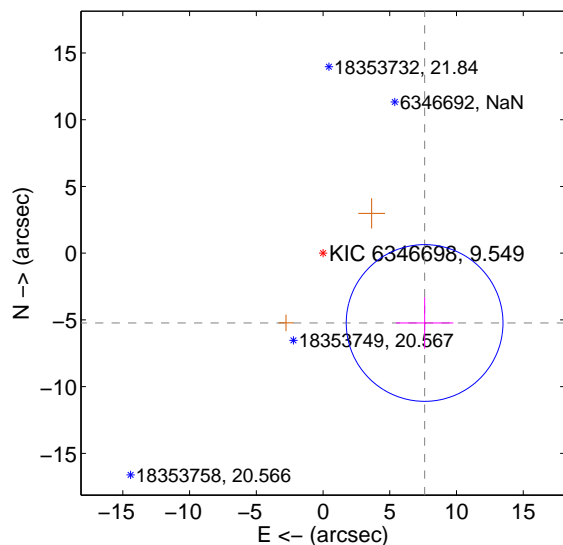
Supplemental centroid analysis for 006346698-02. **Kepler magnitude: 9.55.** Transit SNR 8.50

There are 0 quarters with good PRF difference image offsets

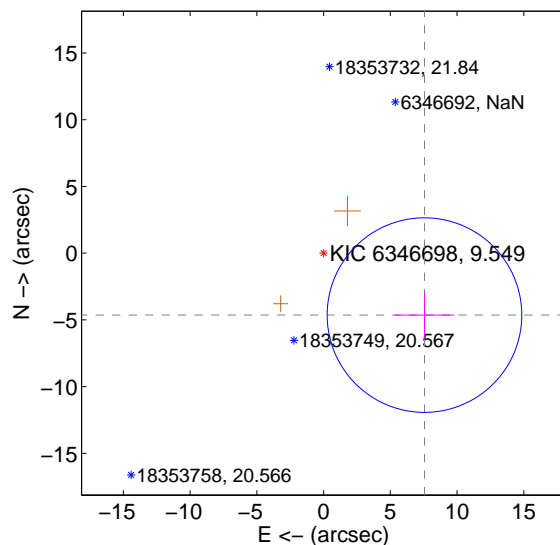
The direct PRF centroid is offset from the target star catalog position by about 0.59 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.236 ± 1.957	4.72	-7.612 ± 2.148	-5.231 ± 1.935
PRF-fit source offset from KIC position	8.869 ± 2.430	3.65	-7.559 ± 2.238	-4.640 ± 1.703
photometric centroid source offset	0.81 ± 0.50	1.62	-0.67 ± 0.53	-0.47 ± 0.45

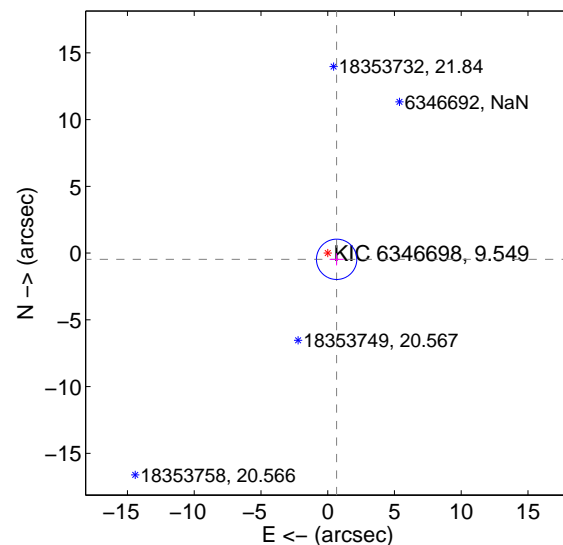
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



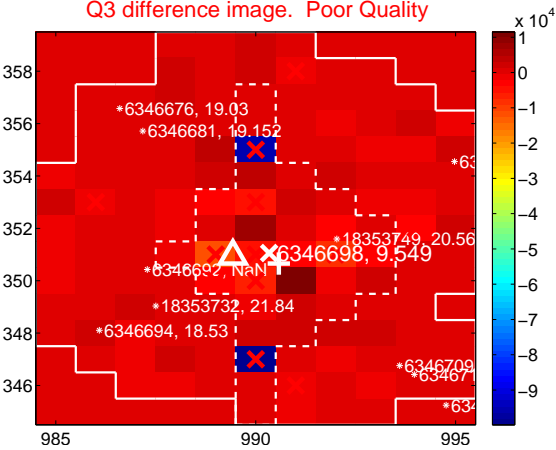
Q2 no difference image



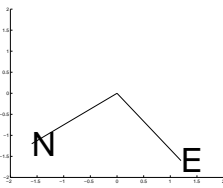
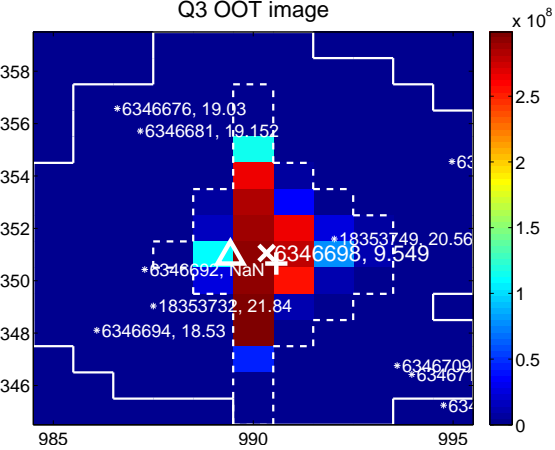
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



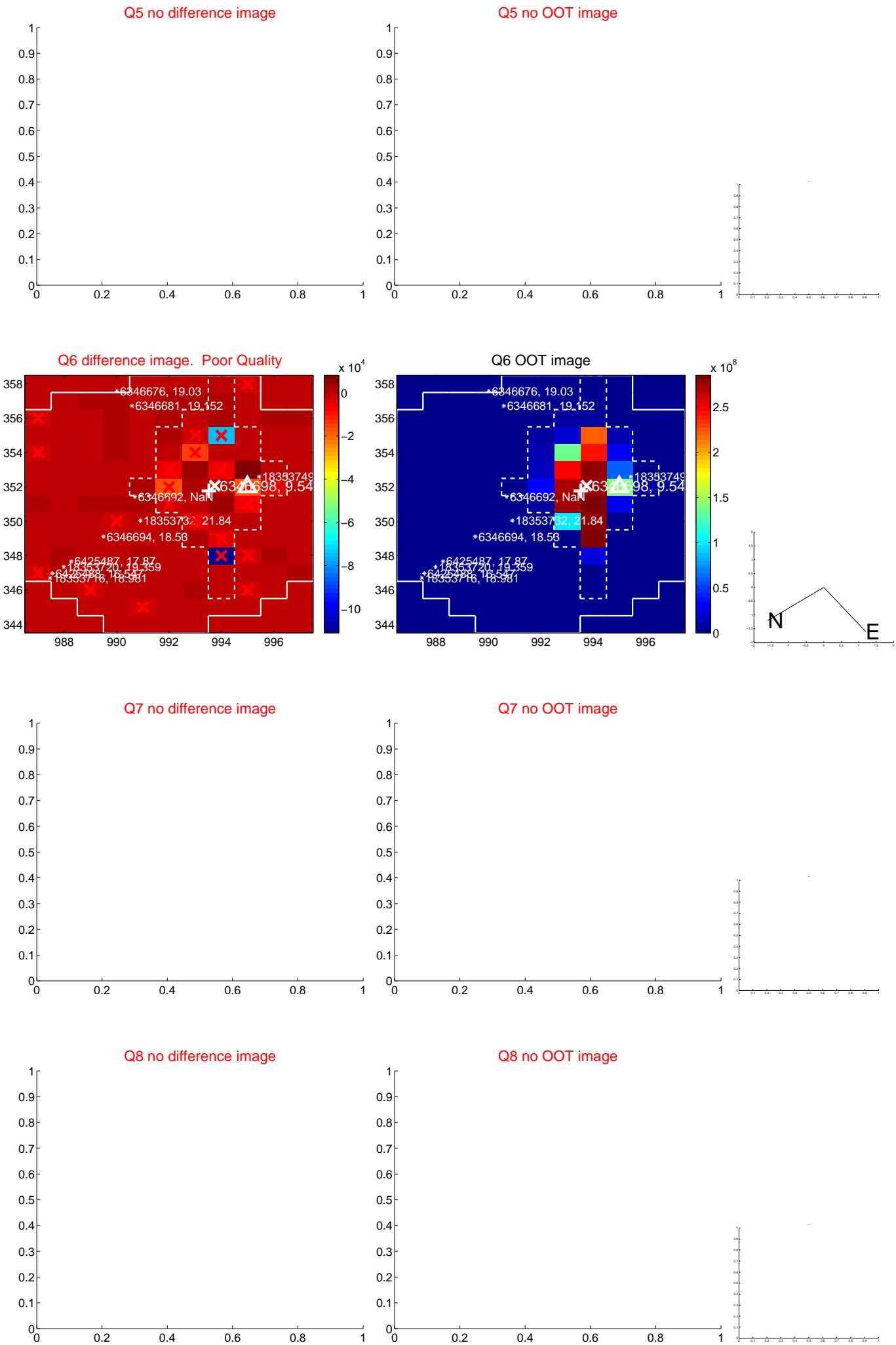
Q4 no difference image



Q4 no OOT image



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



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

Q9 no difference image



Q9 no OOT image



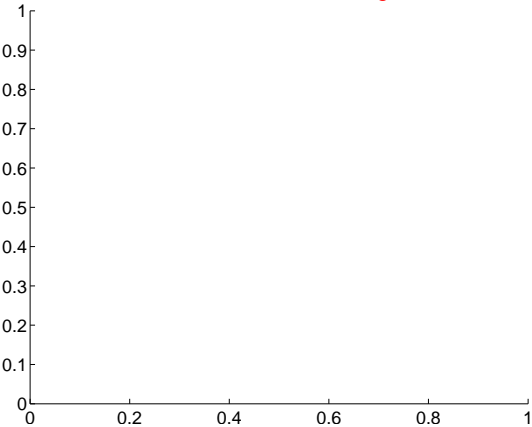
Q10 no difference image



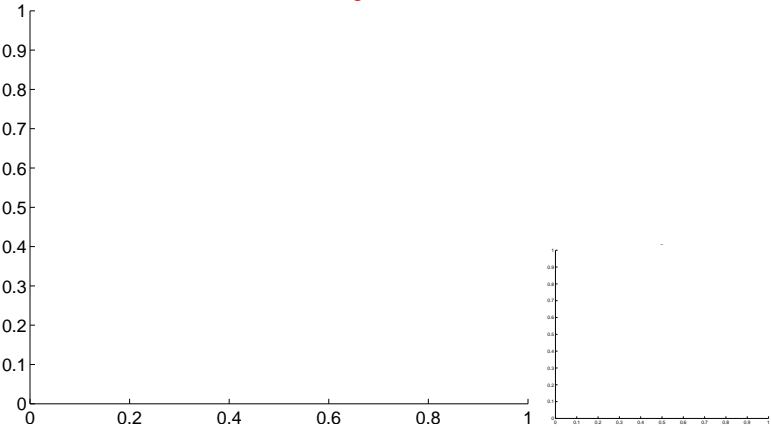
Q10 no OOT image



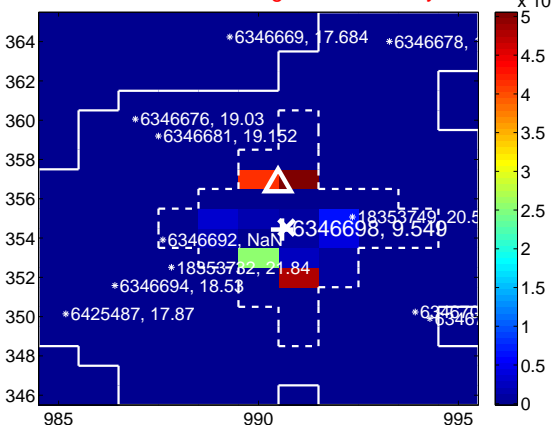
Q11 no difference image



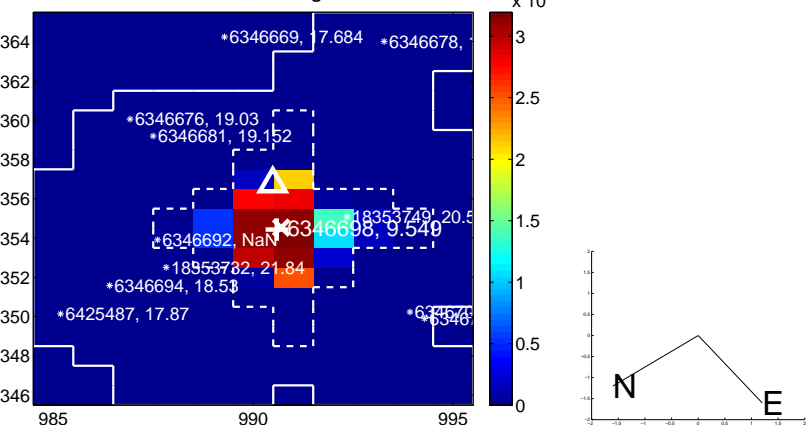
Q11 no OOT image



Q12 difference image. Poor Quality



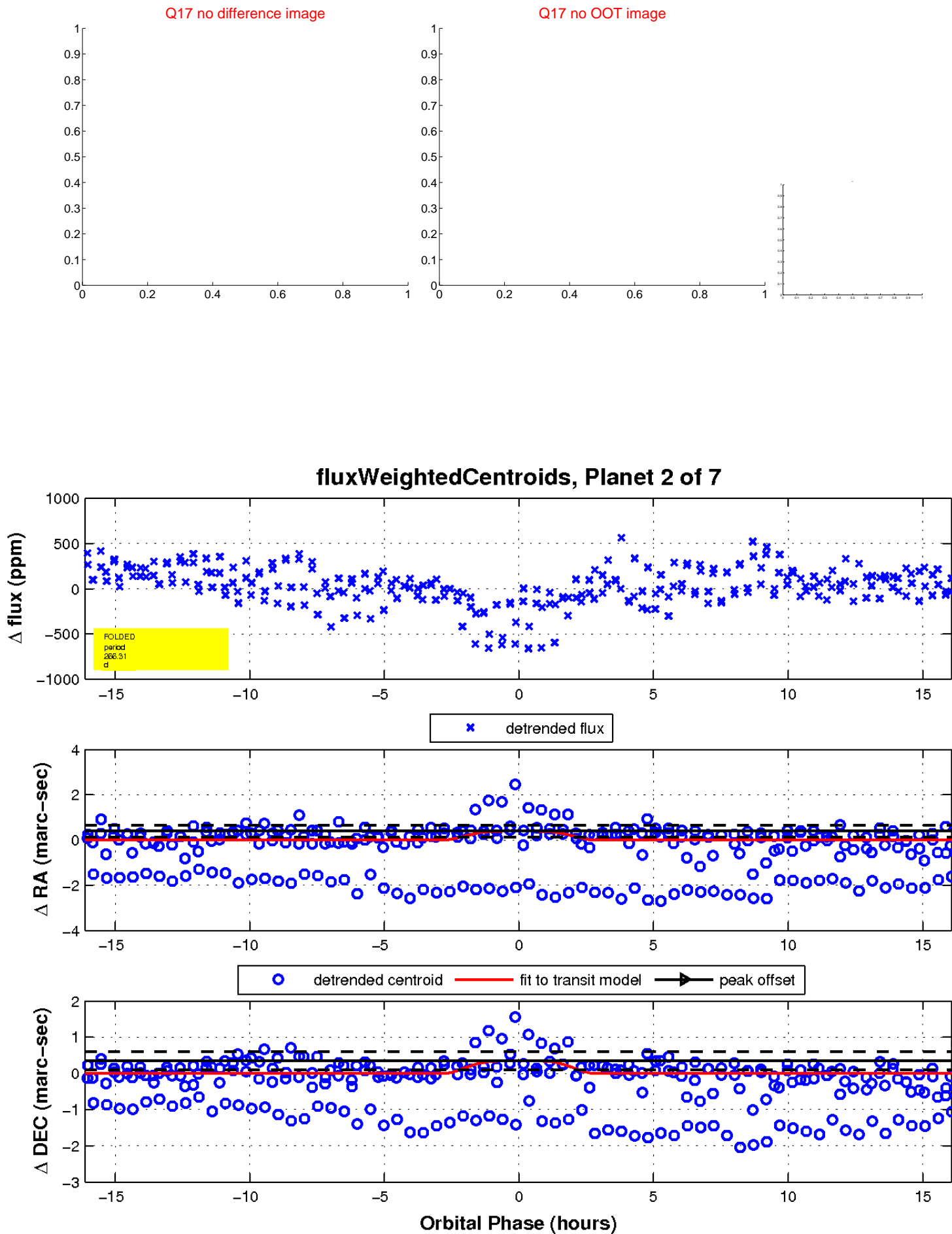
Q12 OOT image



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

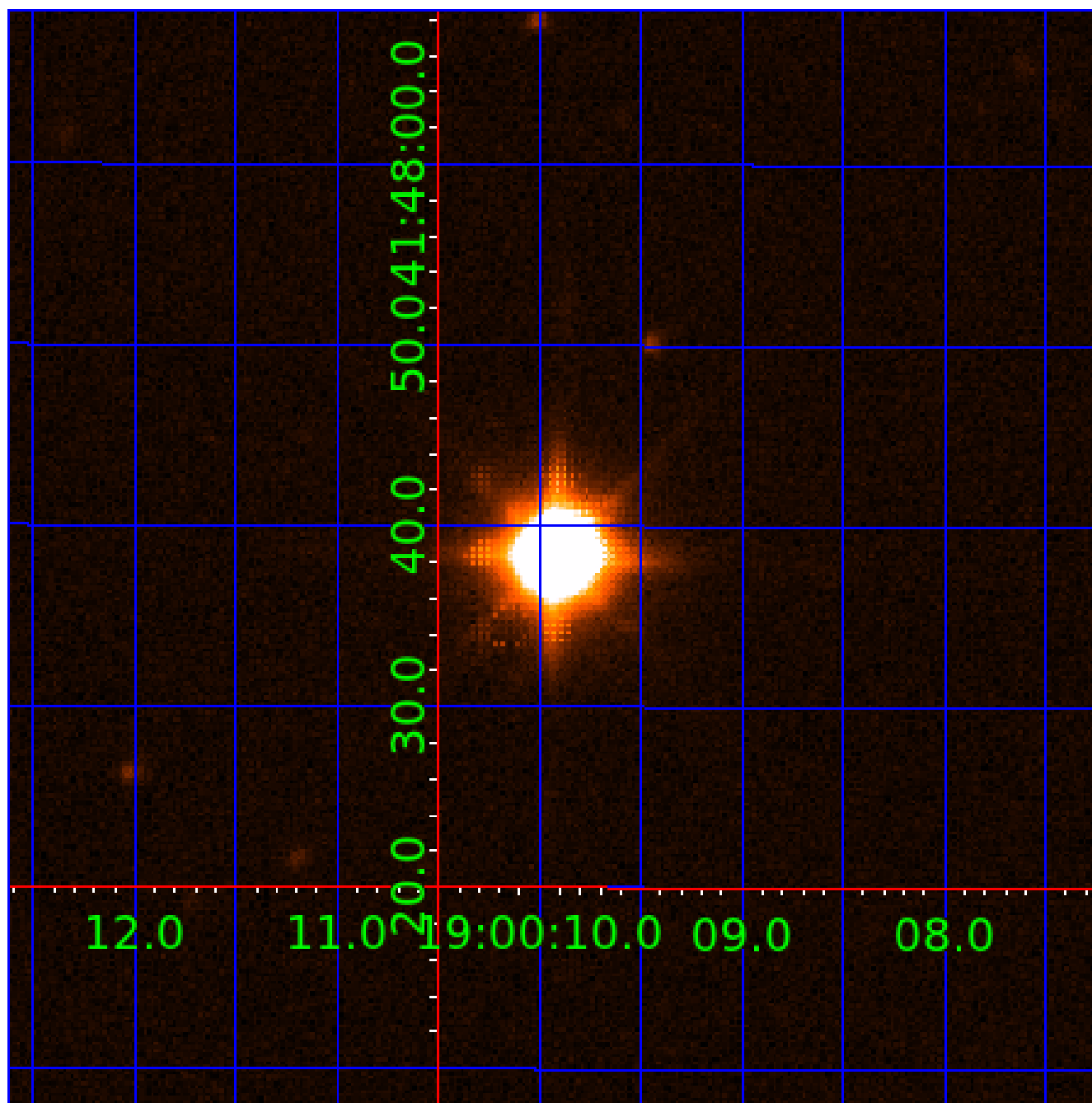


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006346698

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})
006346698-01	OBS	No	1.220221	132.149443	57.7	4.583	9.0	12.6	1.83	6251	2.86	8598.22
006346698-02	OBS	No	266.314739	344.053750	484.9	5.385	8.2	8.5	1.83	6251	5.15	6.54
006346698-03	OBS	No	433.147881	209.698718	448.2	12.310	7.1	8.0	1.83	6251	4.84	3.42
006346698-04	OBS	No	534.261924	439.146878	619.2	11.980	7.9	8.2	1.83	6251	5.55	2.59
006346698-05	OBS	No	83.640271	208.582800	151.4	7.661	7.6	4.4	1.83	6251	2.48	30.65
006346698-06	OBS	No	1.220382	131.771486	71.3	7.836	10.3	11.2	1.83	6251	2.17	8596.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006346698-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006346698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
006346698-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
006346698-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

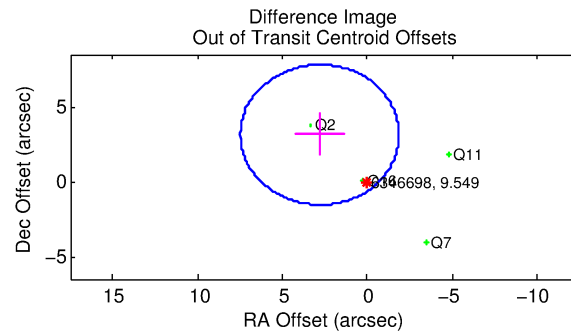
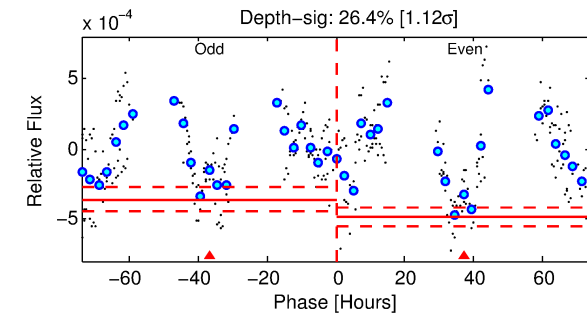
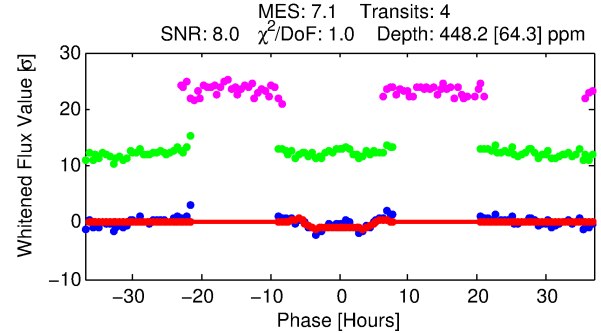
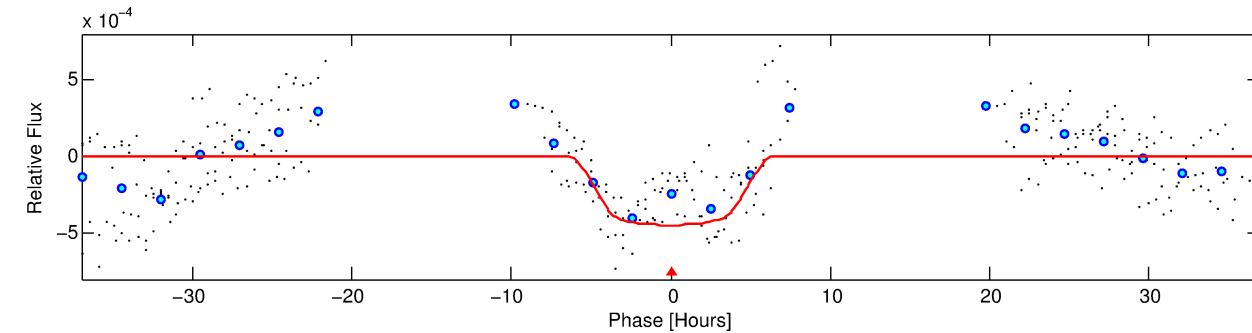
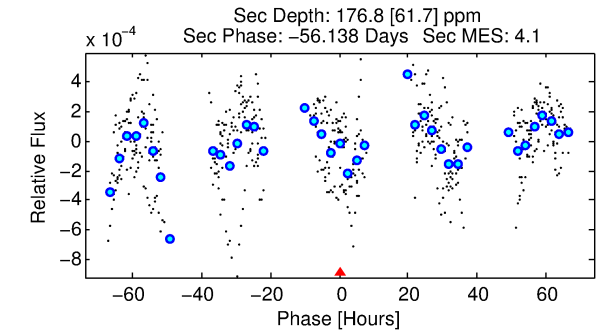
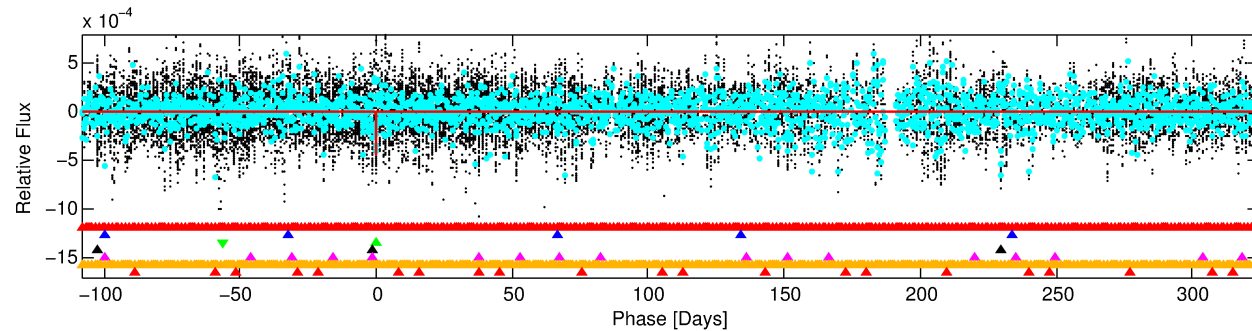
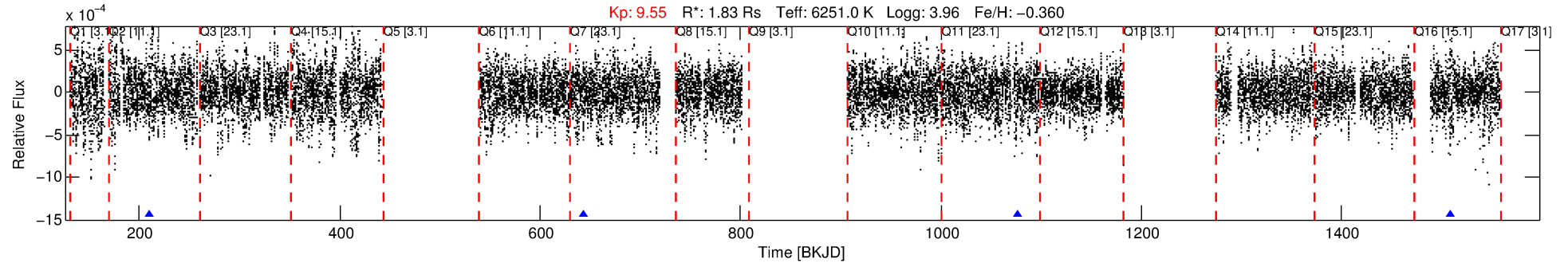
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006346698-03

No Significant Match Found

DV One-Page Summary

KIC: 6346698 Candidate: 3 of 7 Period: 433.148 d



DV Fit Results:

Period = 433.14788 [0.00849] d
Epoch = 209.6987 [0.0161] BKJD
Rp/R* = 0.0242 [0.0019]
a/R* = 100.42 [11.89]
b = 0.95 [0.01]
Seff = 3.42 [2.45]
Teq = 347 [62] K
Rp = 4.84 [2.01] Re
a = 1.1572 [0.4879] AU
Ag = 5563.24 [4435.94] [1.25 σ]
Teffp = 4631 [475] K [8.94 σ]

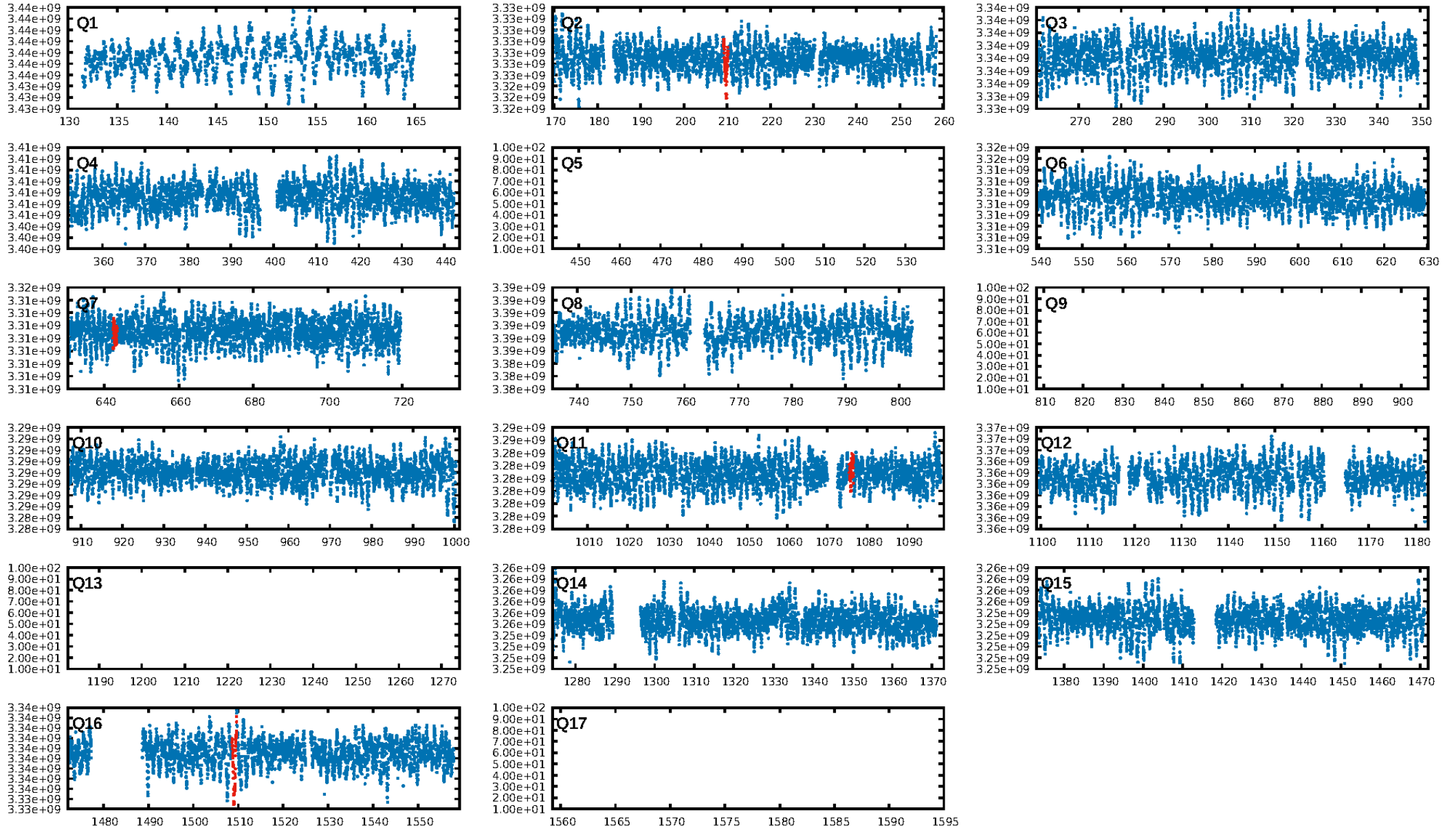
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [298.00 σ]
LongPeriod-sig: 100.0% [141.27 σ]
ModelChiSquare2-sig: 13.3%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: N/A
Centroid-sig: 64.7%
Centroid-so: 0.547 arcsec [0.87 σ]
OotOffset-rm: 4.196 arcsec [2.69 σ]
KicOffset-rm: 5.238 arcsec [2.60 σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/4]

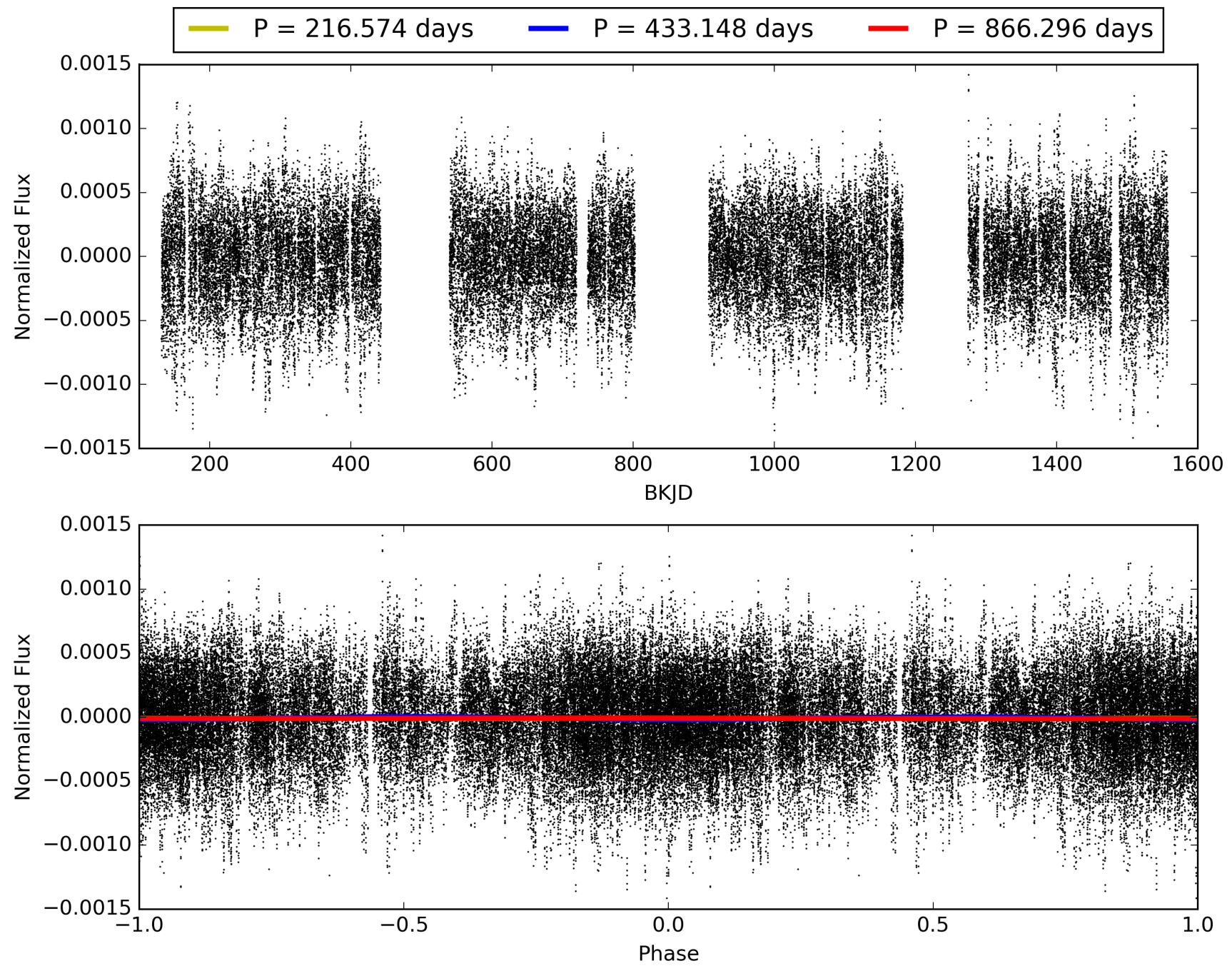
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:51:33 Z

