

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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD— CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

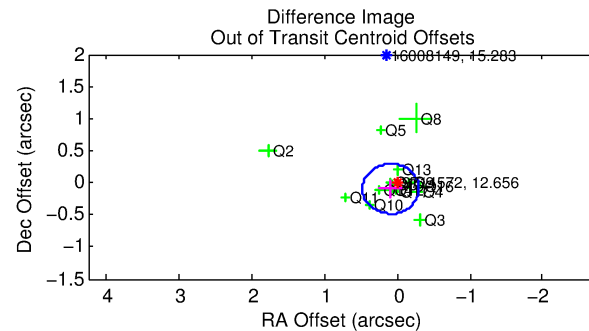
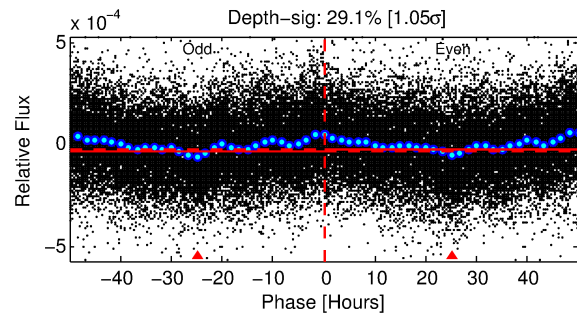
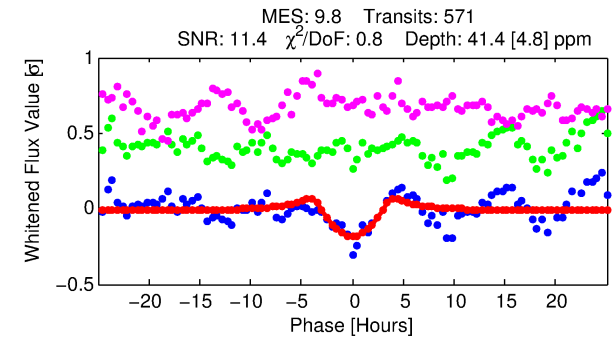
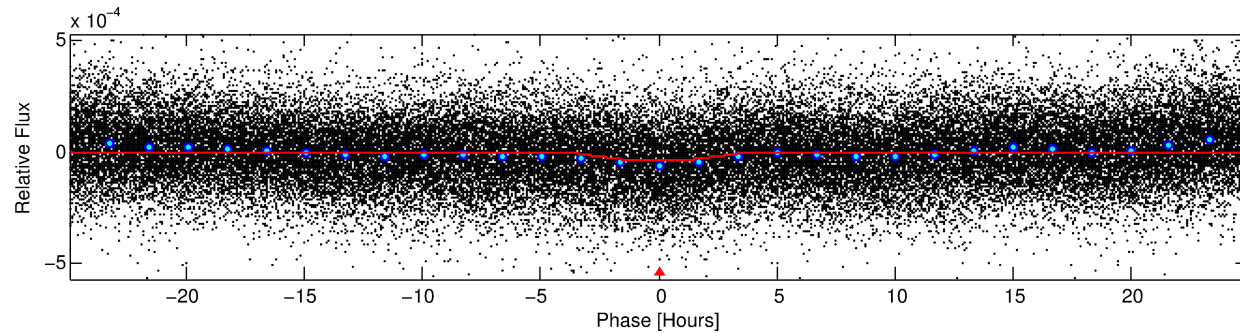
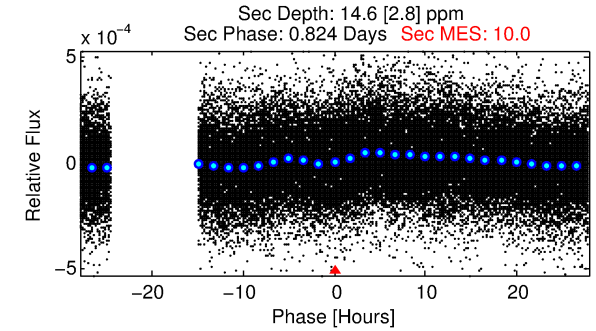
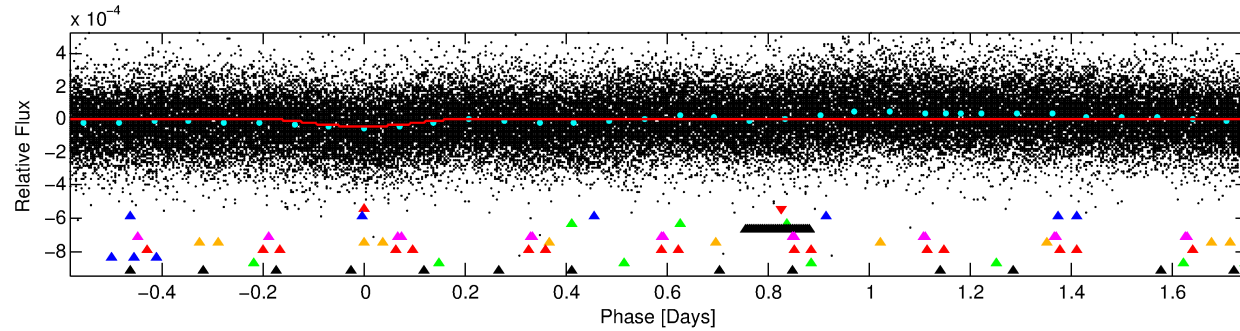
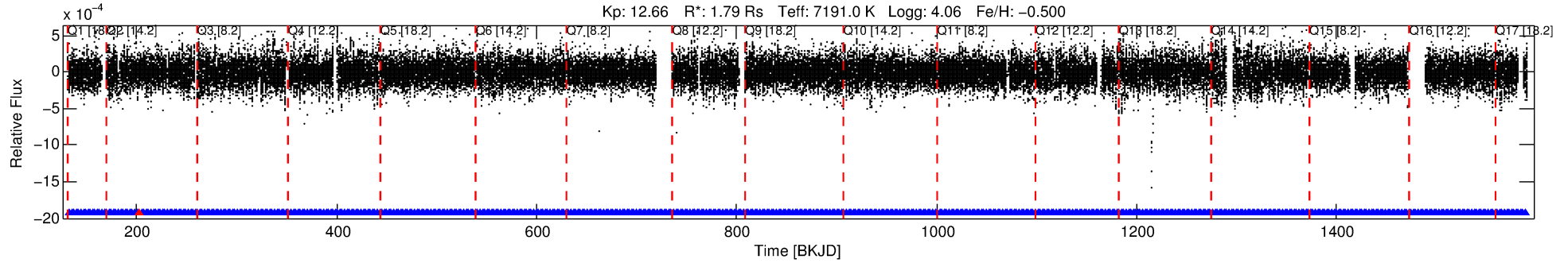
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-01

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 1 of 10 Period: 2.333 d



DV Fit Results:

Period = 2.33337 [0.00003] d
Epoch = 132.8706 [0.0104] BKJD
Rp/R* = 0.0118 [0.0163]
a/R* = 1.06 [0.02]
b = 1.00 [0.03]
Seff = 5336.90 [2580.89]
Teq = 2179 [263] K
Rp = 2.31 [3.28] Re
a = 0.0380 [0.0111] AU
Ag = 2.17 [6.10] [0.19σ]
Teffp = 4089 [2844] K [0.67σ]

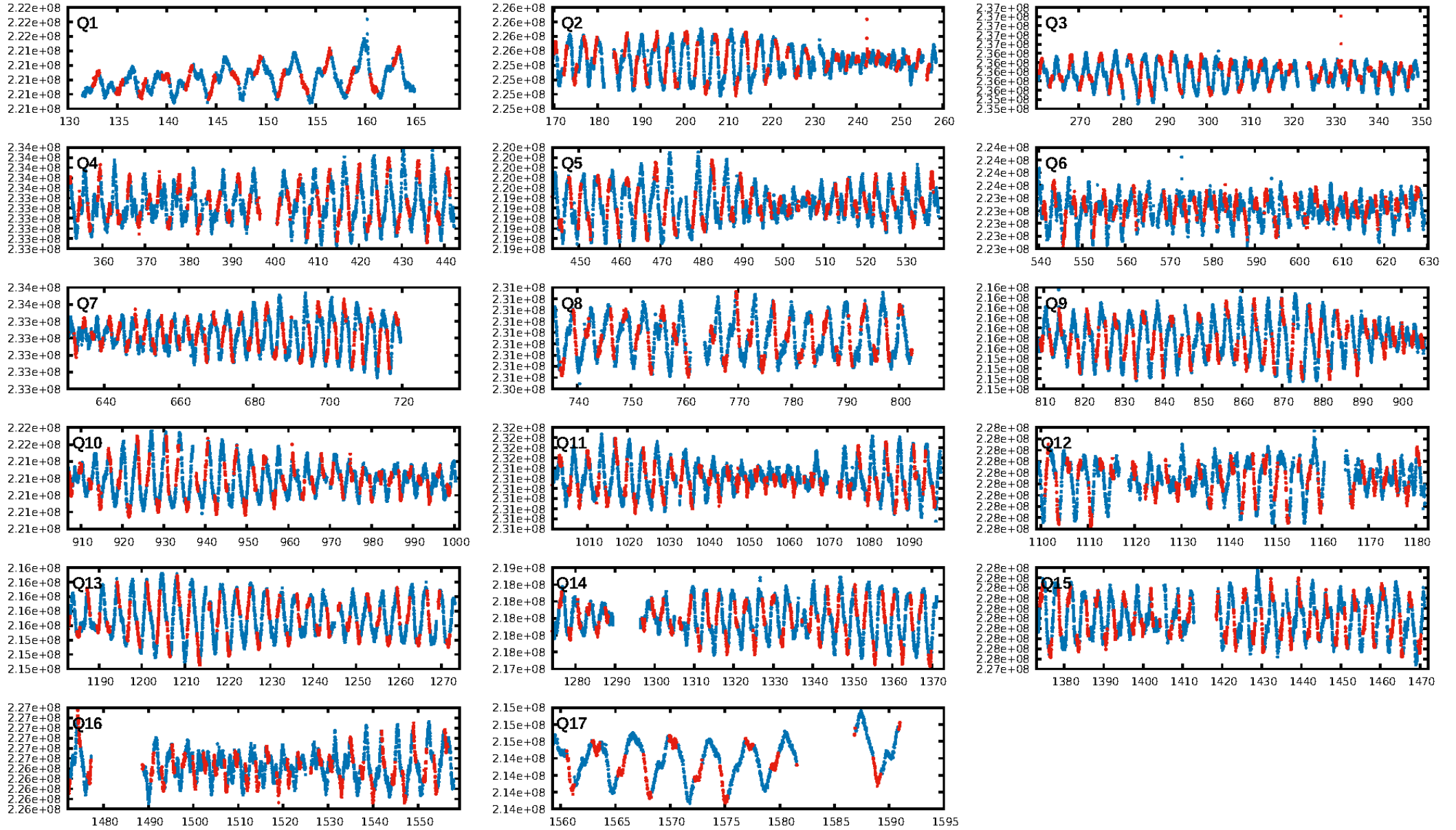
DV Diagnostic Results:

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 [546/547]
GhostDiagnostic-chr: 1.652
Centroid-sig: 11.5%
Centroid-so: 1.032 arcsec [1.37σ]
OotOffset-rm: 0.133 arcsec [1.02σ]
KicOffset-rm: 0.321 arcsec [2.87σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.67 [10/15]
DiffImageOverlap-fno: 0.88 [15/17]

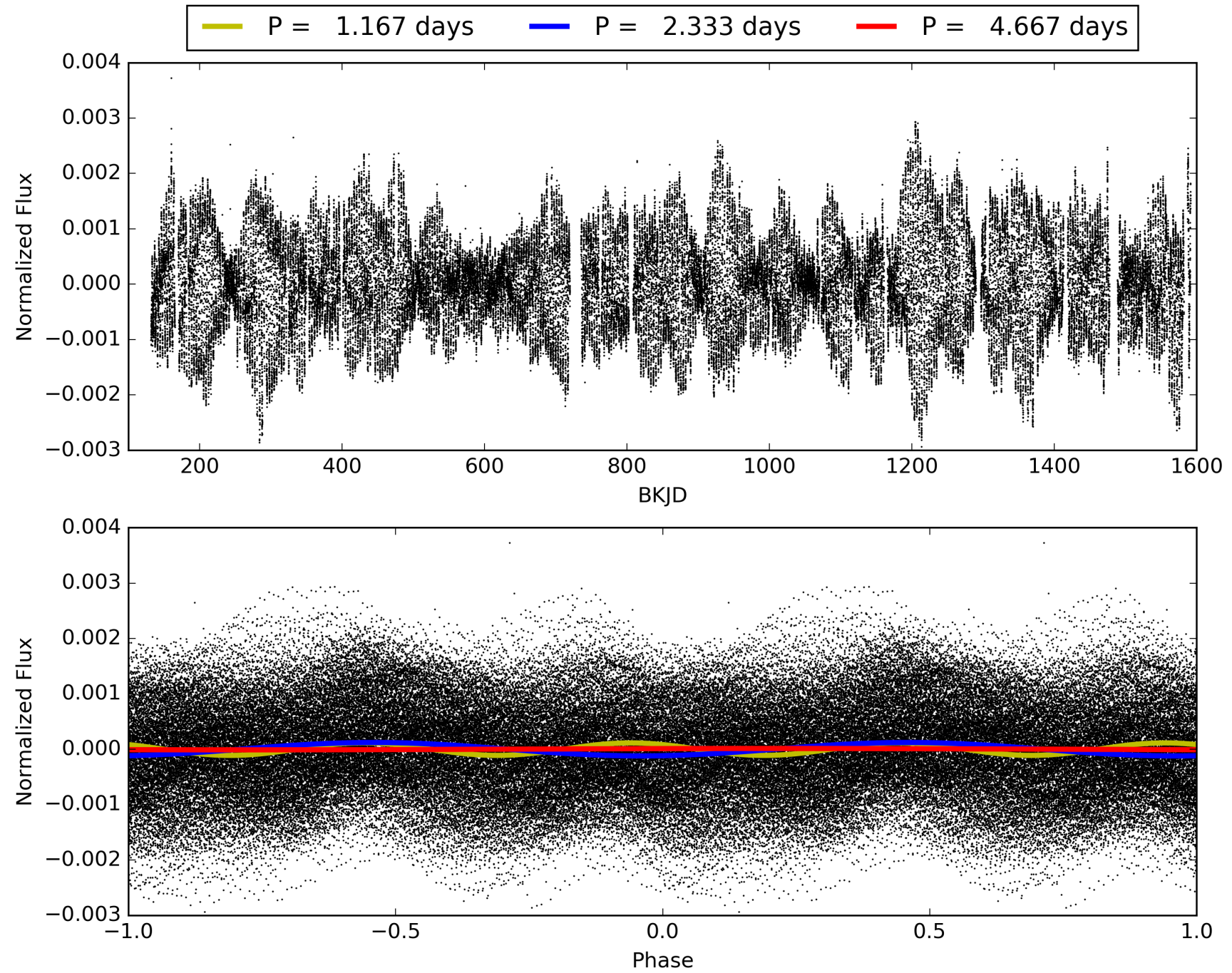
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:00 Z

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

TCE 009714572-01, PDC Light Curves

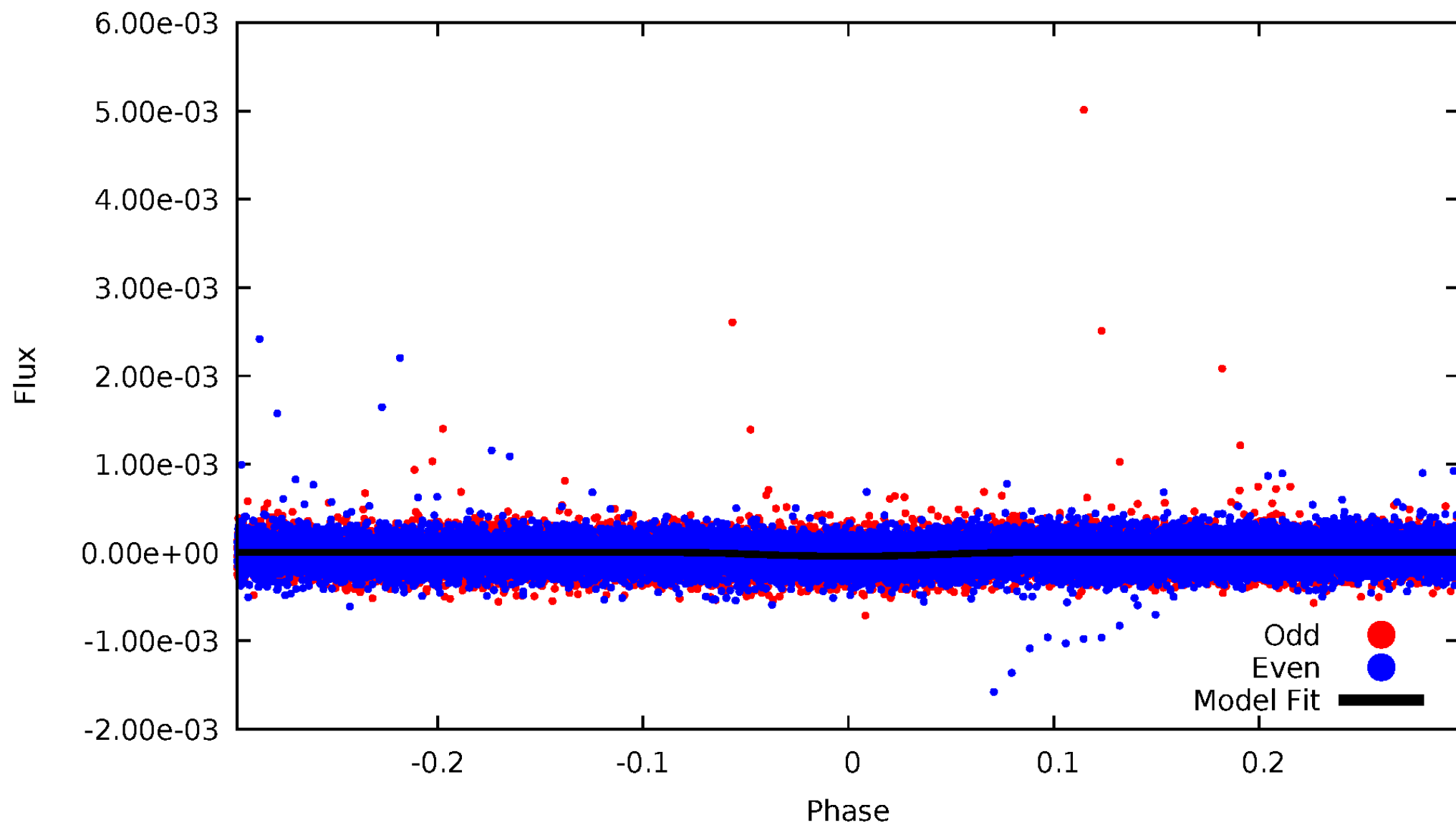


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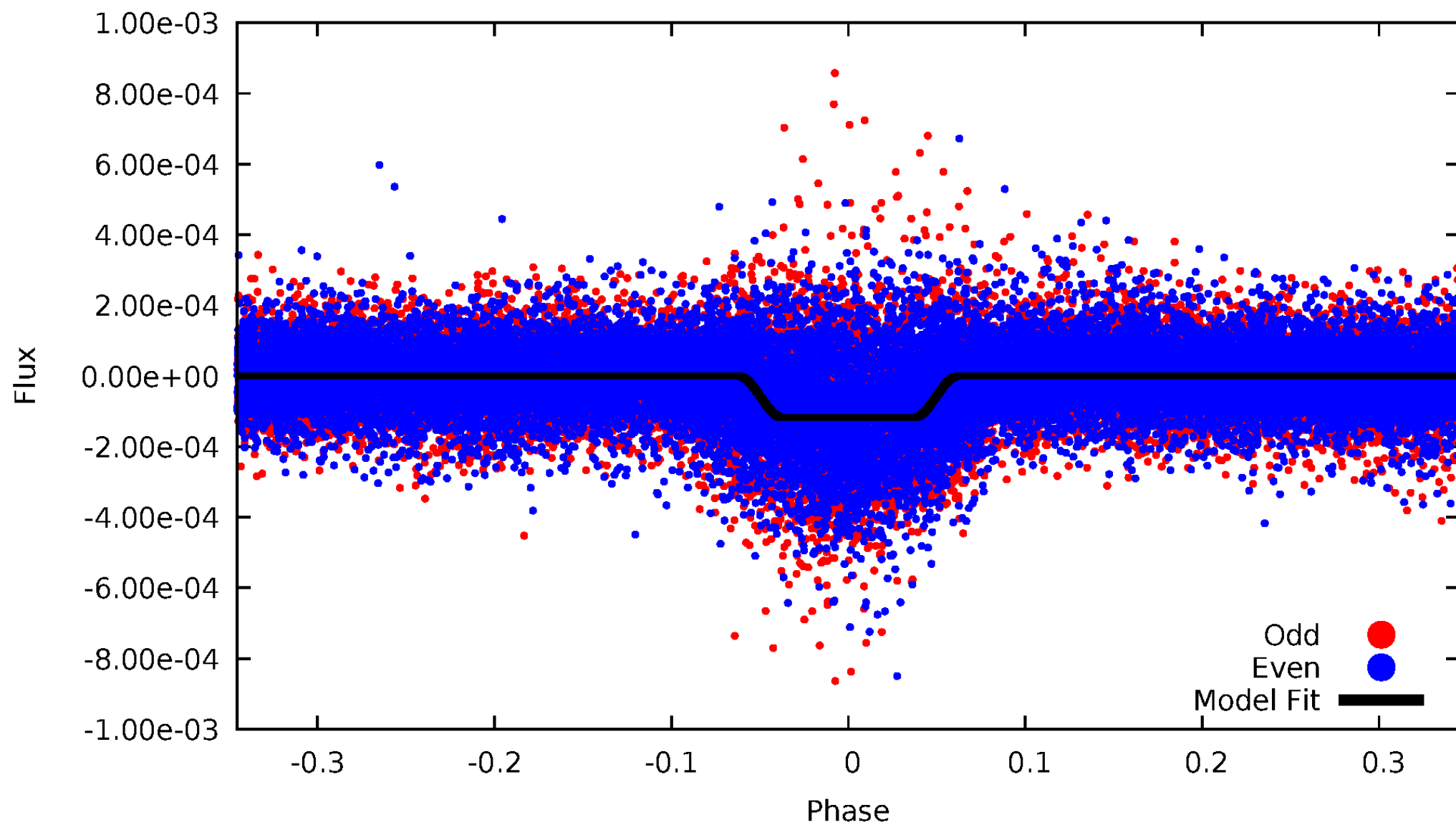
DV Odd/Even

TCE 009714572-01

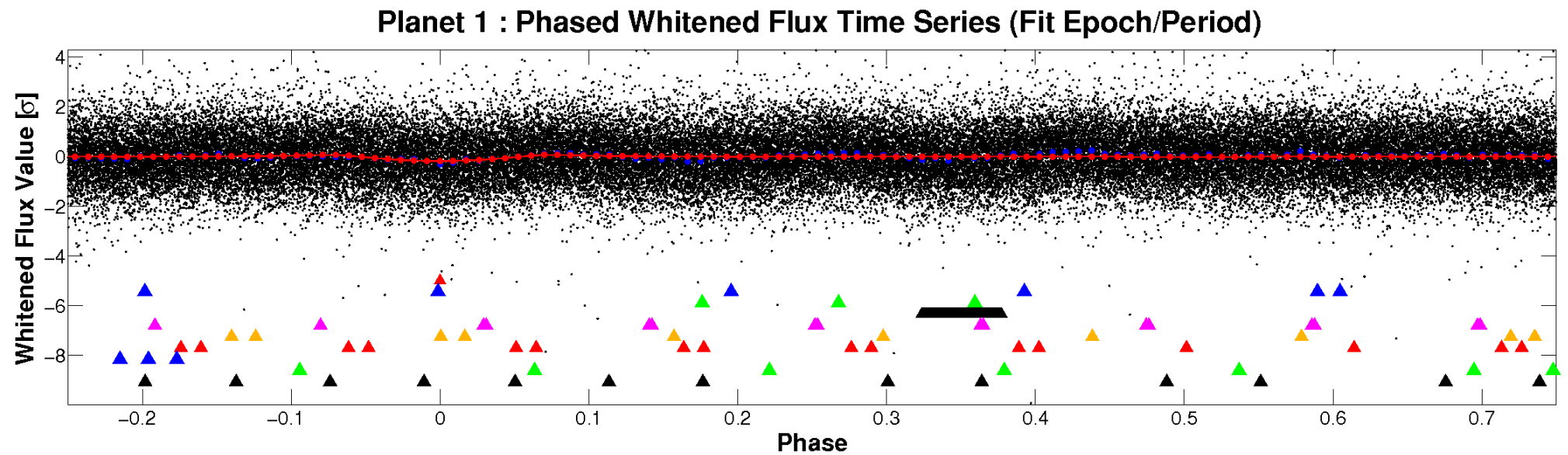
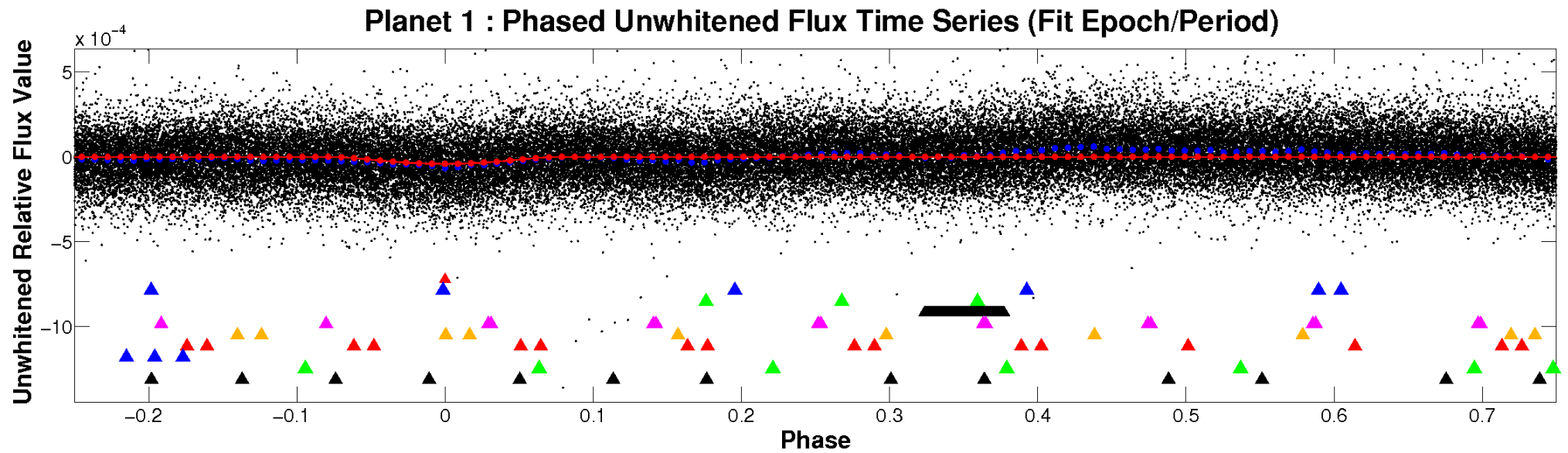