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

TCE 006346698-03, PDC Light Curves

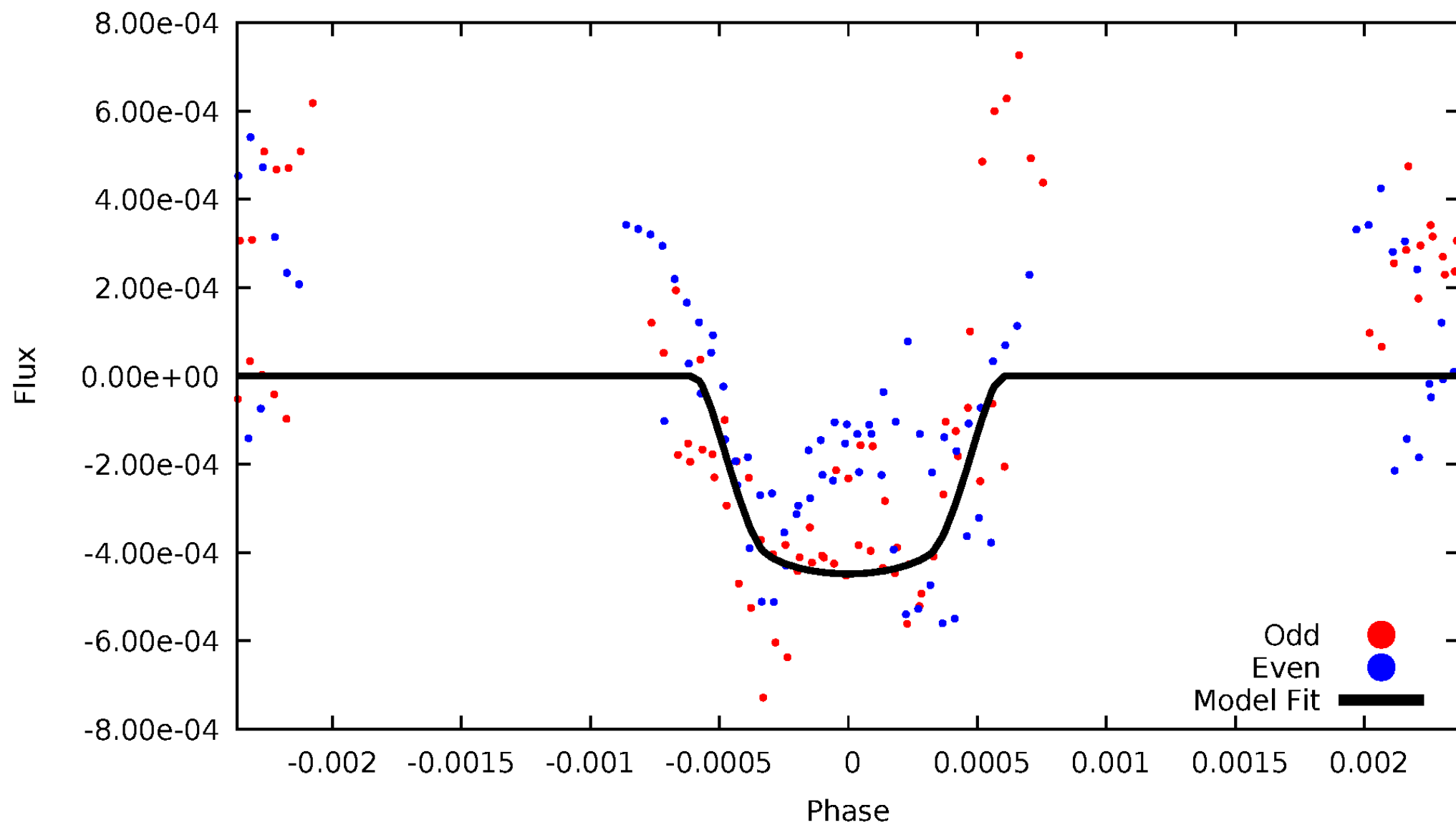


TCE 006346698-03



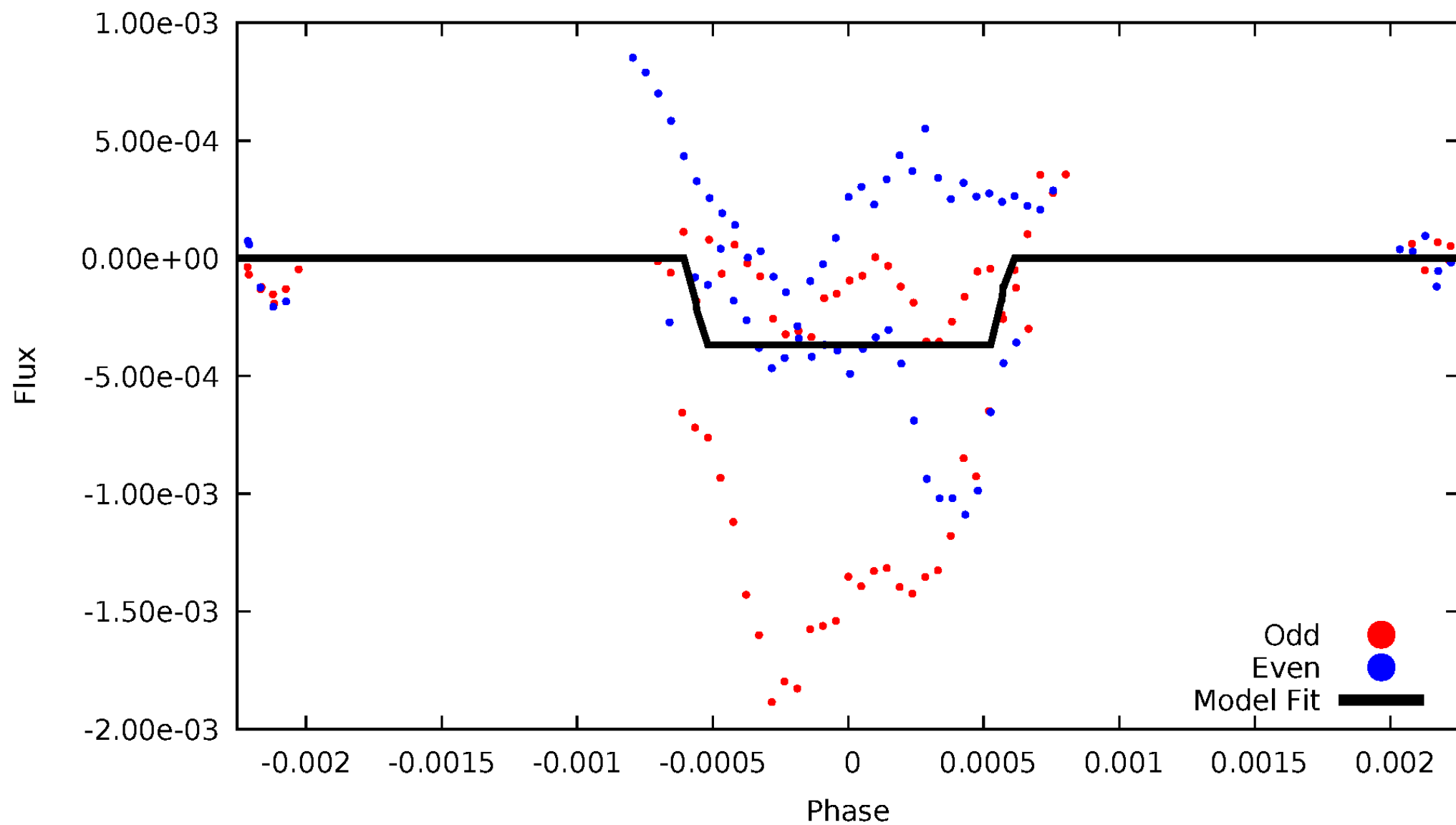
DV Odd/Even

TCE 006346698-03



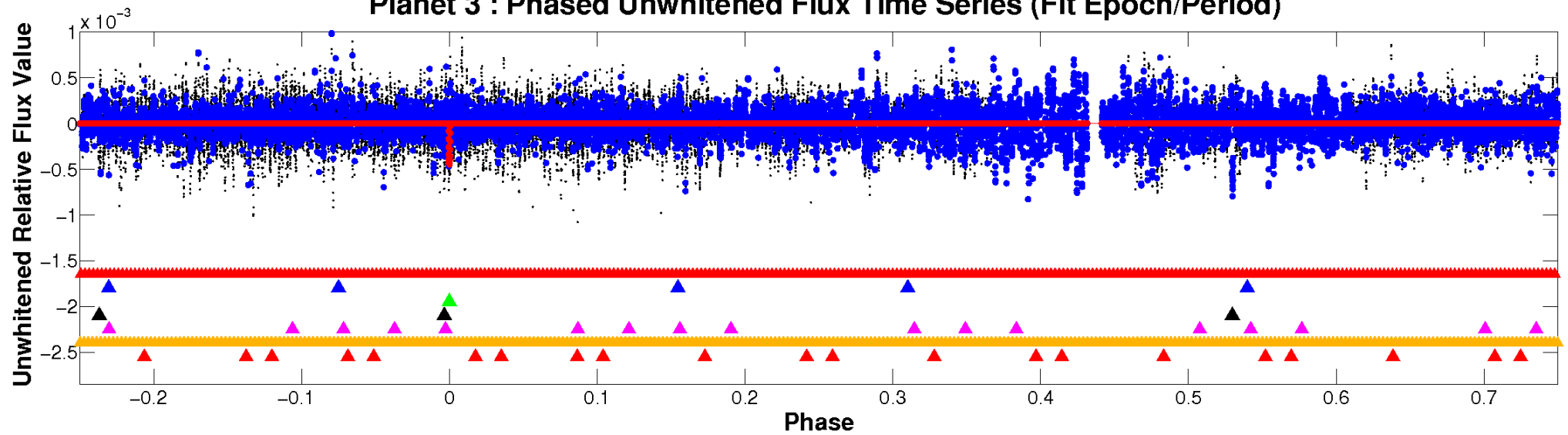
ALT Odd/Even

TCE 006346698-03

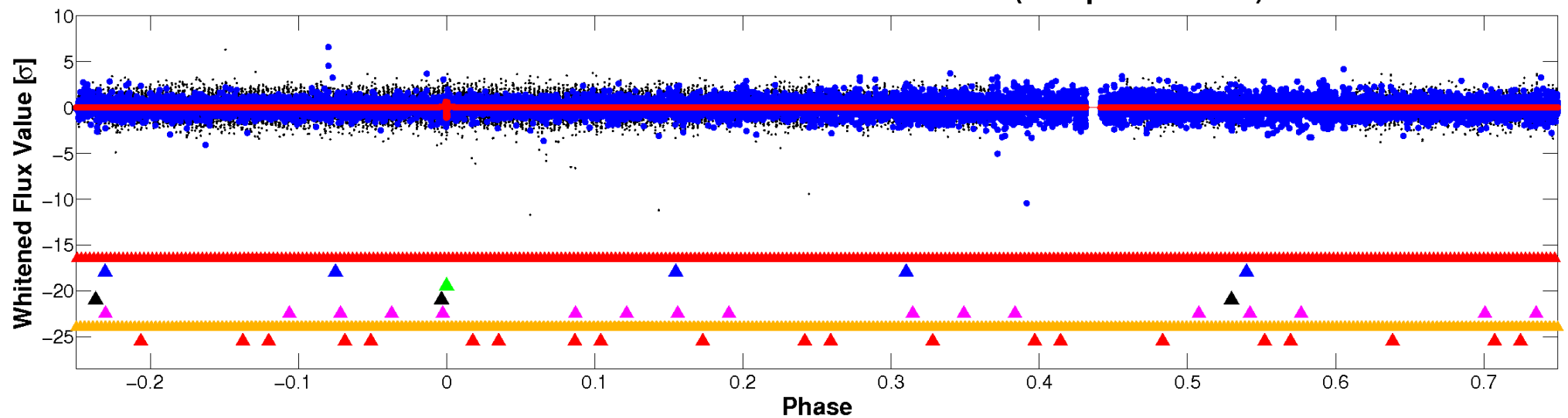


Non-Whitened Vs. Whitened Light Curve

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

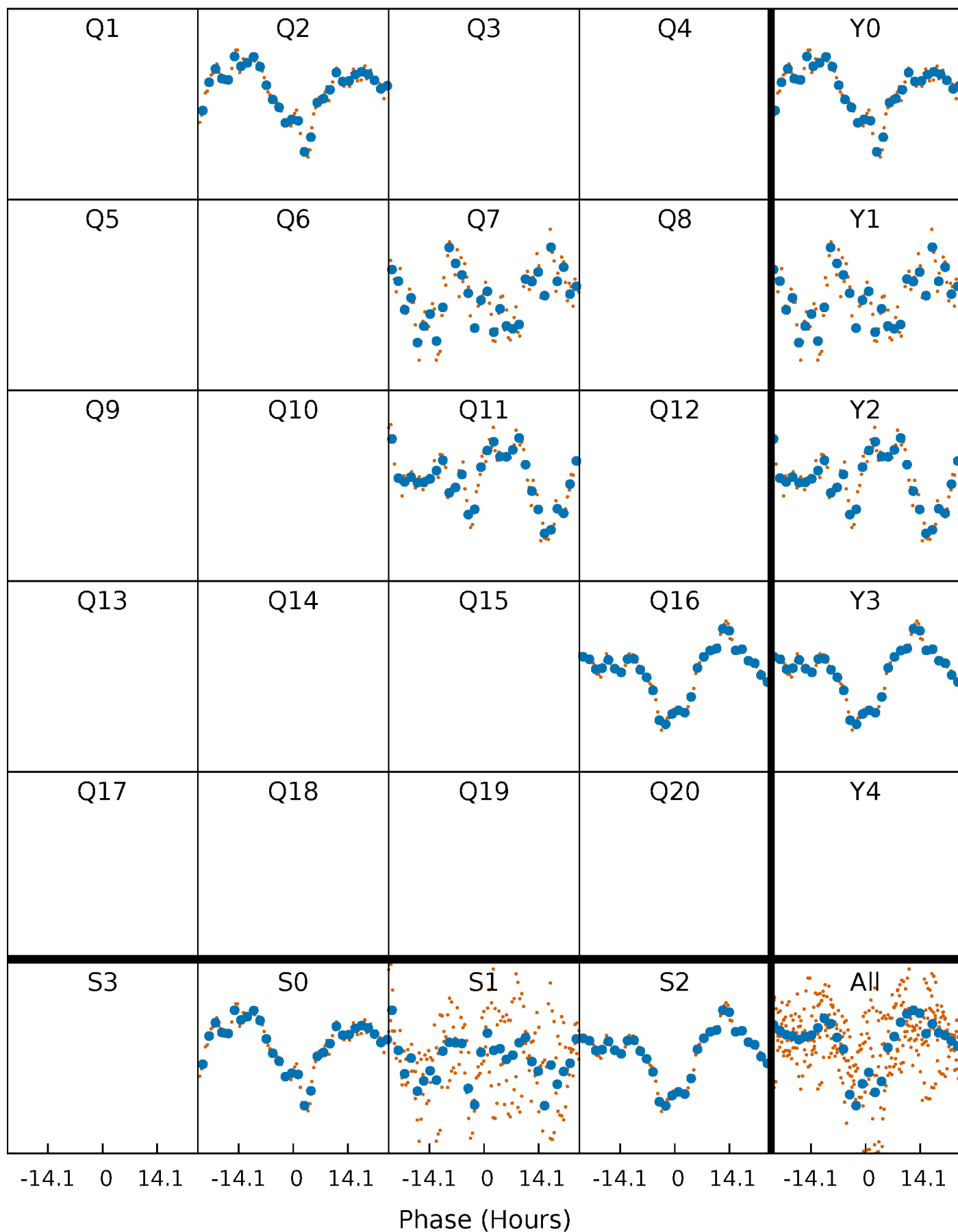


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



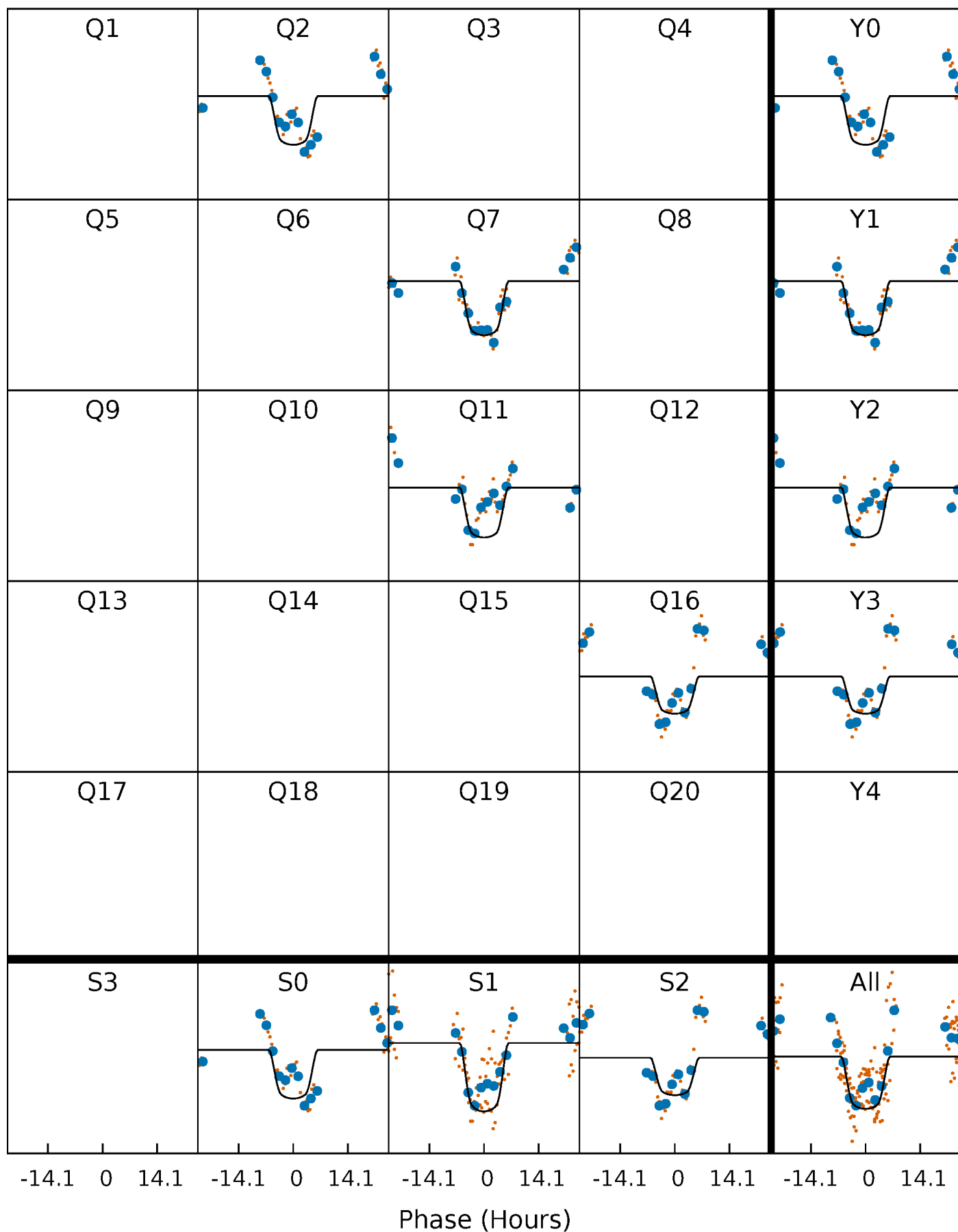
PDC Quarter-Phased Transit Curves

TCE 006346698-03 P=433.147881 Days $T_0=209.698718$ (BKJD)



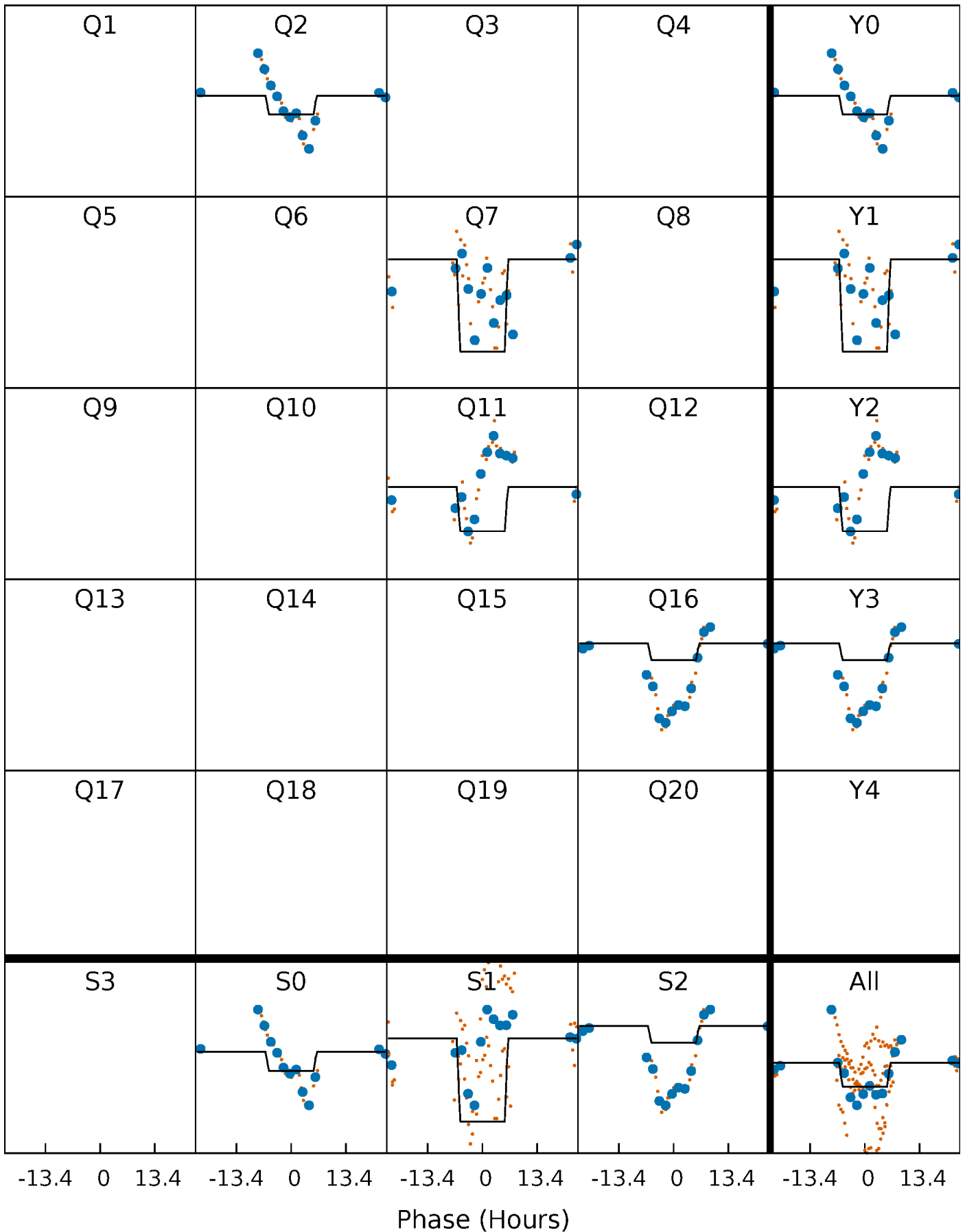
DV Quarter-Phased Transit Curves

TCE 006346698-03 P=433.147881 Days $T_0=209.698718$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

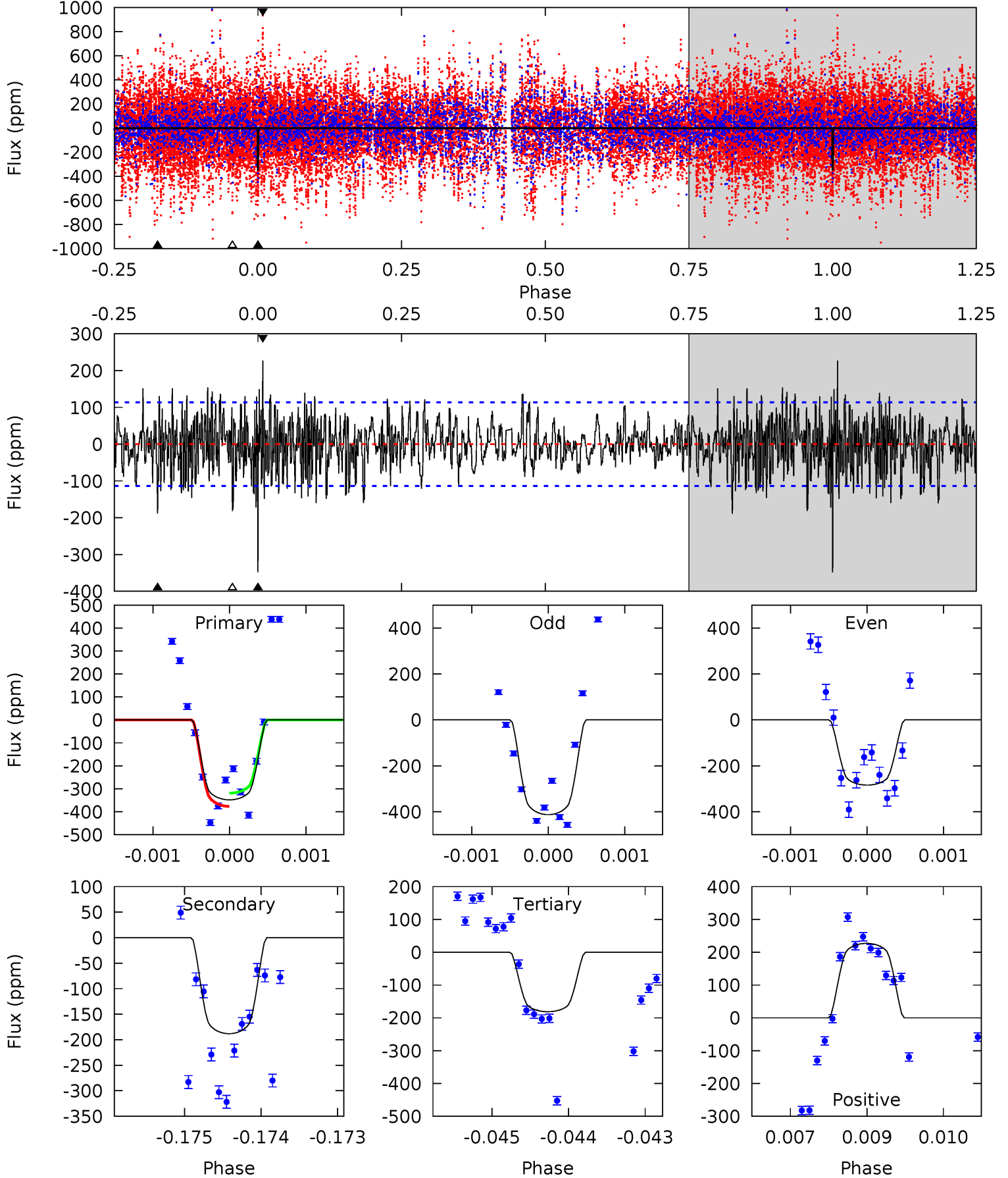
TCE 006346698-03 P=433.150605 Days $T_0=209.670050$ (BKJD)



DV Model-Shift Uniqueness Test

006346698-03, P = 433.147881 Days, E = 209.698718 Days

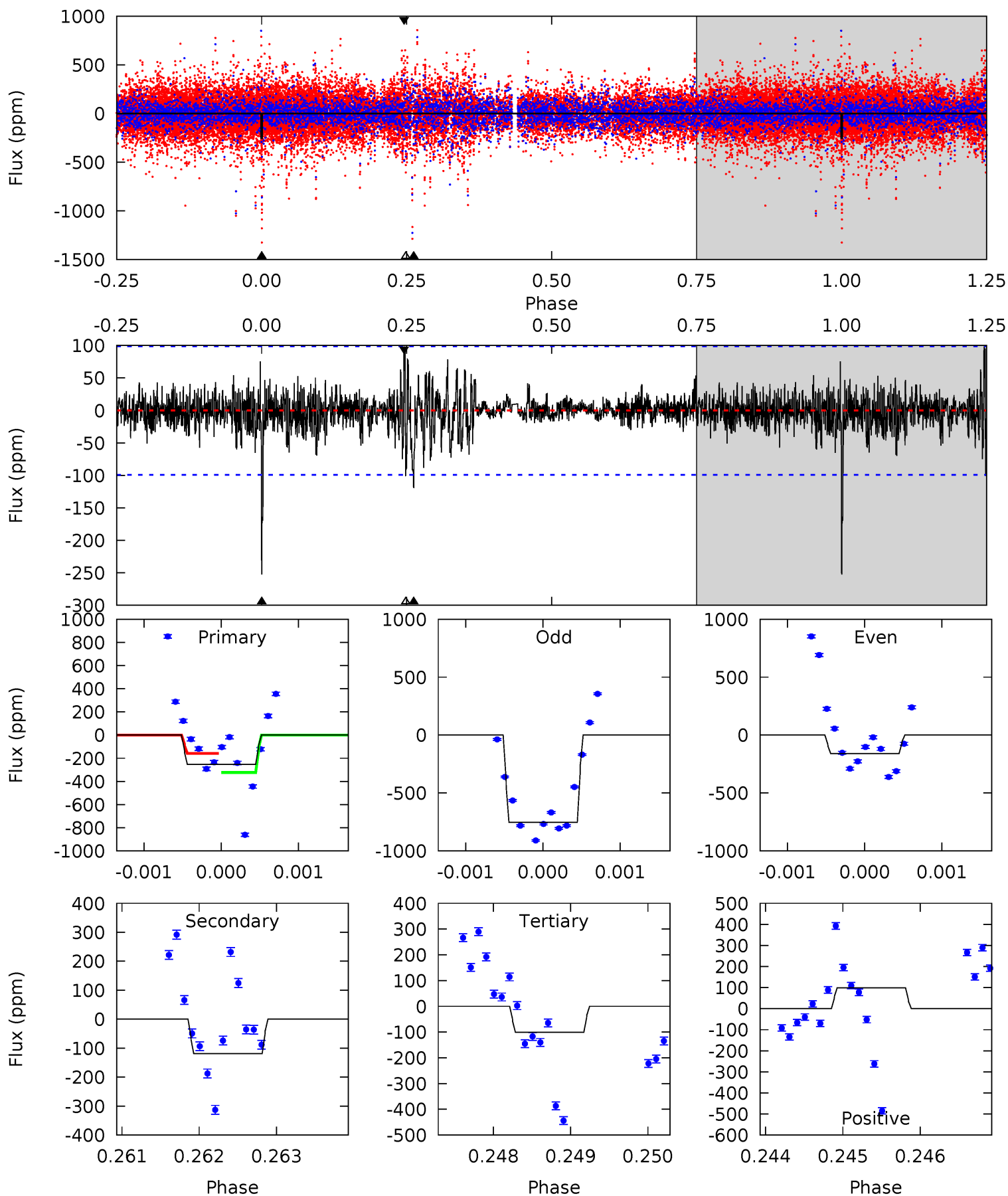
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	8.97	8.63	10.8	5.41	3.23	2.67	7.96	5.77	0.33	-1.85	3.07	0.94	0.39	1.37



Alt Model-Shift Uniqueness Test

006346698-03, P = 433.150605 Days, E = 209.670050 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	6.52	5.52	5.40	5.42	3.24	1.10	8.29	8.41	1.01	1.13	17.7	1.62	0.28	4.54



Stellar Parameters For KIC 006346698

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6251^{+194}_{-233}	$3.955^{+0.420}_{-0.140}$	$-0.360^{+0.300}_{-0.300}$	$1.830^{+0.435}_{-0.746}$	$1.101^{+0.174}_{-0.192}$	$0.253^{+0.844}_{-0.104}$
	+3%/-4%	+11%/-4%	+83%/-83%	+24%/-41%	+16%/-17%	+334%/-41%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006346698-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-188 ± 21	$4.69^{+0.85}_{-1.06}$	475^{+39}_{-52}	4822^{+249}_{-232}	6415^{+4068}_{-1819}
Alt.	-119 ± 18	$3.63^{+0.77}_{-0.86}$	470^{+40}_{-54}	4836^{+275}_{-275}	6748^{+4820}_{-2231}

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

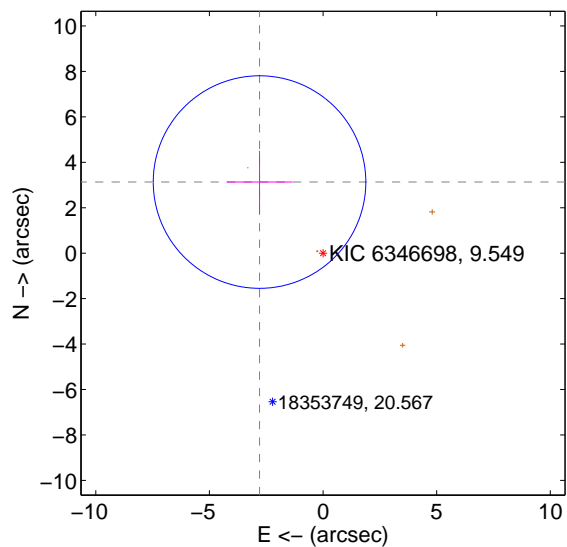
Supplemental centroid analysis for 006346698-03. **Kepler magnitude: 9.55.** Transit SNR 8.00

There are 0 quarters with good PRF difference image offsets

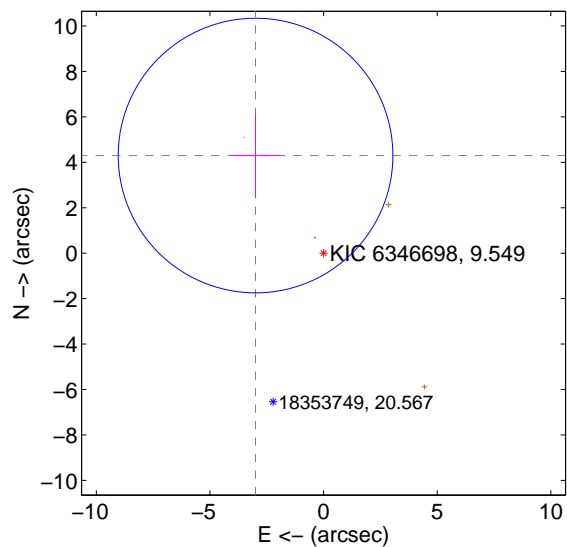
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.196 ± 1.559	2.69	2.795 ± 1.450	3.130 ± 1.373
PRF-fit source offset from KIC position	5.238 ± 2.014	2.60	2.994 ± 1.090	4.297 ± 1.826
photometric centroid source offset	0.55 ± 0.63	0.87	-0.01 ± 0.77	0.55 ± 0.63

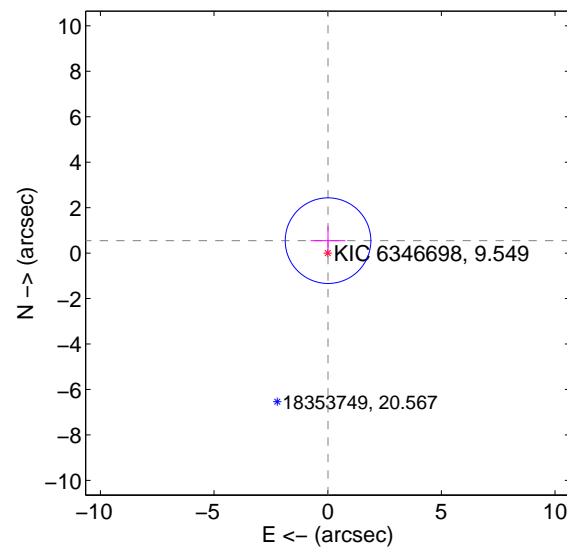
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

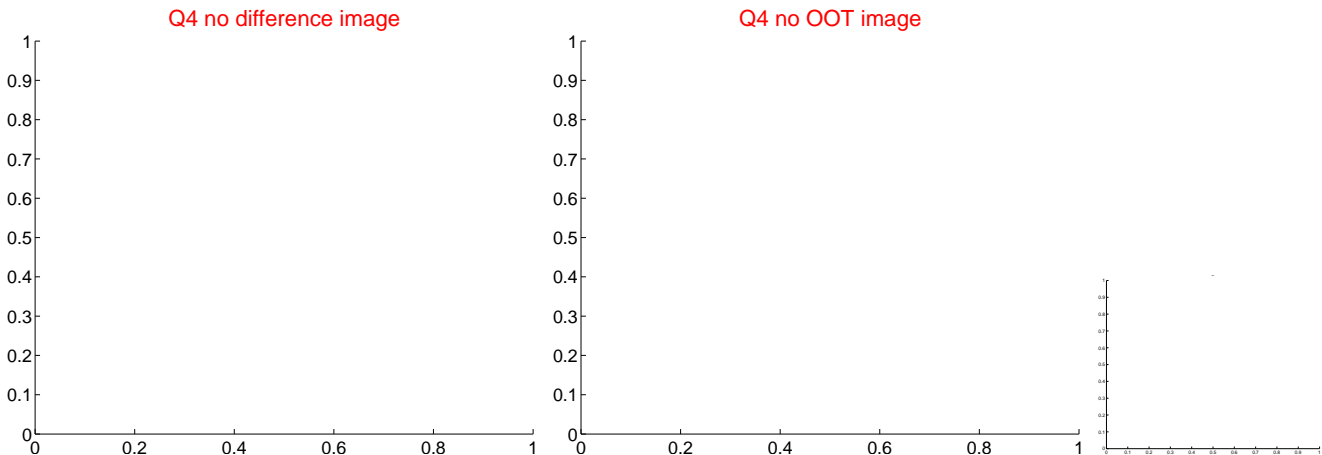
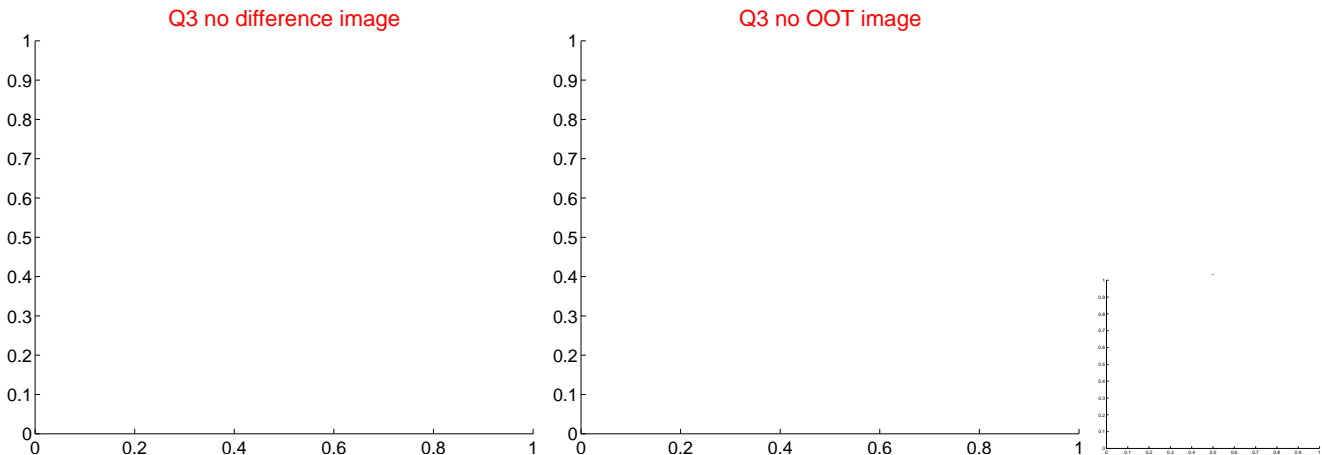
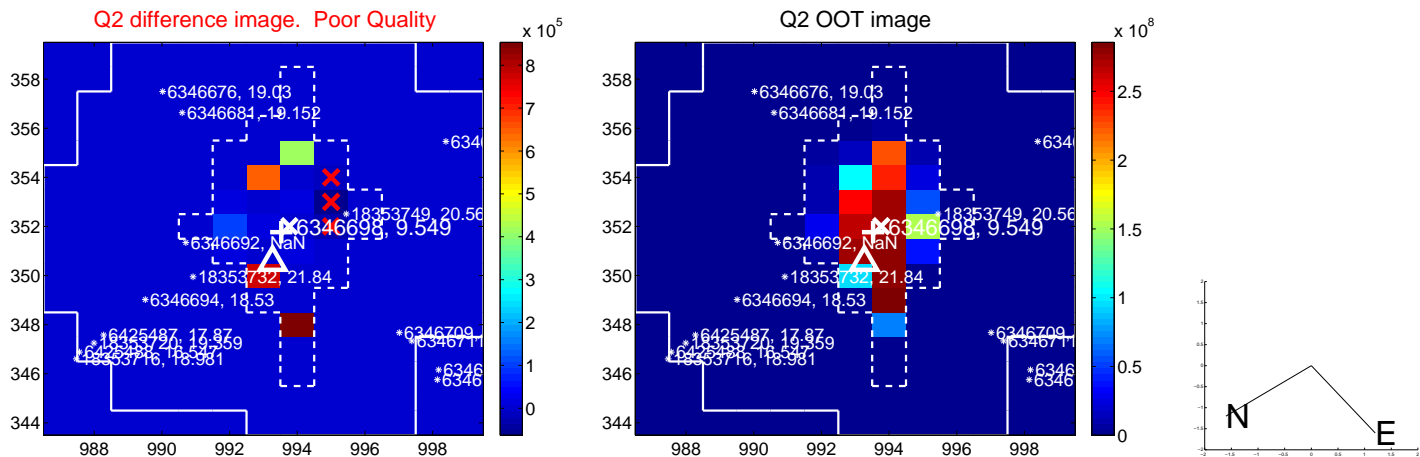
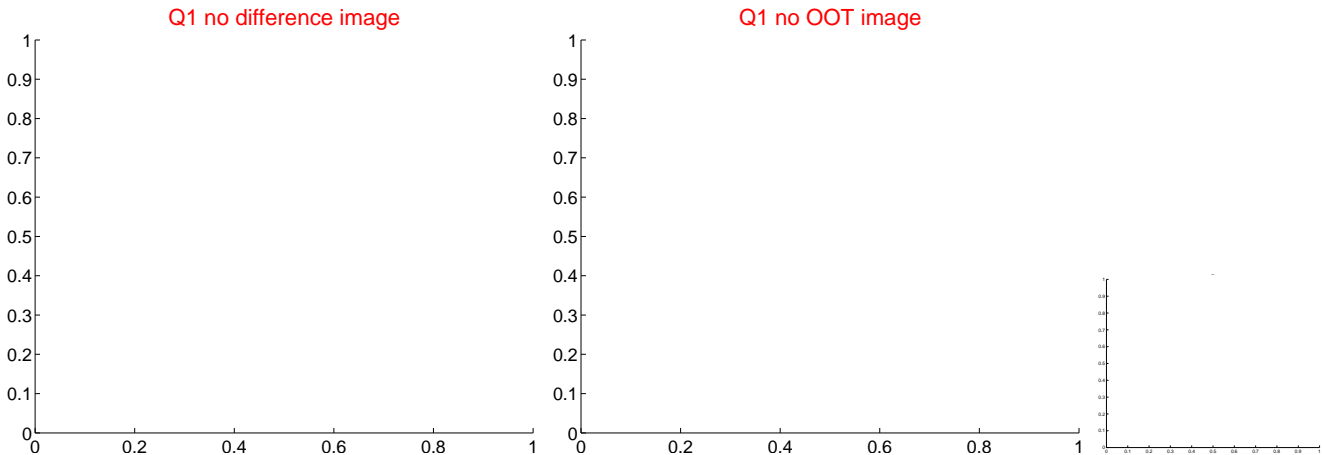


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



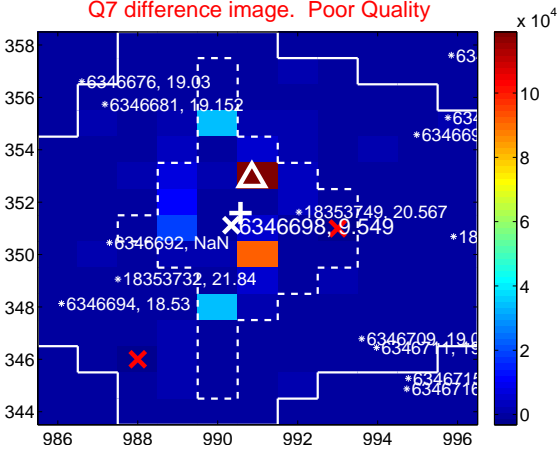
Q6 no difference image



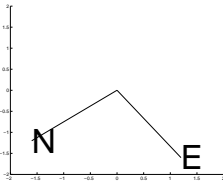
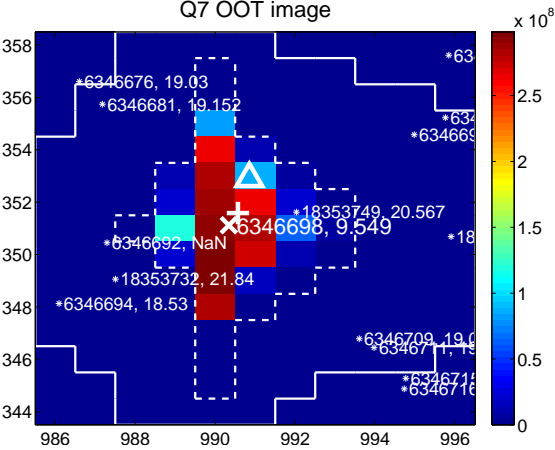
Q6 no OOT image



Q7 difference image. Poor Quality



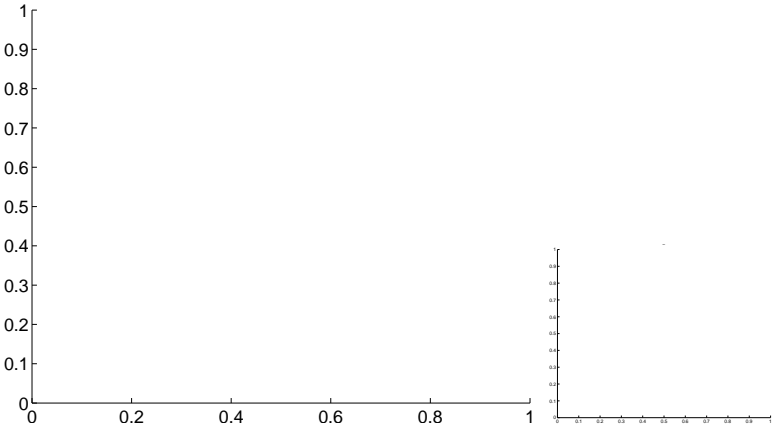
Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



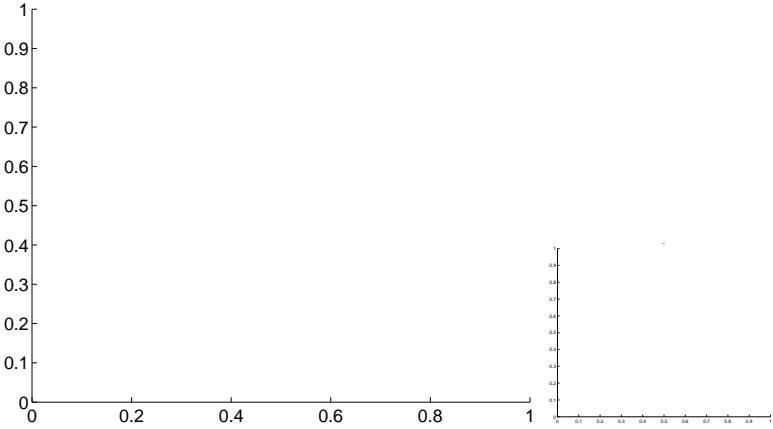
Q9 no OOT image



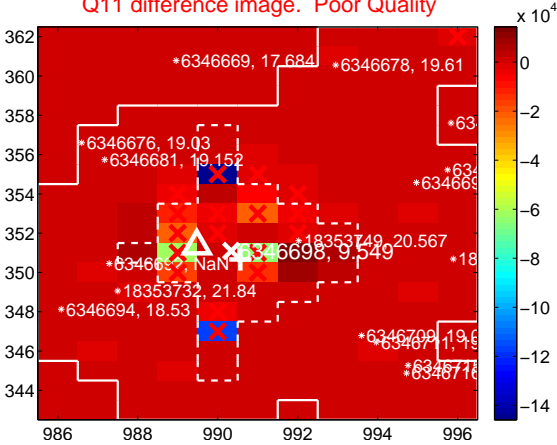
Q10 no difference image



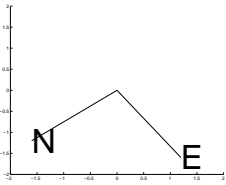
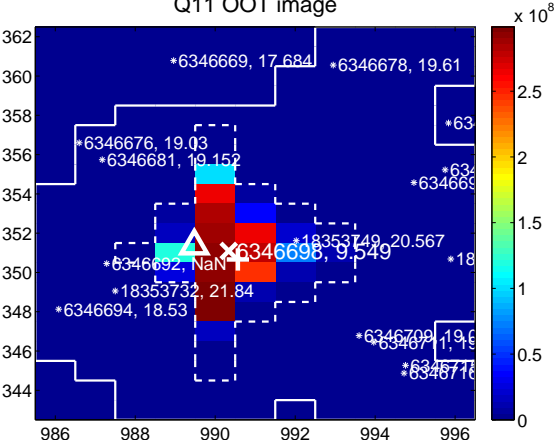
Q10 no OOT image



Q11 difference image. Poor Quality



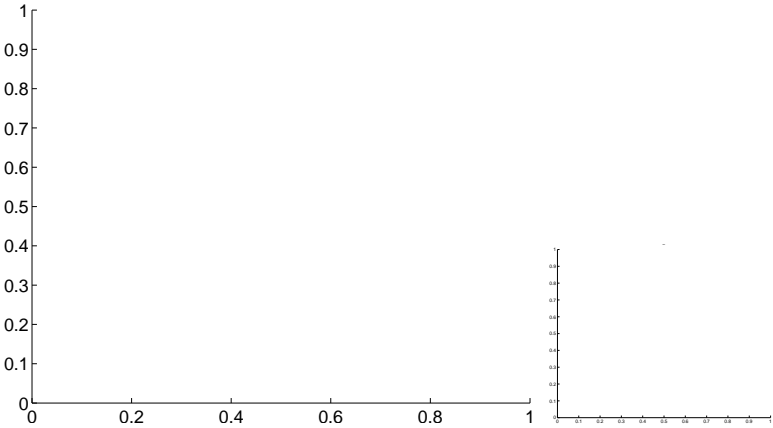
Q11 OOT image



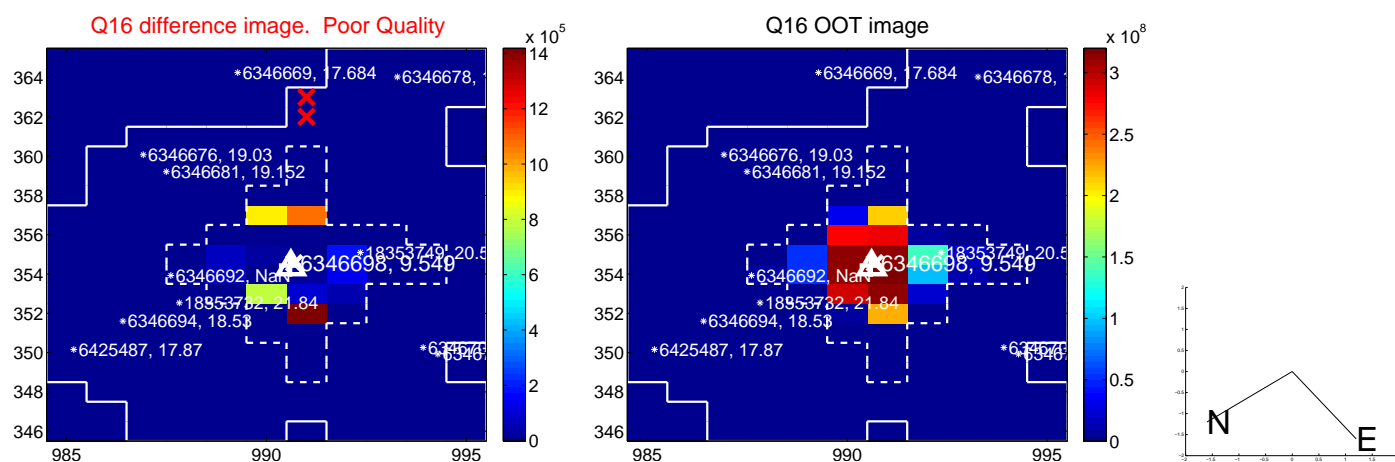
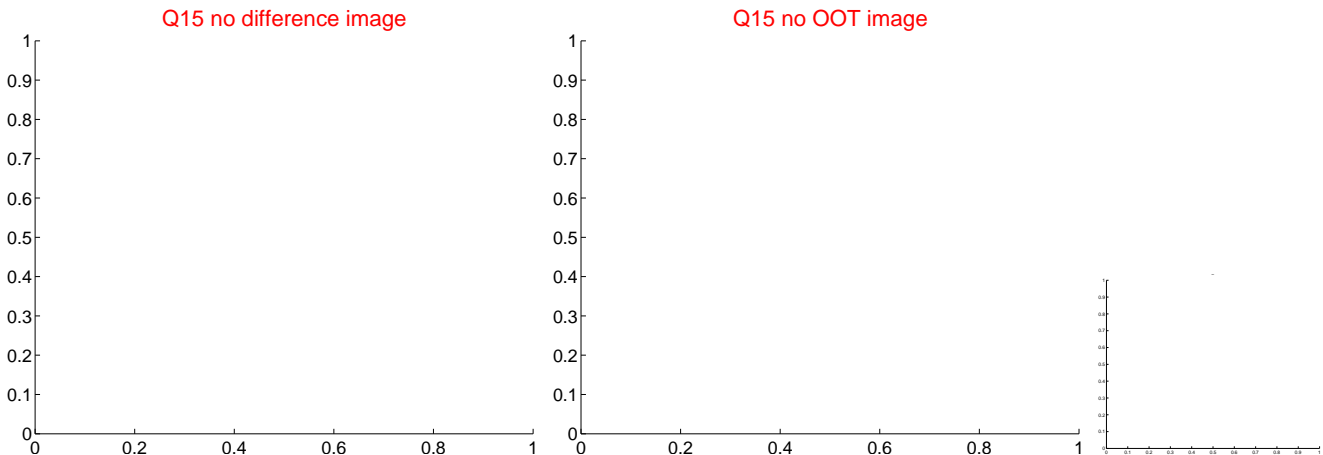
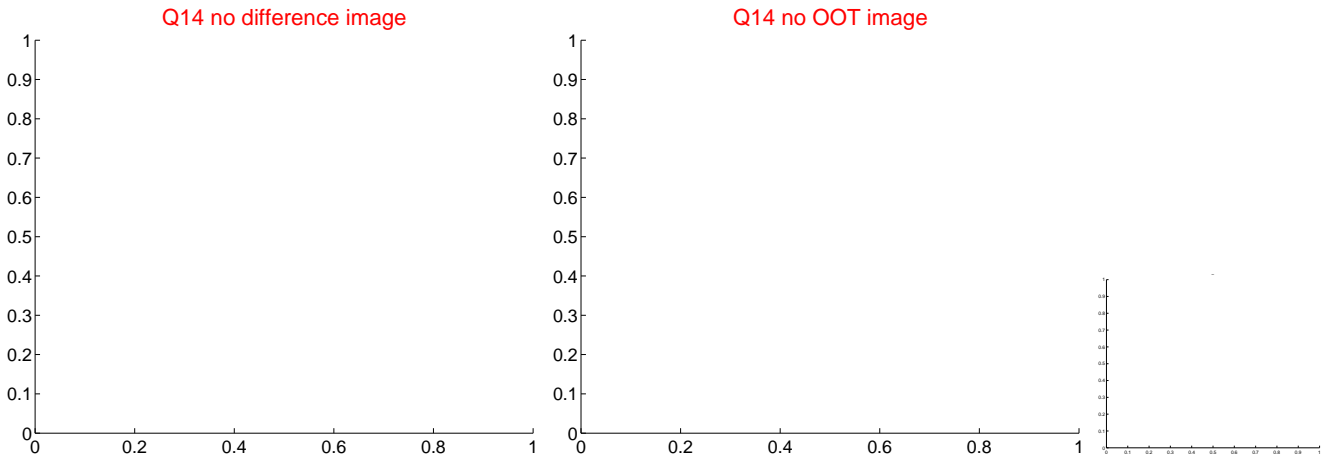
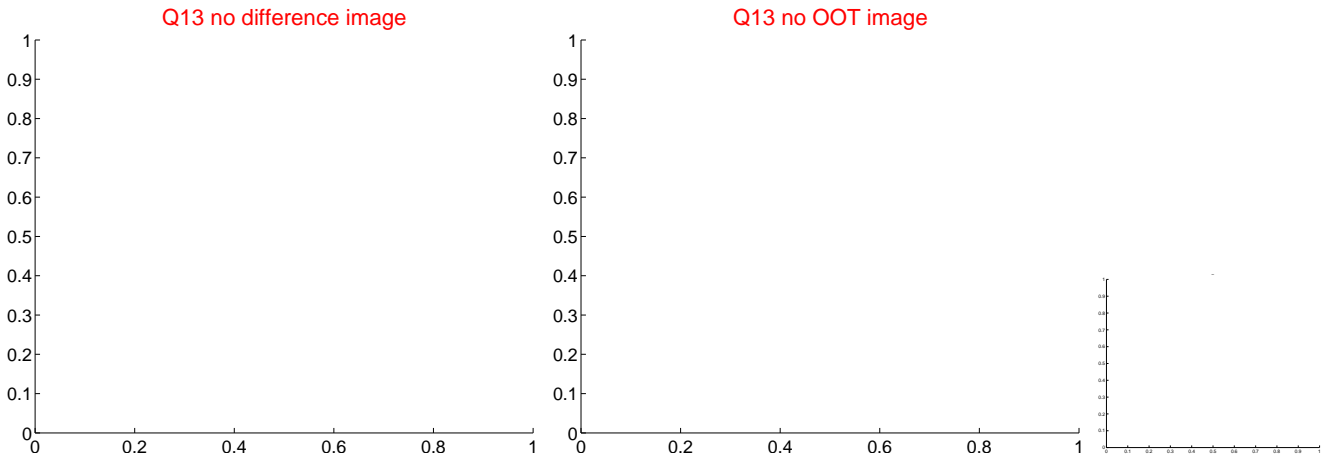
Q12 no difference image



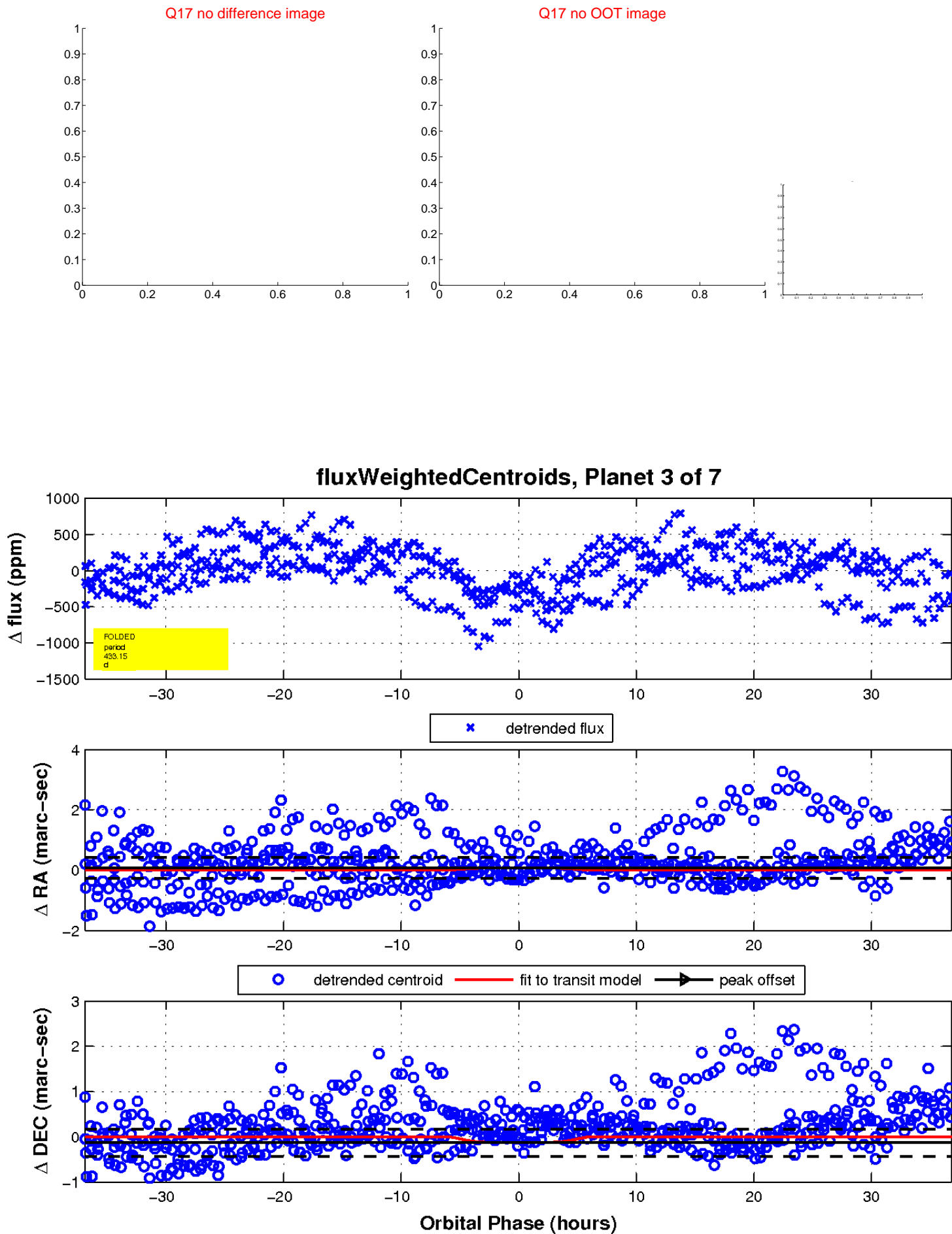
Q12 no OOT image



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

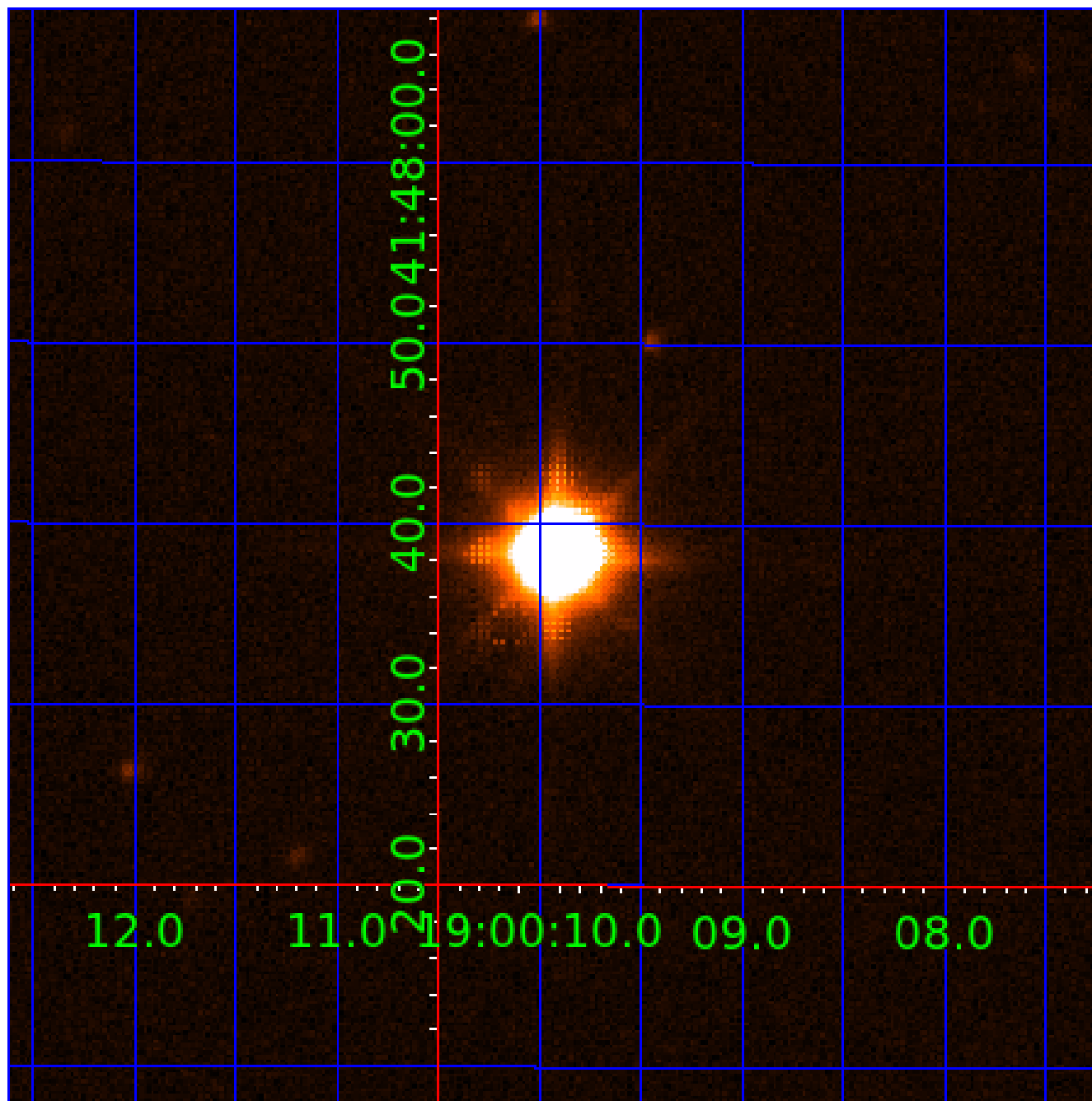


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006346698

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})
006346698-01	OBS	No	1.220221	132.149443	57.7	4.583	9.0	12.6	1.83	6251	2.86	8598.22
006346698-02	OBS	No	266.314739	344.053750	484.9	5.385	8.2	8.5	1.83	6251	5.15	6.54
006346698-03	OBS	No	433.147881	209.698718	448.2	12.310	7.1	8.0	1.83	6251	4.84	3.42
006346698-04	OBS	No	534.261924	439.146878	619.2	11.980	7.9	8.2	1.83	6251	5.55	2.59
006346698-05	OBS	No	83.640271	208.582800	151.4	7.661	7.6	4.4	1.83	6251	2.48	30.65
006346698-06	OBS	No	1.220382	131.771486	71.3	7.836	10.3	11.2	1.83	6251	2.17	8596.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006346698-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006346698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
006346698-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
006346698-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

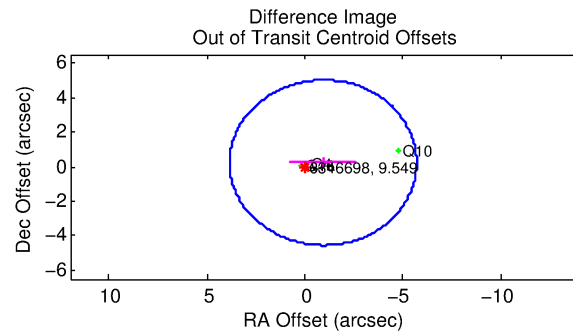
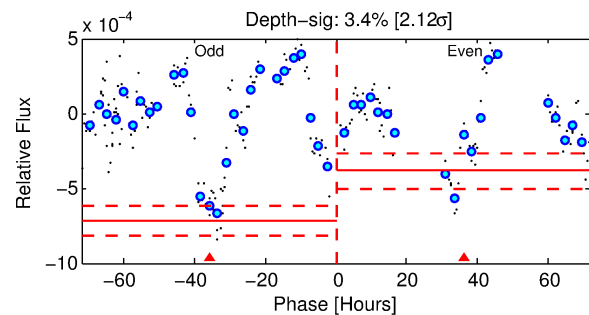
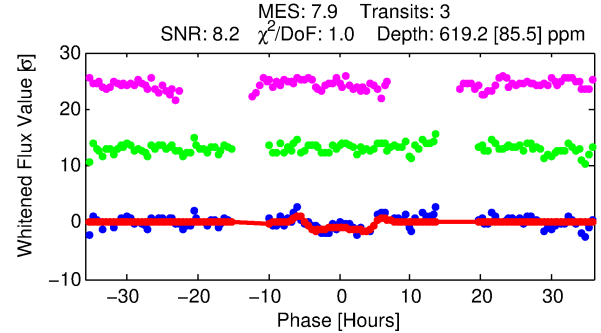
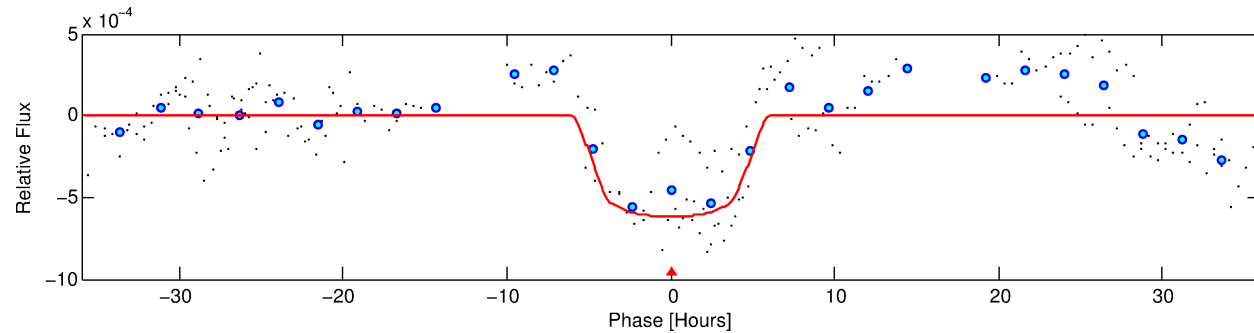
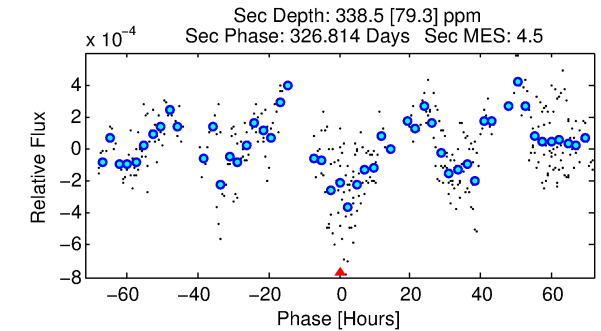
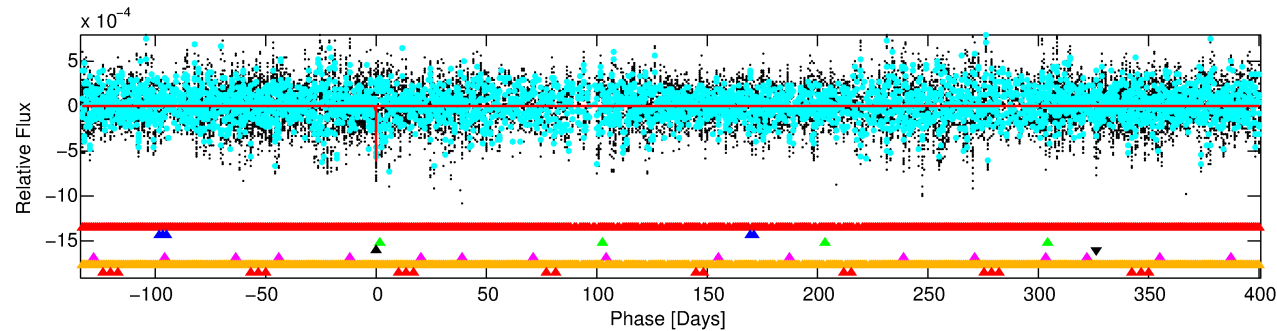
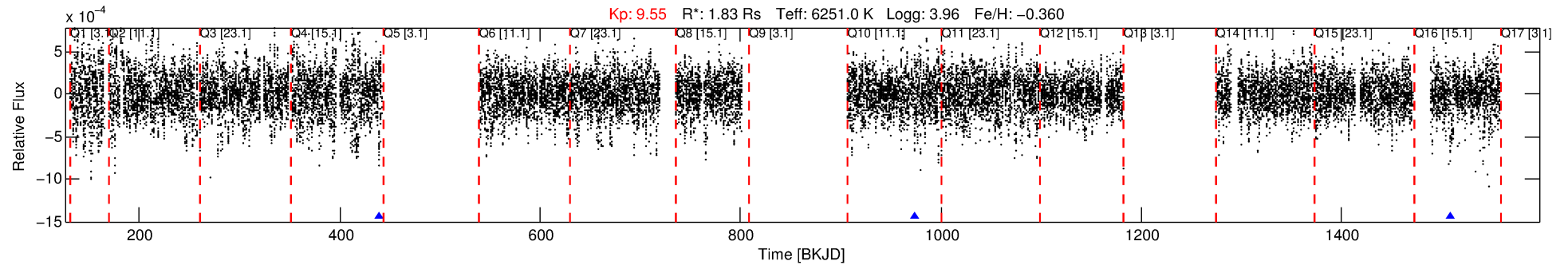
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006346698-04

No Significant Match Found

DV One-Page Summary

KIC: 6346698 Candidate: 4 of 7 Period: 534.262 d



DV Fit Results:

Period = 534.26192 [0.01249] d
Epoch = 439.1469 [0.0122] BKJD
Rp/R* = 0.0278 [0.0021]
a/R* = 143.03 [19.31]
b = 0.94 [0.02]
Seff = 2.59 [1.85]
Teq = 323 [58] K
Rp = 5.55 [2.30] Re
a = 1.3310 [0.5612] AU
Ag = 10694.48 [8056.97] [1.33 σ]
Teffp = 5084 [402] K [11.71 σ]

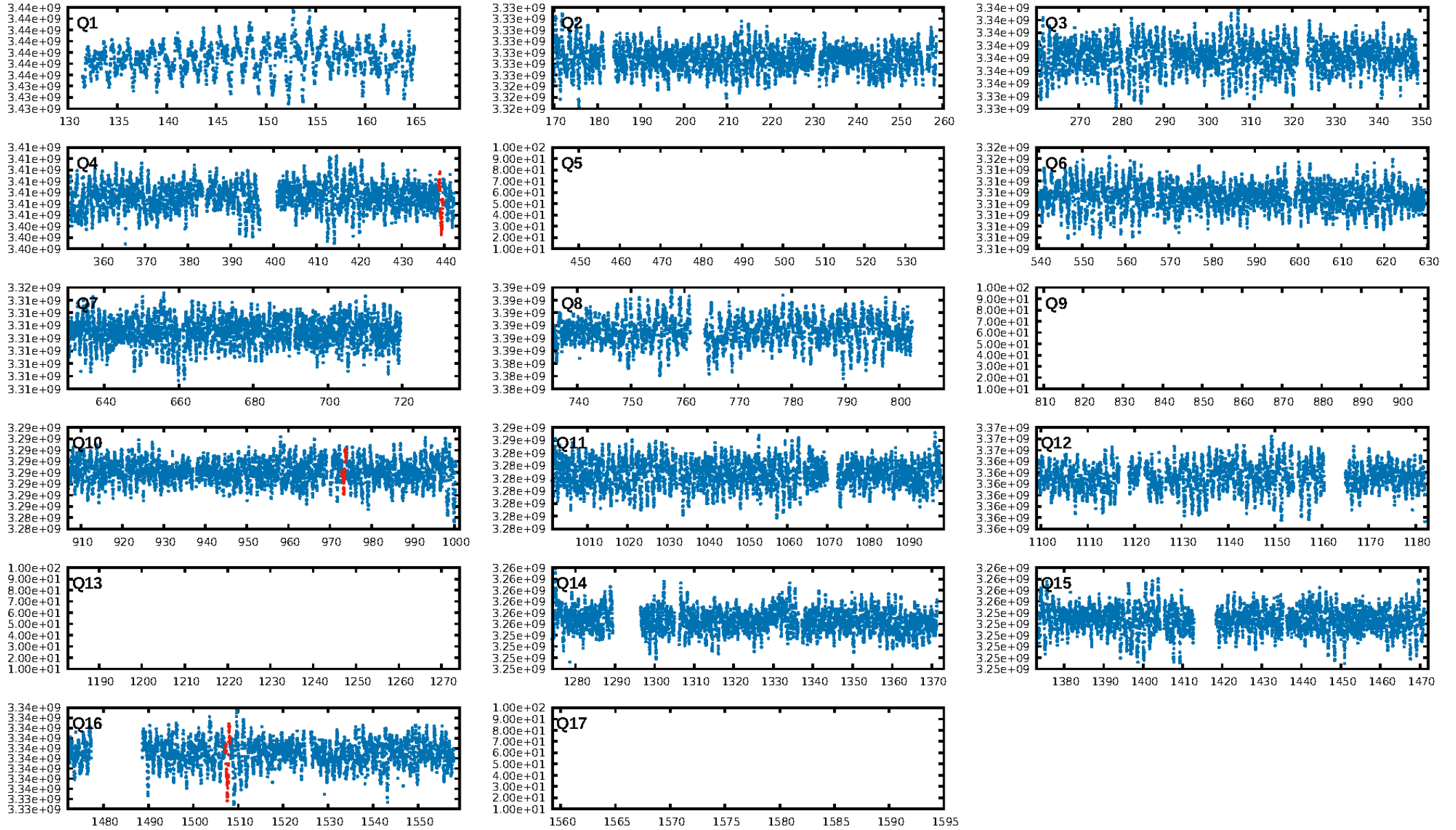
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [141.27 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 85.5%
Centroid-so: 0.479 arcsec [0.92 σ]
OotOffset-rm: 0.950 arcsec [0.60 σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-rm: 1.289 arcsec [1.17 σ]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

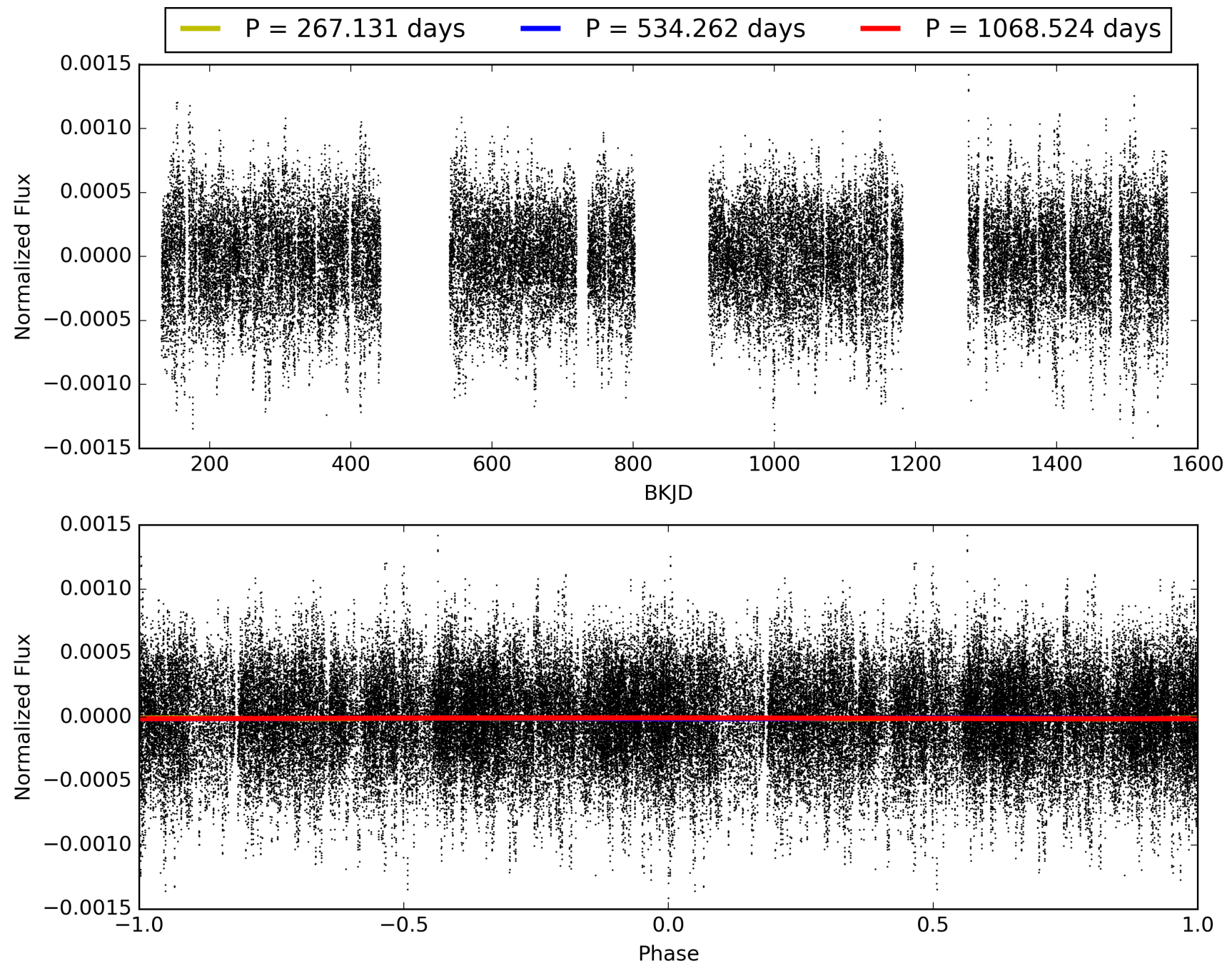
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:51:39 Z