ALT Odd/Even

TCE 009714572-01

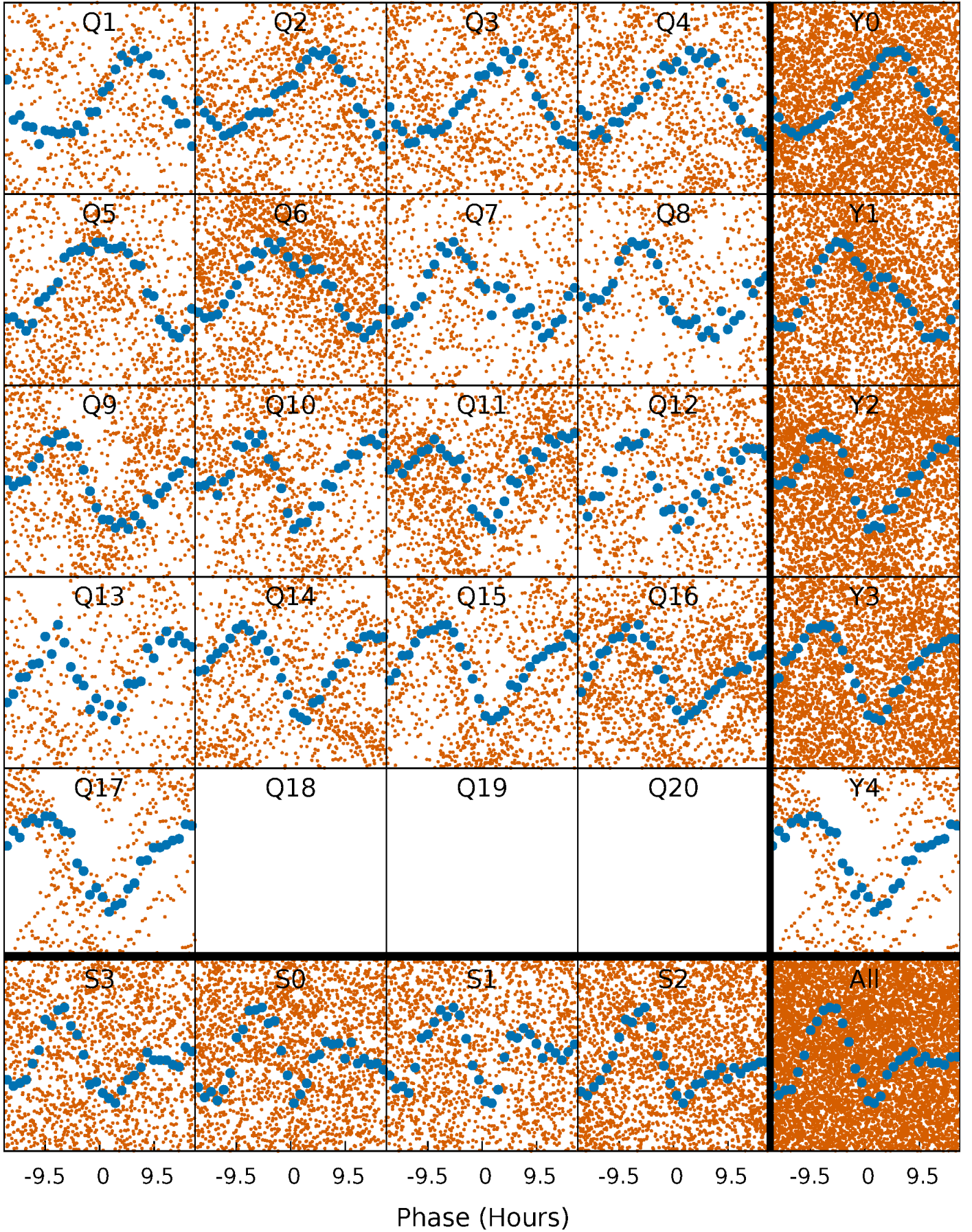


Non-Whitened Vs. Whitened Light Curve



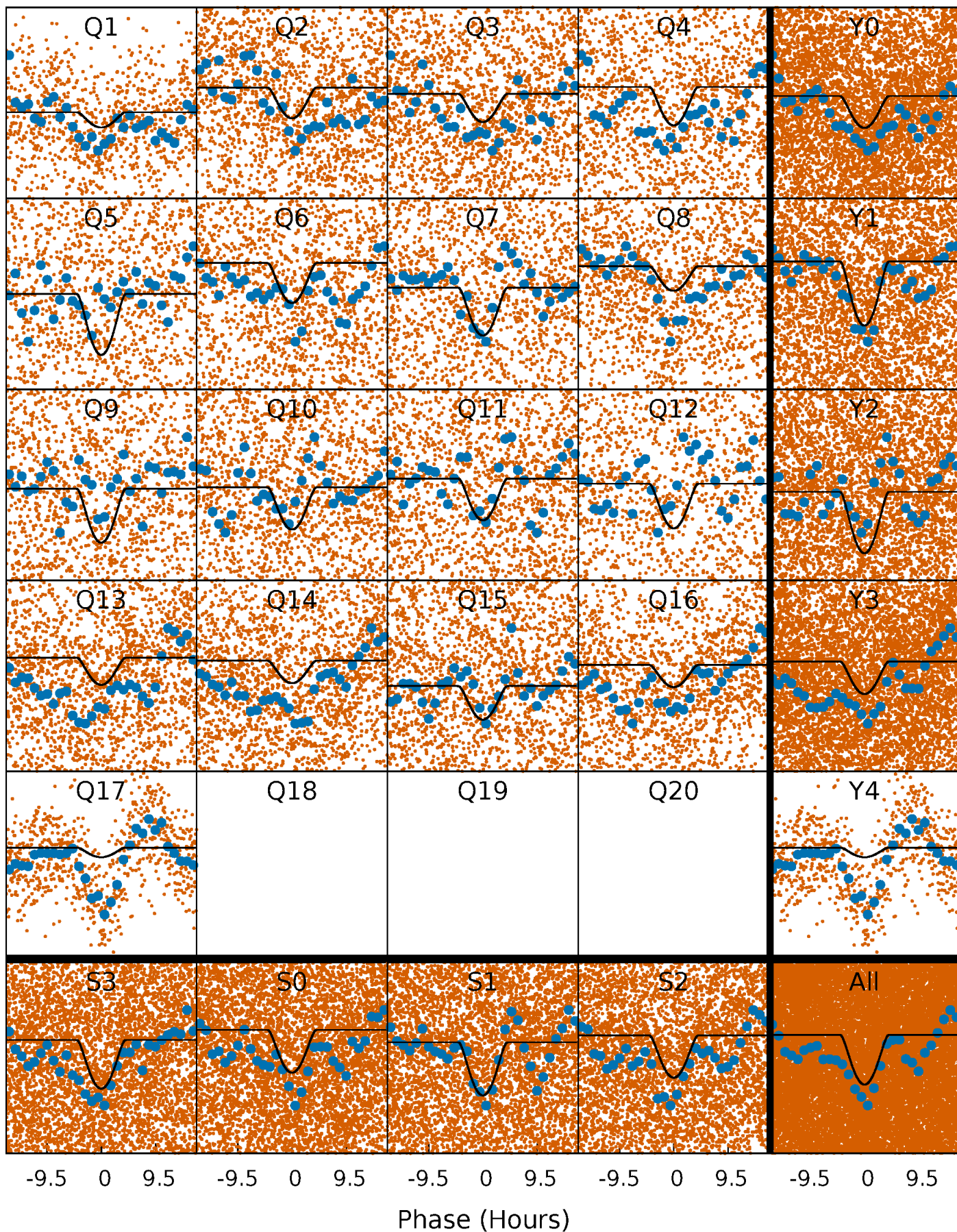
PDC Quarter-Phased Transit Curves

TCE 009714572-01 P= 2.333366 Days $T_0=132.870551$ (BKJD)



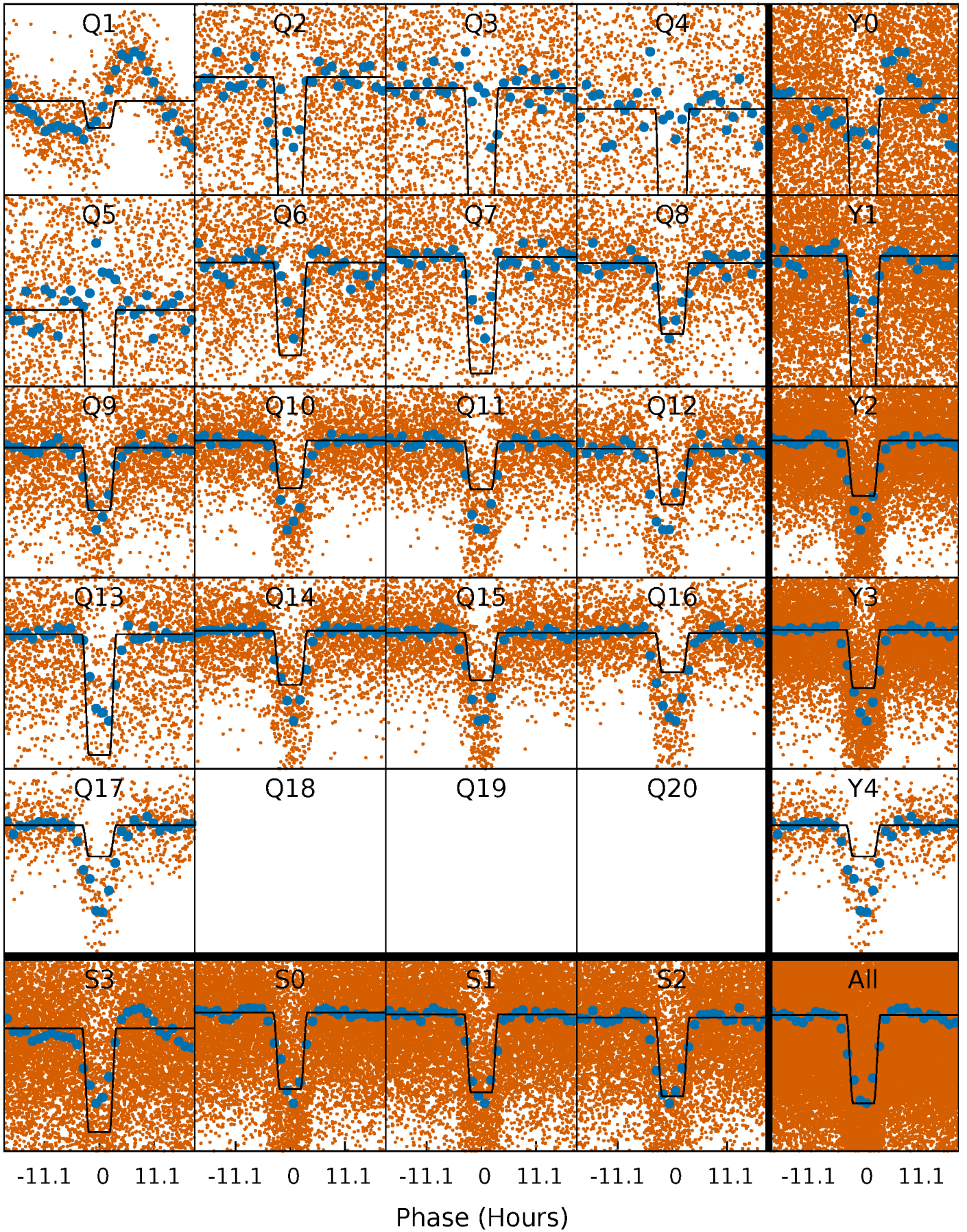
DV Quarter-Phased Transit Curves

TCE 009714572-01 P= 2.333366 Days $T_0=132.870551$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