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

TCE 006346698-04, PDC Light Curves

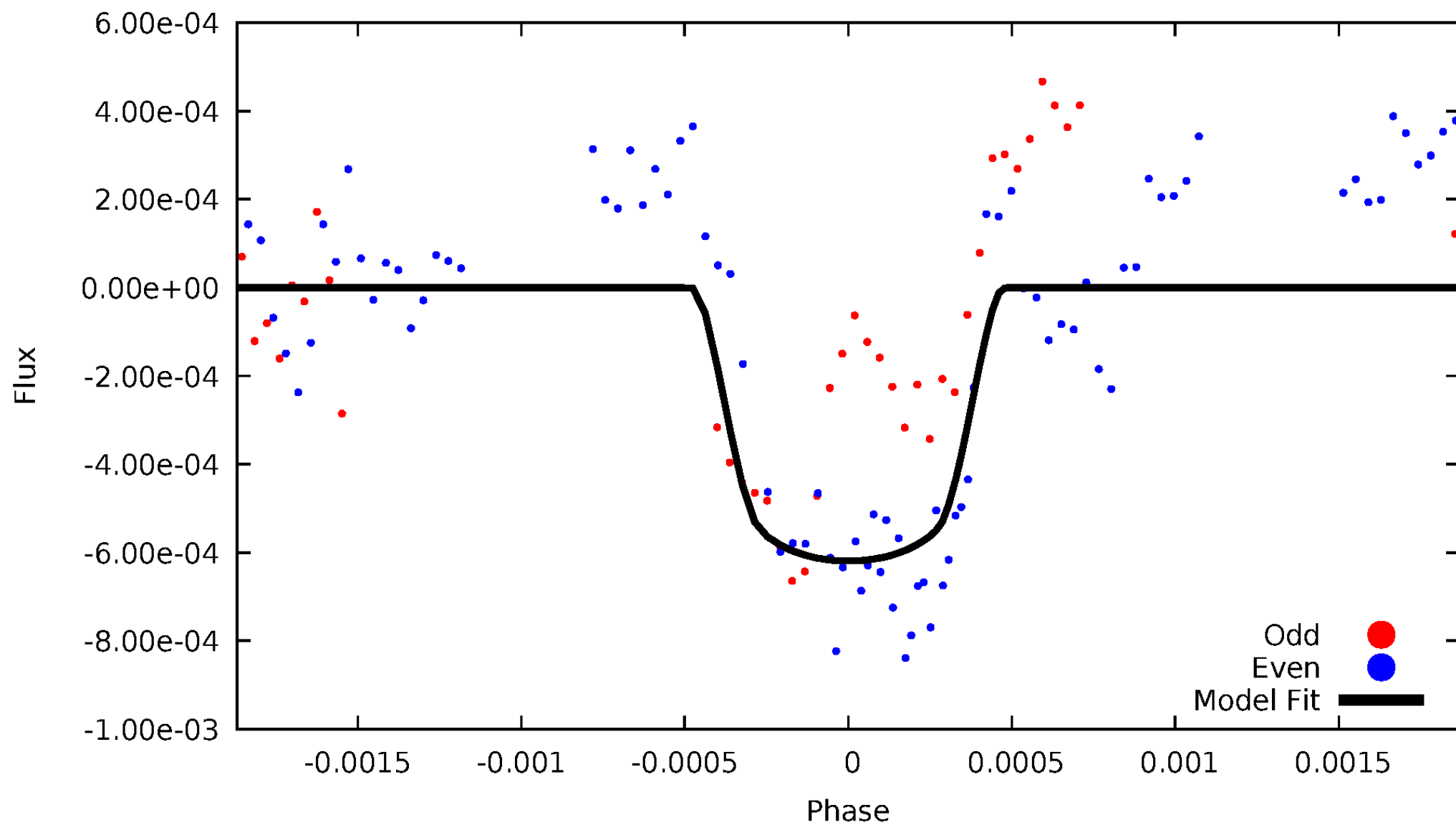


TCE 006346698-04



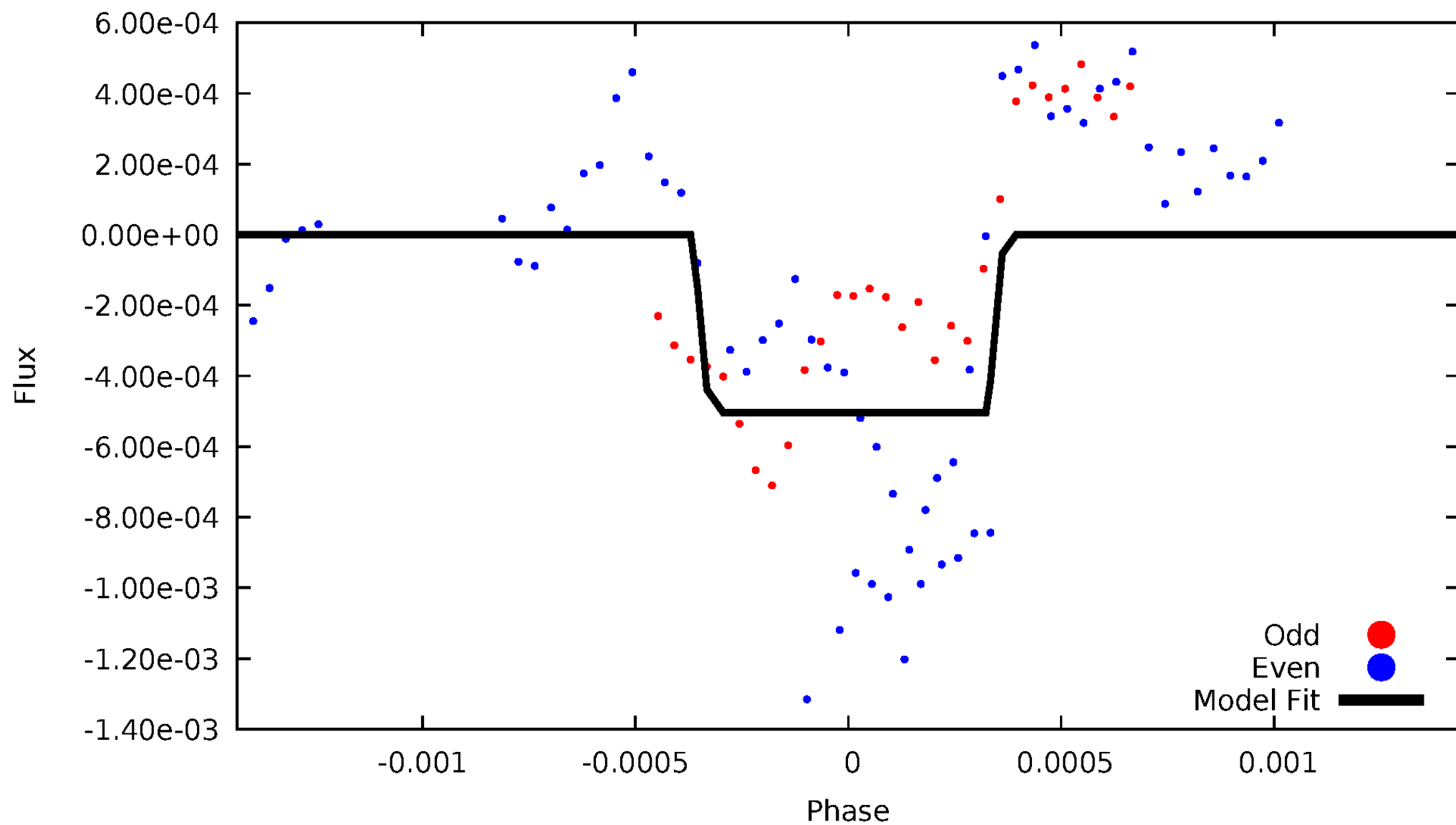
DV Odd/Even

TCE 006346698-04



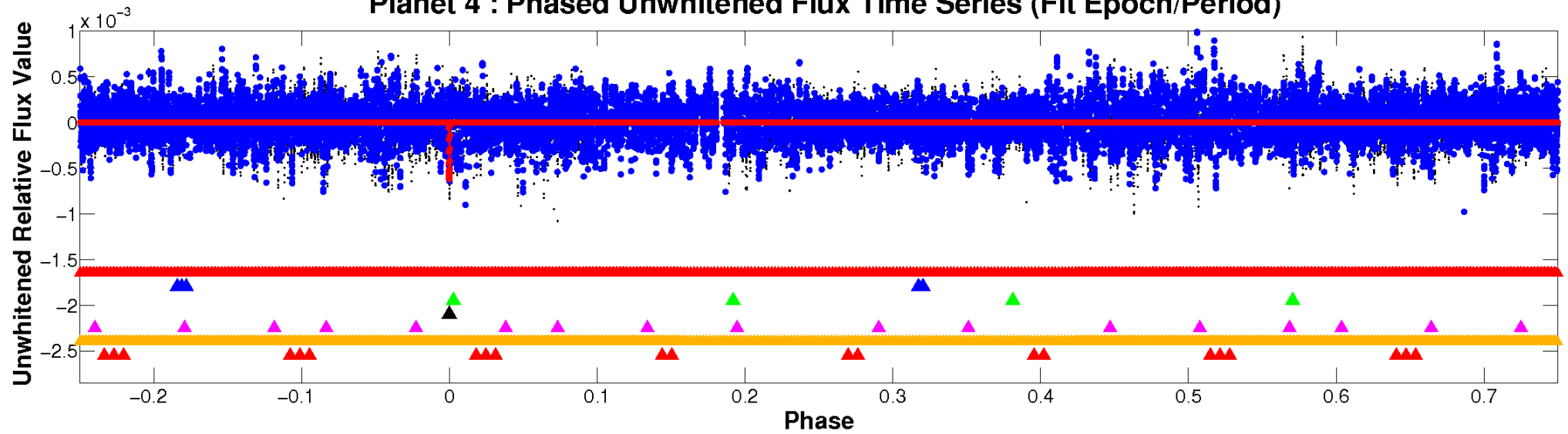
ALT Odd/Even

TCE 006346698-04

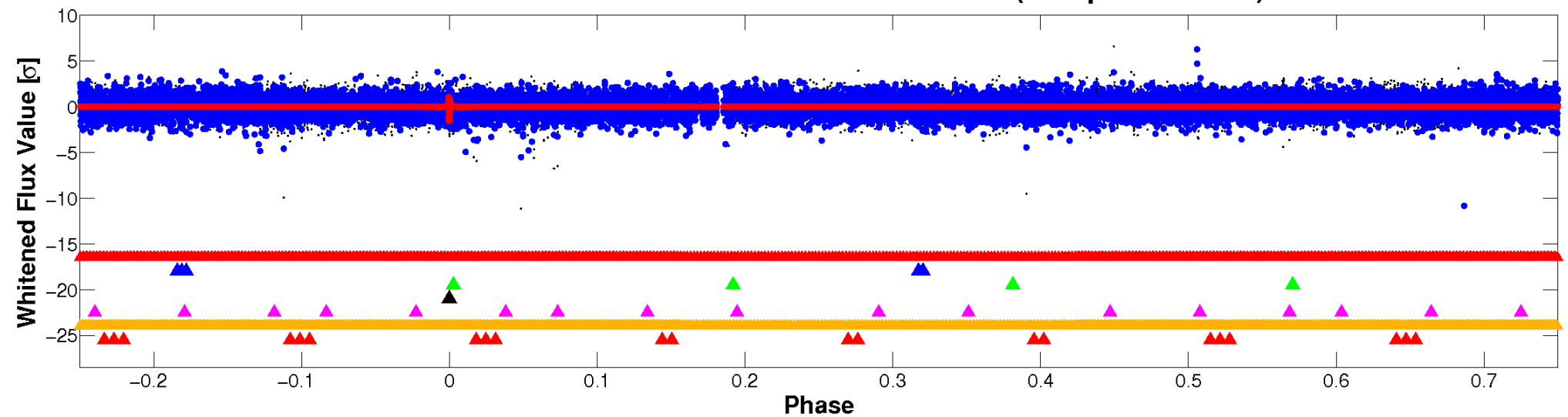


Non-Whitened Vs. Whitened Light Curve

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

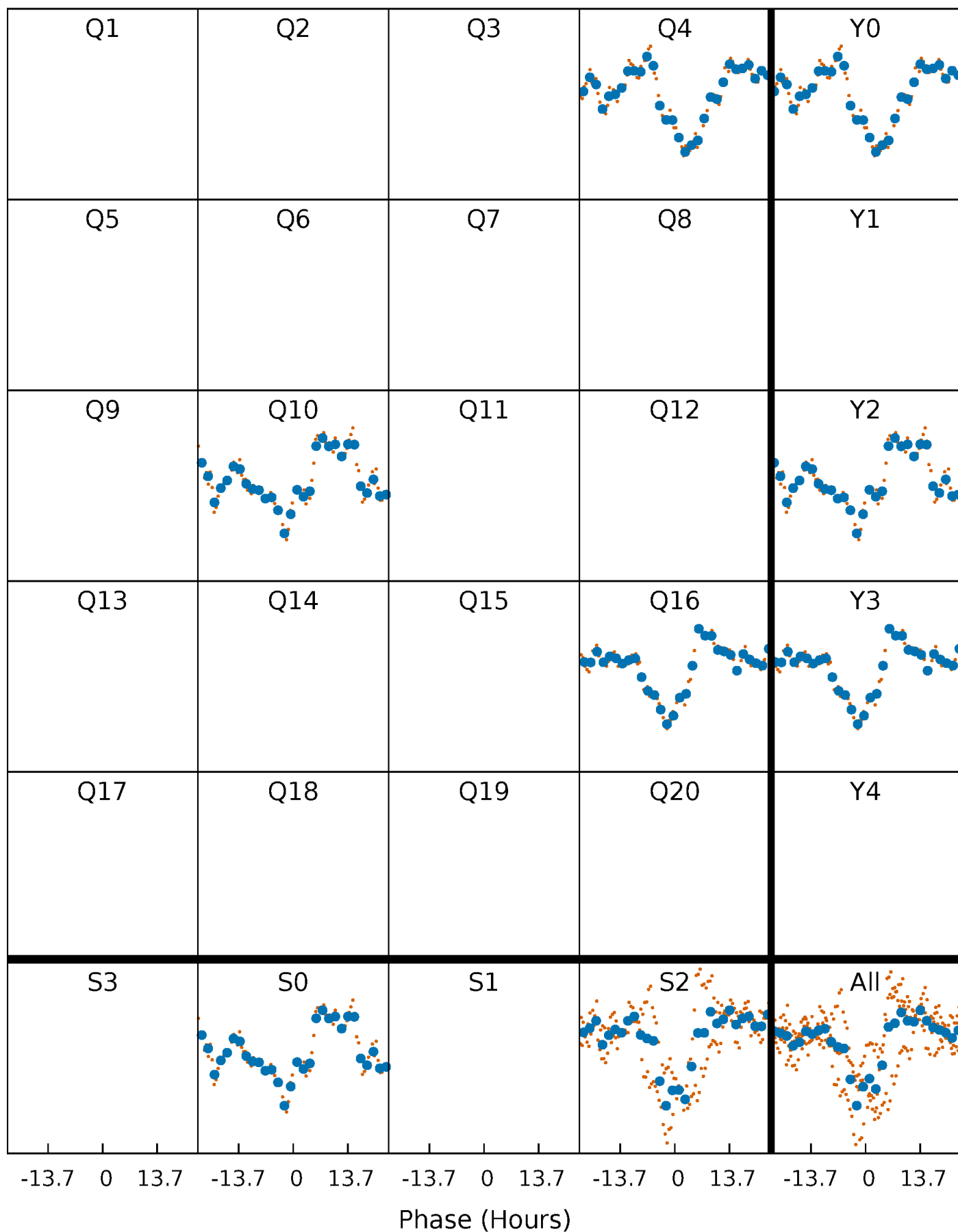


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



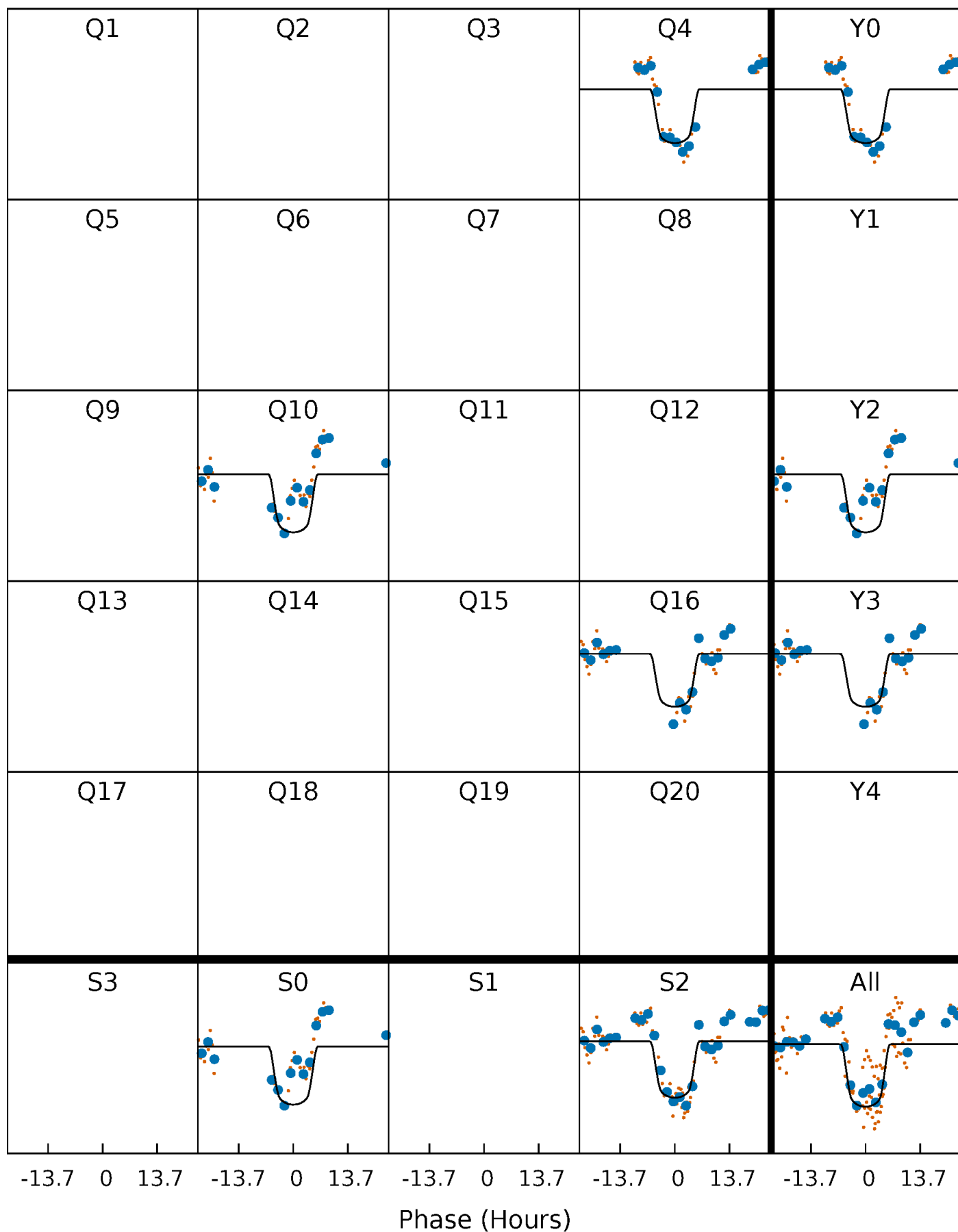
PDC Quarter-Phased Transit Curves

TCE 006346698-04 $P=534.261924$ Days $T_0=439.146878$ (BKJD)



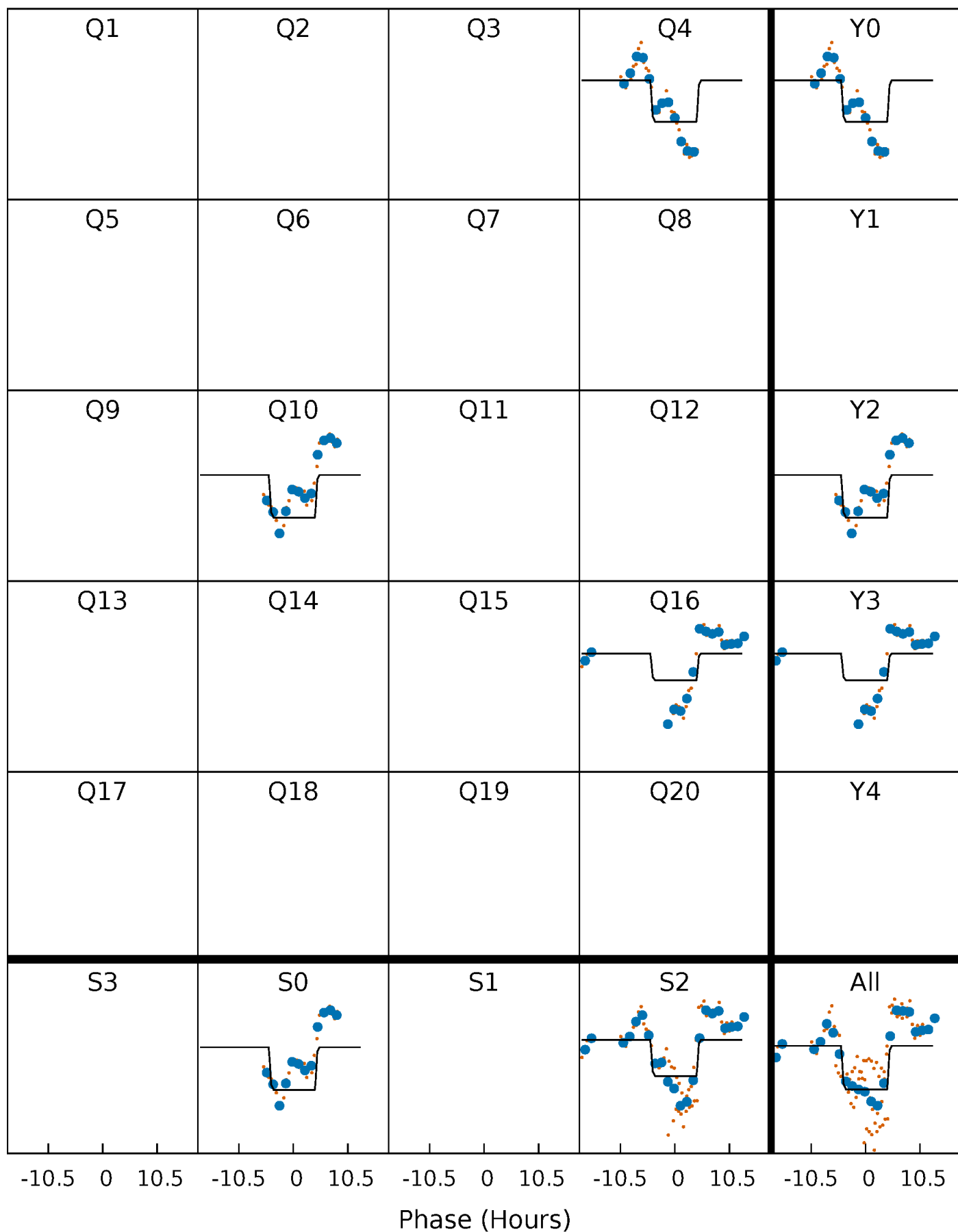
DV Quarter-Phased Transit Curves

TCE 006346698-04 $P=534.261924$ Days $T_0=439.146878$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

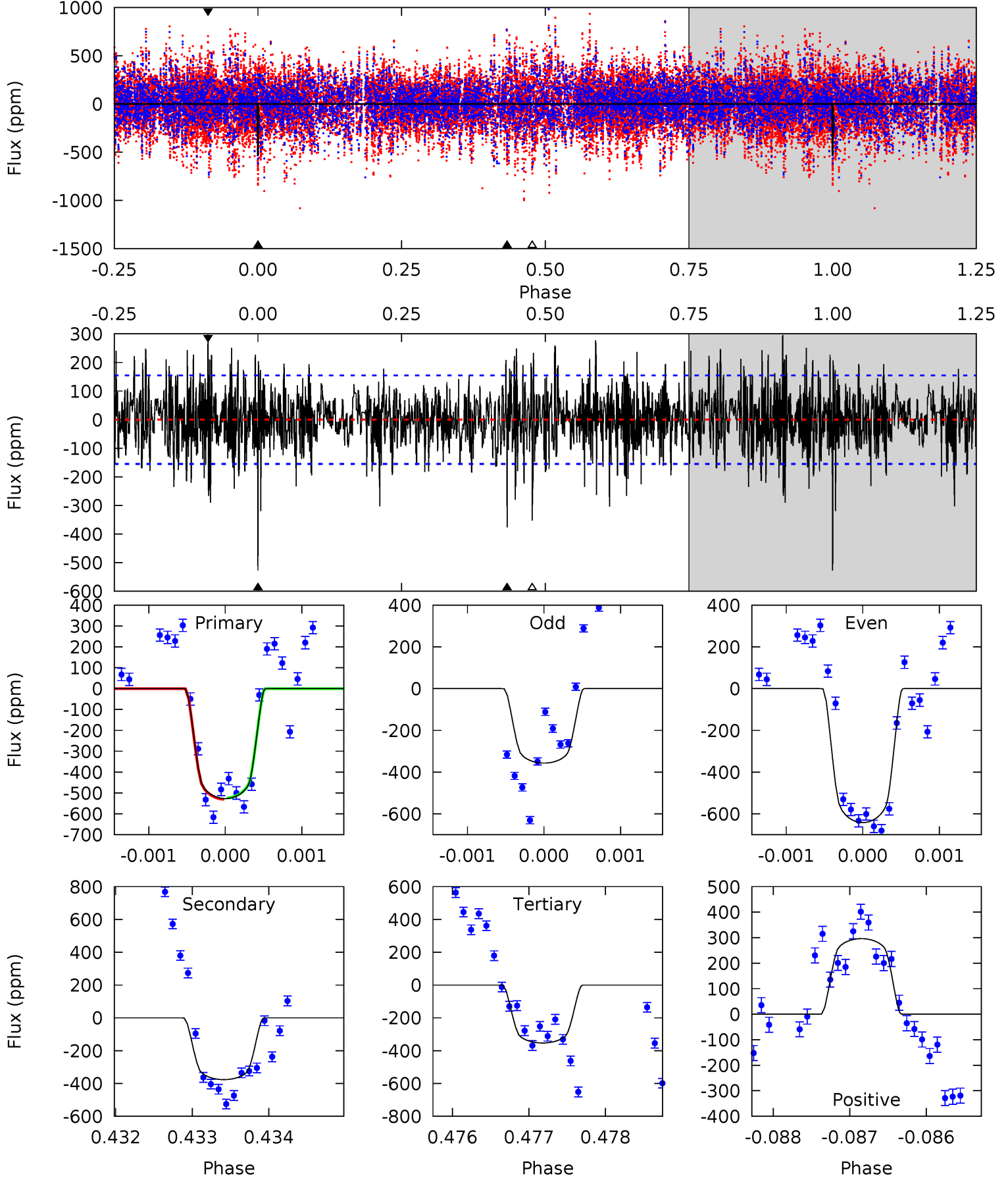
TCE 006346698-04 P=534.269482 Days $T_0=439.163883$ (BKJD)



DV Model-Shift Uniqueness Test

006346698-04, P = 534.261924 Days, E = 439.146878 Days

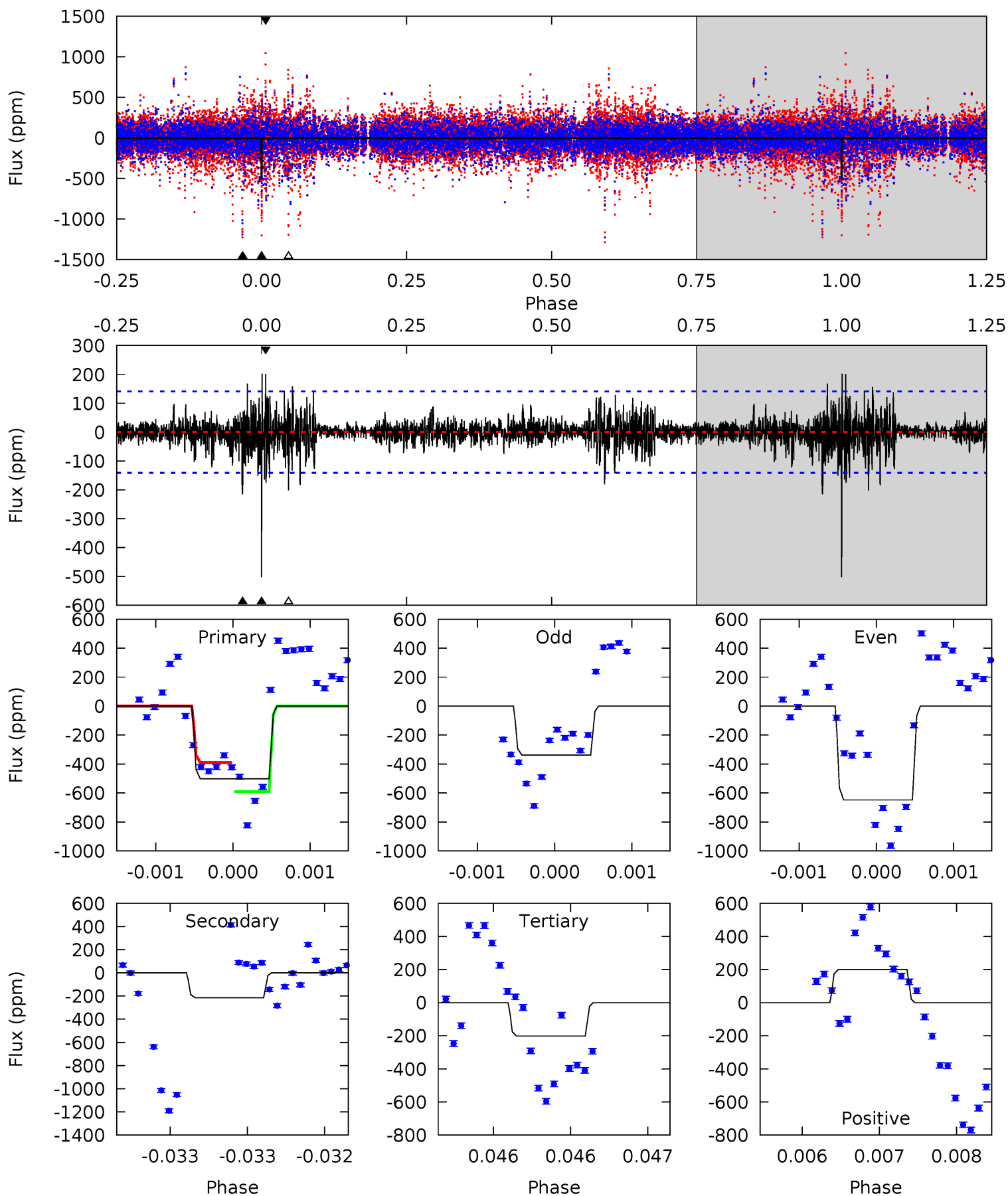
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	13.3	12.5	10.5	5.47	3.32	2.99	6.15	8.16	0.83	2.84	4.99	0.88	0.36	0.10



Alt Model-Shift Uniqueness Test

006346698-04, P = 534.269482 Days, E = 439.163883 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	8.38	7.88	7.82	5.52	3.39	1.51	11.7	11.8	0.51	0.57	5.91	1.04	0.29	3.76



Stellar Parameters For KIC 006346698

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6251^{+194}_{-233}	$3.955^{+0.420}_{-0.140}$	$-0.360^{+0.300}_{-0.300}$	$1.830^{+0.435}_{-0.746}$	$1.101^{+0.174}_{-0.192}$	$0.253^{+0.844}_{-0.104}$
	+3%/-4%	+11%/-4%	+83%/-83%	+24%/-41%	+16%/-17%	+334%/-41%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006346698-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-376 ± 28	$5.35^{+1.01}_{-1.25}$	440^{+37}_{-50}	5259^{+263}_{-250}	13027^{+8155}_{-3818}
Alt.	-215 ± 26	$4.27^{+0.86}_{-0.89}$	441^{+37}_{-46}	5110^{+303}_{-267}	11426^{+7185}_{-3426}

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

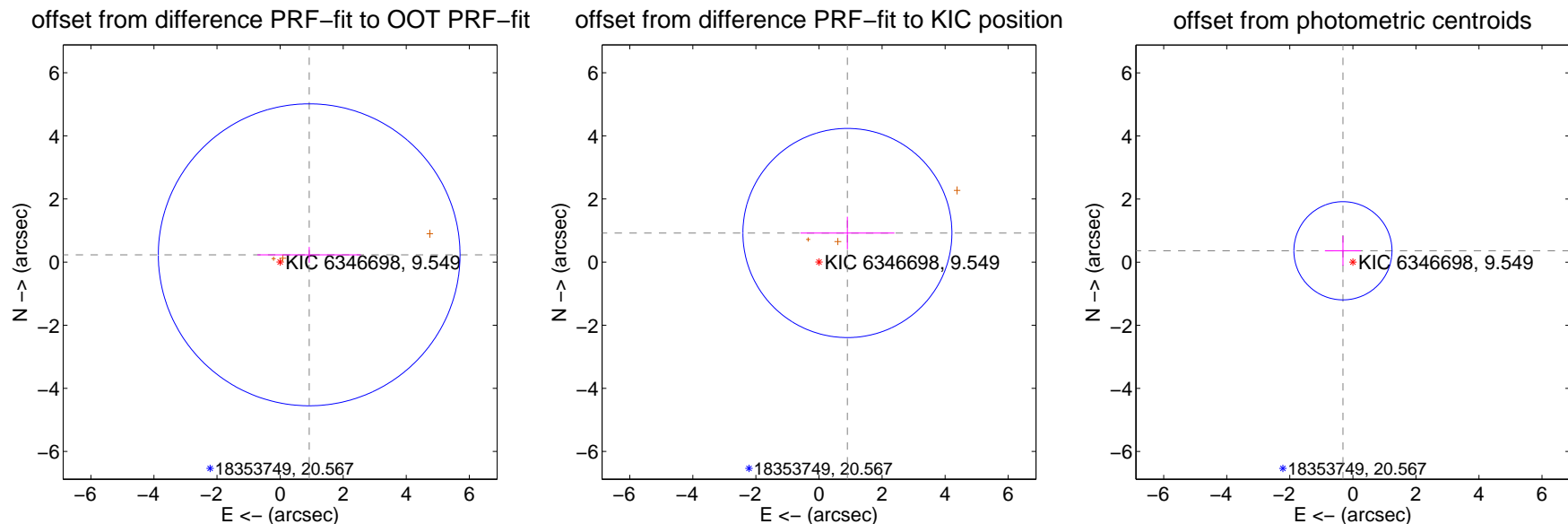
DV Centroid Data

Supplemental centroid analysis for 006346698-04. **Kepler magnitude: 9.55.** Transit SNR 8.22

There are 0 quarters with good PRF difference image offsets

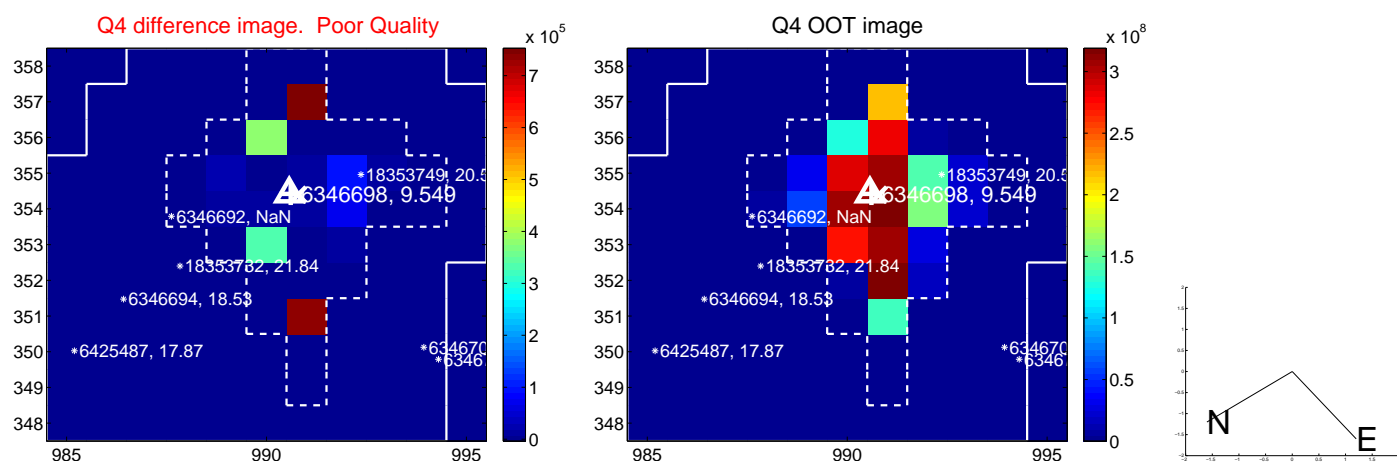
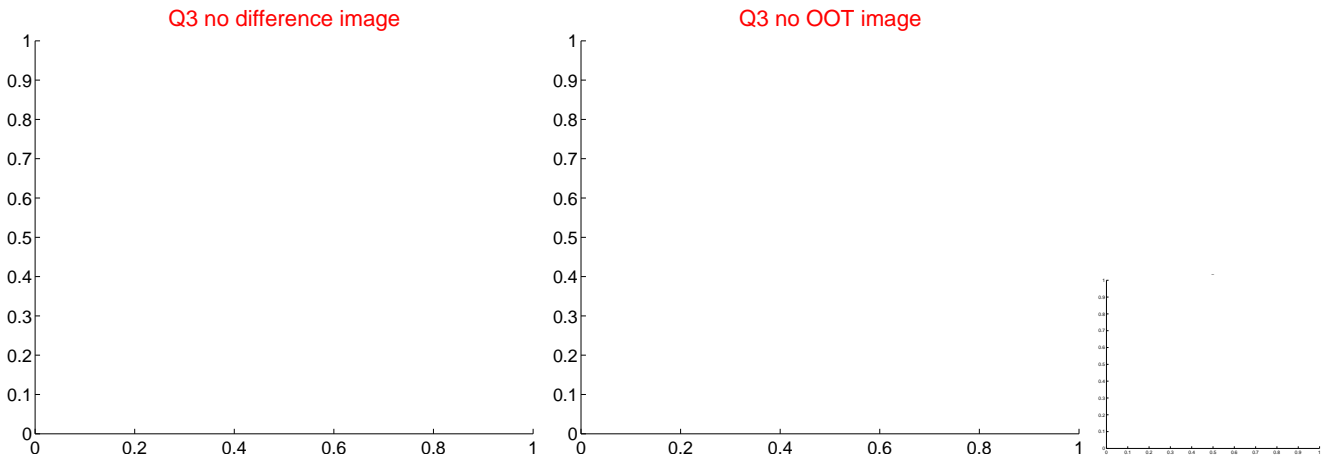
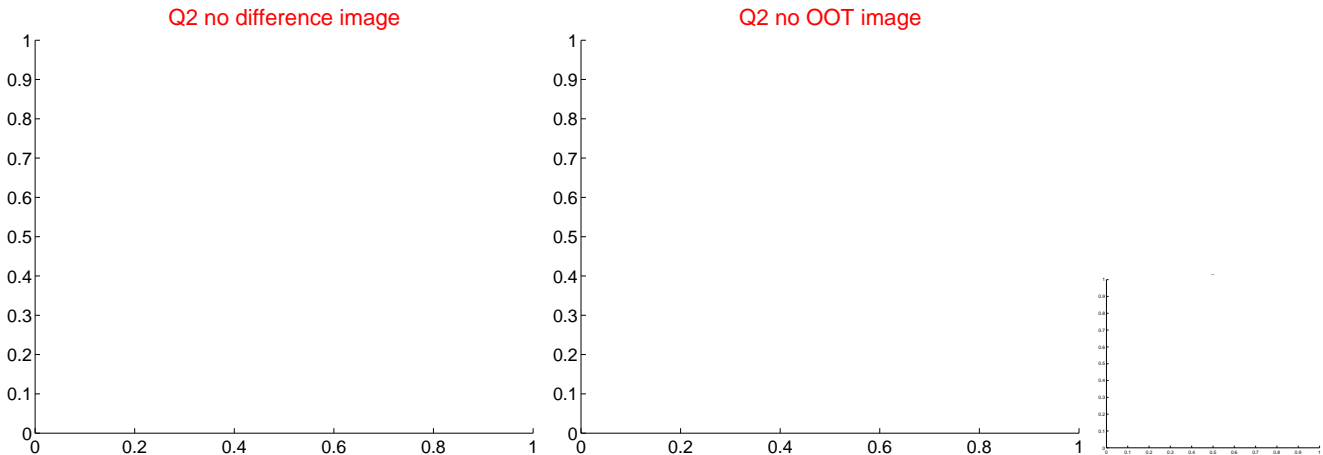
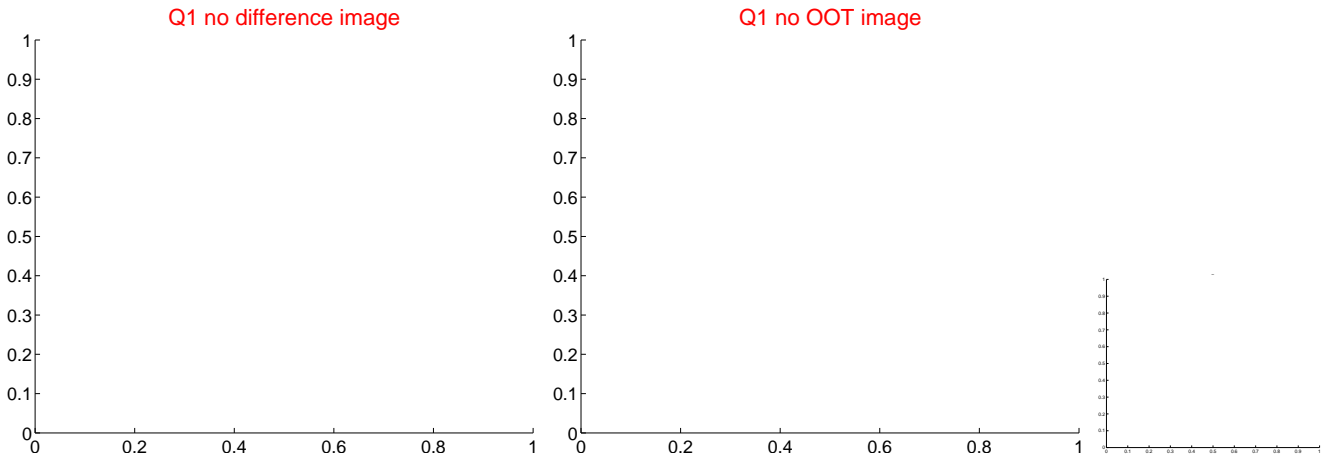
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.950 ± 1.594	0.60	-0.922 ± 1.642	0.231 ± 0.250
PRF-fit source offset from KIC position	1.289 ± 1.104	1.17	-0.901 ± 1.489	0.921 ± 0.516
photometric centroid source offset	0.48 ± 0.52	0.92	0.31 ± 0.57	0.36 ± 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.

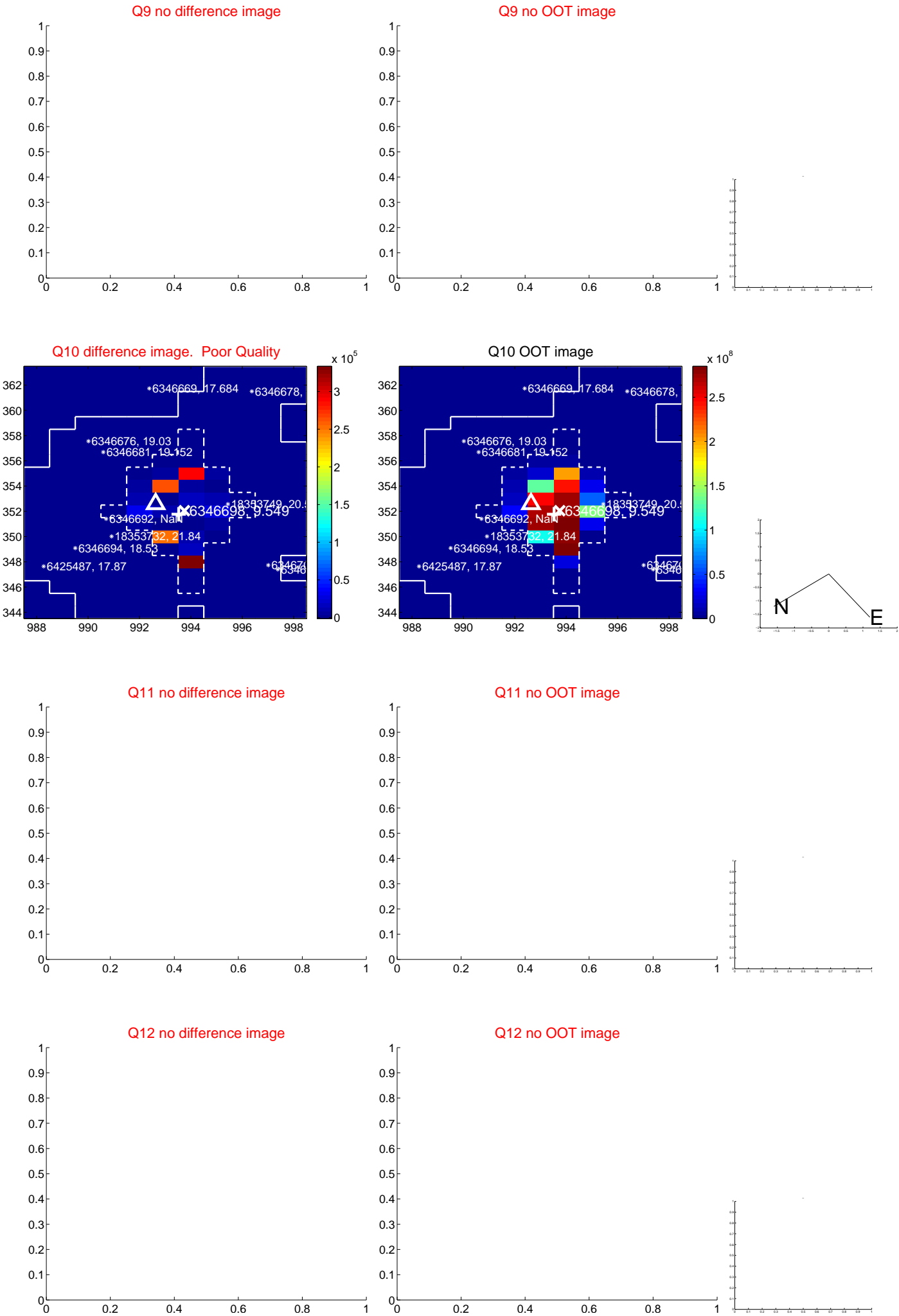
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



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



Q10 difference image. Poor Quality

Q10 OOT image

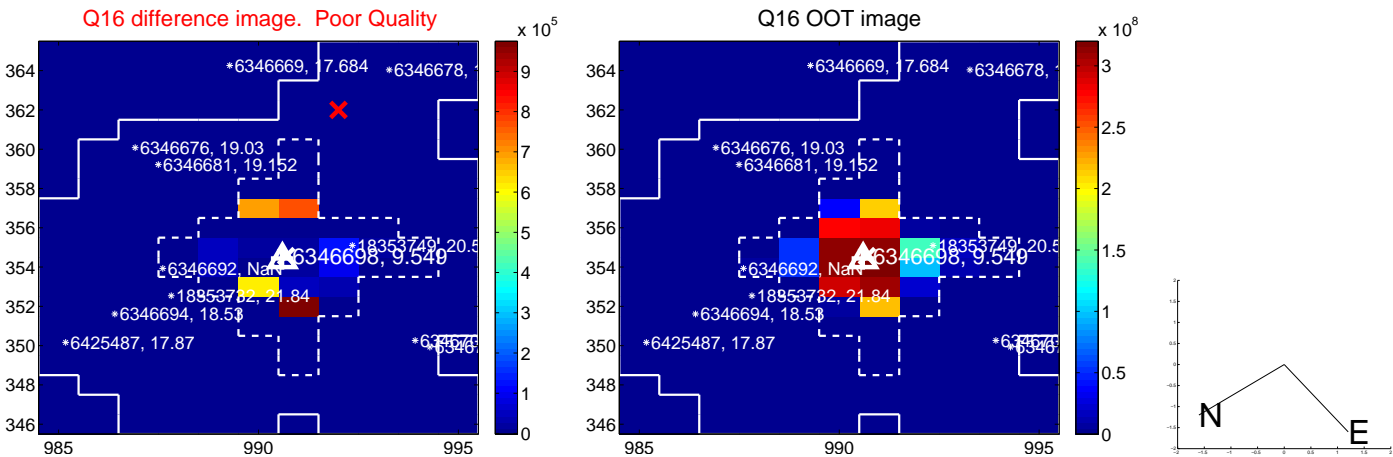
Q11 no difference image

Q11 no OOT image

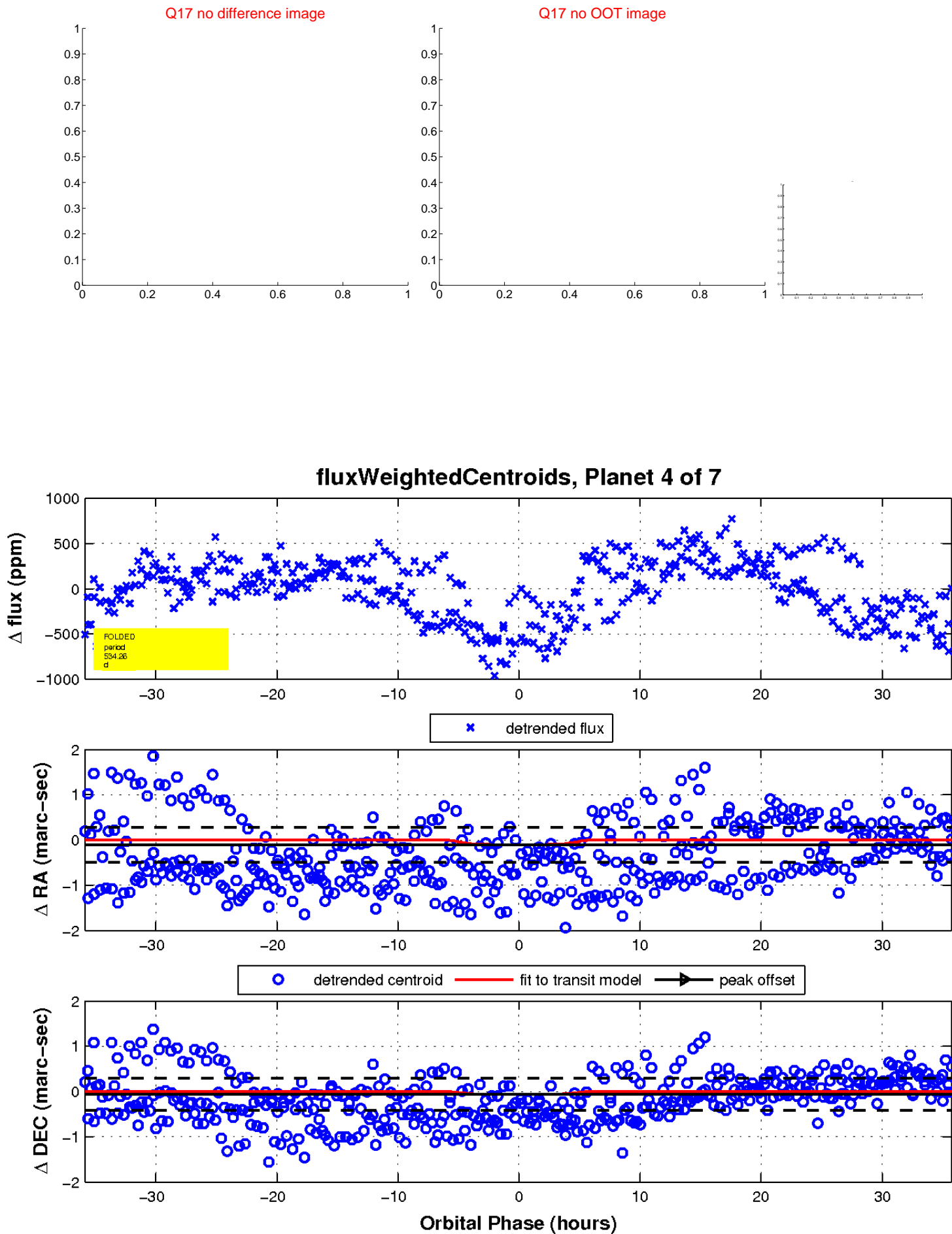
Q12 no difference image

Q12 no OOT image

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

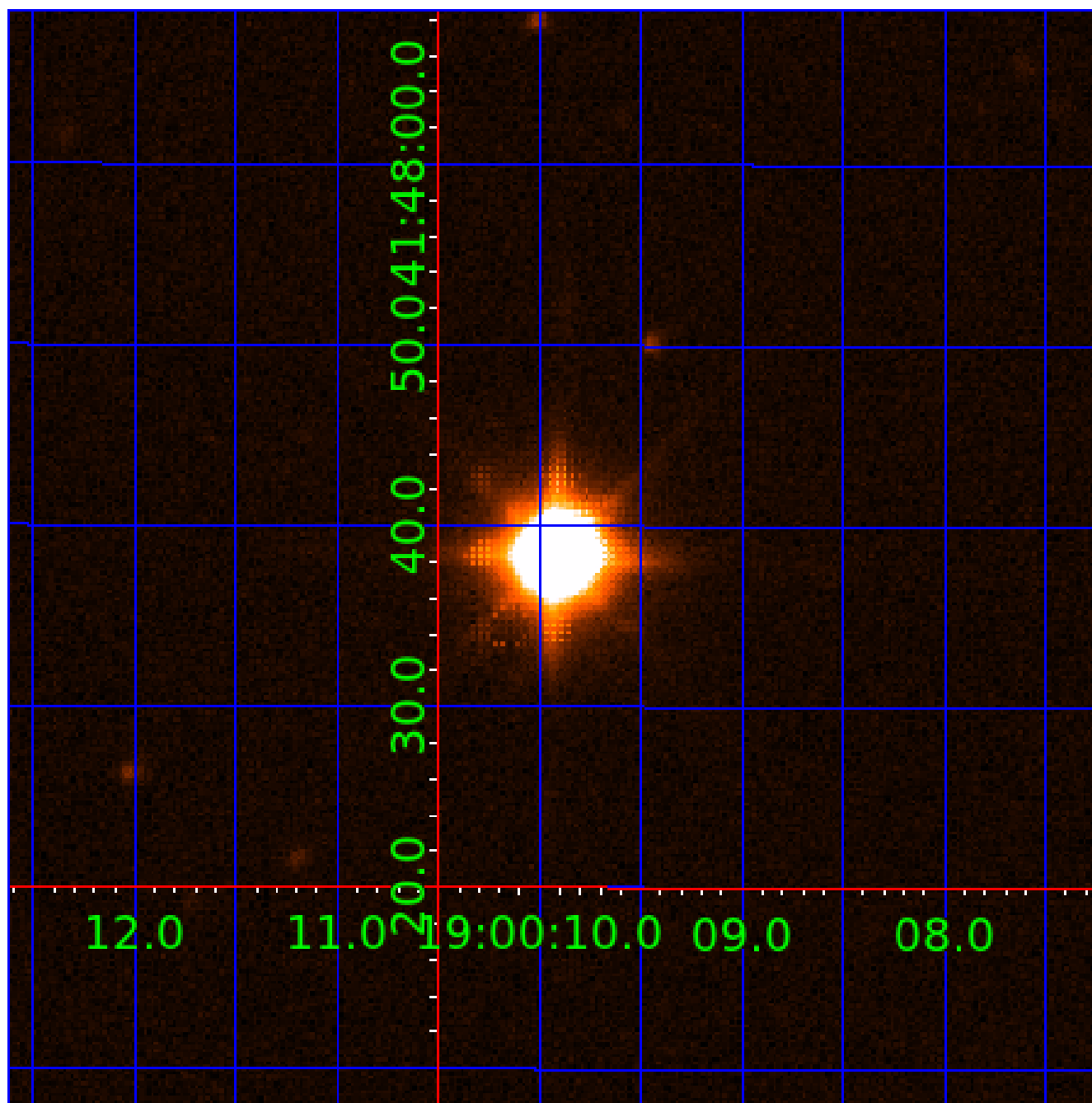


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006346698

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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006346698-05	OBS	No	83.640271	208.582800	151.4	7.661	7.6	4.4	1.83	6251	2.48	30.65
006346698-06	OBS	No	1.220382	131.771486	71.3	7.836	10.3	11.2	1.83	6251	2.17	8596.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006346698-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006346698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
006346698-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
006346698-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

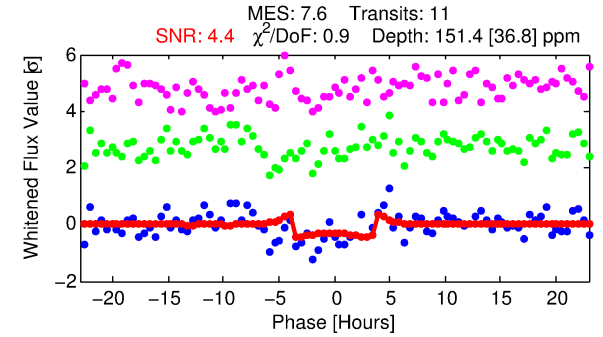
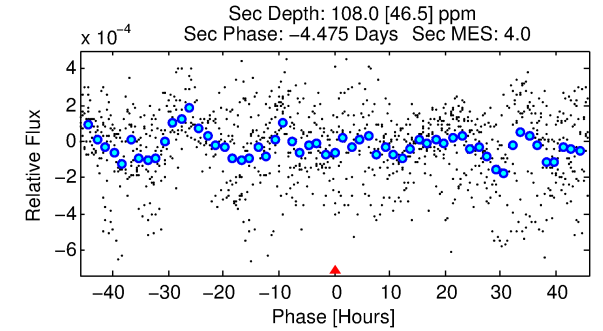
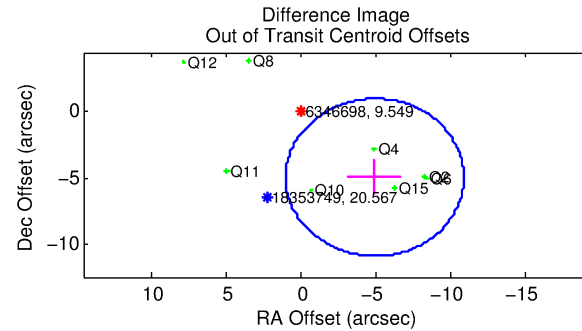
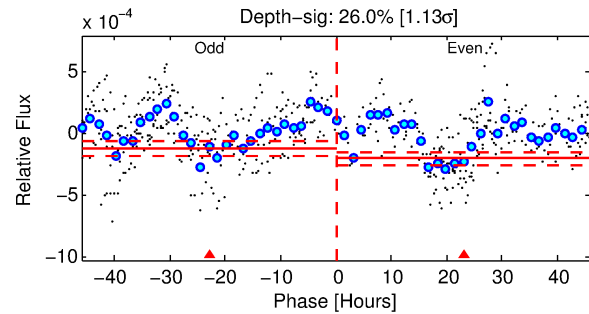
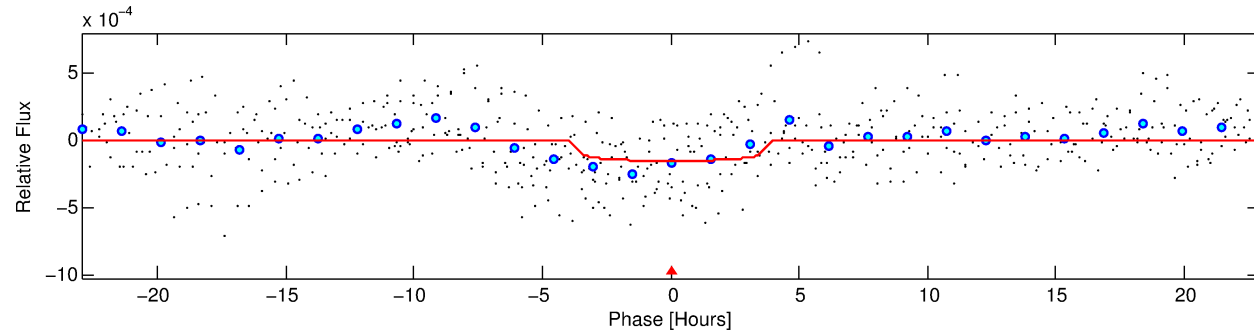
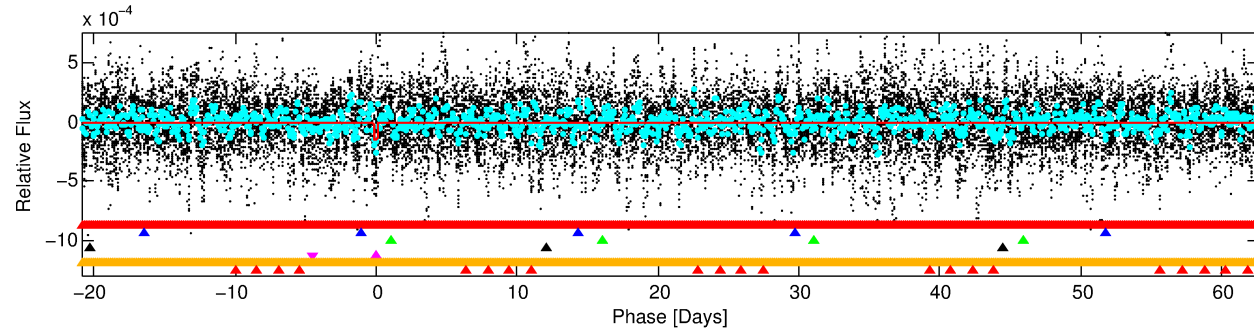
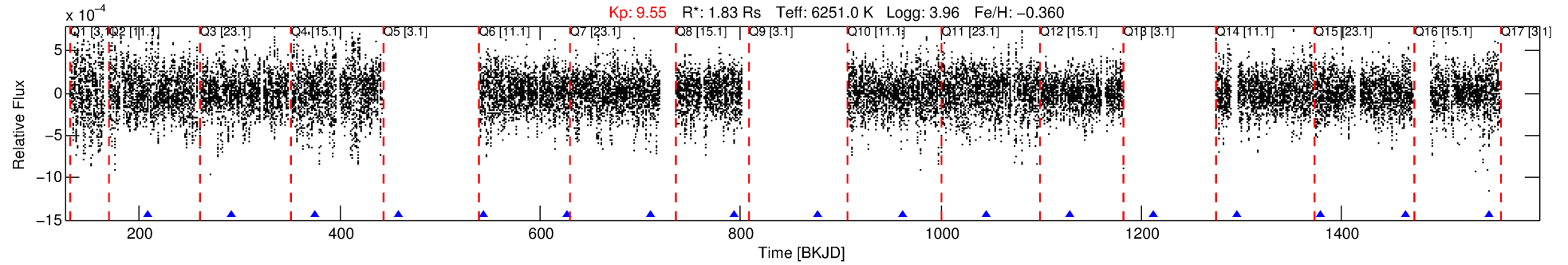
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006346698-05

No Significant Match Found

DV One-Page Summary

KIC: 6346698 Candidate: 5 of 7 Period: 83.640 d



DV Fit Results:

Period = 83.64027 [0.00155] d
Epoch = 208.5828 [0.0141] BKJD
Rp/R* = 0.0124 [0.0048]
a/R* = 52.35 [98.87]
b = 0.79 [0.88]
Seff = 30.65 [21.93]
Teq = 600 [107] K
Rp = 2.48 [1.40] Re
a = 0.3866 [0.1630] AU
Ag = 1441.42 [1630.69] [0.88 σ]
Teffp = 5716 [1288] K [3.96 σ]

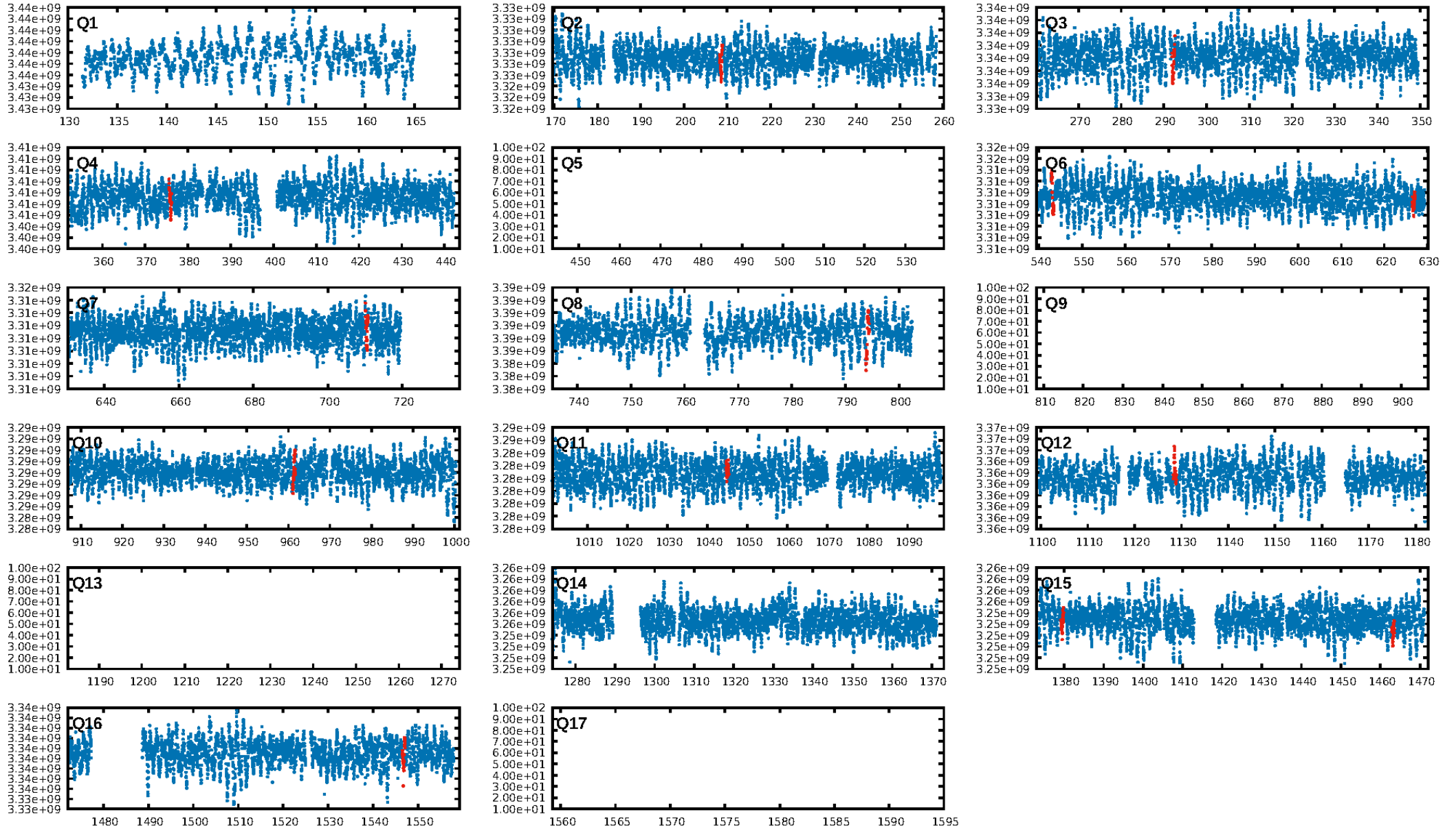
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [30.32 σ]
LongPeriod-sig: 100.0% [468.21 σ]
ModelChiSquare2-sig: 43.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: N/A
Centroid-sig: 34.1%
Centroid-so: 0.951 arcsec [1.09 σ]
OotOffset-rm: 7.031 arcsec [3.54 σ]
KicOffset-rm: 5.838 arcsec [2.71 σ]
OotOffset-st: 3/2/3/0 [8]
KicOffset-st: 3/2/3/0 [8]
DiffImageQuality-fgm: 0.00 [0/8]
DiffImageOverlap-fno: 0.00 [0/8]

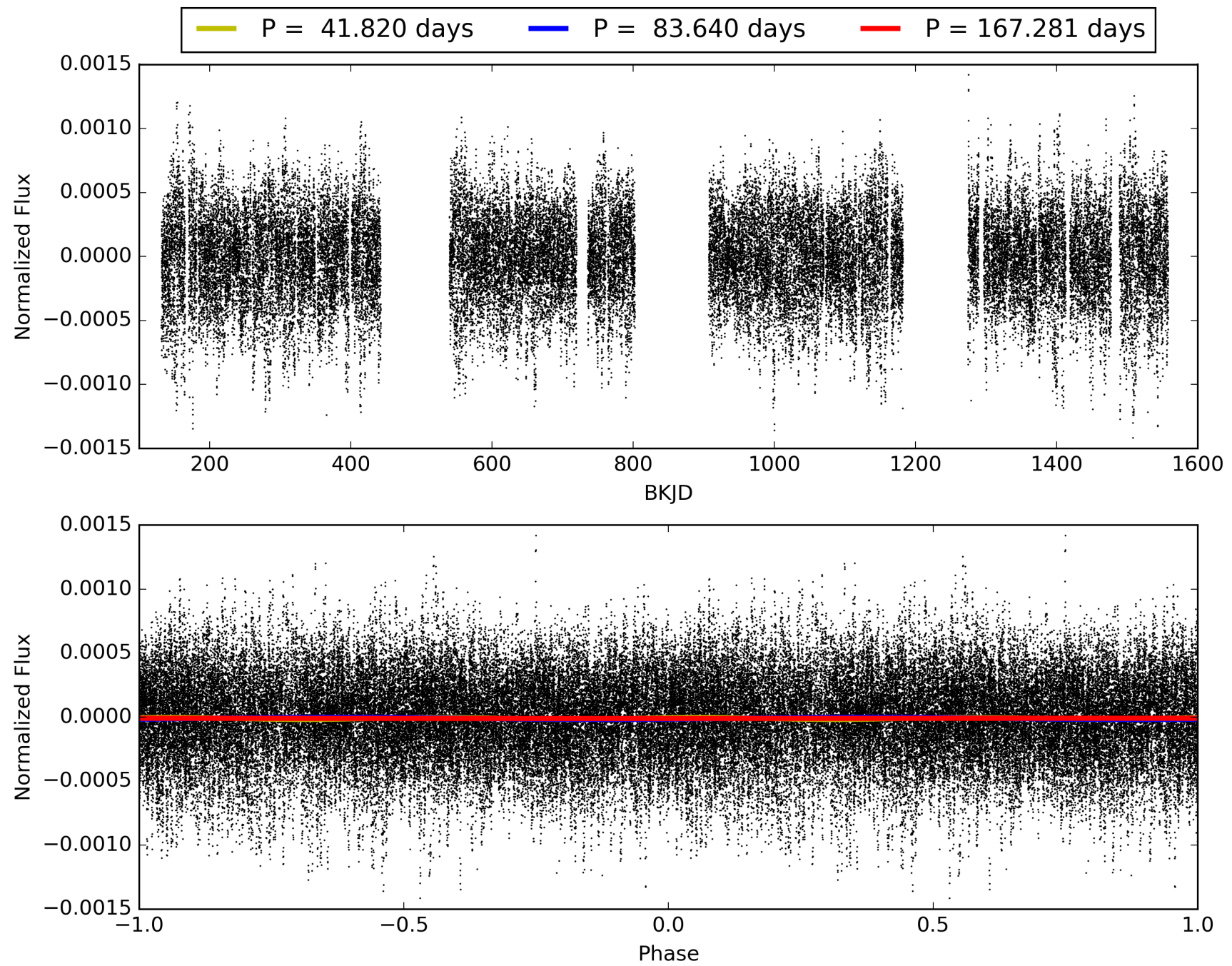
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:51:44 Z

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

TCE 006346698-05, PDC Light Curves

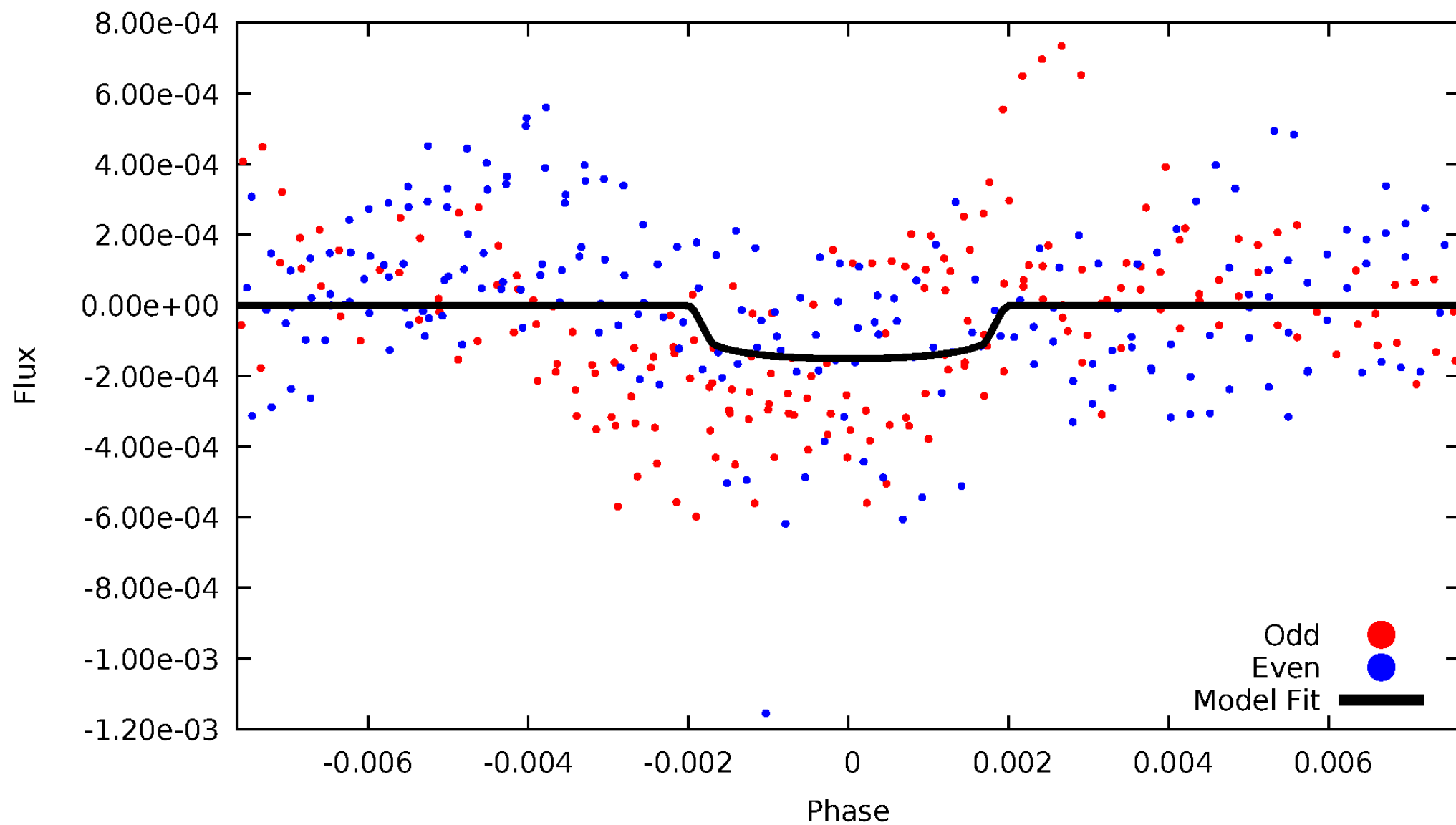


TCE 006346698-05



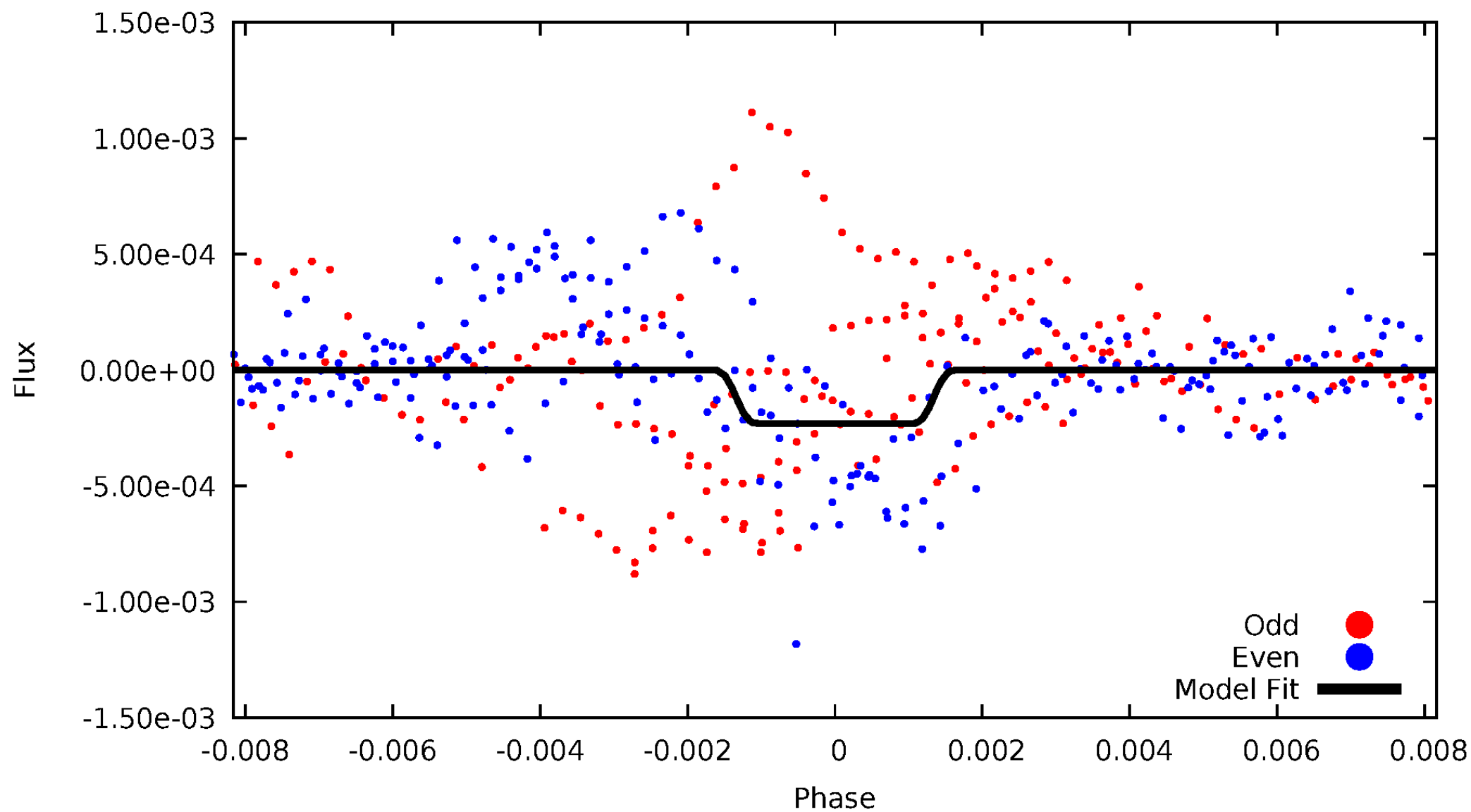
DV Odd/Even

TCE 006346698-05



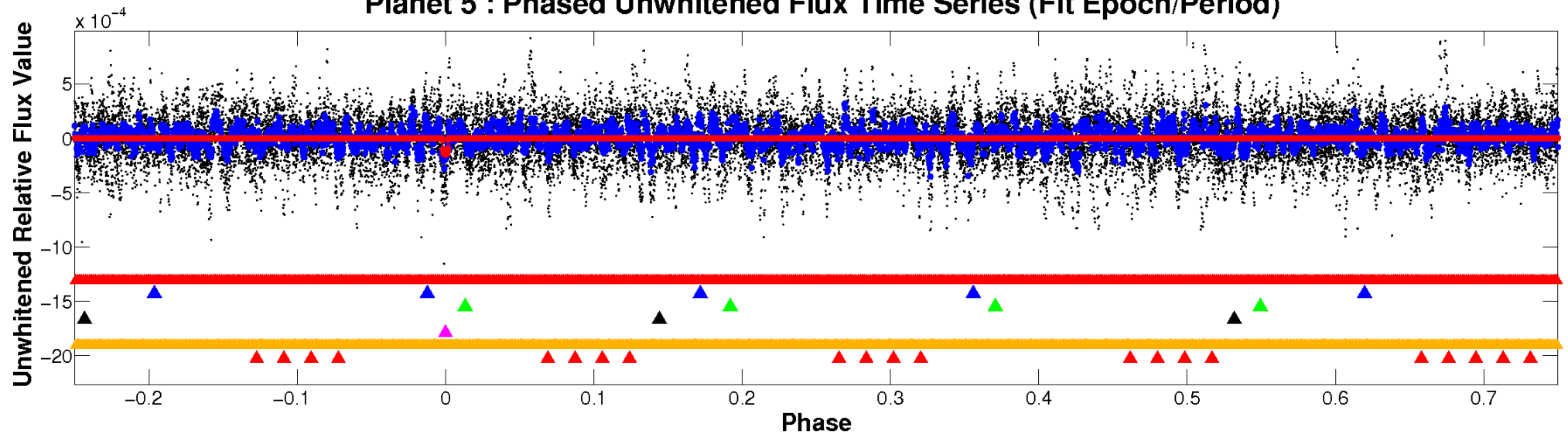
ALT Odd/Even

TCE 006346698-05

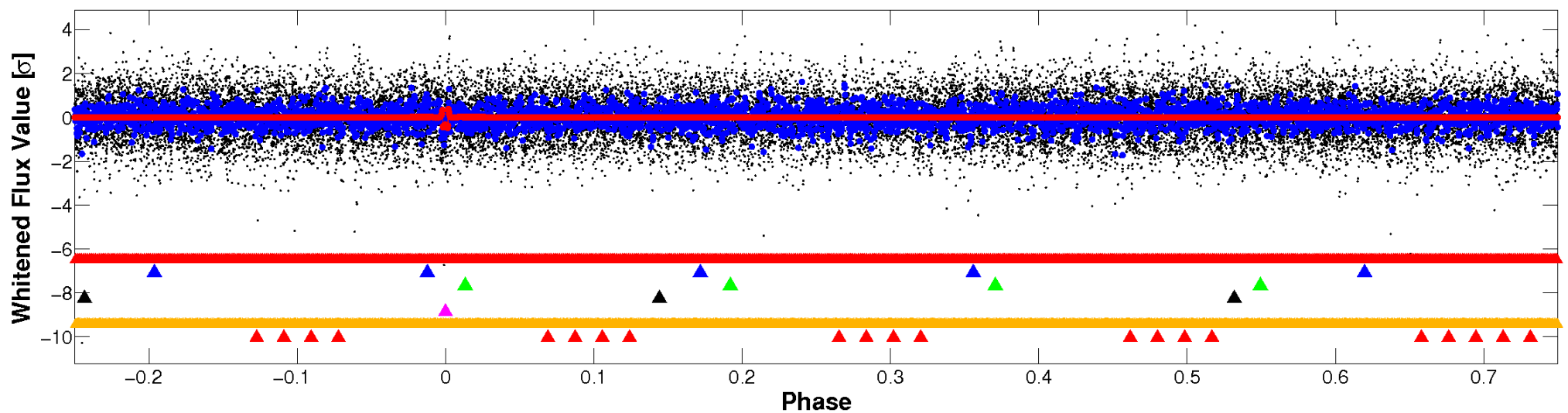


Non-Whitened Vs. Whitened Light Curve

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

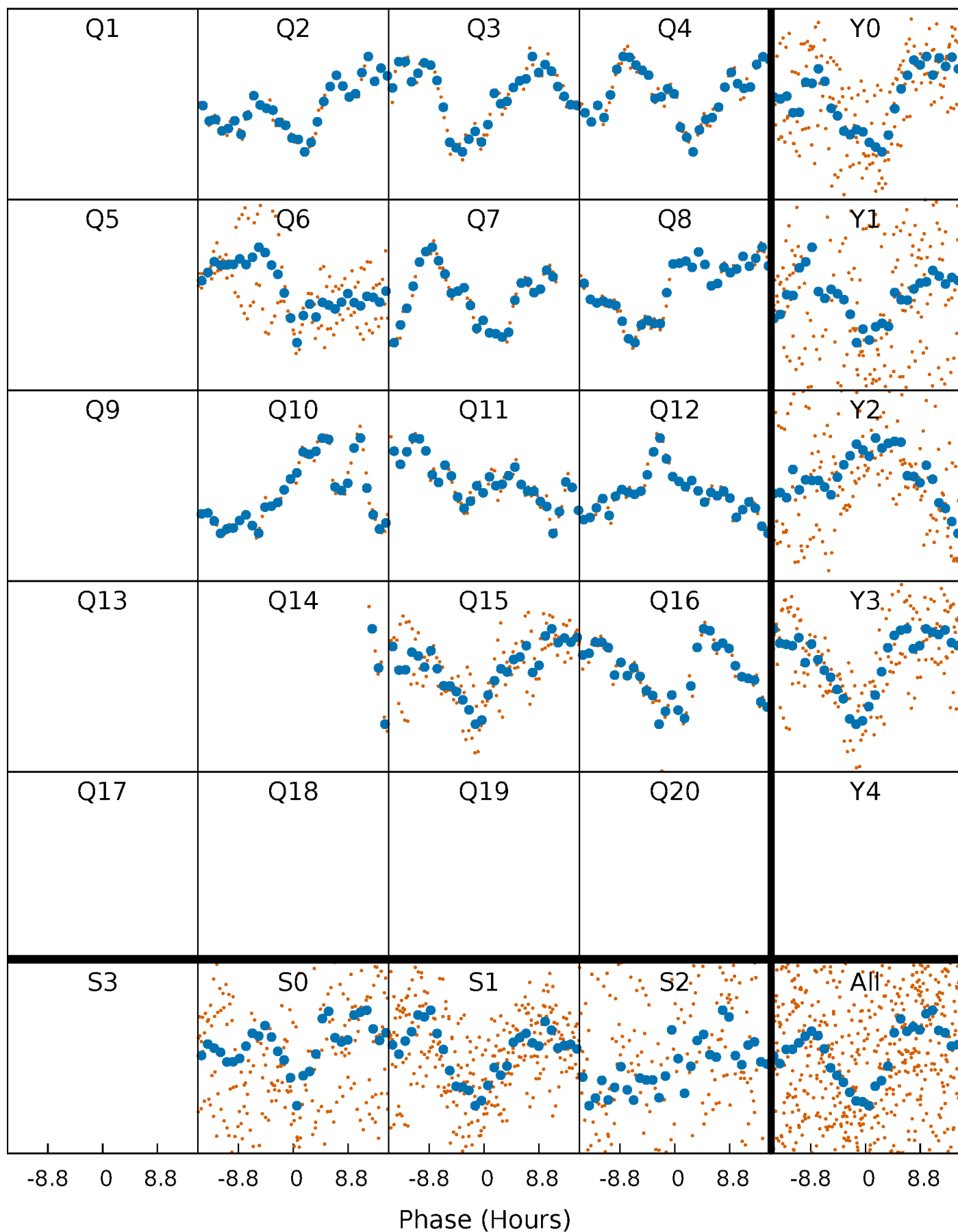


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



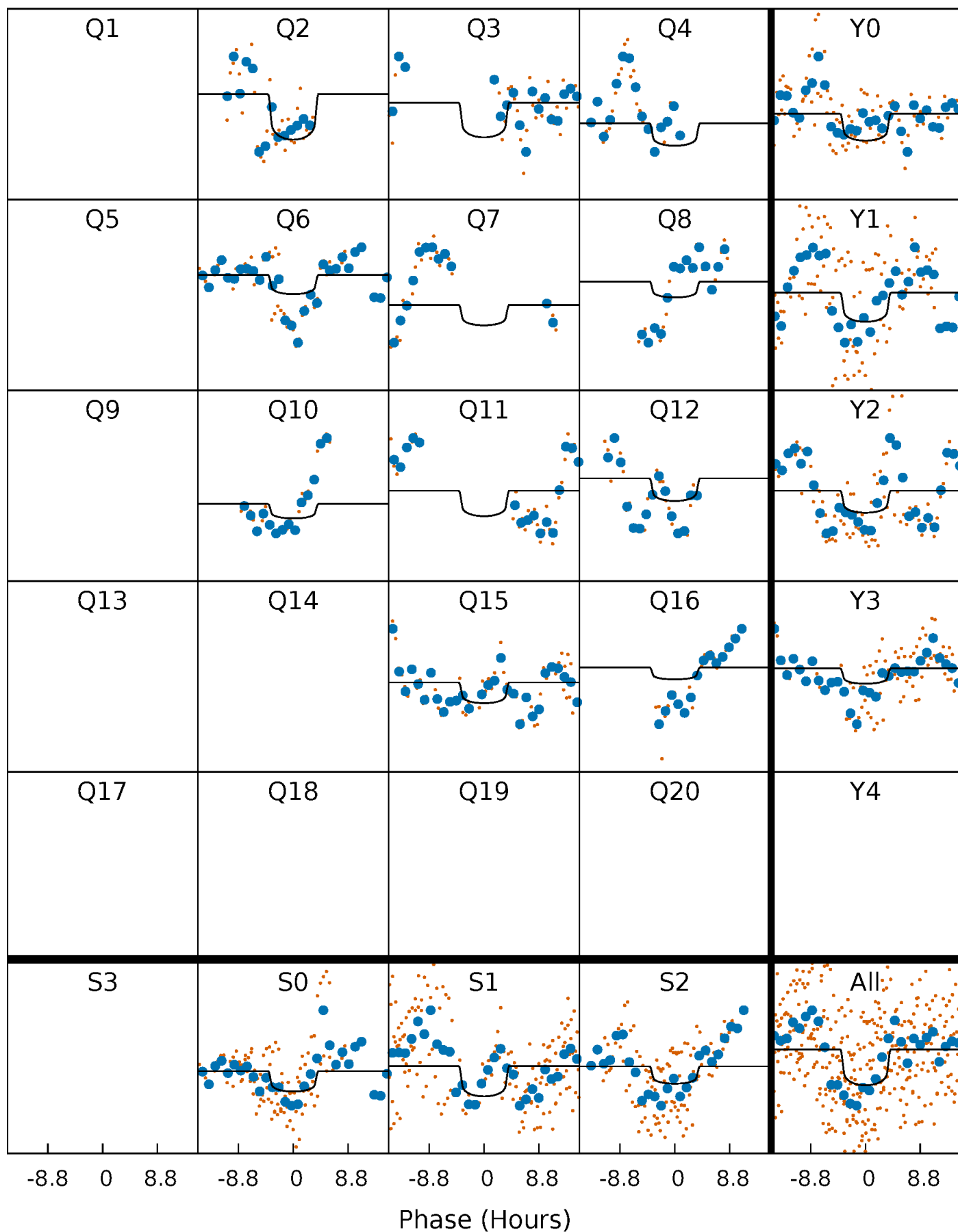
PDC Quarter-Phased Transit Curves

TCE 006346698-05 $P = 83.640271$ Days $T_0 = 208.582800$ (BKJD)