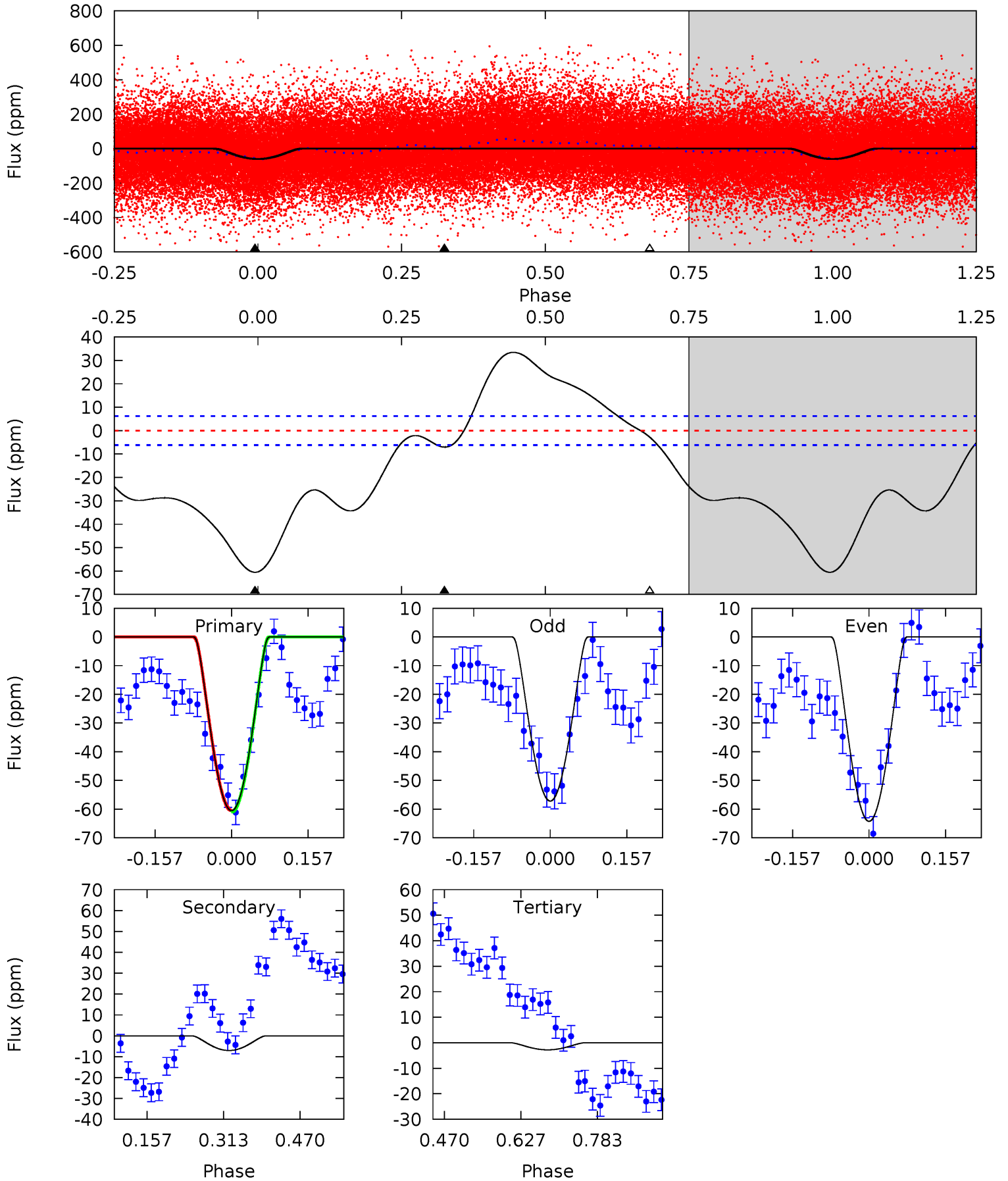
TCE 009714572-01 P= 2.333455 Days $T_0=132.860187$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-01, P = 2.333366 Days, E = 130.537185 Days

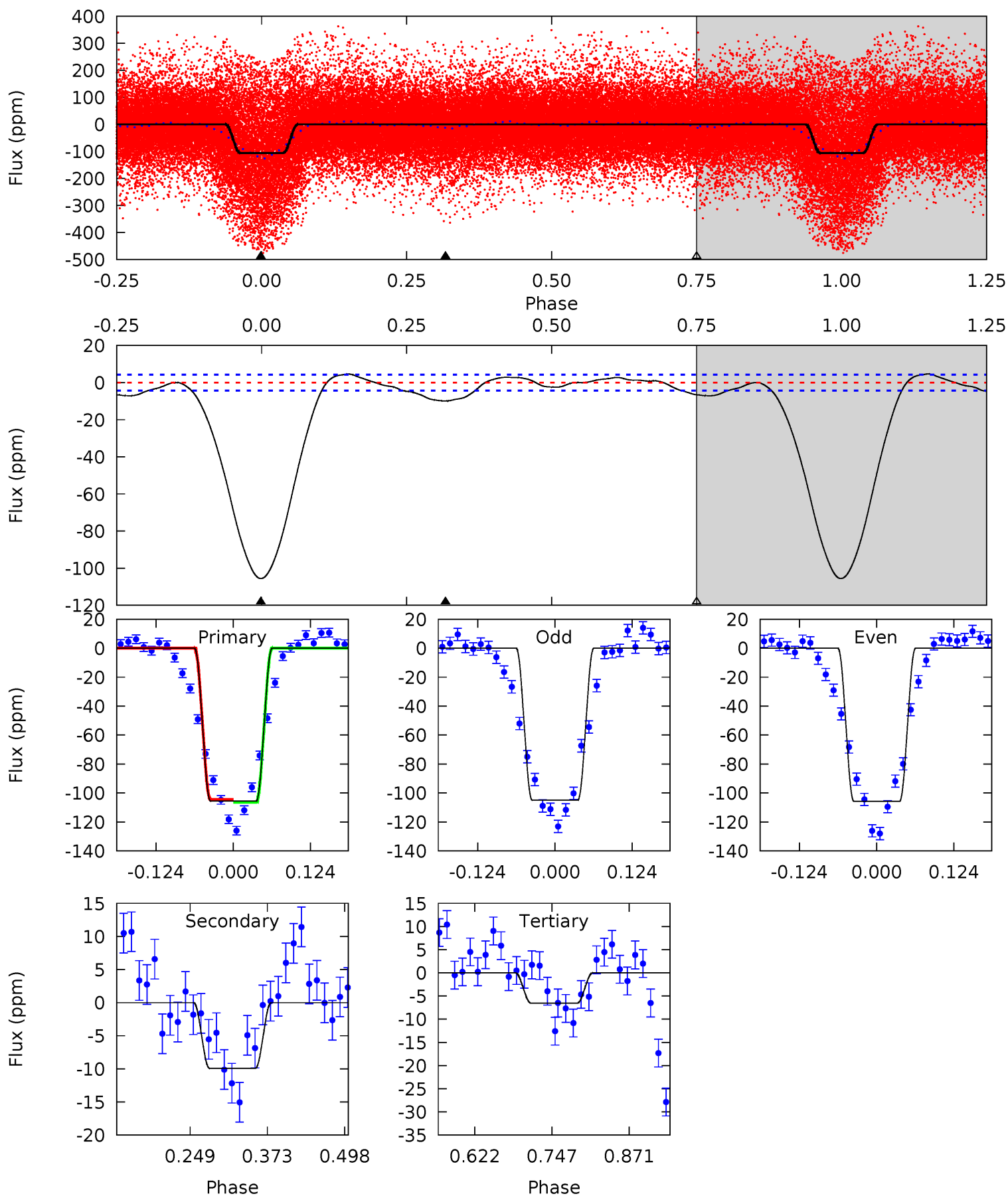
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.8	5.09	2.00	0	4.47	1.42	14.6	41.8	43.8	3.09	5.09	2.55	1.07	0.36	0.20



Alt Model-Shift Uniqueness Test

009714572-01, P = 2.333455 Days, E = 130.526732 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
111.2	10.4	6.91	0	4.52	1.54	3.28	104.3	111.2	3.54	10.4	0.47	1.01	0.04	1.05



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 1	$3.17^{+2.72}_{-2.16}$	3010^{+268}_{-283}	3009^{+2044}_{-5791}	$0.589^{+4.880}_{-0.439}$
Alt.	-10 ± 1	$2.89^{+2.99}_{-1.86}$	2997^{+253}_{-252}	3380^{+1893}_{-5942}	$0.901^{+6.331}_{-0.680}$

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

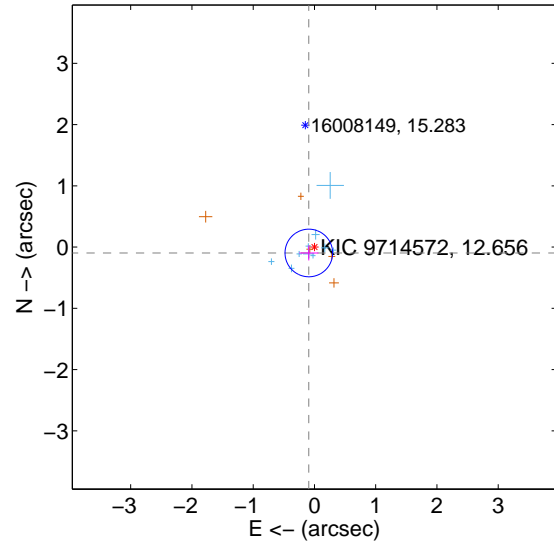
Supplemental centroid analysis for 009714572-01. Kepler magnitude: 12.66. Transit SNR 11.39

There are 10 quarters with good PRF difference image offsets

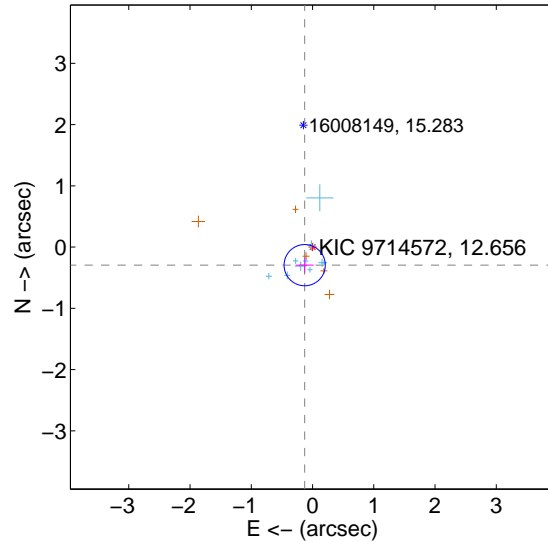
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.133 ± 0.130	1.02	0.092 ± 0.157	-0.096 ± 0.122
PRF-fit source offset from KIC position	0.321 ± 0.112	2.87	0.128 ± 0.148	-0.295 ± 0.124
photometric centroid source offset	1.03 ± 0.75	1.37	0.20 ± 0.45	-1.01 ± 0.76

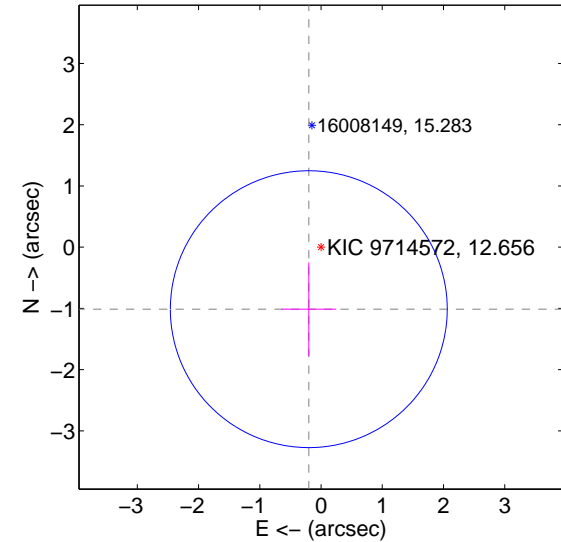
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

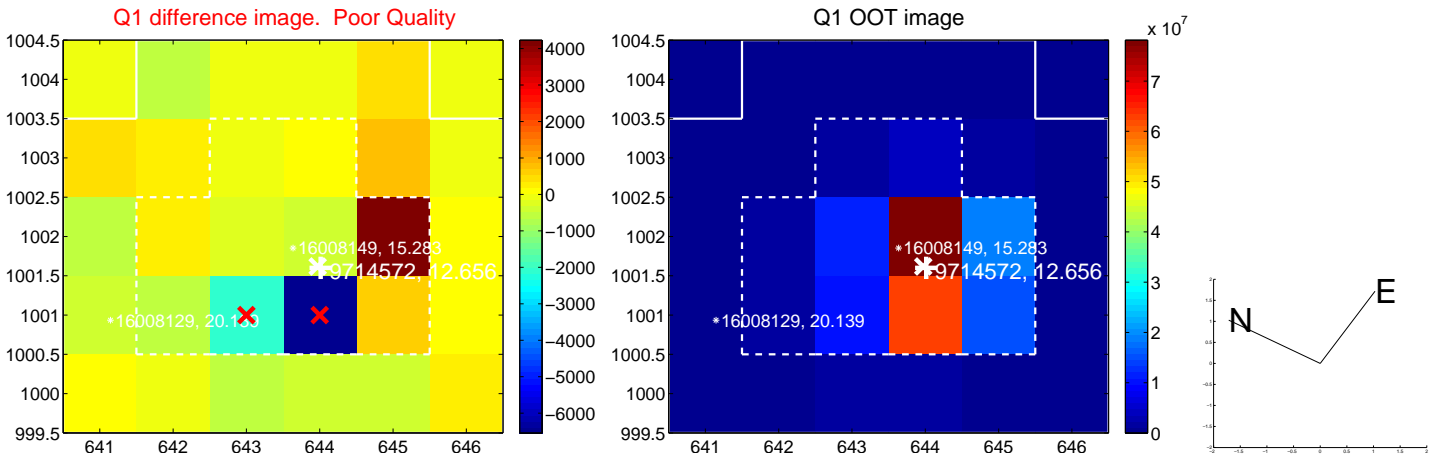


offset from photometric centroids

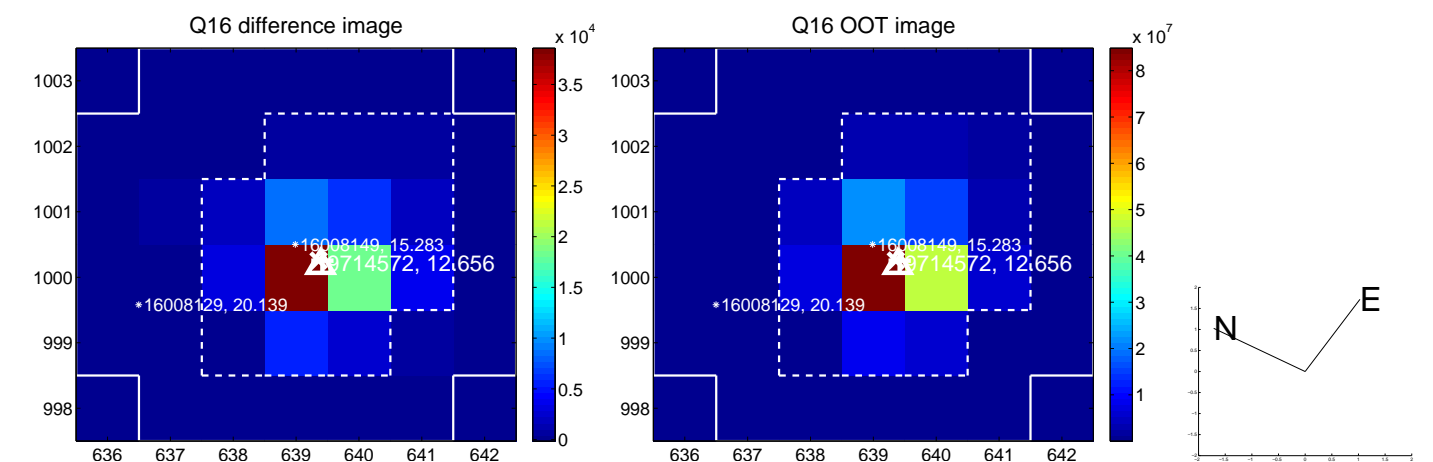
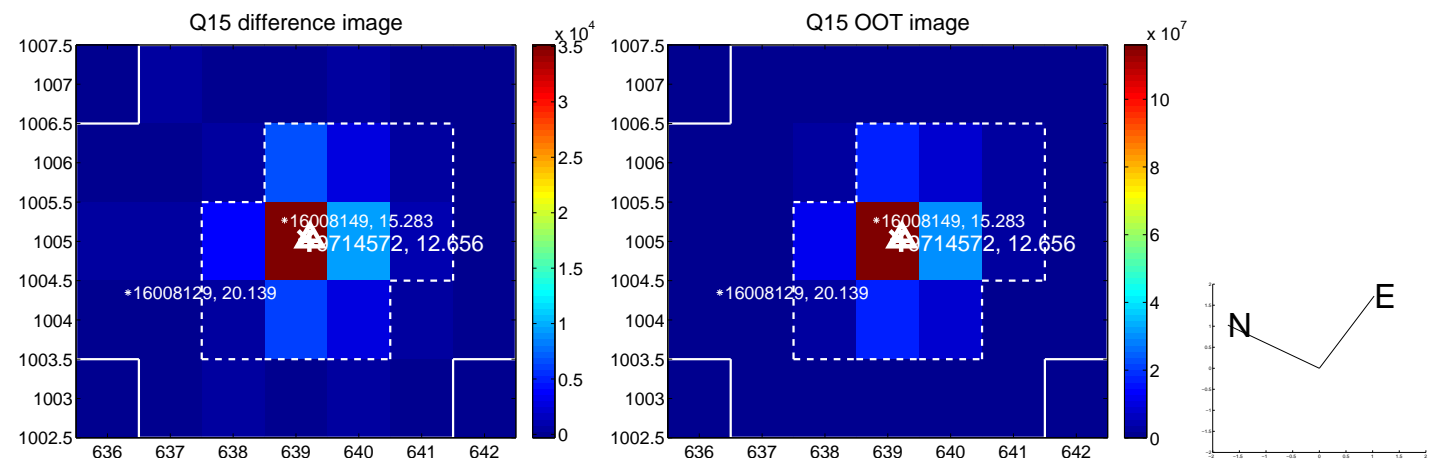
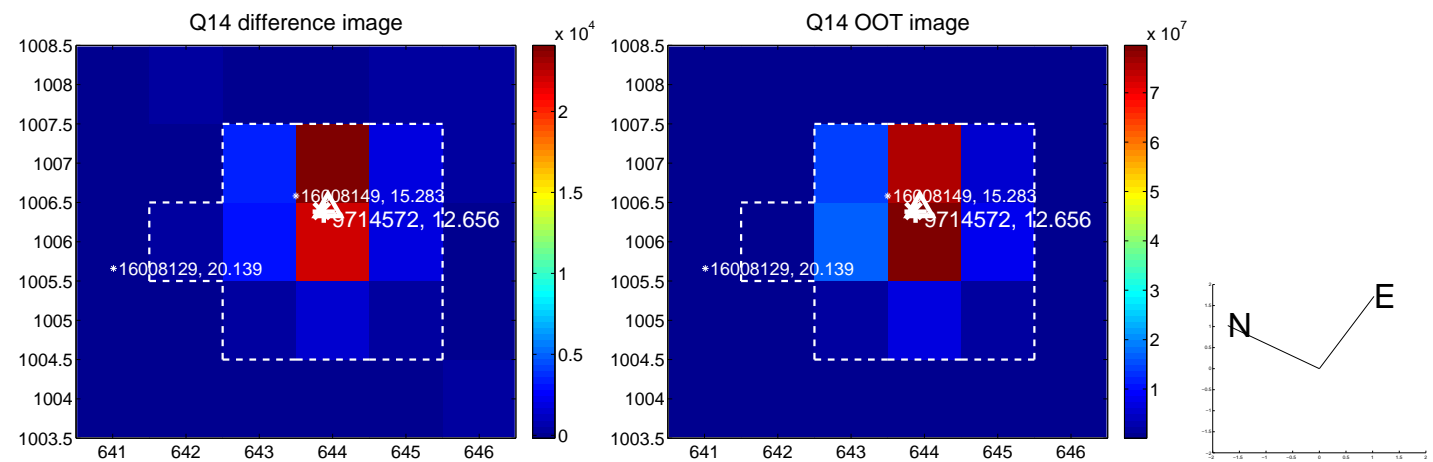
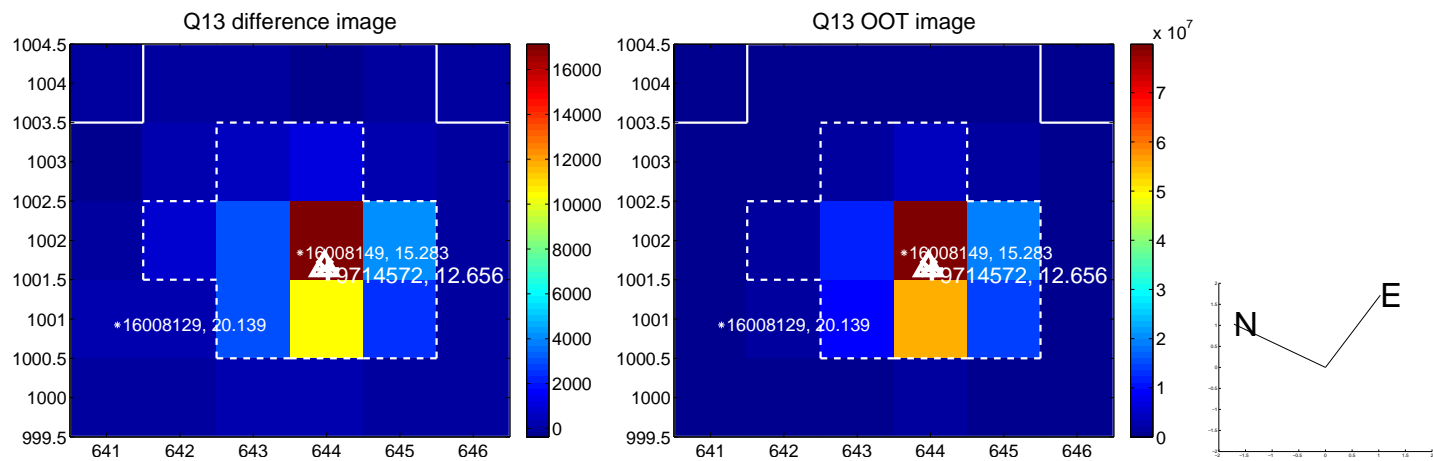