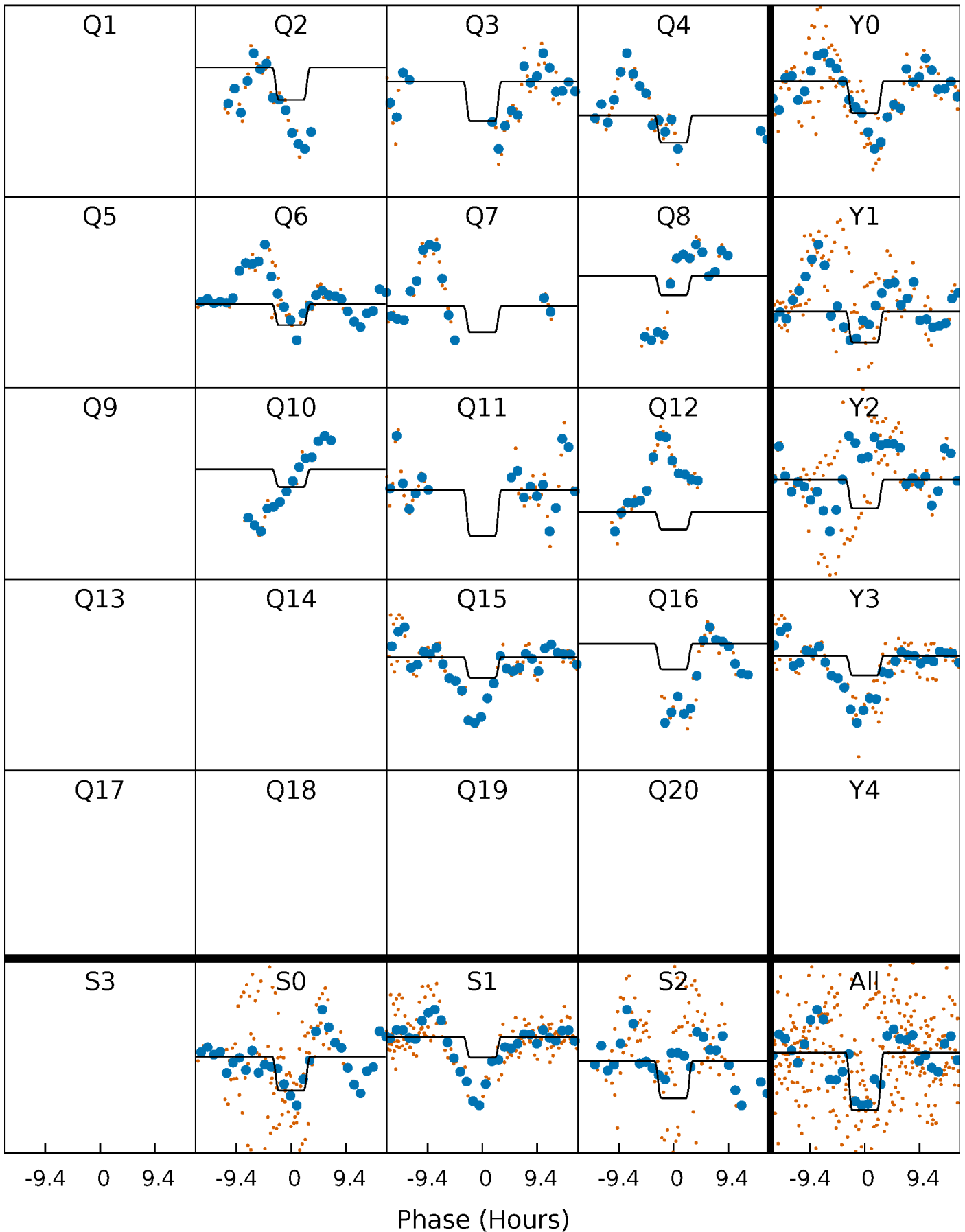
DV Quarter-Phased Transit Curves

TCE 006346698-05 $P = 83.640271$ Days $T_0 = 208.582800$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

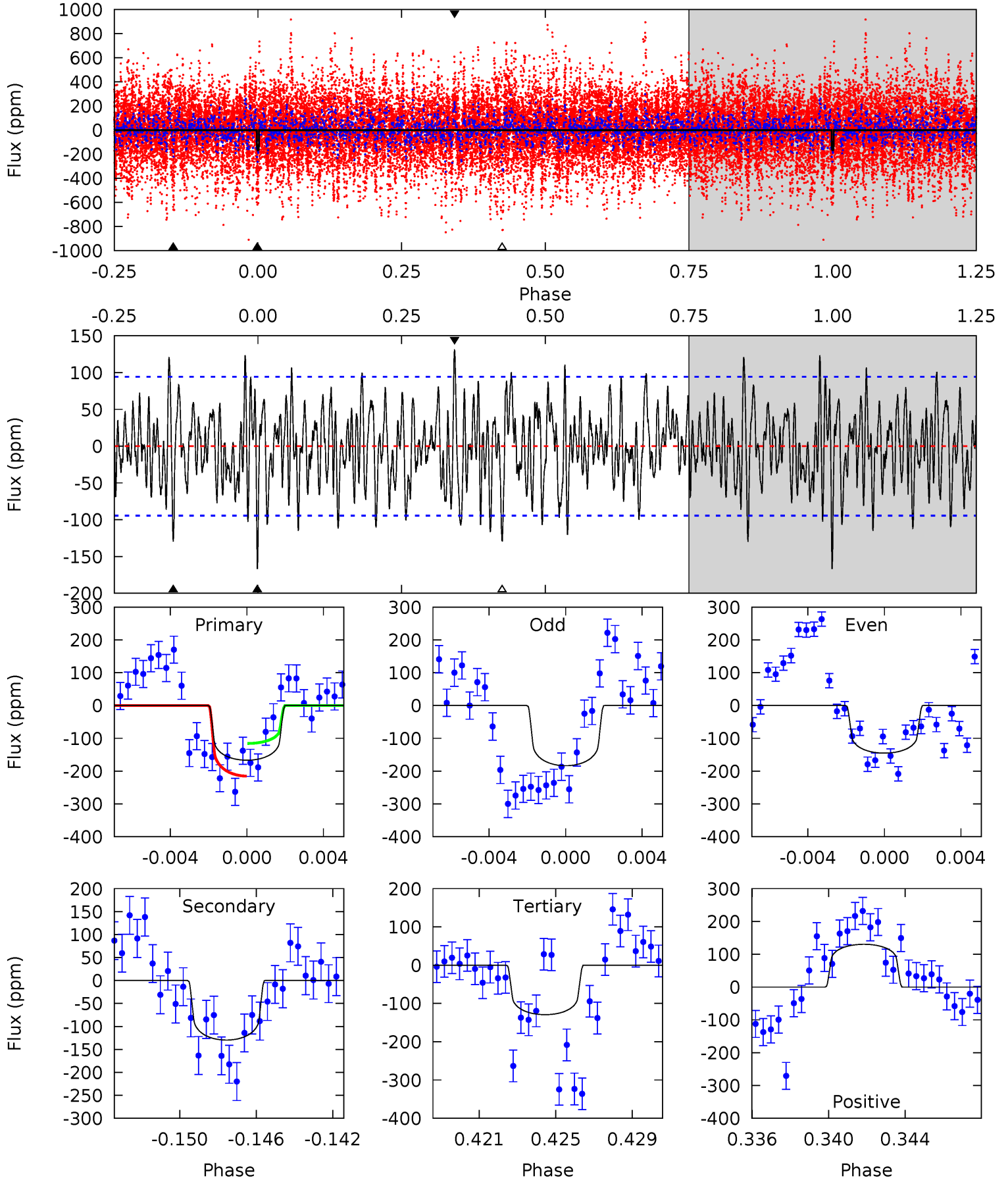
TCE 006346698-05 $P = 83.637084$ Days $T_0 = 208.591588$ (BKJD)



DV Model-Shift Uniqueness Test

006346698-05, P = 83.640271 Days, E = 124.942529 Days

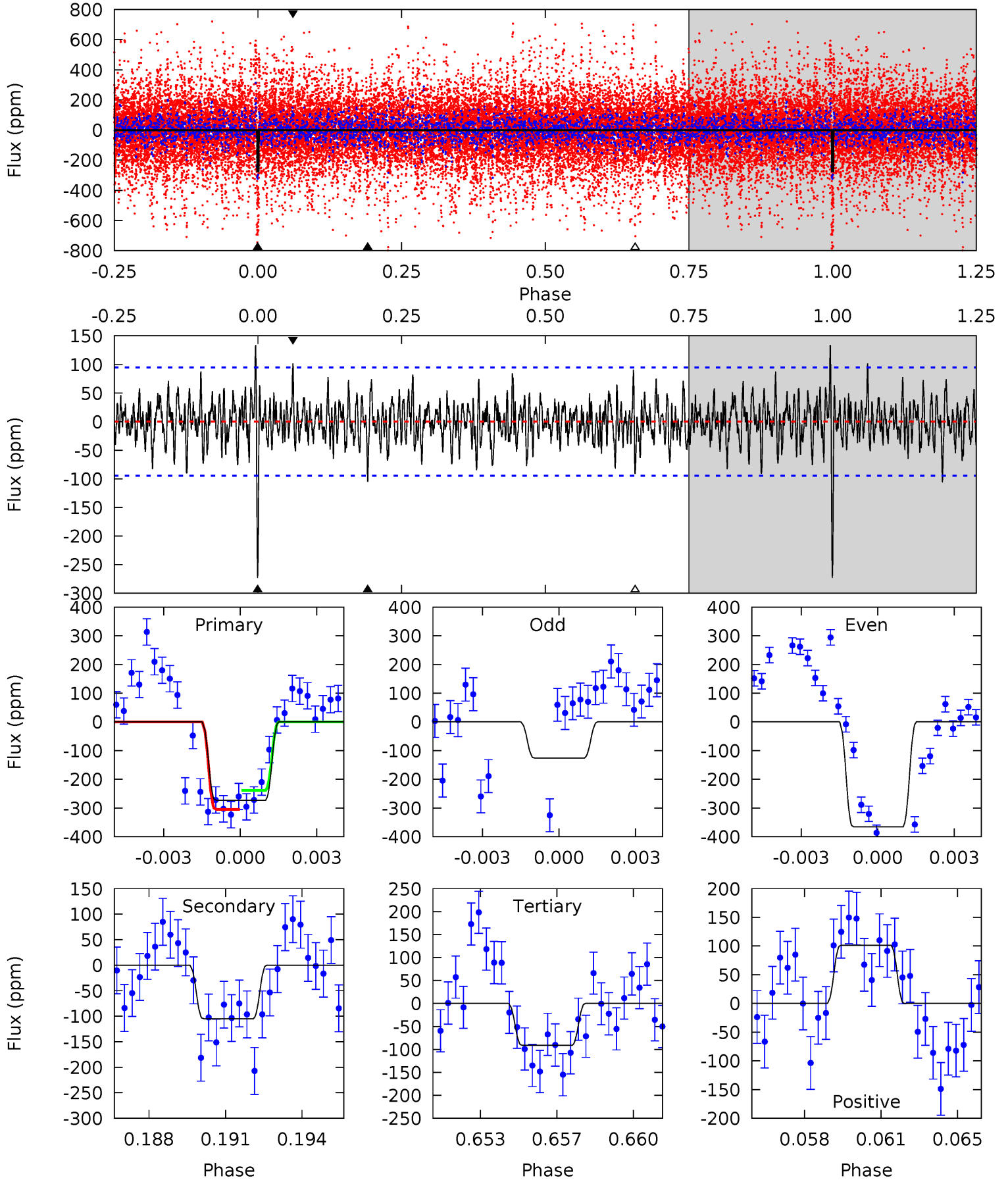
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.19	7.14	7.12	7.17	5.20	2.87	2.46	2.07	2.01	0.02	-0.03	1.03	1.13	0.44	2.74



Alt Model-Shift Uniqueness Test

006346698-05, P = 83.637084 Days, E = 124.954504 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	5.81	5.05	5.61	5.24	2.94	1.63	10.0	9.48	0.76	0.20	6.69	1.07	0.33	1.82



Stellar Parameters For KIC 006346698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6251^{+194}_{-233}	$3.955^{+0.420}_{-0.140}$	$-0.360^{+0.300}_{-0.300}$	$1.830^{+0.435}_{-0.746}$	$1.101^{+0.174}_{-0.192}$	$0.253^{+0.844}_{-0.104}$
	+3%/-4%	+11%/-4%	+83%/-83%	+24%/-41%	+16%/-17%	+334%/-41%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006346698-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-130 ± 18	$2.34^{+1.09}_{-0.89}$	819^{+71}_{-97}	5857^{+1598}_{-799}	1949^{+3105}_{-1042}
Alt.	-105 ± 18	$2.90^{+1.14}_{-1.13}$	823^{+69}_{-101}	5153^{+1086}_{-609}	1032^{+1794}_{-523}

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

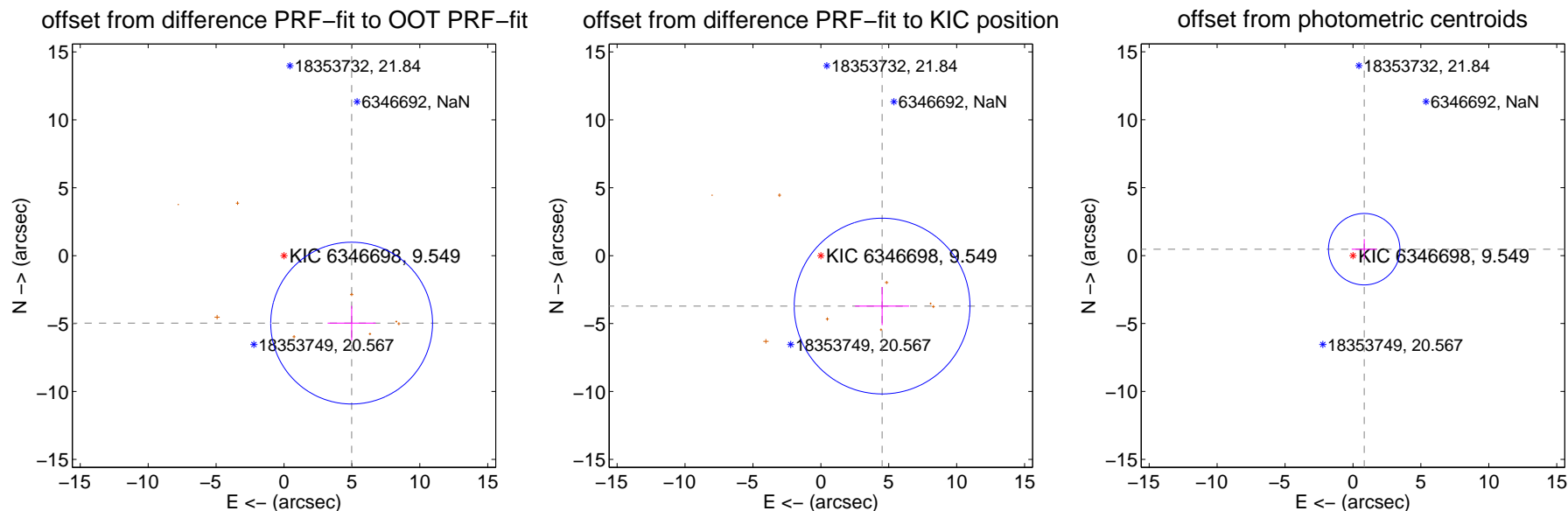
DV Centroid Data

Supplemental centroid analysis for 006346698-05. **Kepler magnitude: 9.55.** Transit SNR 4.45

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.92 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.031 ± 1.985	3.54	-4.978 ± 1.770	-4.966 ± 1.267
PRF-fit source offset from KIC position	5.838 ± 2.156	2.71	-4.507 ± 1.986	-3.711 ± 1.403
photometric centroid source offset	0.95 ± 0.88	1.09	-0.83 ± 0.92	0.47 ± 0.74



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

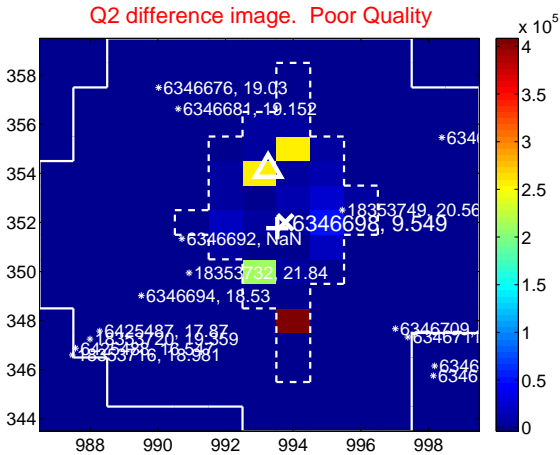
Q1 no difference image



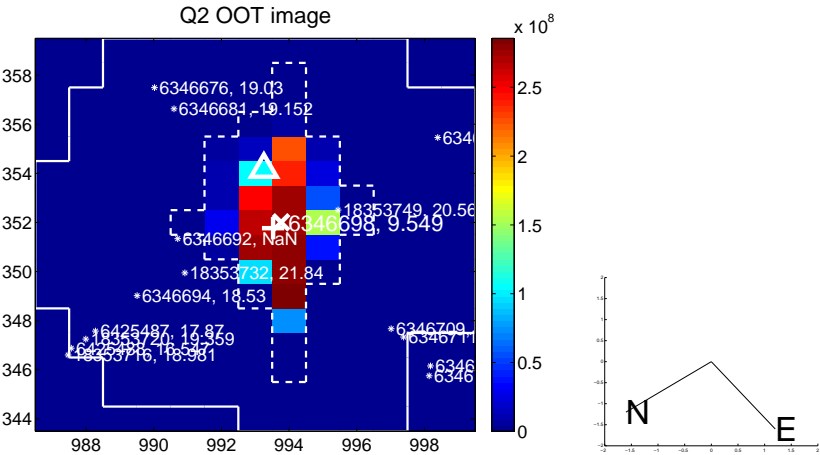
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



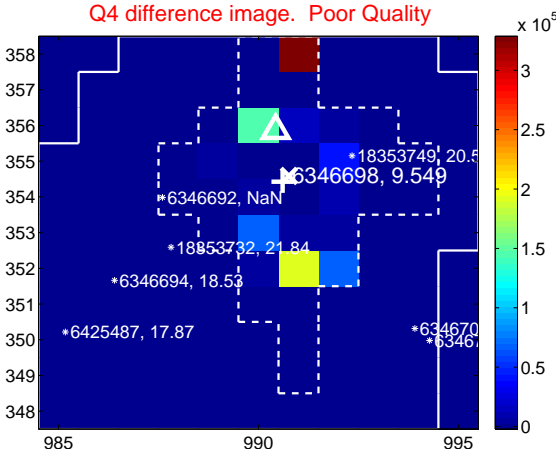
Q3 no difference image



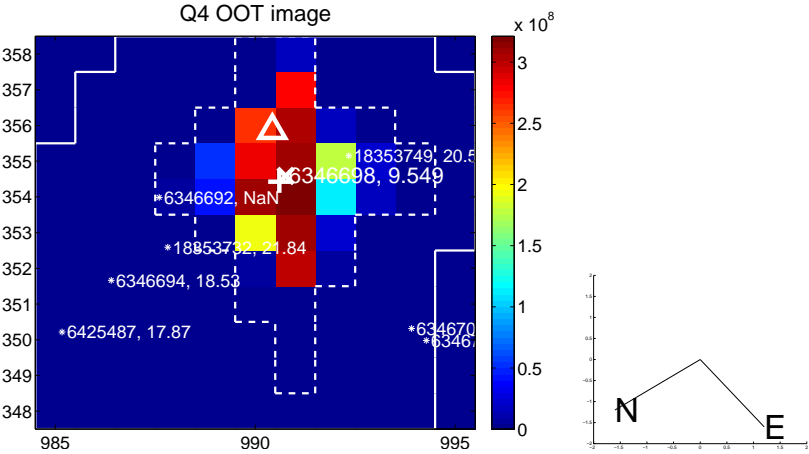
Q3 no OOT image



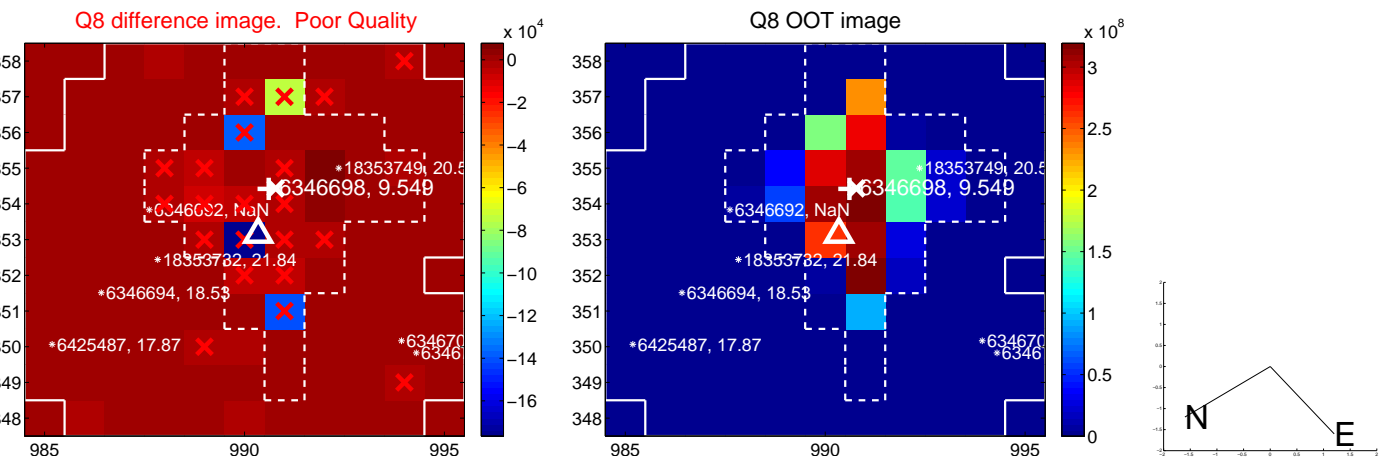
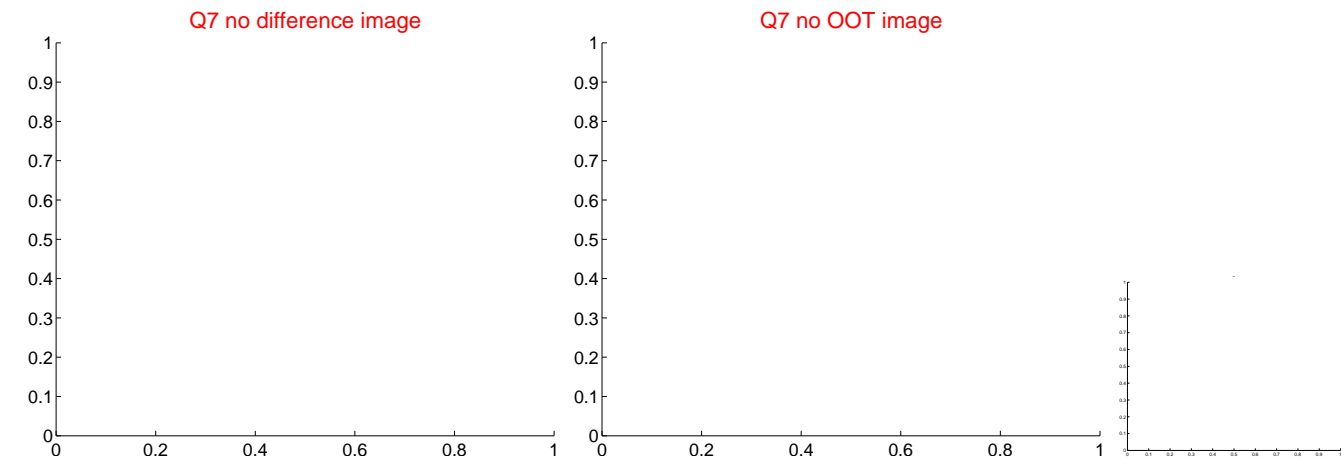
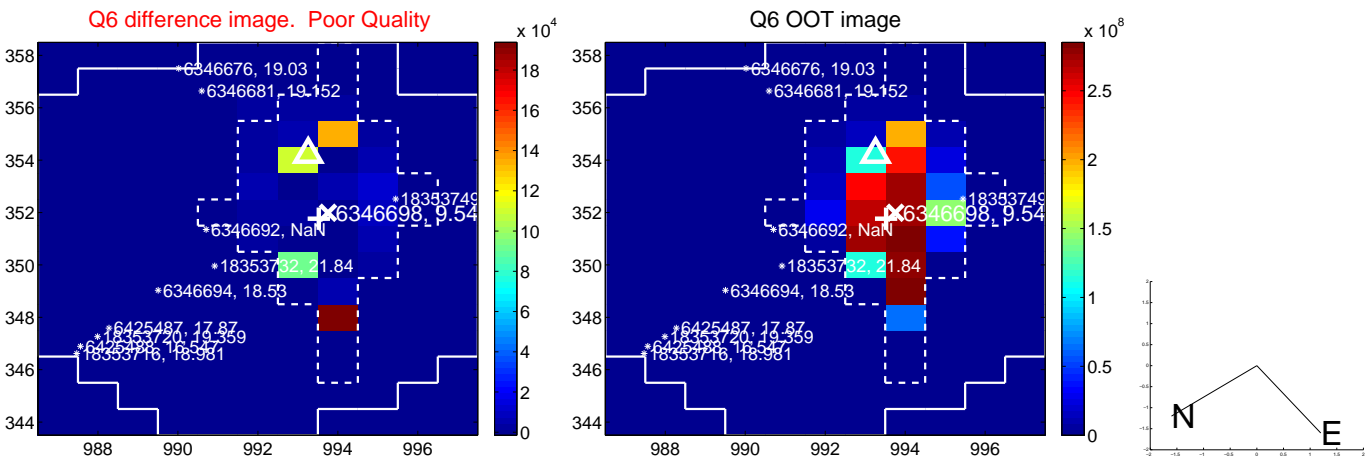
Q4 difference image. Poor Quality



Q4 OOT image



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



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

Q9 no difference image

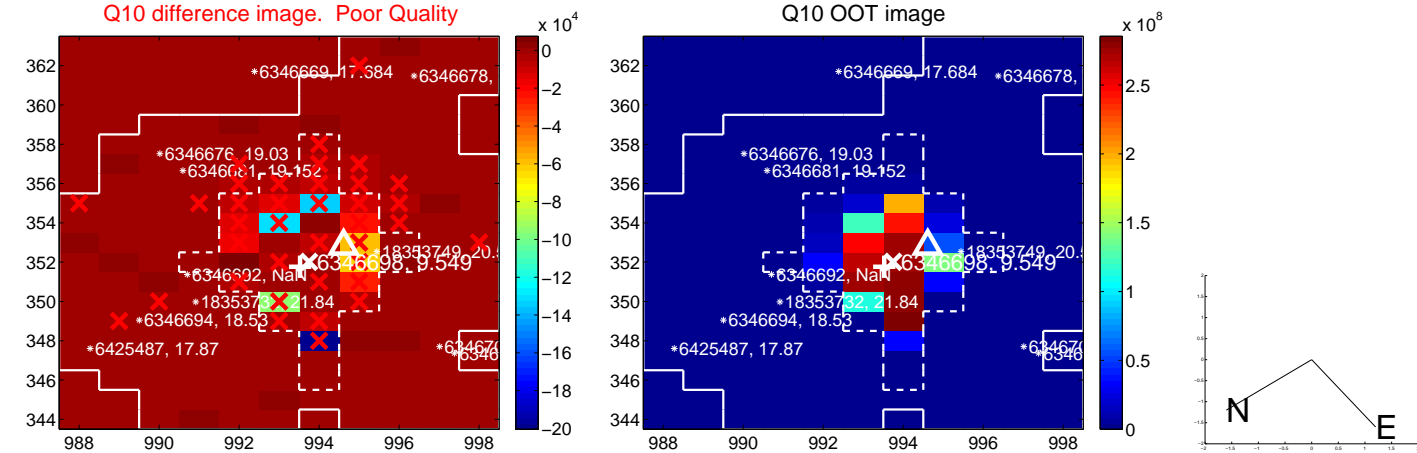


Q9 no OOT image



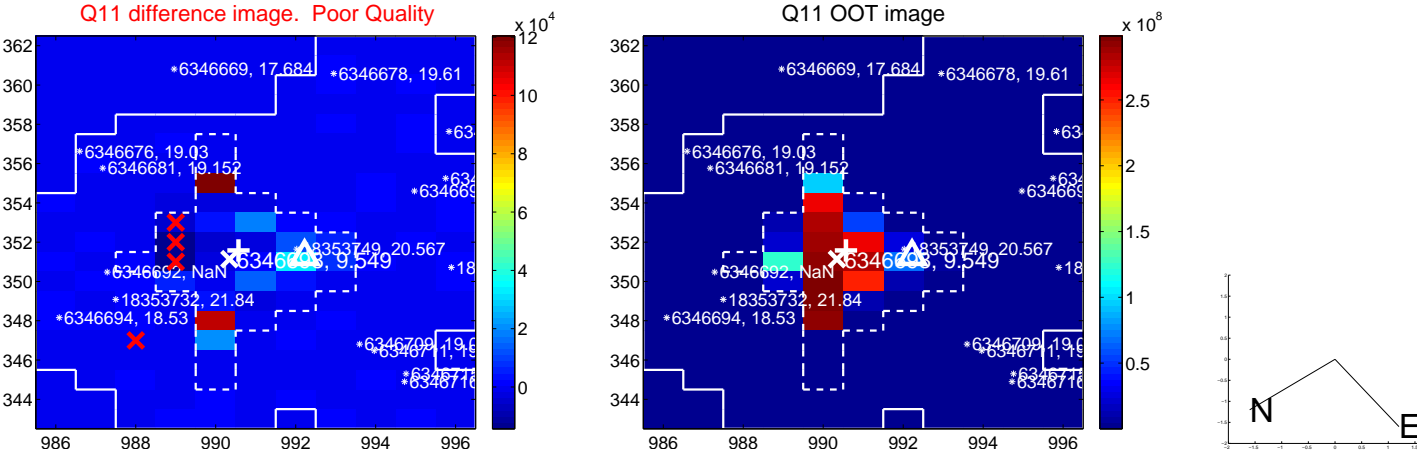
Q10 difference image. Poor Quality

Q10 OOT image



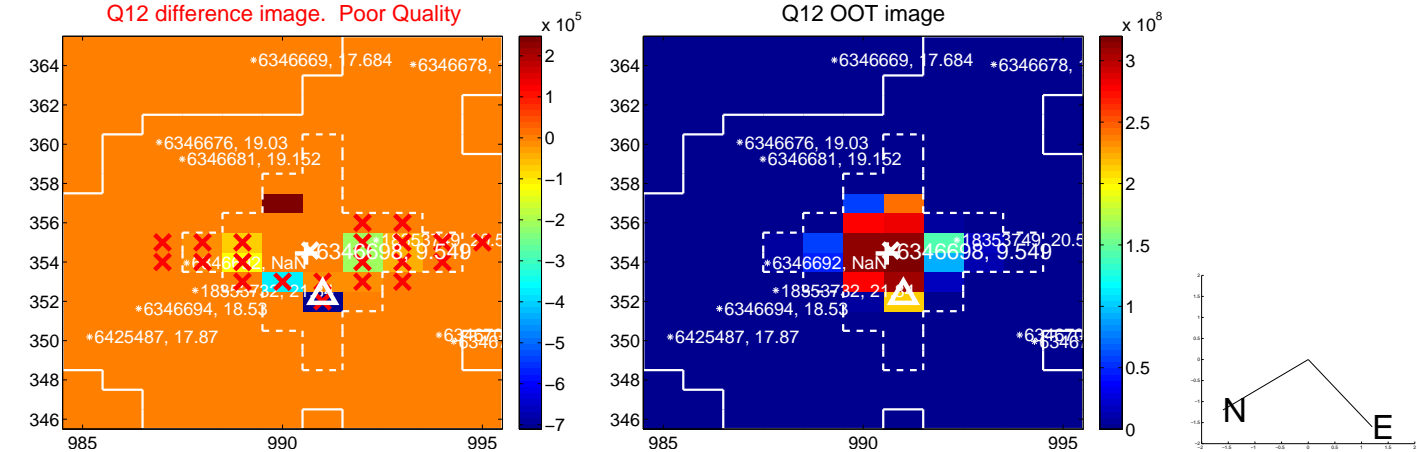
Q11 difference image. Poor Quality

Q11 OOT image



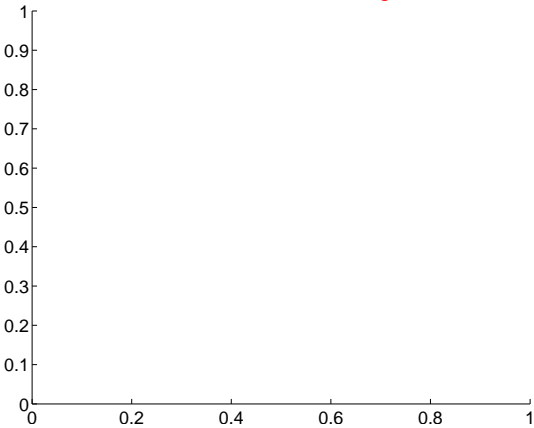
Q12 difference image. Poor Quality

Q12 OOT image



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

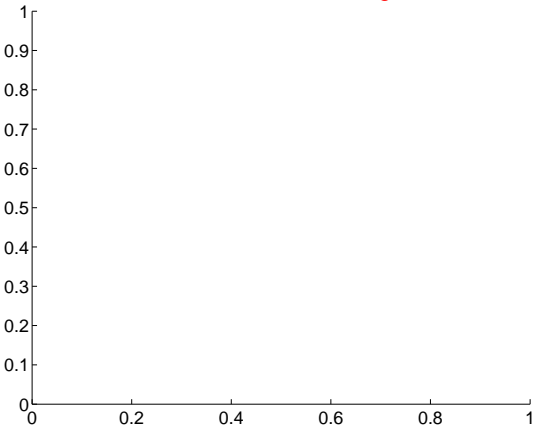
Q13 no difference image



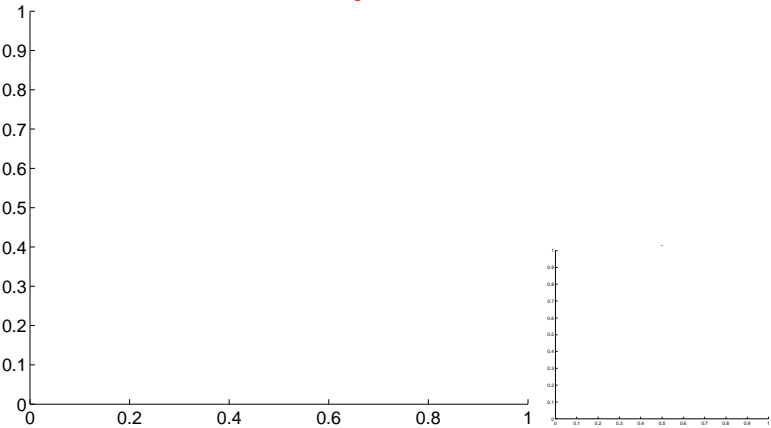
Q13 no OOT image



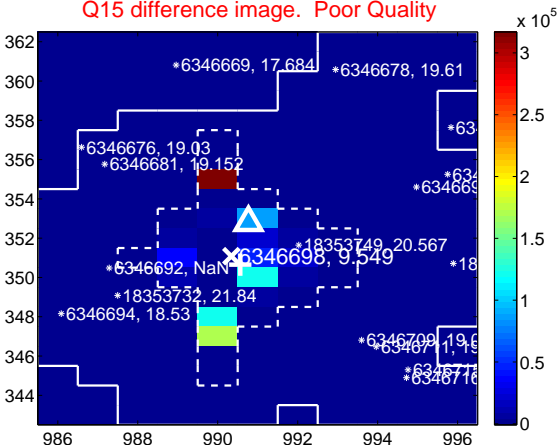
Q14 no difference image



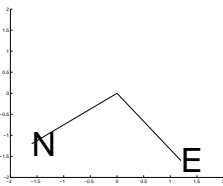
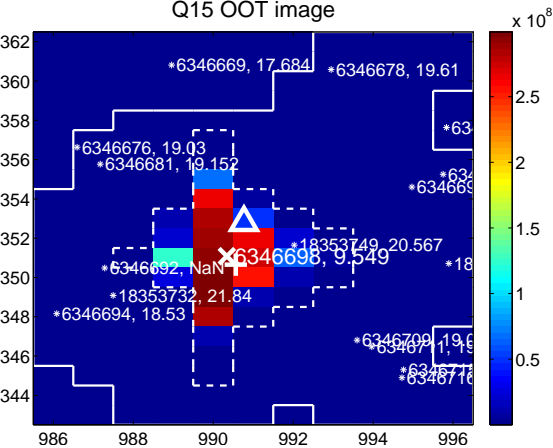
Q14 no OOT image



Q15 difference image. Poor Quality



Q15 OOT image



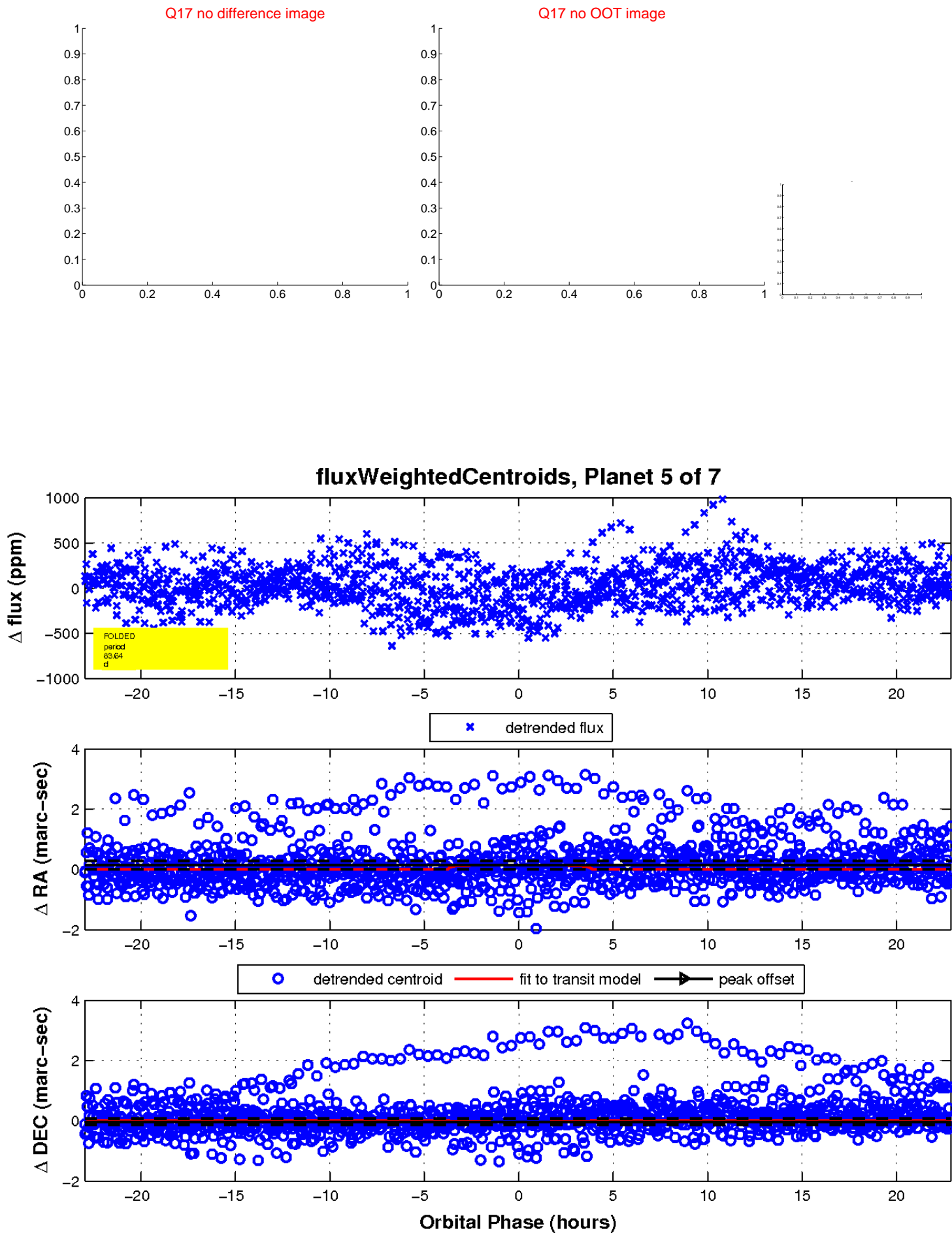
Q16 no difference image



Q16 no OOT image

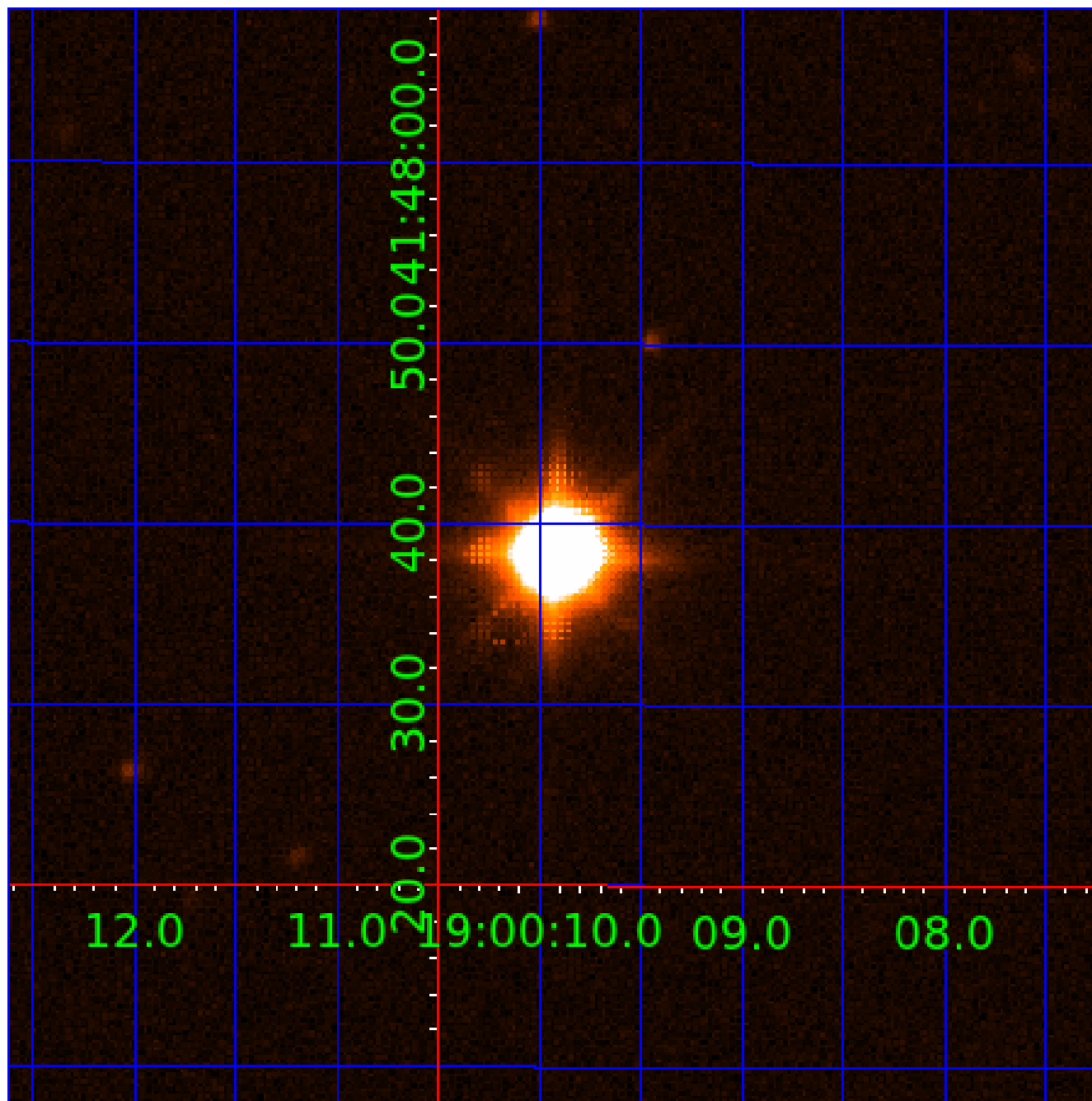


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006346698

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})
006346698-01	OBS	No	1.220221	132.149443	57.7	4.583	9.0	12.6	1.83	6251	2.86	8598.22
006346698-02	OBS	No	266.314739	344.053750	484.9	5.385	8.2	8.5	1.83	6251	5.15	6.54
006346698-03	OBS	No	433.147881	209.698718	448.2	12.310	7.1	8.0	1.83	6251	4.84	3.42
006346698-04	OBS	No	534.261924	439.146878	619.2	11.980	7.9	8.2	1.83	6251	5.55	2.59
006346698-05	OBS	No	83.640271	208.582800	151.4	7.661	7.6	4.4	1.83	6251	2.48	30.65
006346698-06	OBS	No	1.220382	131.771486	71.3	7.836	10.3	11.2	1.83	6251	2.17	8596.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006346698-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
006346698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006346698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
006346698-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
006346698-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