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

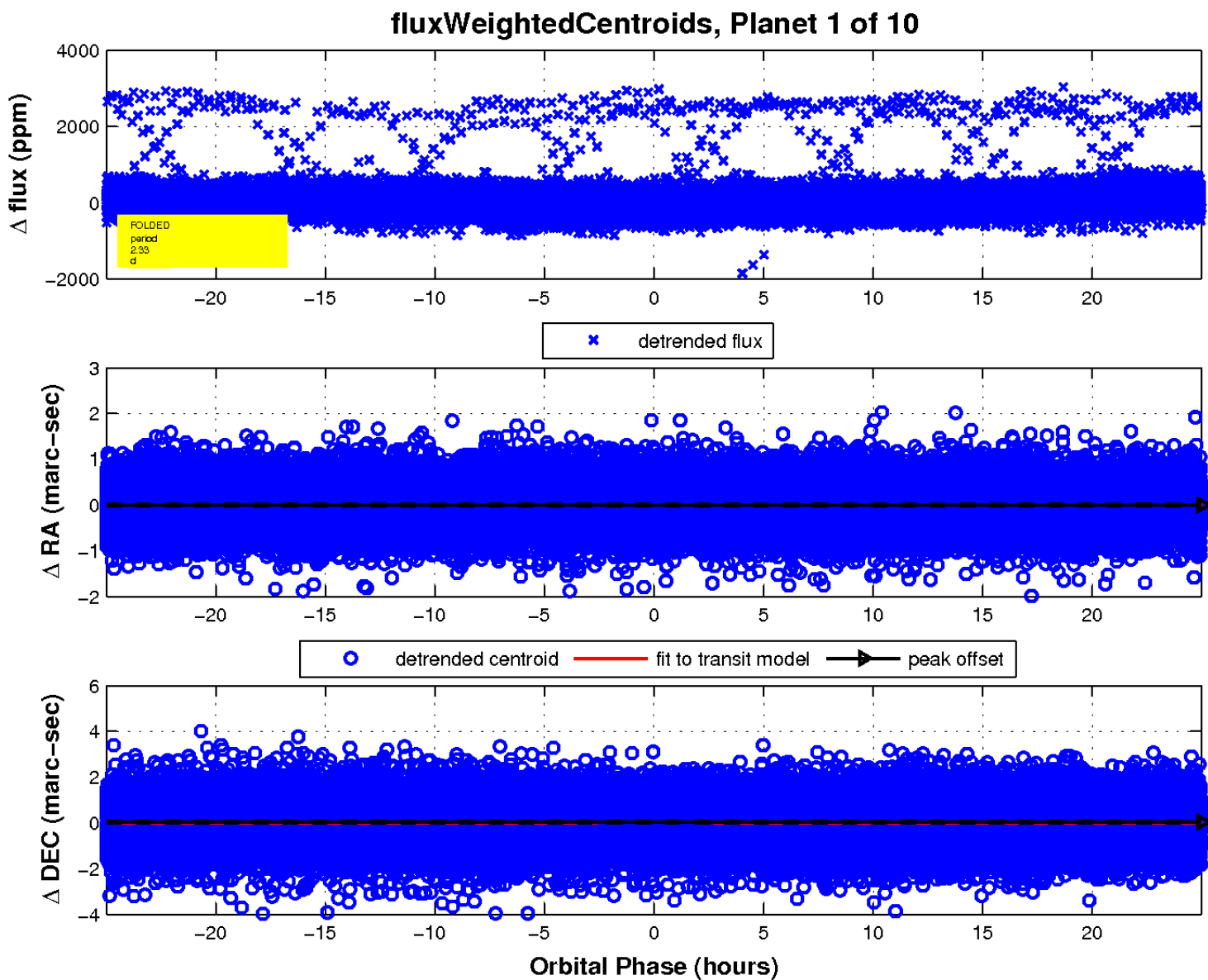
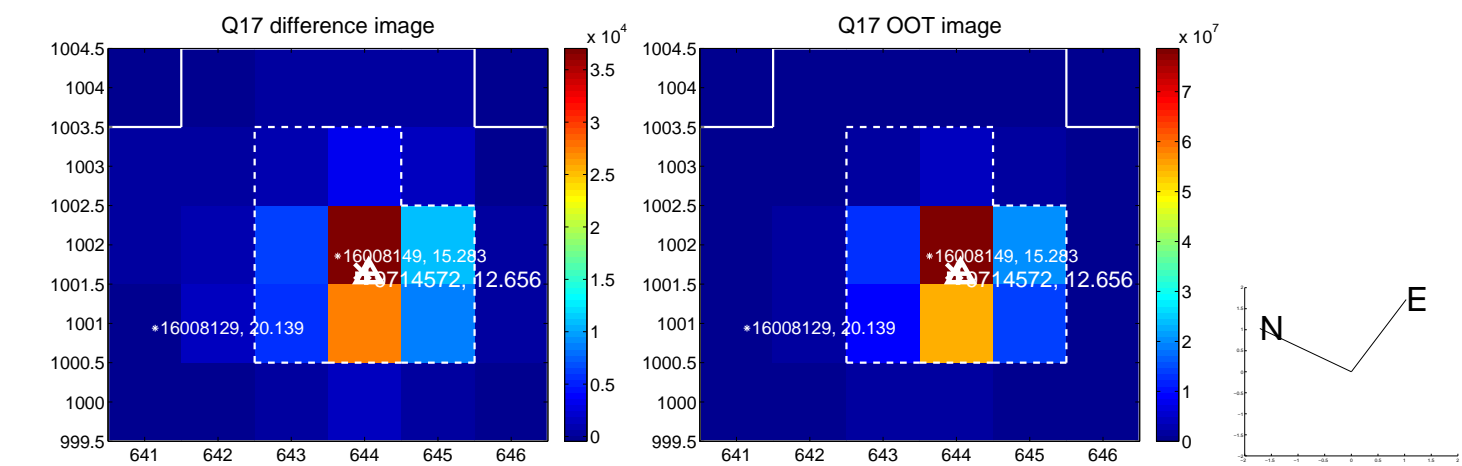
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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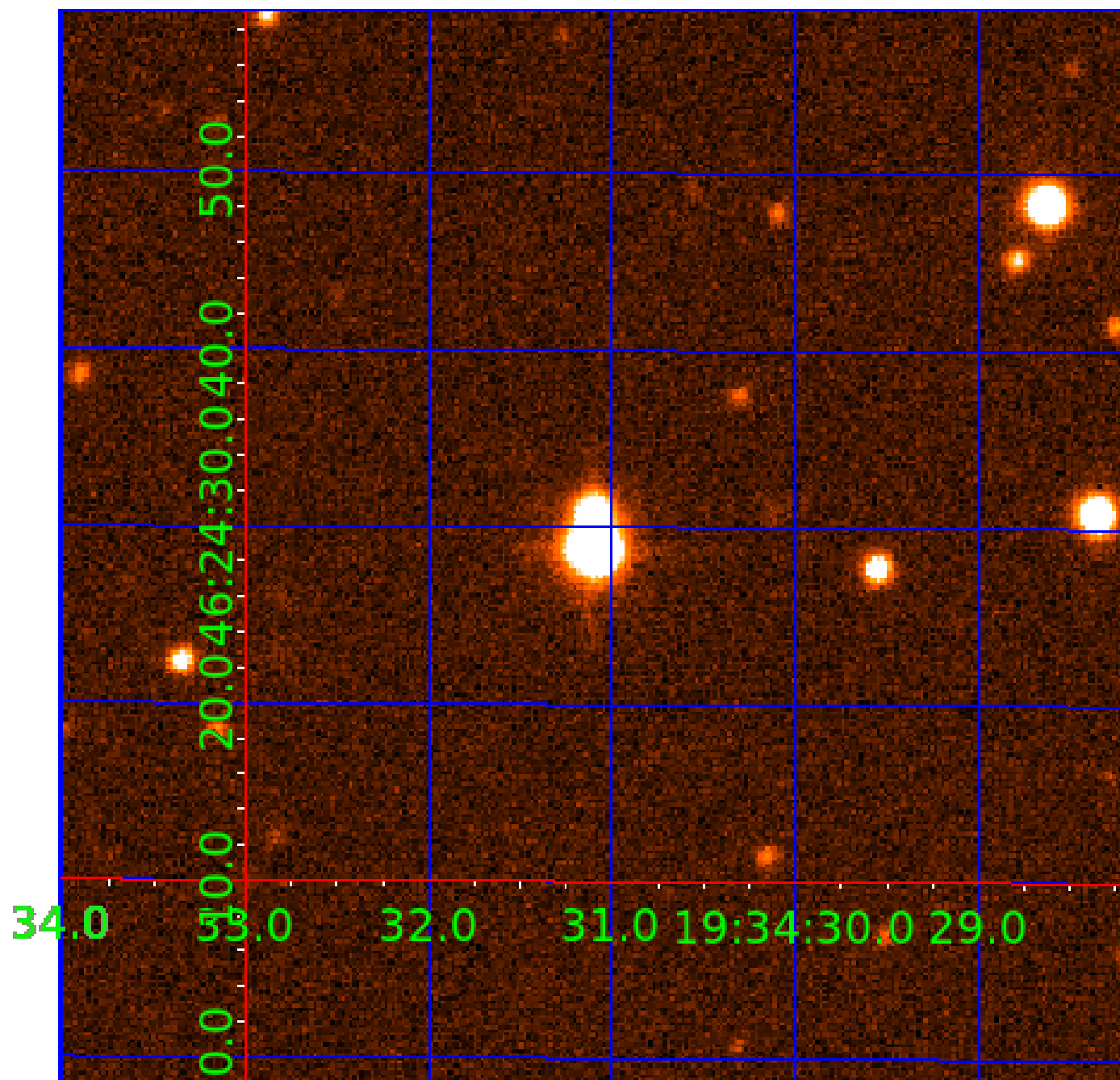


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UKIRT Image

Declination



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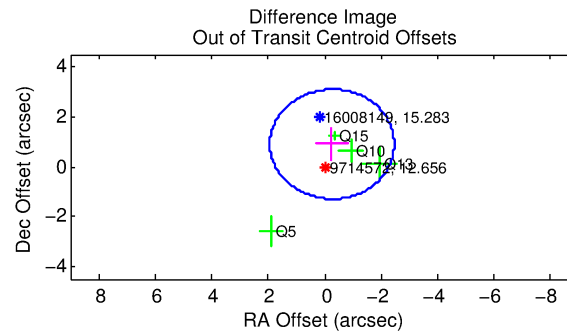
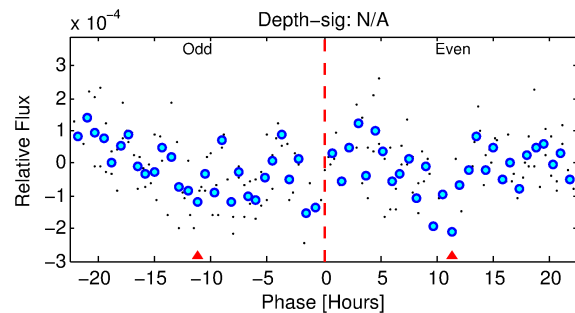
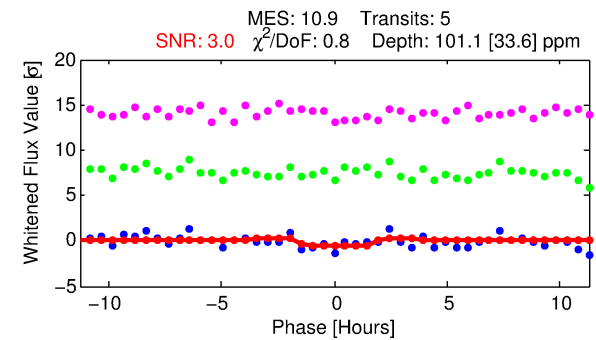
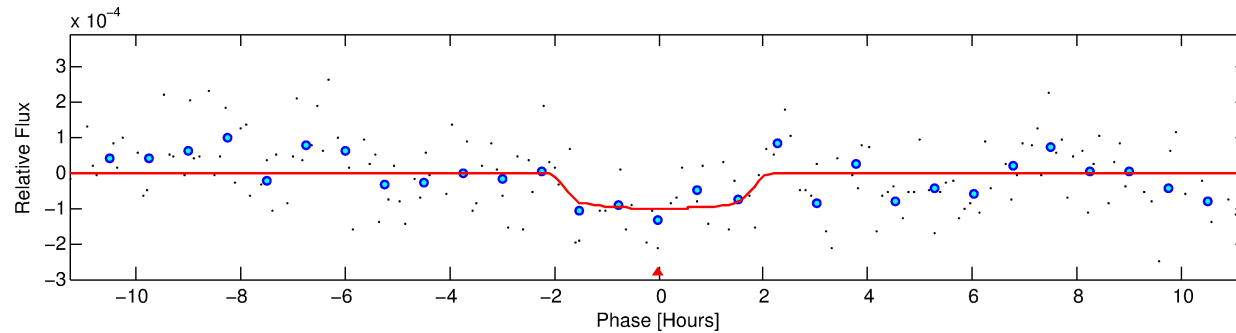
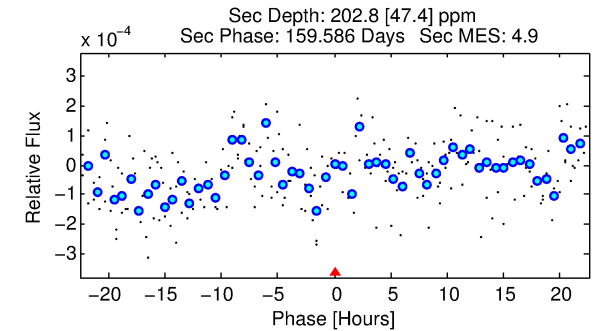
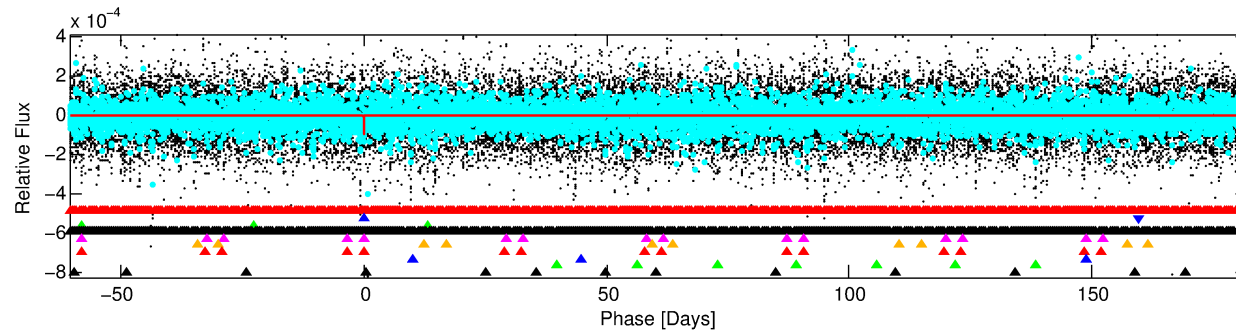
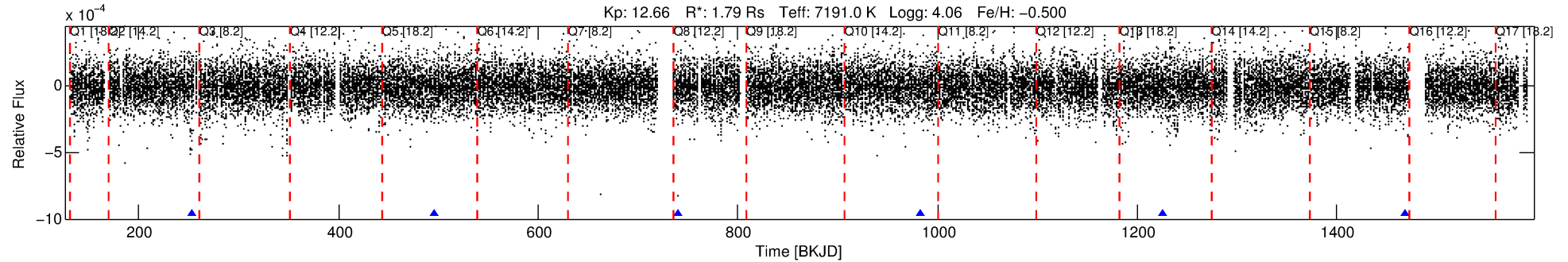
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-02

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 2 of 10 Period: 243.130 d



DV Fit Results:

Period = 243.12967 [0.00468] d
Epoch = 253.2832 [0.0169] BKJD
Rp/R* = 0.0099 [0.0140]
a/R* = 360.69 [3076.51]
b = 0.70 [6.26]
Seff = 10.88 [5.26]
Teq = 463 [56] K
Rp = 1.93 [2.80] Re
a = 0.8417 [0.2465] AU
Ag = 21146.99 [60723.32] [0.35σ]
Teffp = 8635 [6132] K [1.33σ]

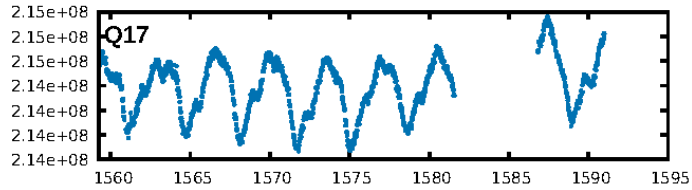
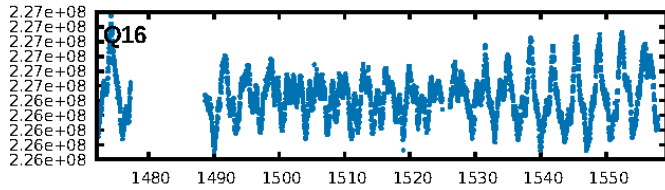
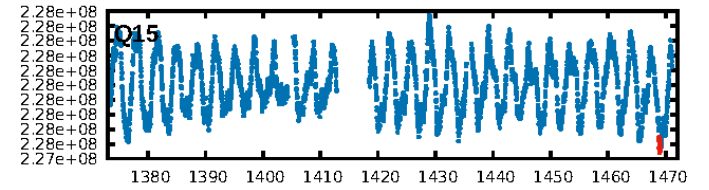
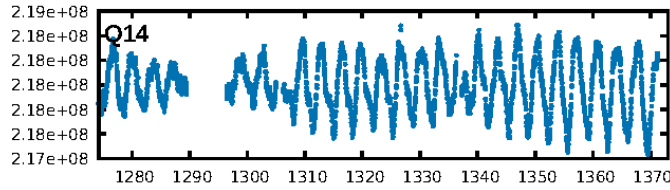
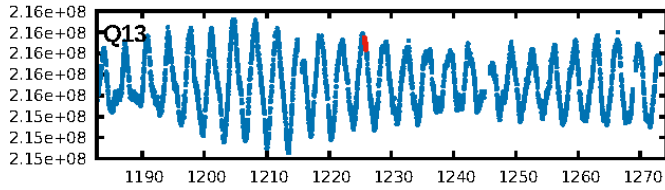
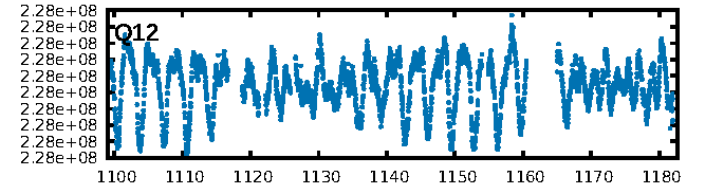
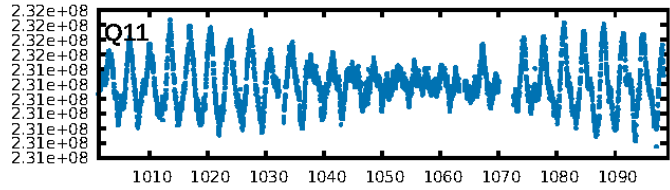
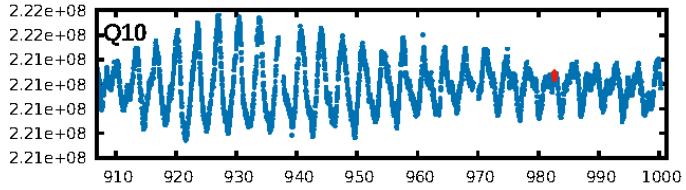
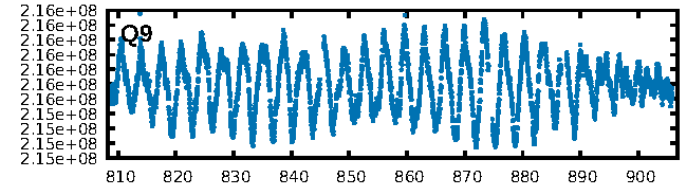
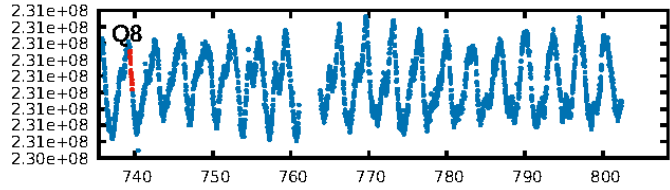
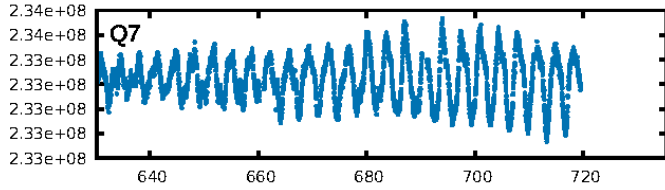
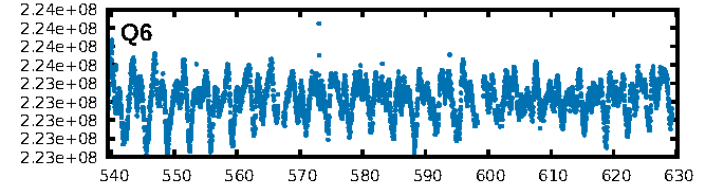
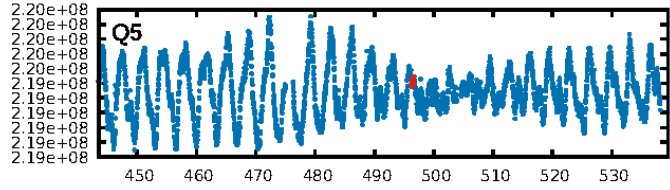
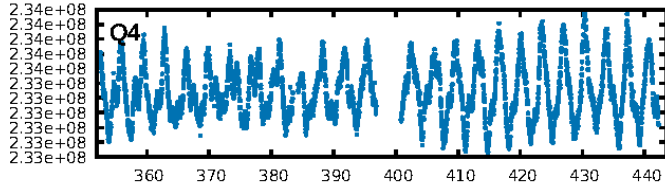
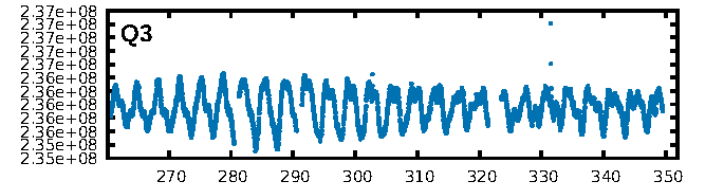
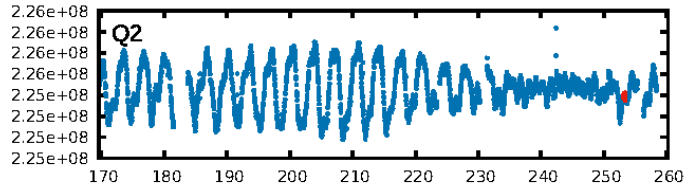
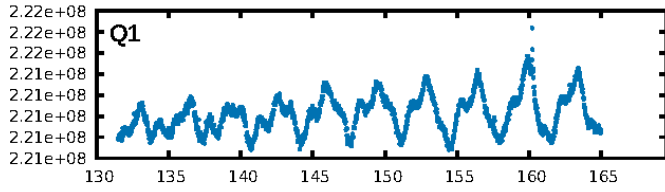
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [82.40σ]
LongPeriod-sig: 100.0% [309.15σ]
ModelChiSquare2-sig: 74.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.8462
Centroid-sig: 0.1%
Centroid-so: 5.016 arcsec [1.90σ]
OotOffset-rm: 0.938 arcsec [1.28σ]
KicOffset-rm: 0.739 arcsec [0.91σ]
OotOffset-st: 1/1/0/2 [4]
KicOffset-st: 1/1/0/2 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.33 [2/6]

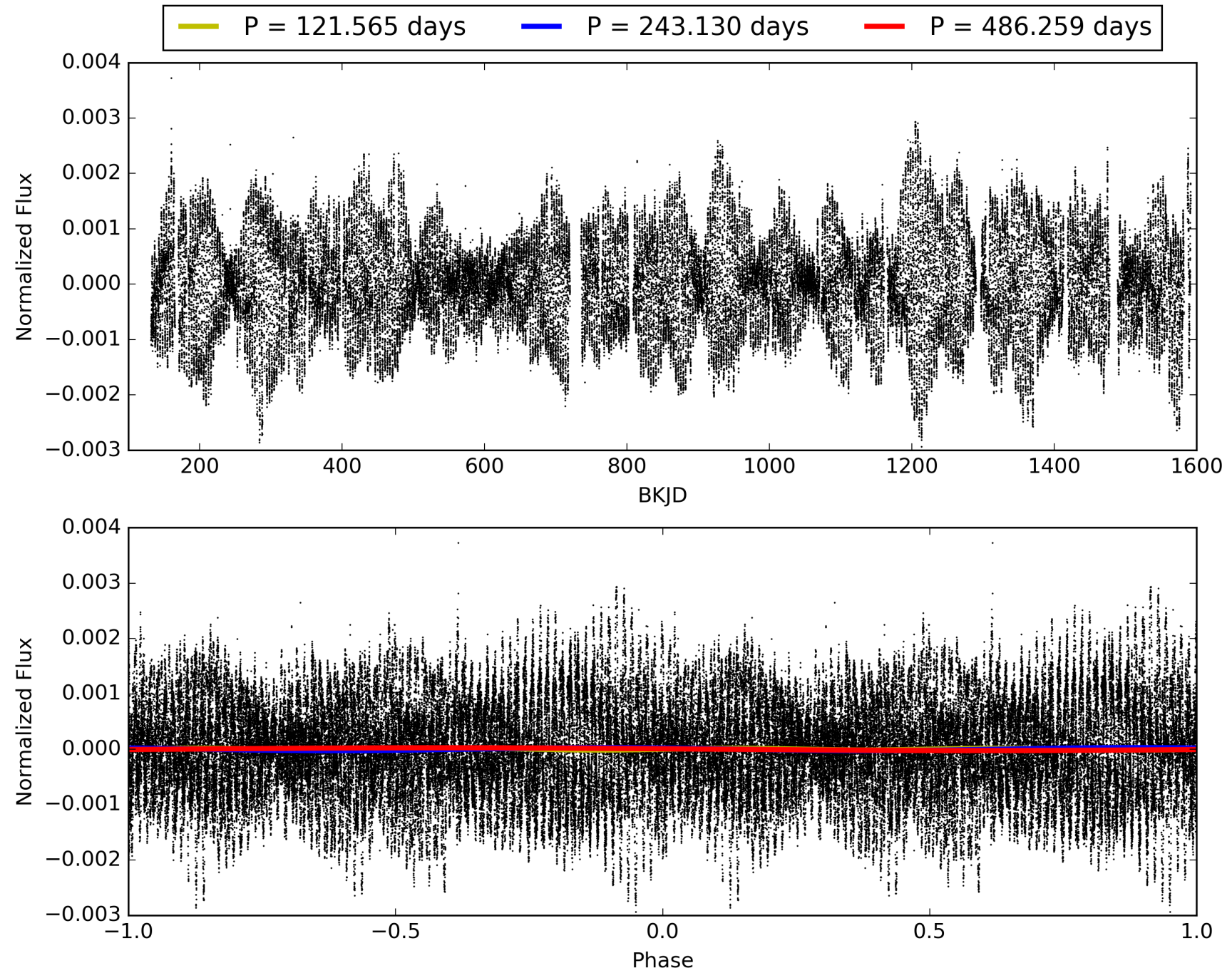
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:13 Z