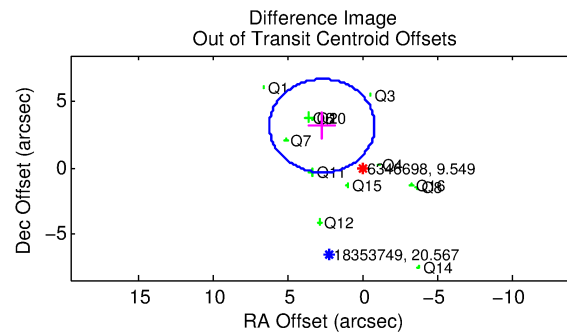
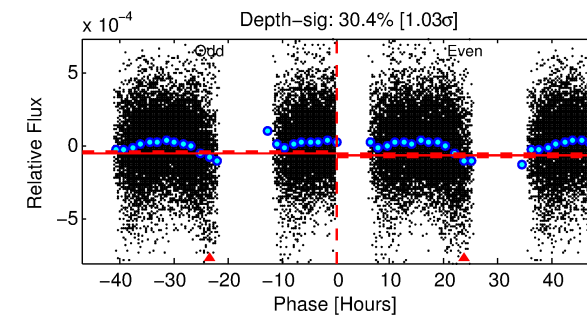
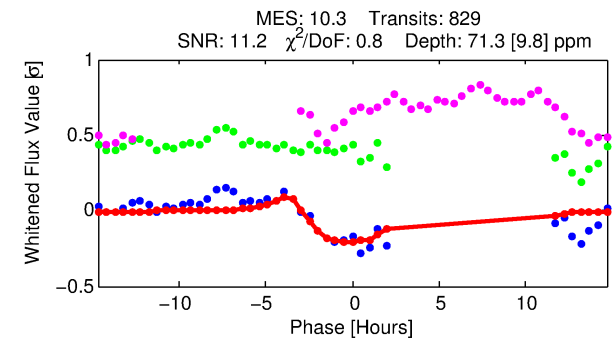
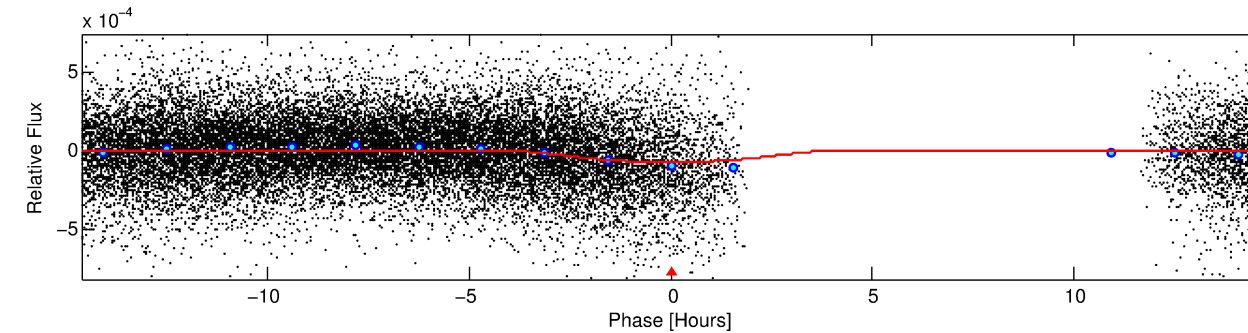
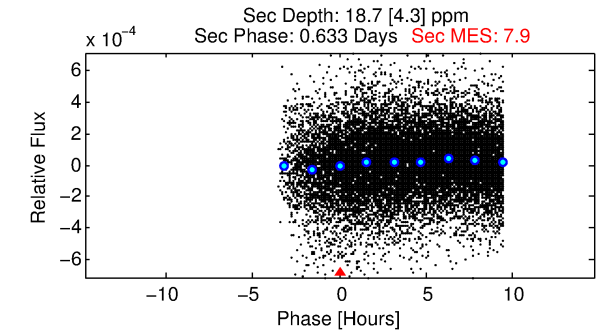
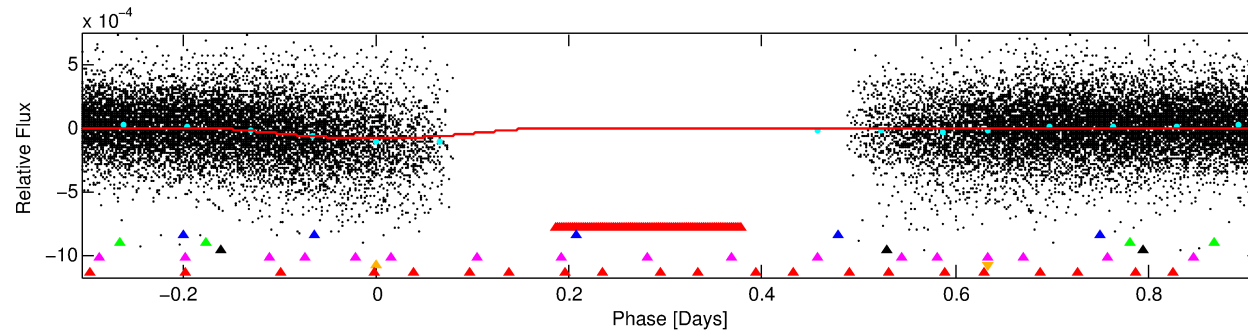
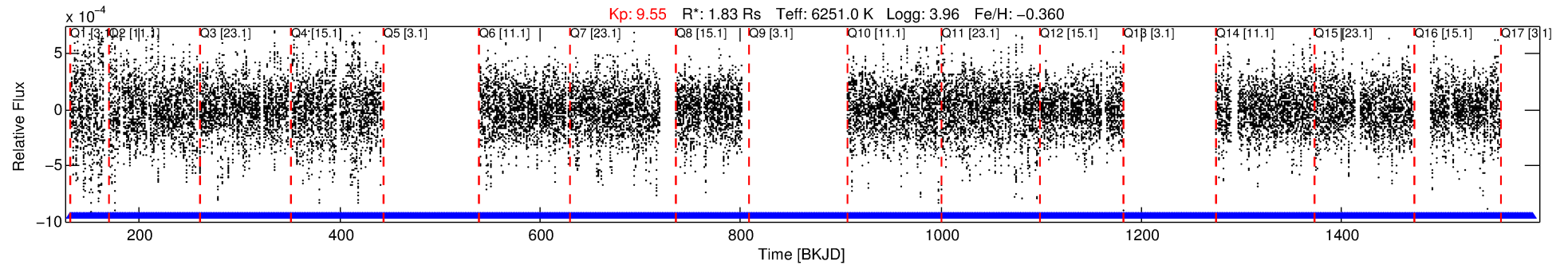
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006346698-06

No Significant Match Found

DV One-Page Summary

KIC: 6346698 Candidate: 6 of 7 Period: 1.220 d



DV Fit Results:

Period = 1.22038 [0.00002] d
Epoch = 131.7715 [0.0187] BKJD
Rp/R* = 0.0108 [0.0009]
a/R* = 1.03 [0.01]
b = 0.99 [0.00]
Seff = 8596.70 [6149.83]
Teq = 2455 [439] K
Rp = 2.17 [0.90] Re
a = 0.0231 [0.0097] AU
Ag = 1.17 [0.88] [0.19σ]
Teffp = 3945 [320] K [2.74σ]

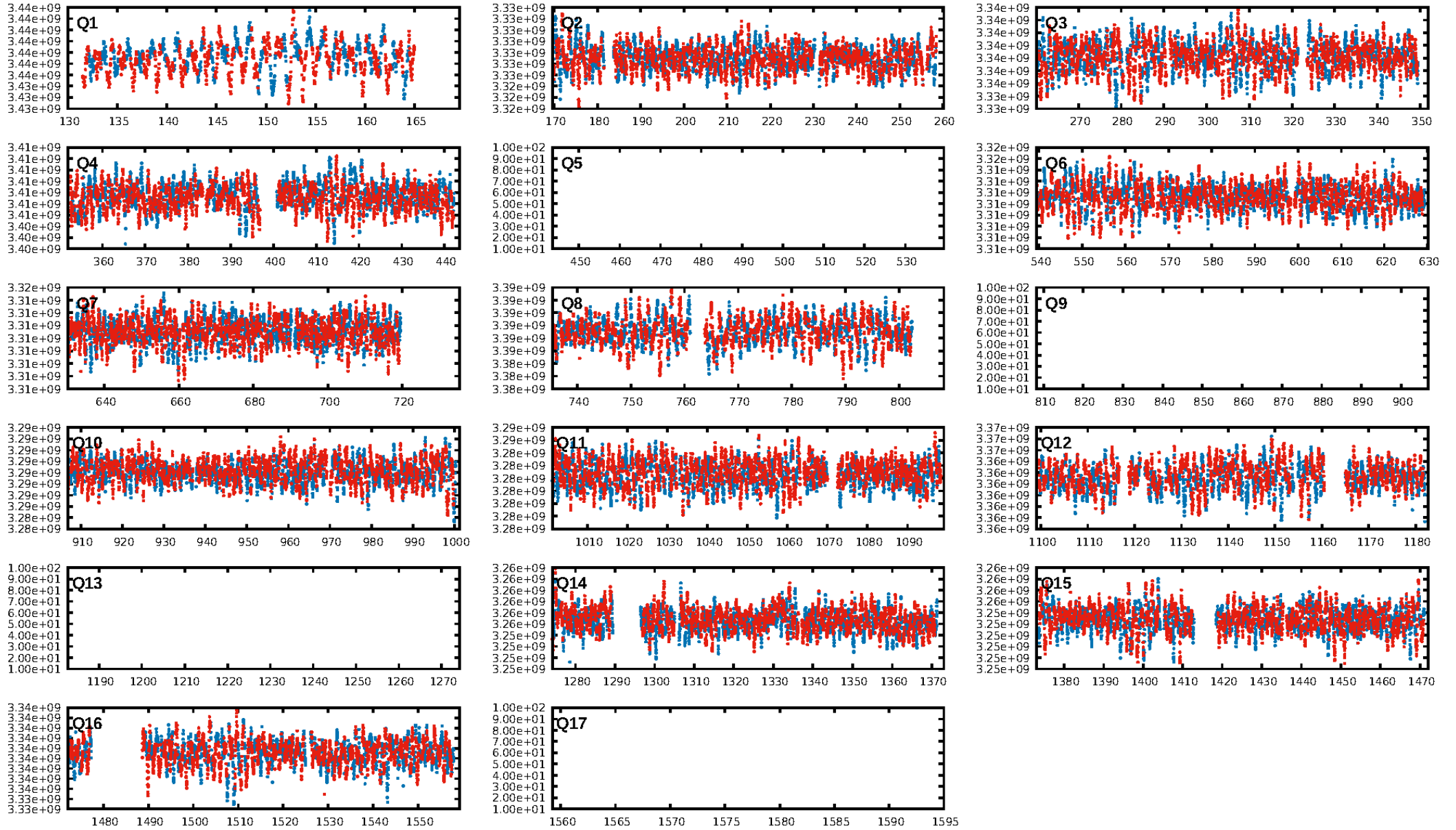
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [120.90σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [801/801]
GhostDiagnostic-chr: N/A
Centroid-sig: 6.8%
Centroid-so: 0.684 arcsec [2.65σ]
OotOffset-rm: 4.145 arcsec [3.53σ]
KicOffset-rm: 6.092 arcsec [4.84σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 0.00 [0/13]

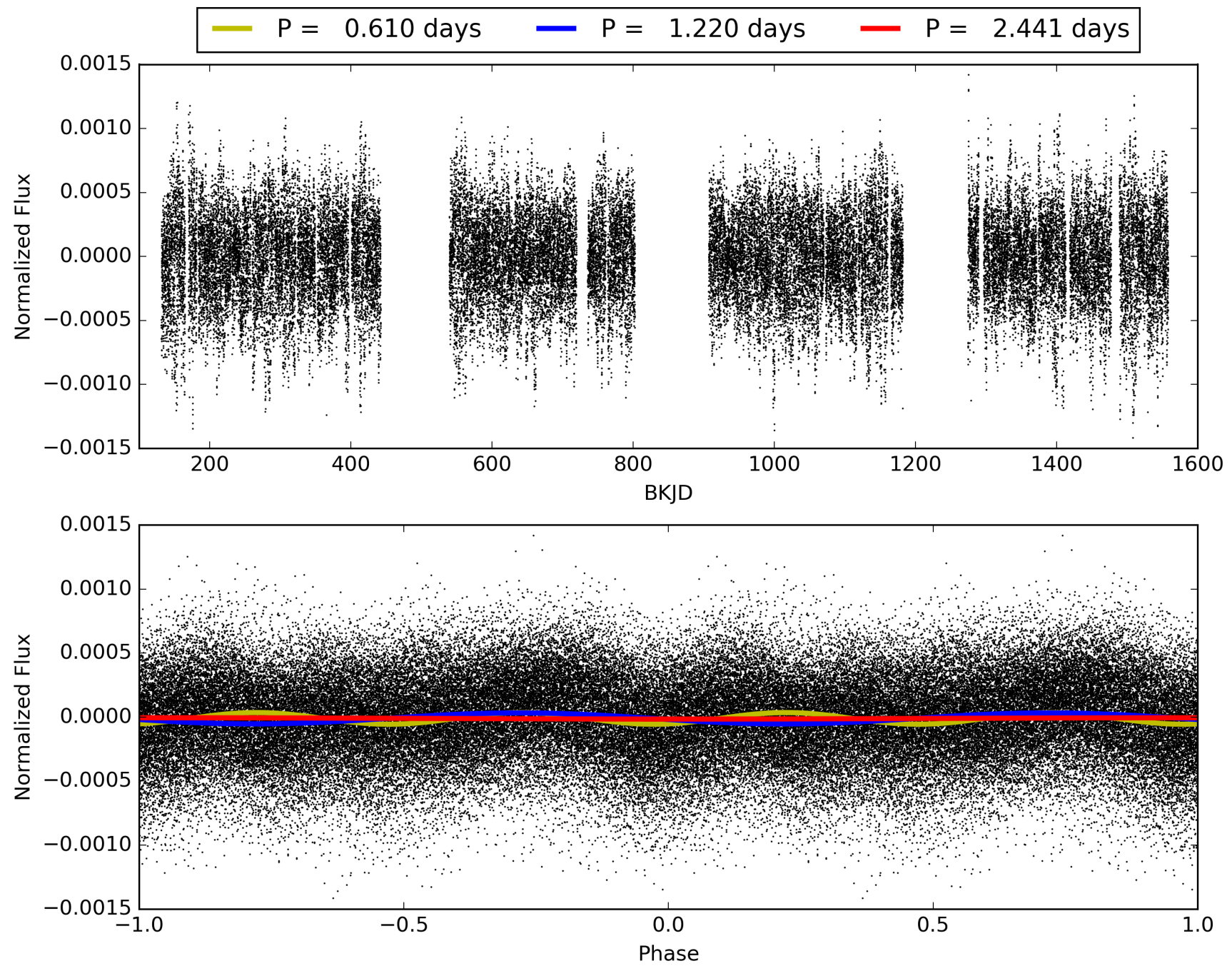
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:51:52 Z

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

TCE 006346698-06, PDC Light Curves

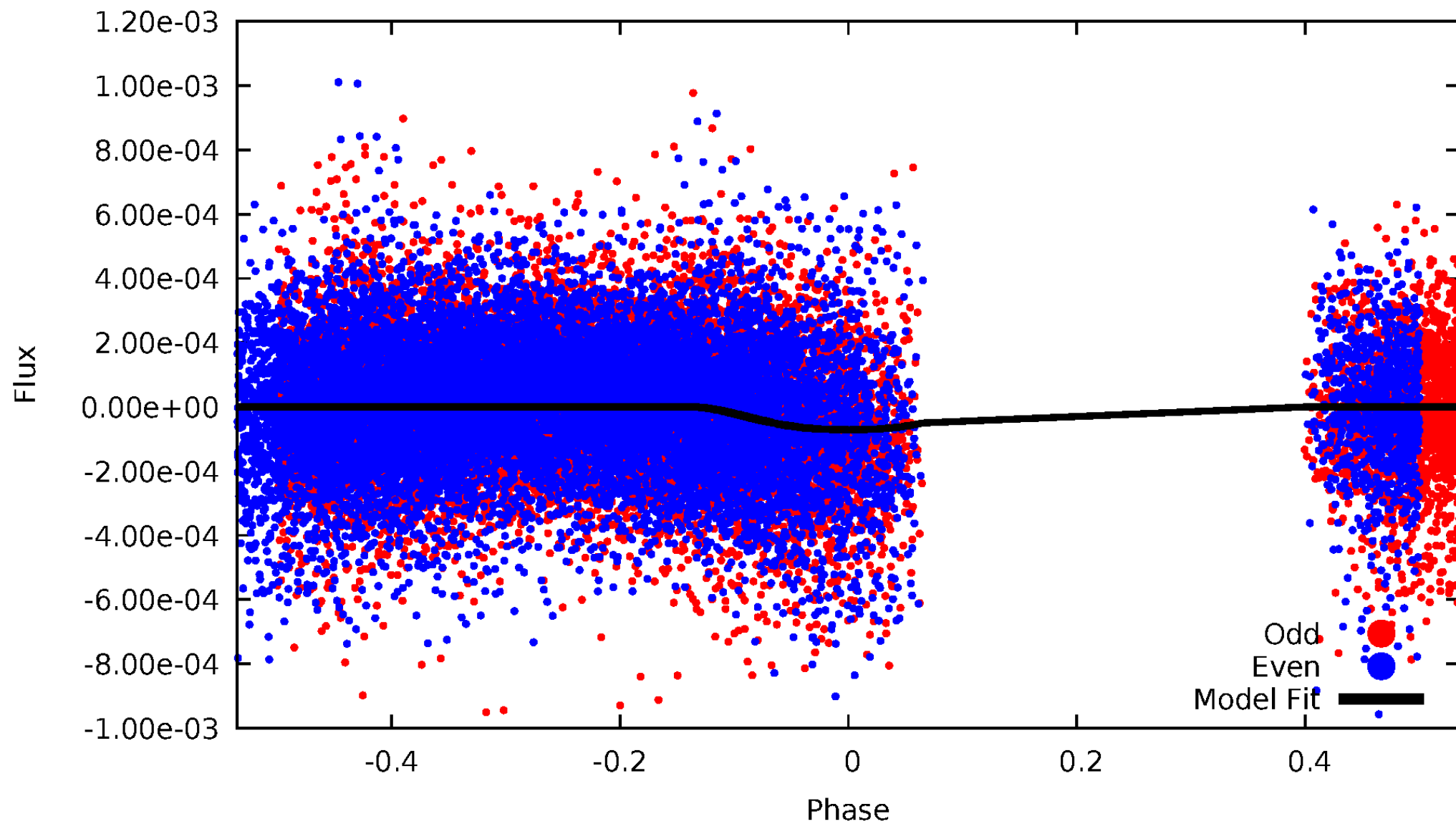


TCE 006346698-06



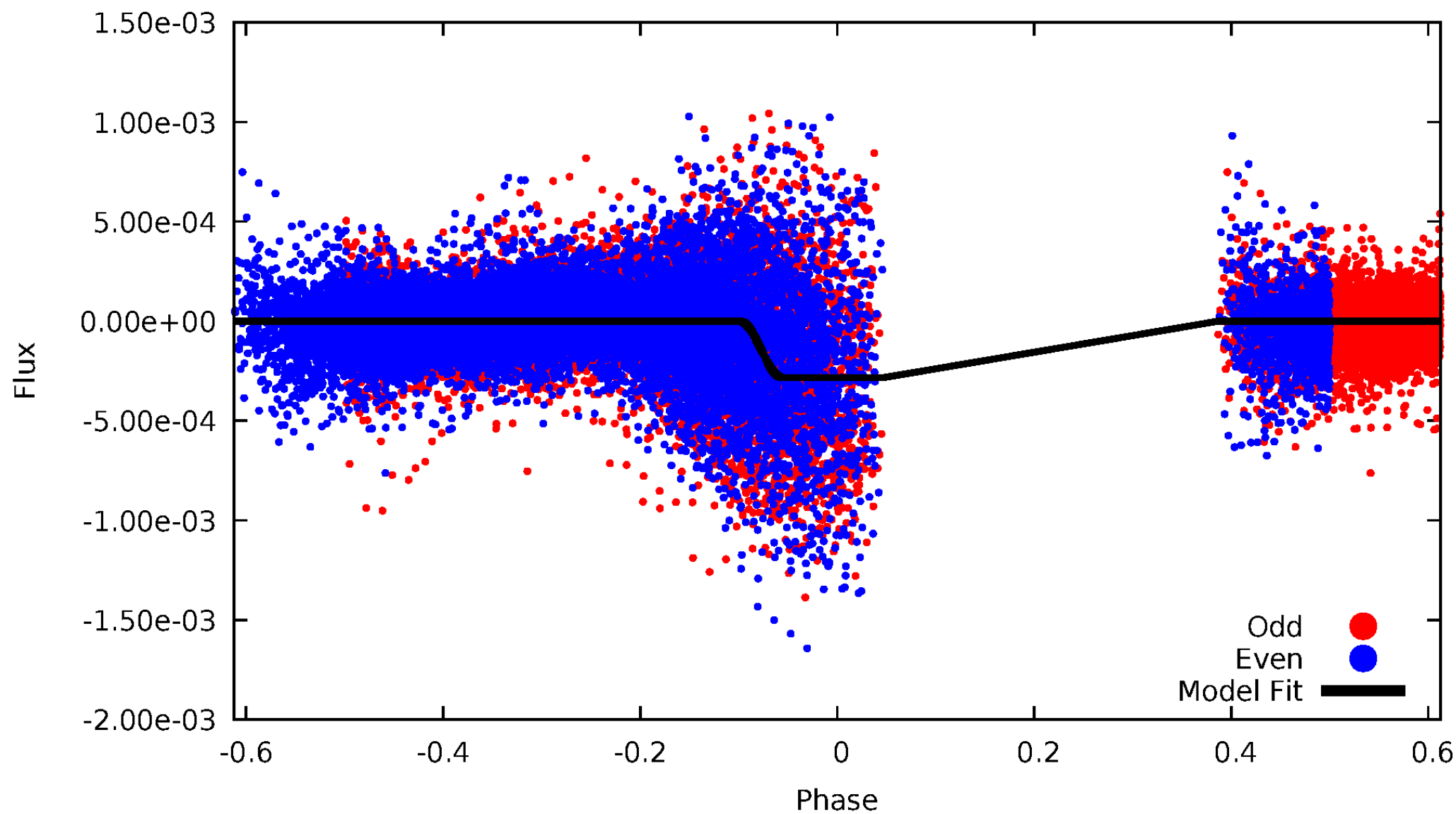
DV Odd/Even

TCE 006346698-06



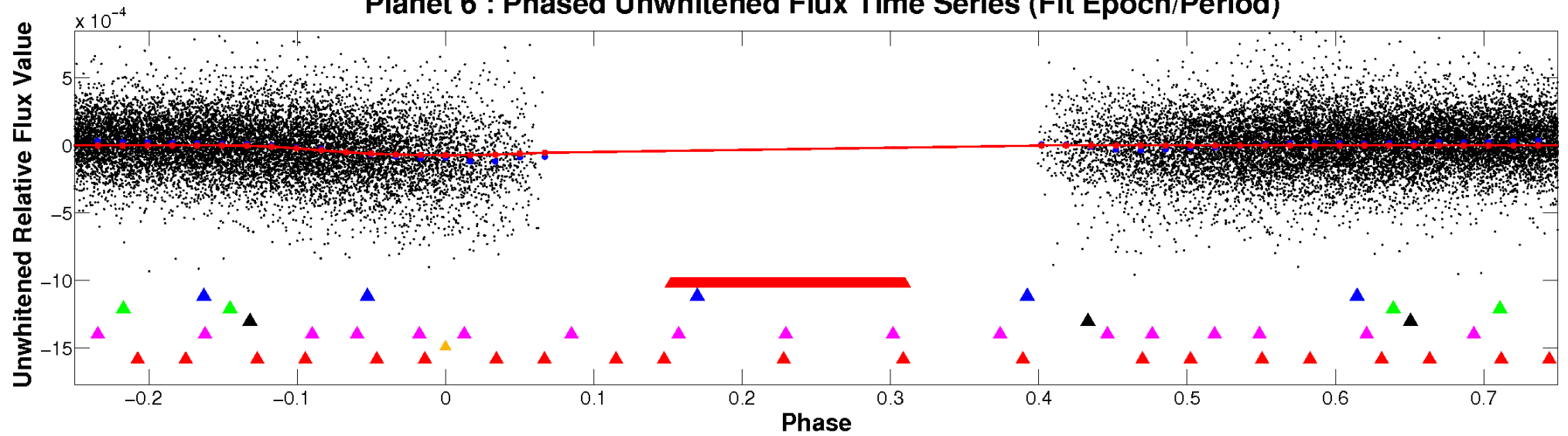
ALT Odd/Even

TCE 006346698-06

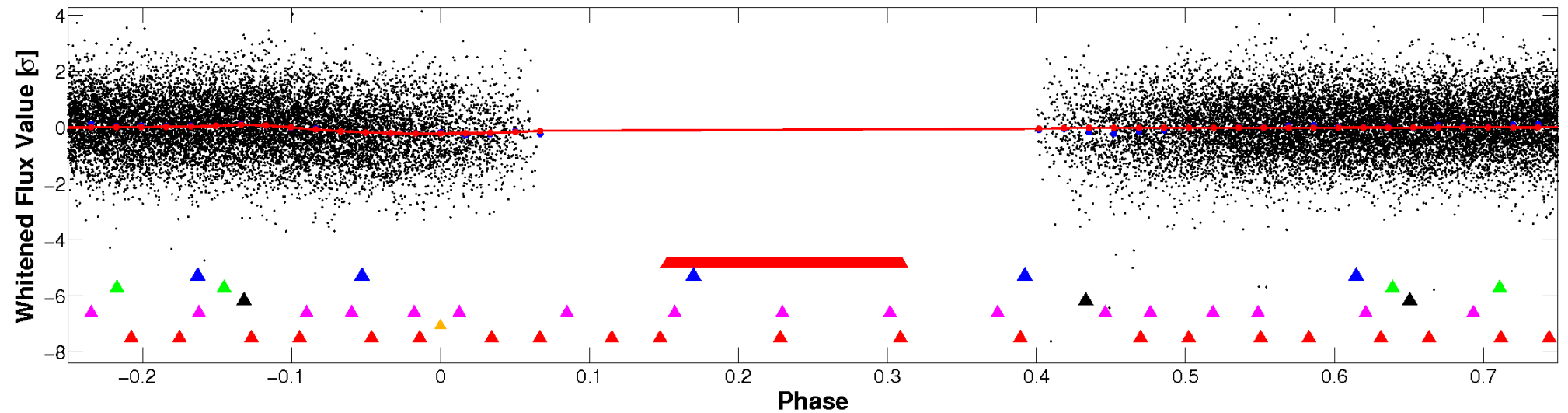


Non-Whitened Vs. Whitened Light Curve

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

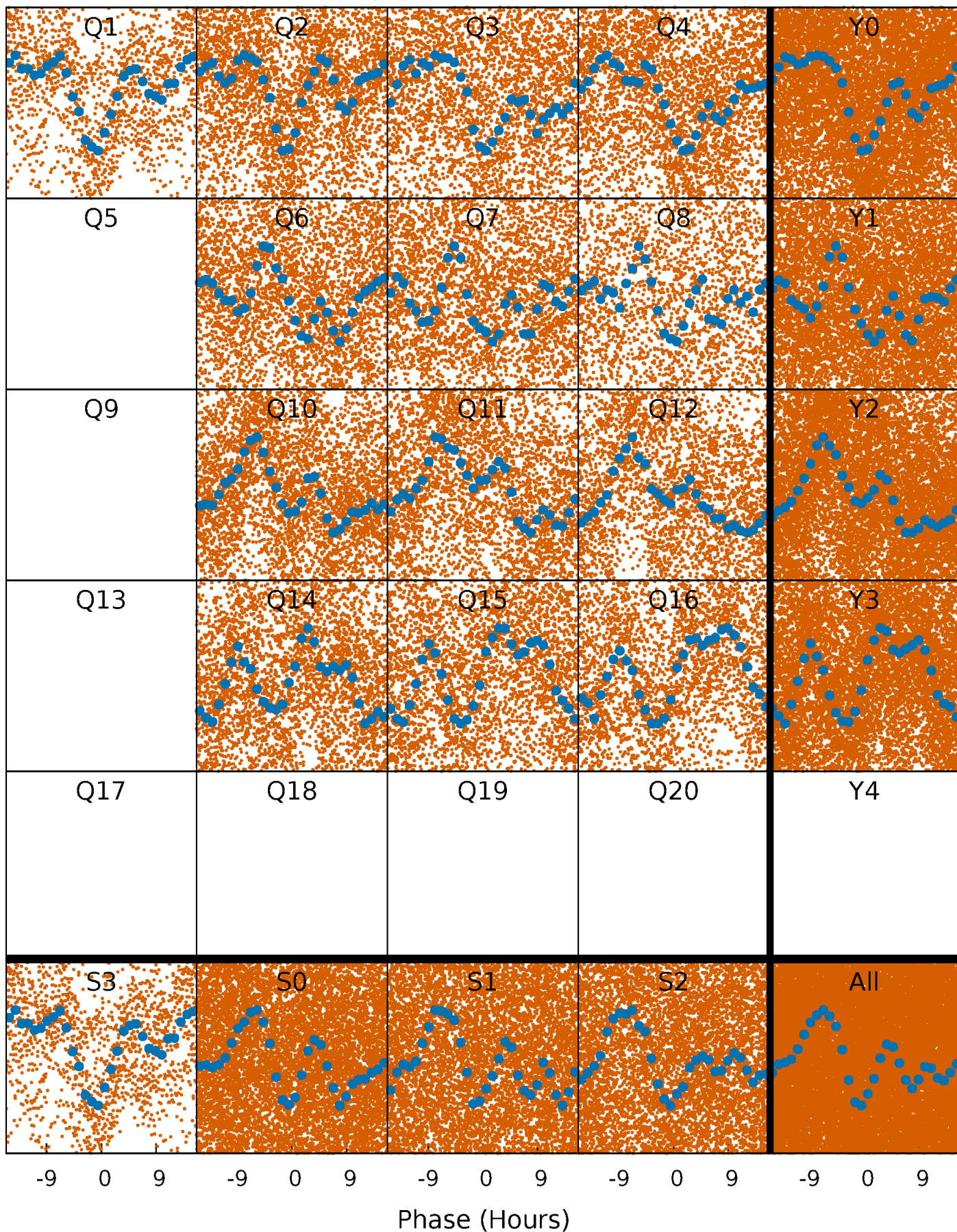


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



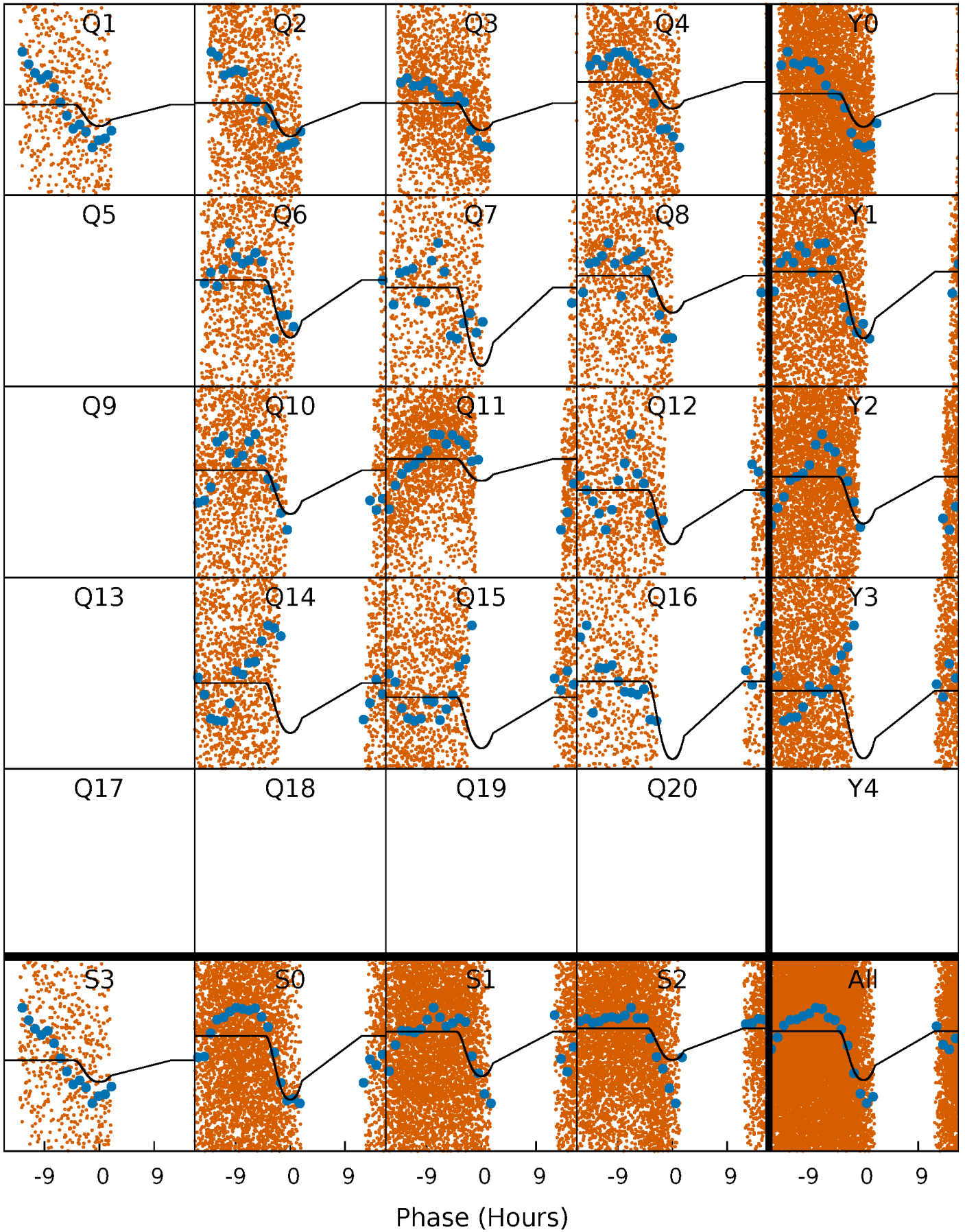
PDC Quarter-Phased Transit Curves

TCE 006346698-06 P= 1.220382 Days $T_0=131.771486$ (BKJD)



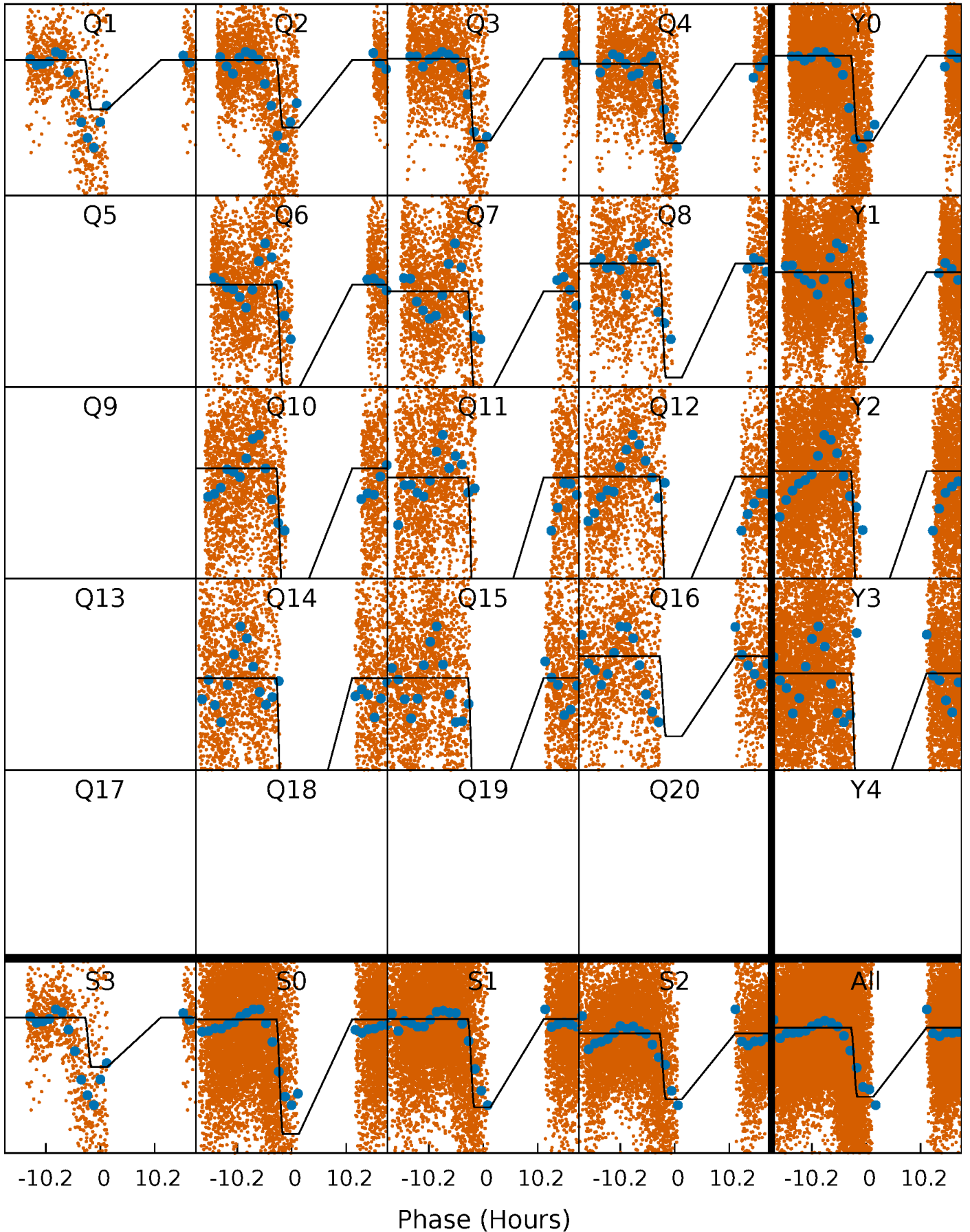
DV Quarter-Phased Transit Curves

TCE 006346698-06 P= 1.220382 Days $T_0=131.771486$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

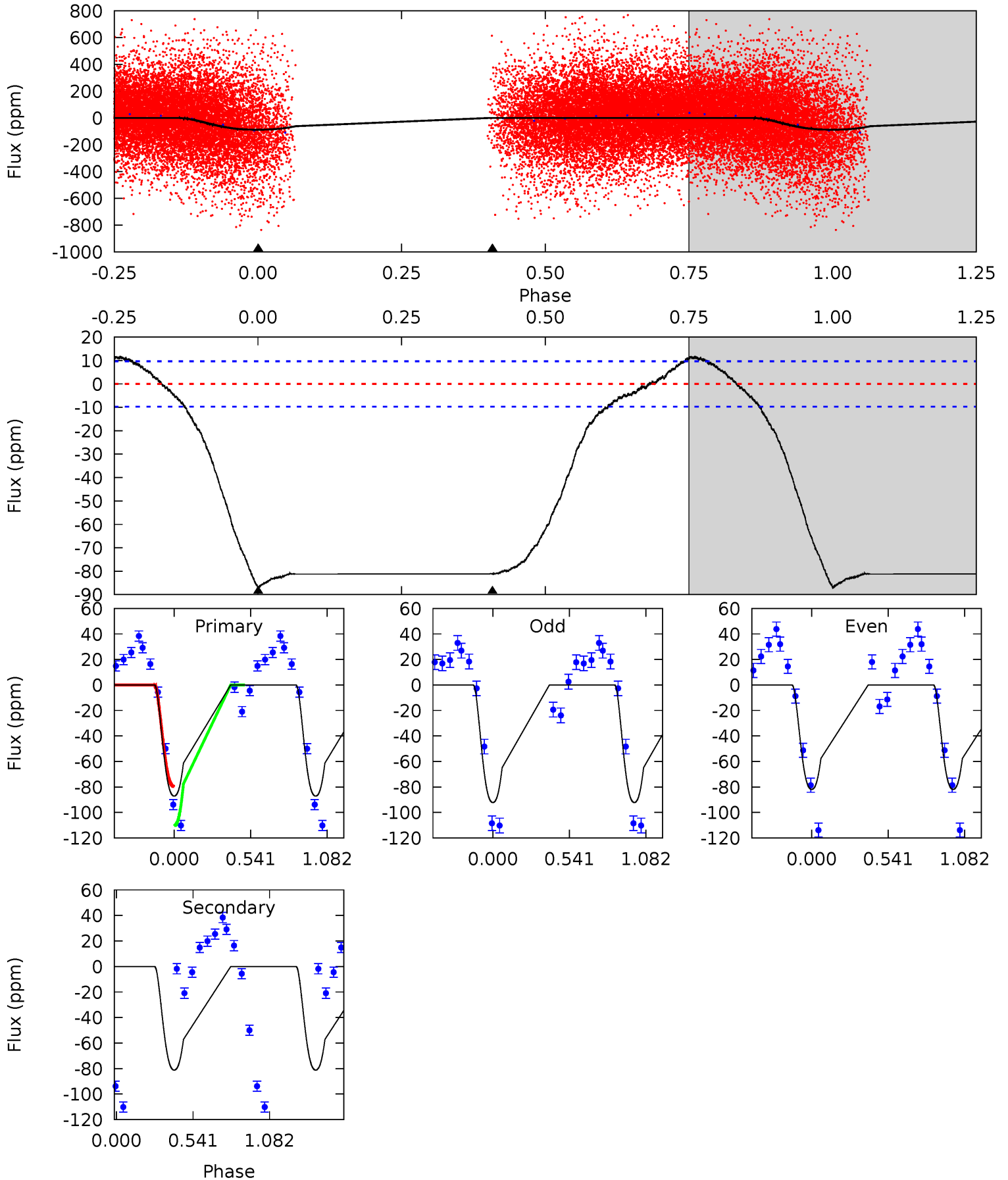
TCE 006346698-06 P= 1.220375 Days $T_0=131.795371$ (BKJD)



DV Model-Shift Uniqueness Test

006346698-06, P = 1.220382 Days, E = 130.551104 Days

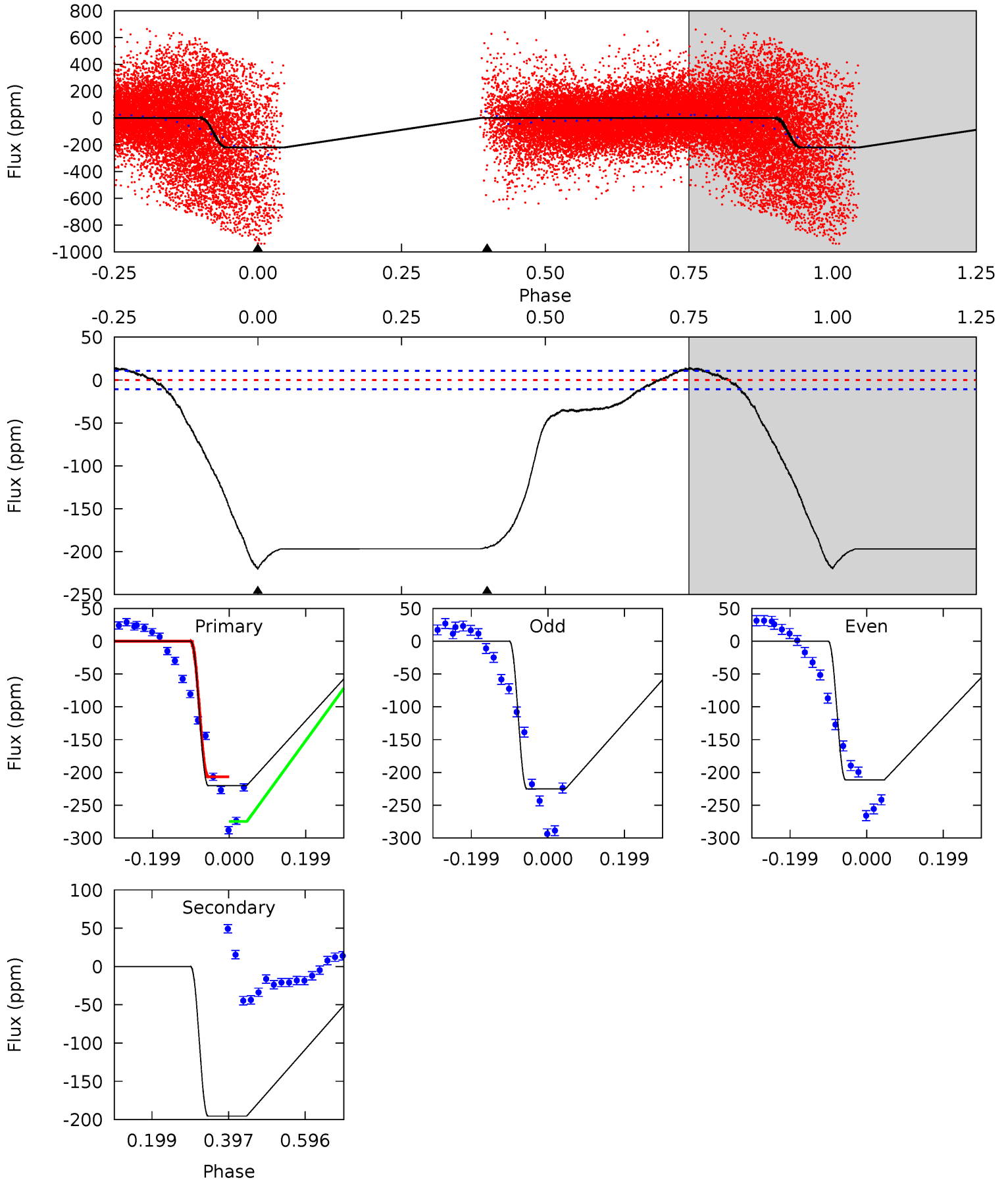
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.7	35.1	0	0	4.20	0.61	1.58	37.7	37.7	35.1	35.1	2.21	0.89	0.12	3.91



Alt Model-Shift Uniqueness Test

006346698-06, P = 1.220375 Days, E = 130.574996 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.9	79.9	0	0	4.42	1.29	6.48	89.9	89.9	79.9	79.9	2.77	1.09	0.06	5.99



Stellar Parameters For KIC 006346698

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6251^{+194}_{-233}	$3.955^{+0.420}_{-0.140}$	$-0.360^{+0.300}_{-0.300}$	$1.830^{+0.435}_{-0.746}$	$1.101^{+0.174}_{-0.192}$	$0.253^{+0.844}_{-0.104}$
	+3%/-4%	+11%/-4%	+83%/-83%	+24%/-41%	+16%/-17%	+334%/-41%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006346698-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-81 ± 2	$2.09^{+0.40}_{-0.49}$	3345^{+255}_{-372}	5612^{+306}_{-289}	$5.528^{+3.768}_{-1.487}$
Alt.	-195 ± 2	$3.26^{+0.58}_{-0.72}$	3370^{+254}_{-381}	5619^{+249}_{-223}	$5.486^{+3.123}_{-1.473}$

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

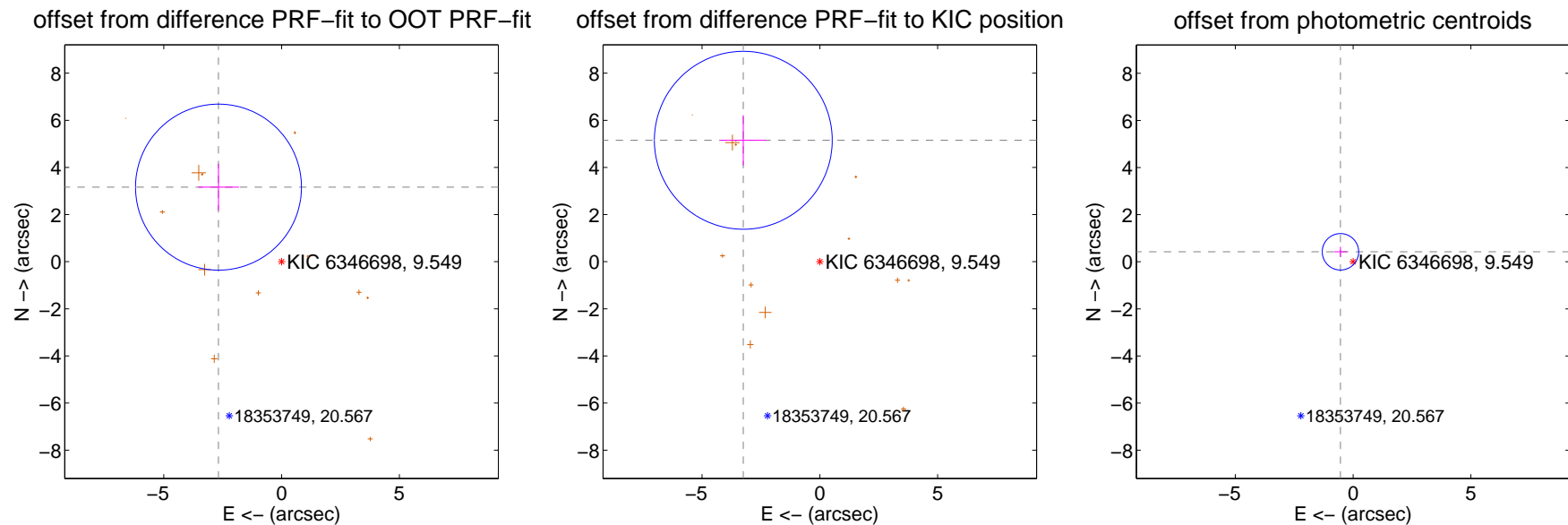
DV Centroid Data

Supplemental centroid analysis for 006346698-06. **Kepler magnitude: 9.55.** Transit SNR 11.19

There are 0 quarters with good PRF difference image offsets

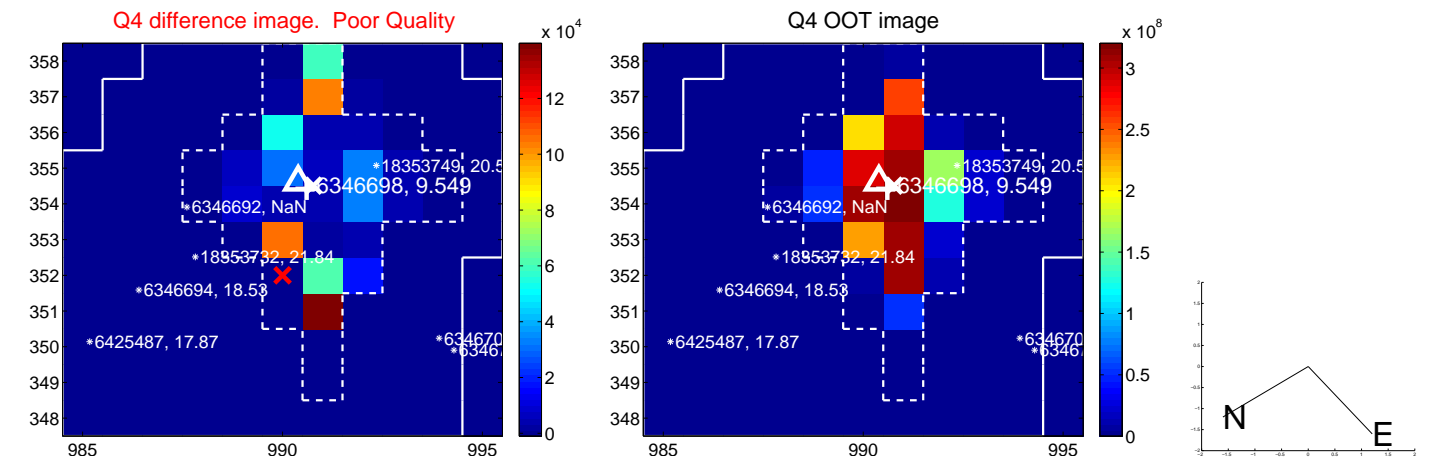
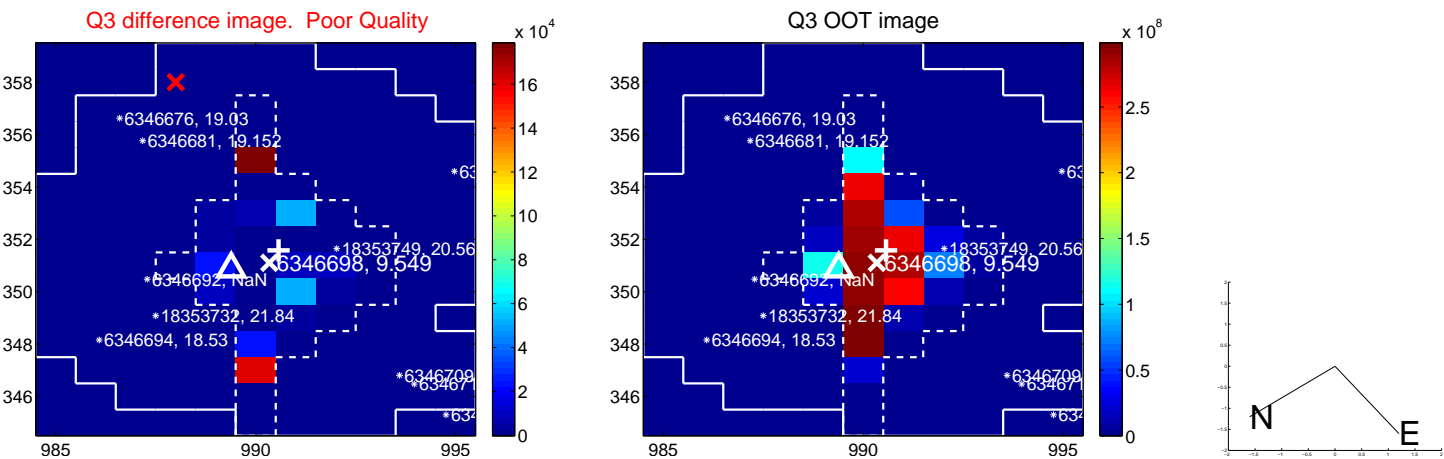
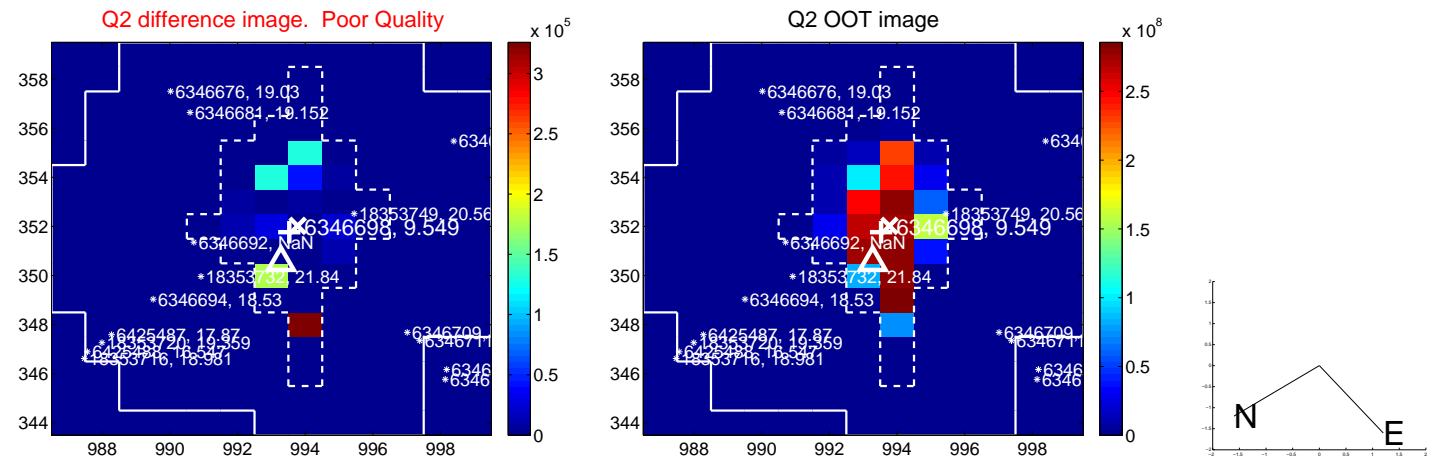
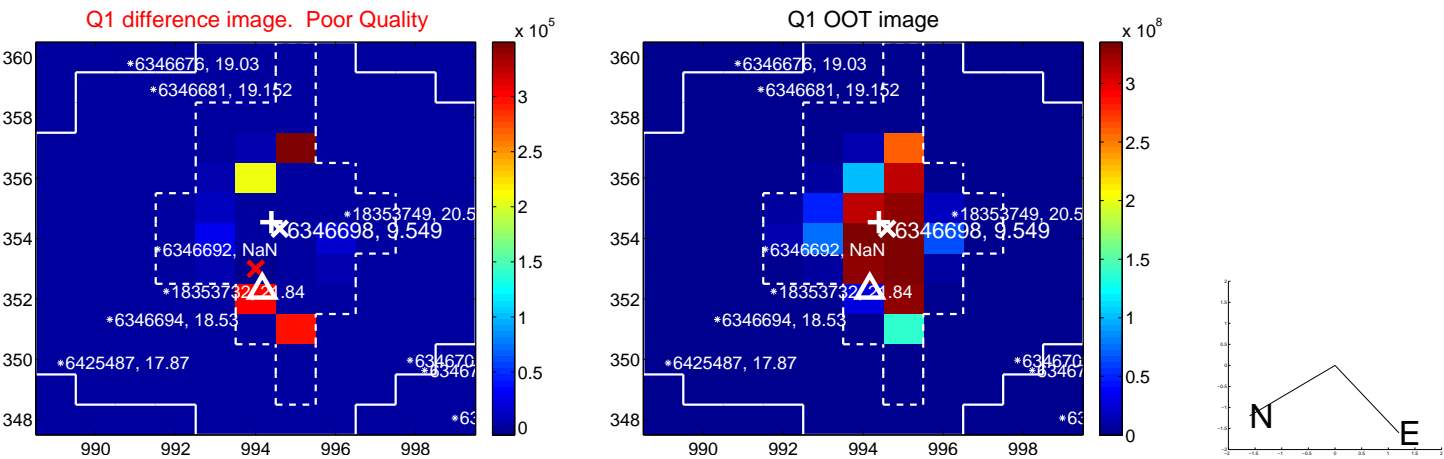
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.145 ± 1.174	3.53	2.678 ± 0.870	3.164 ± 0.988
PRF-fit source offset from KIC position	6.092 ± 1.259	4.84	3.249 ± 0.970	5.152 ± 1.062
photometric centroid source offset	0.68 ± 0.26	2.65	0.54 ± 0.28	0.42 ± 0.22



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.

Q5 no difference image

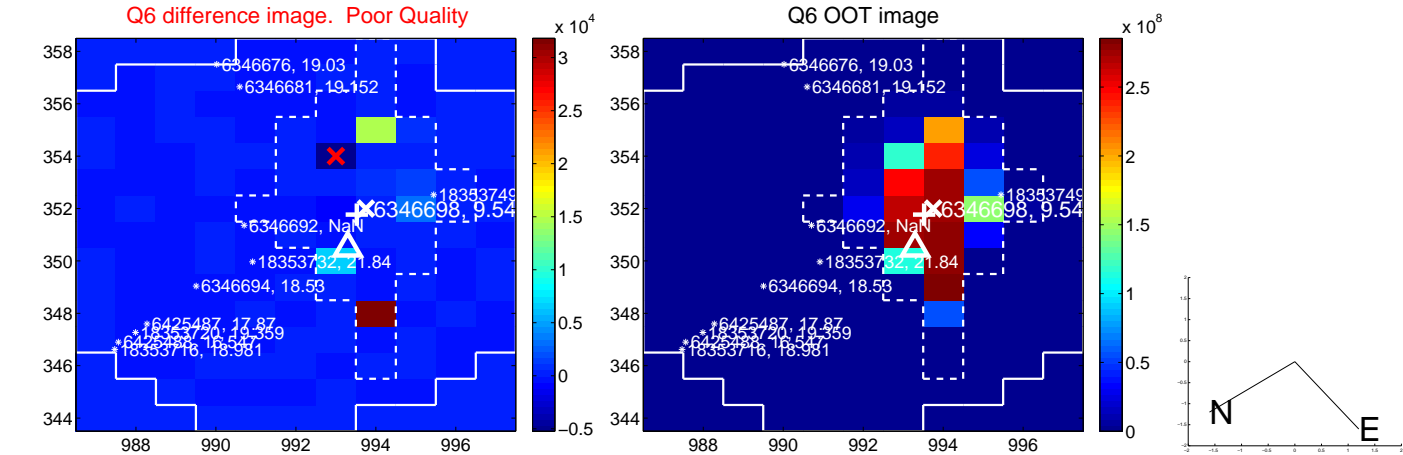


Q5 no OOT image



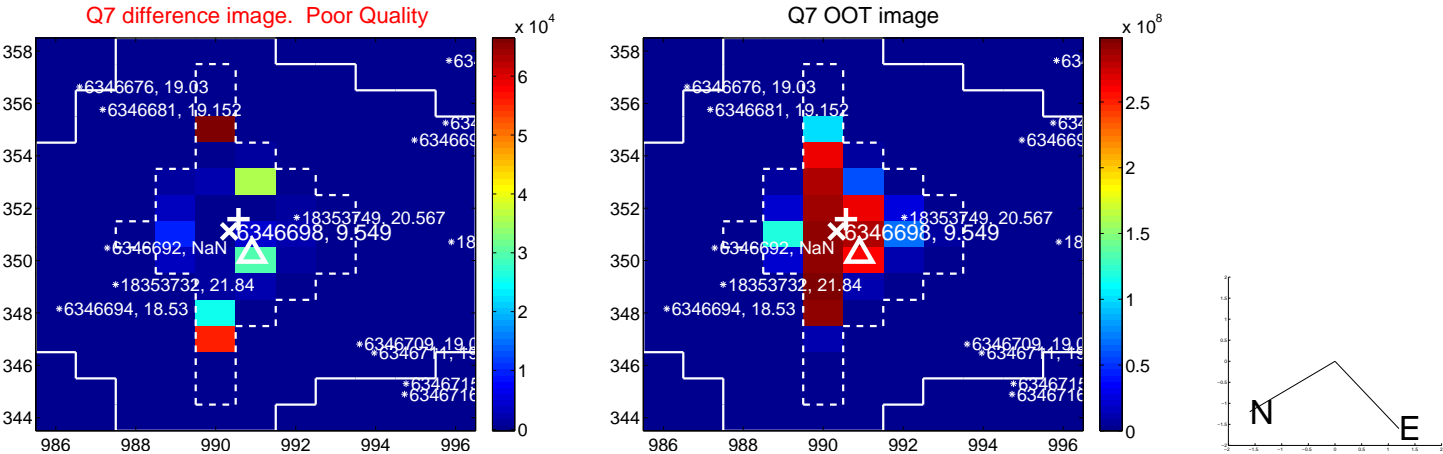
Q6 difference image. Poor Quality

Q6 OOT image



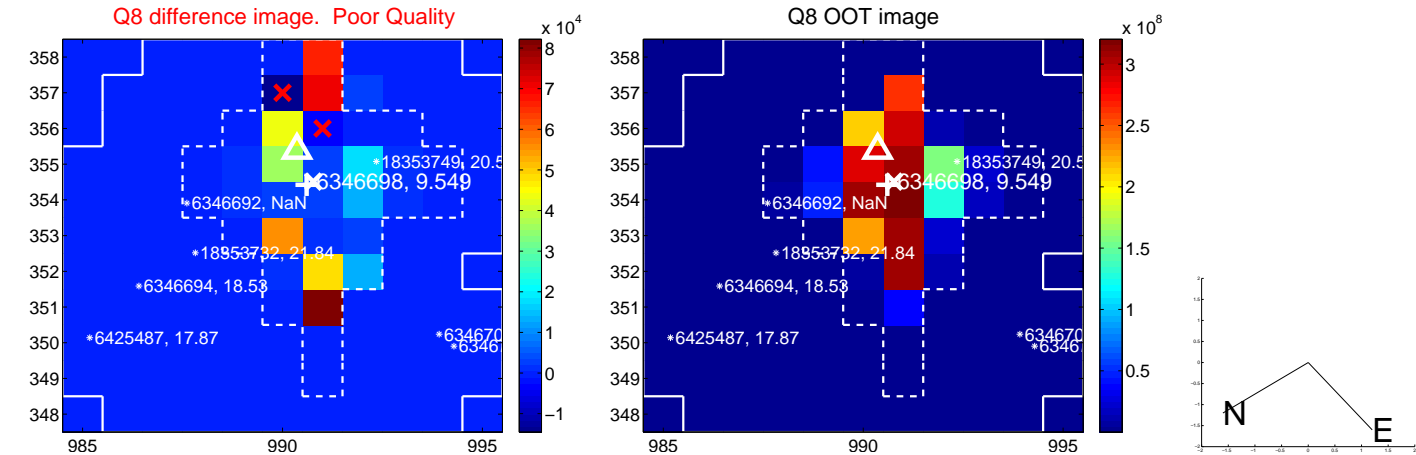
Q7 difference image. Poor Quality

Q7 OOT image

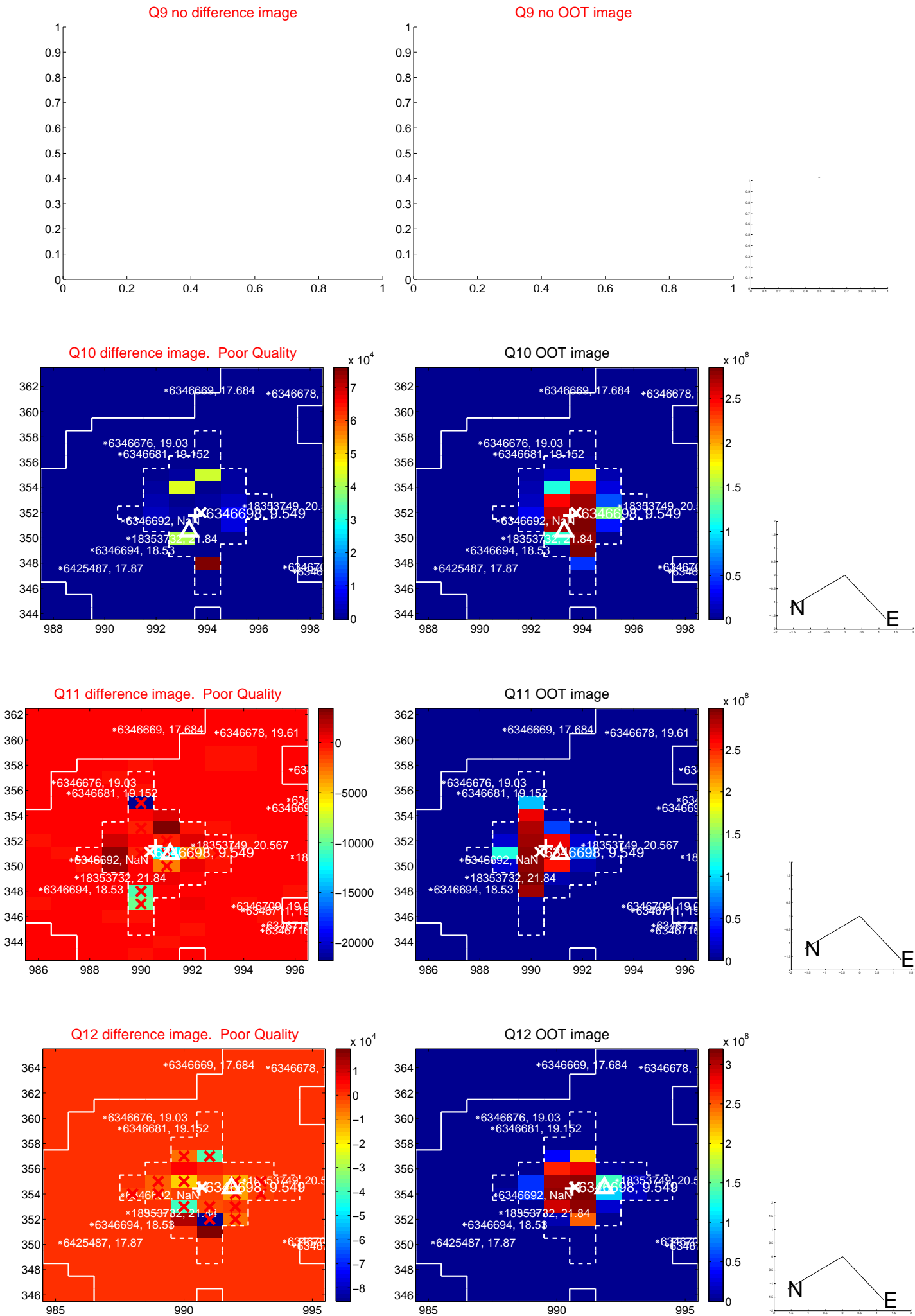


Q8 difference image. Poor Quality

Q8 OOT image

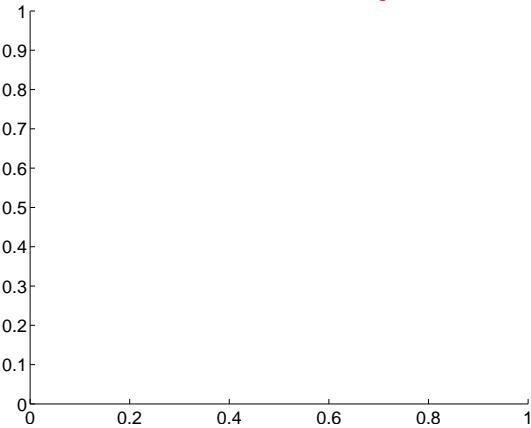


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

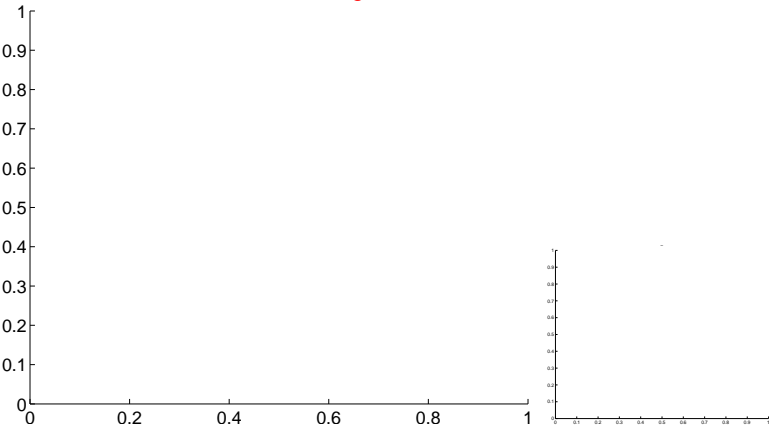


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q13 no difference image

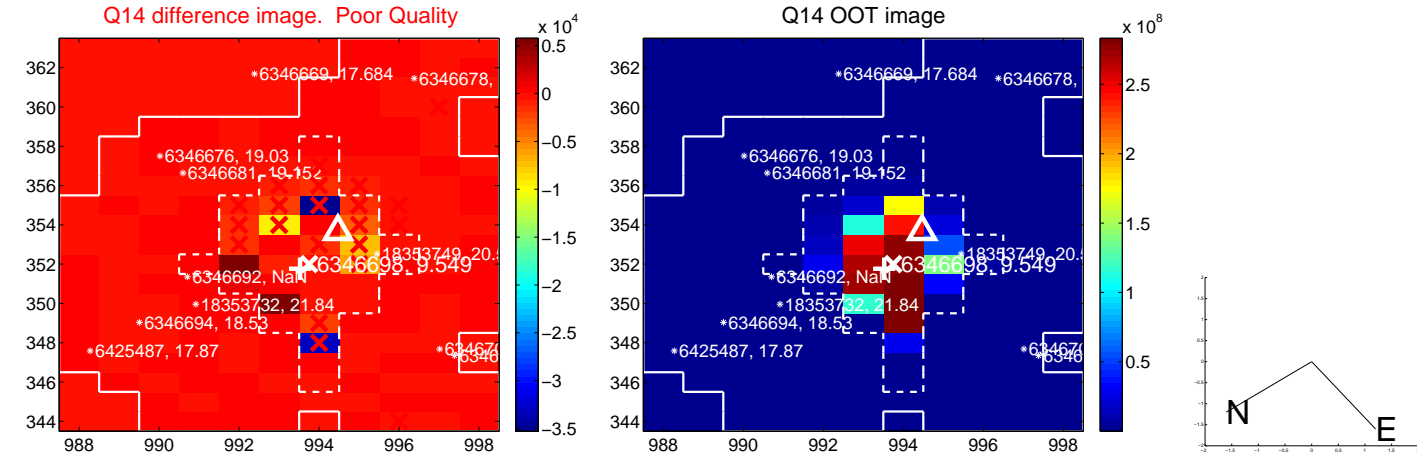


Q13 no OOT image



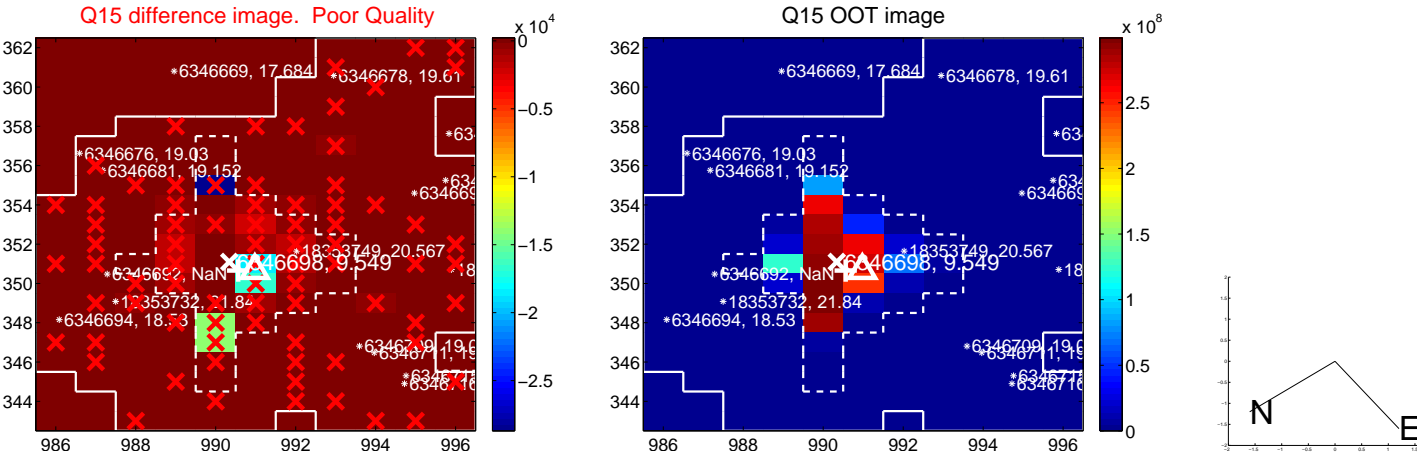
Q14 difference image. Poor Quality

Q14 OOT image



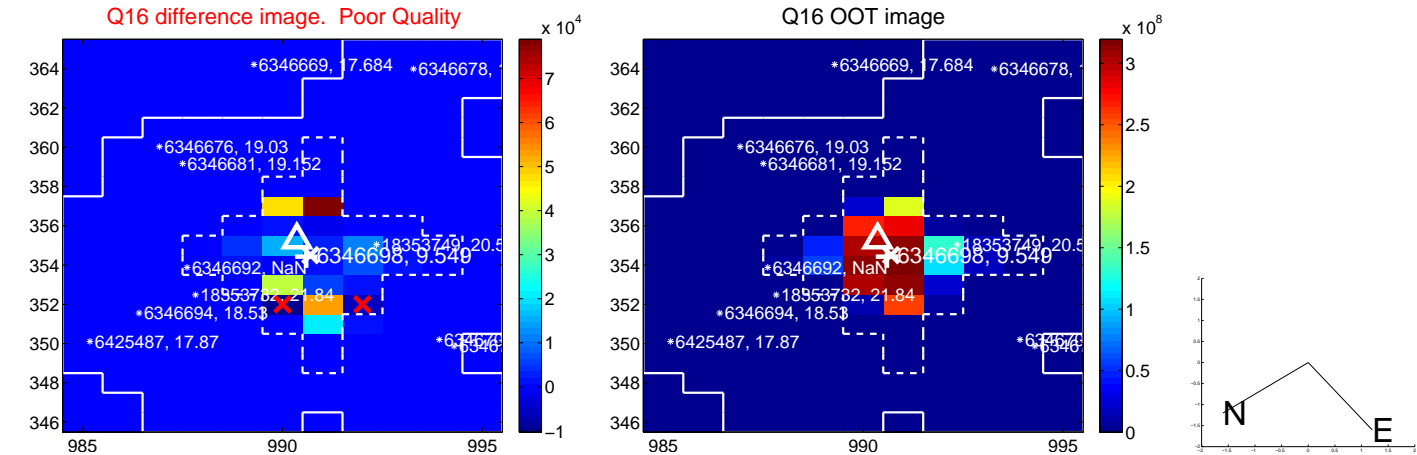
Q15 difference image. Poor Quality

Q15 OOT image

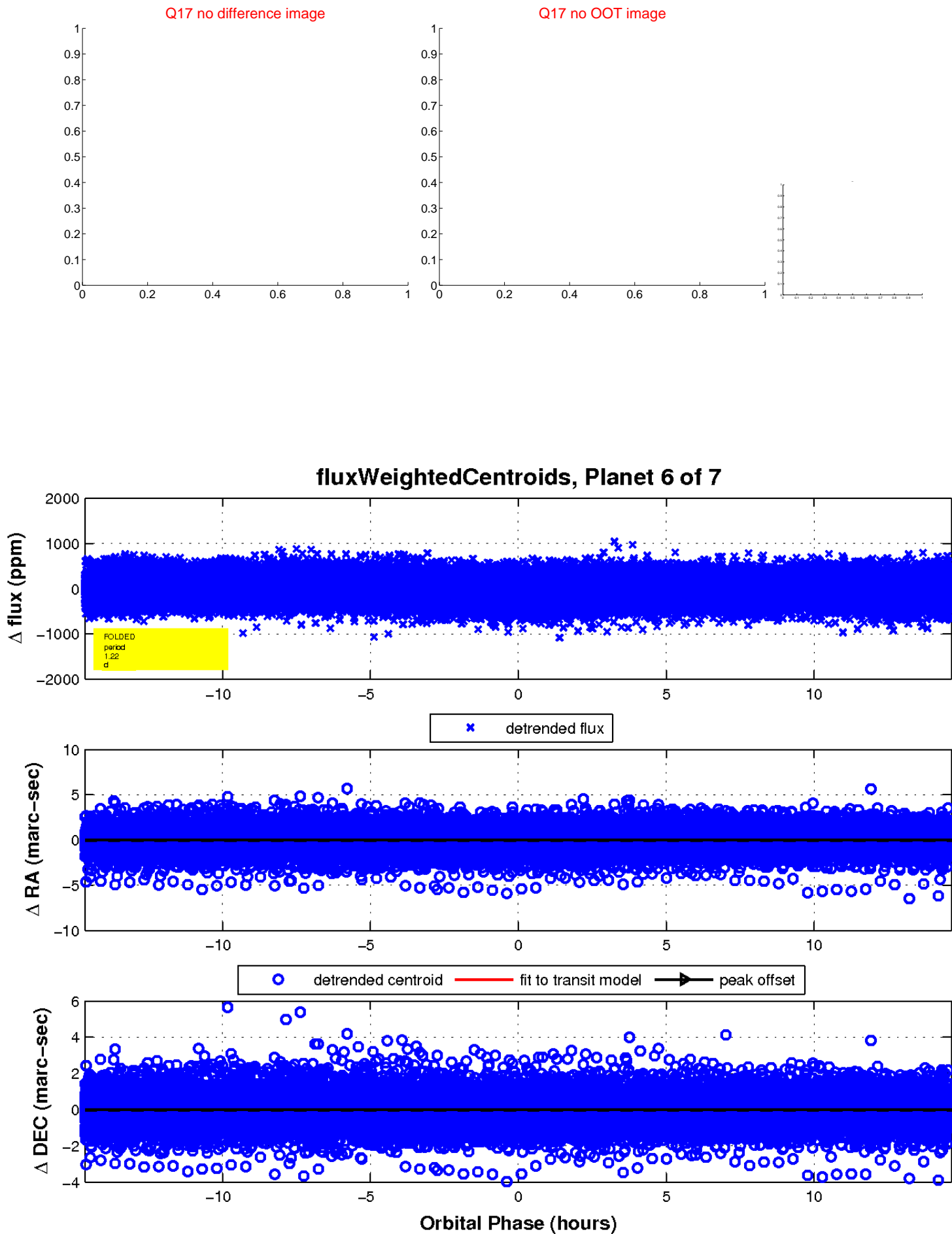


Q16 difference image. Poor Quality

Q16 OOT image



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



UKIRT Image

Declination