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

TCE 009714572-02, PDC Light Curves

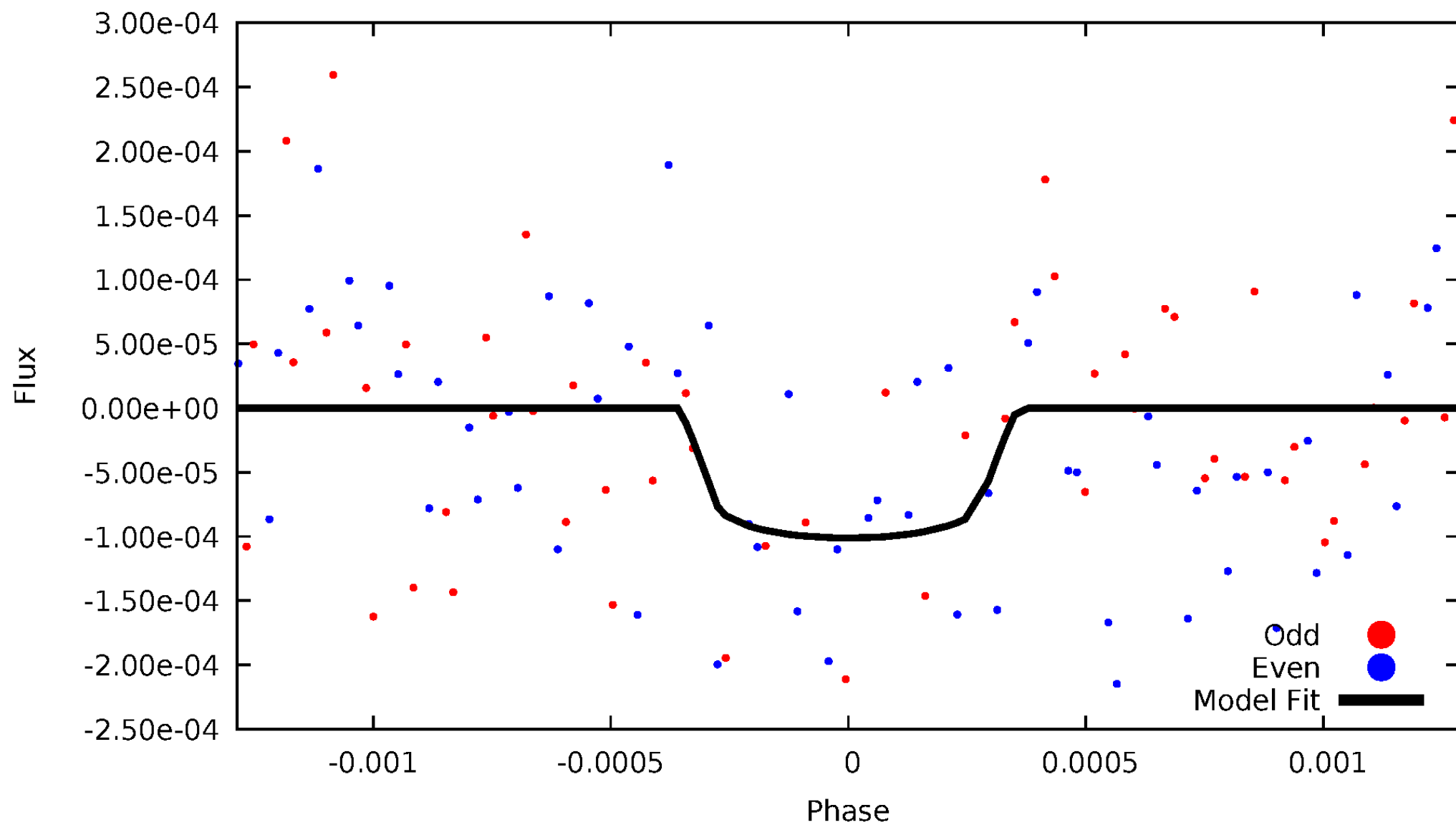


TCE 009714572-02



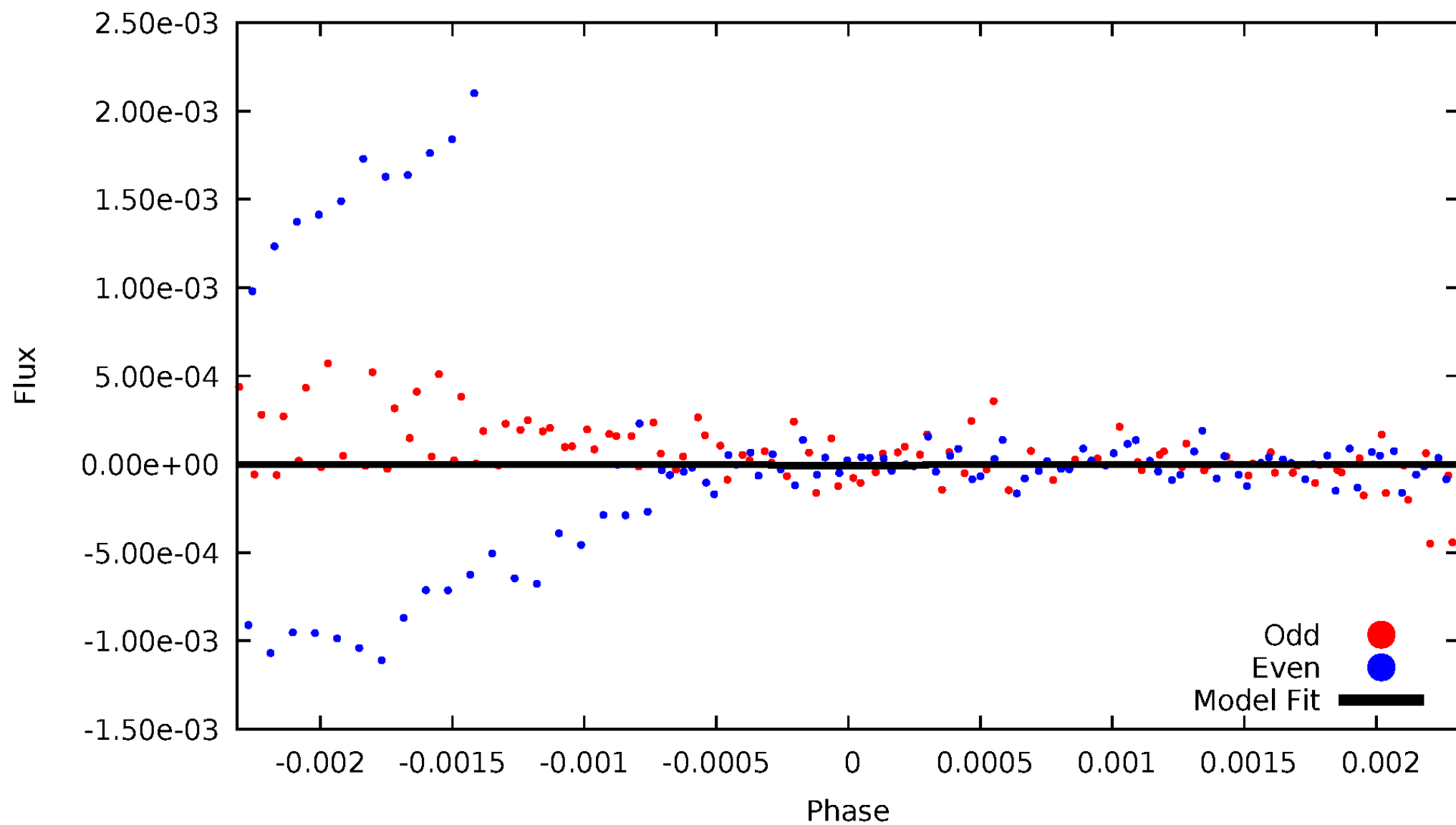
DV Odd/Even

TCE 009714572-02



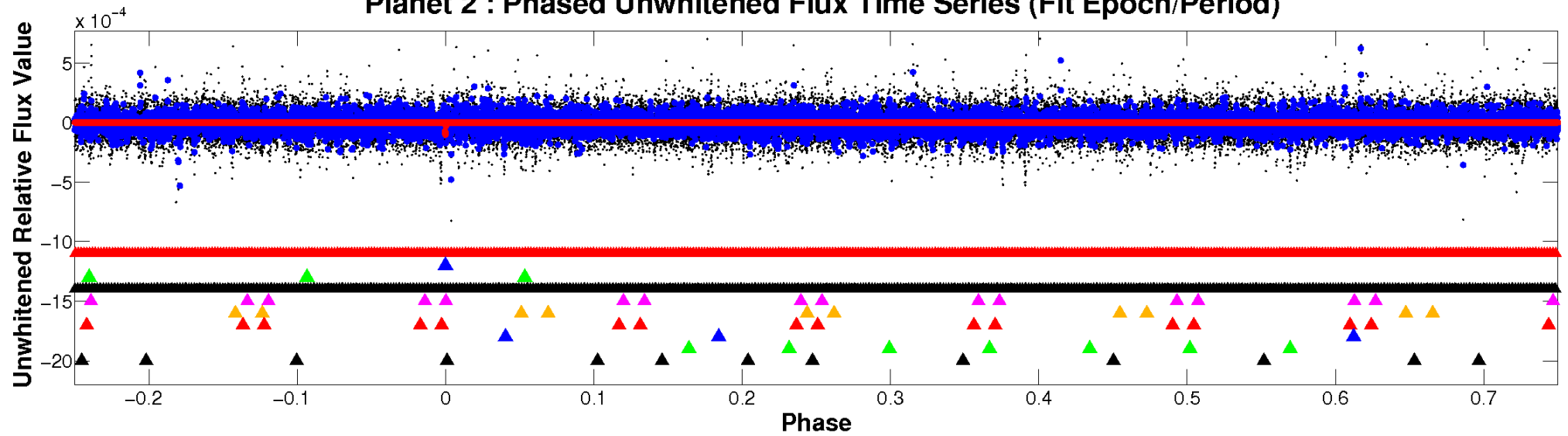
ALT Odd/Even

TCE 009714572-02

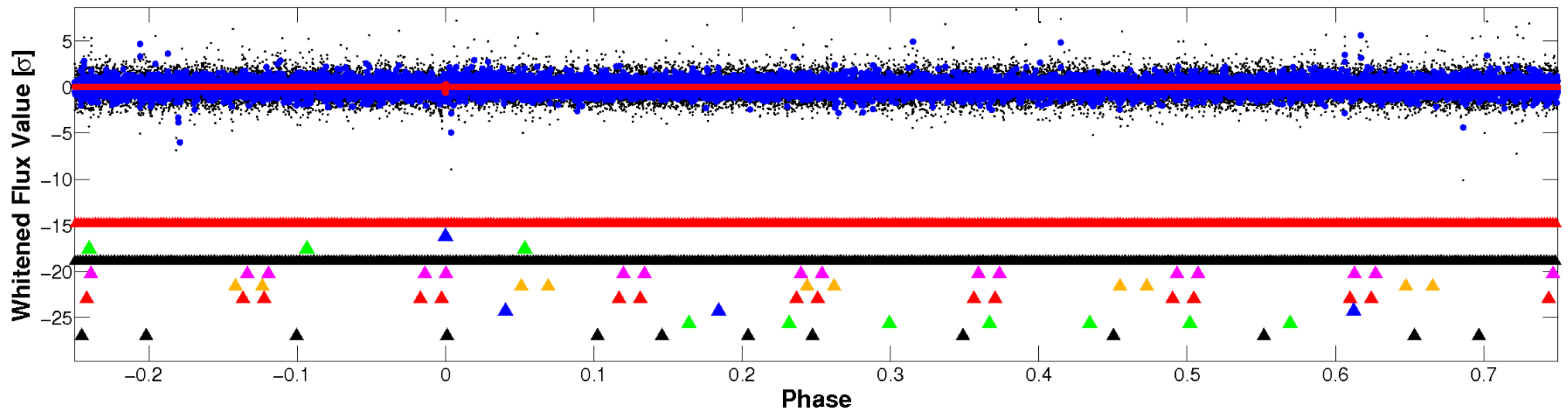


Non-Whitened Vs. Whitened Light Curve

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

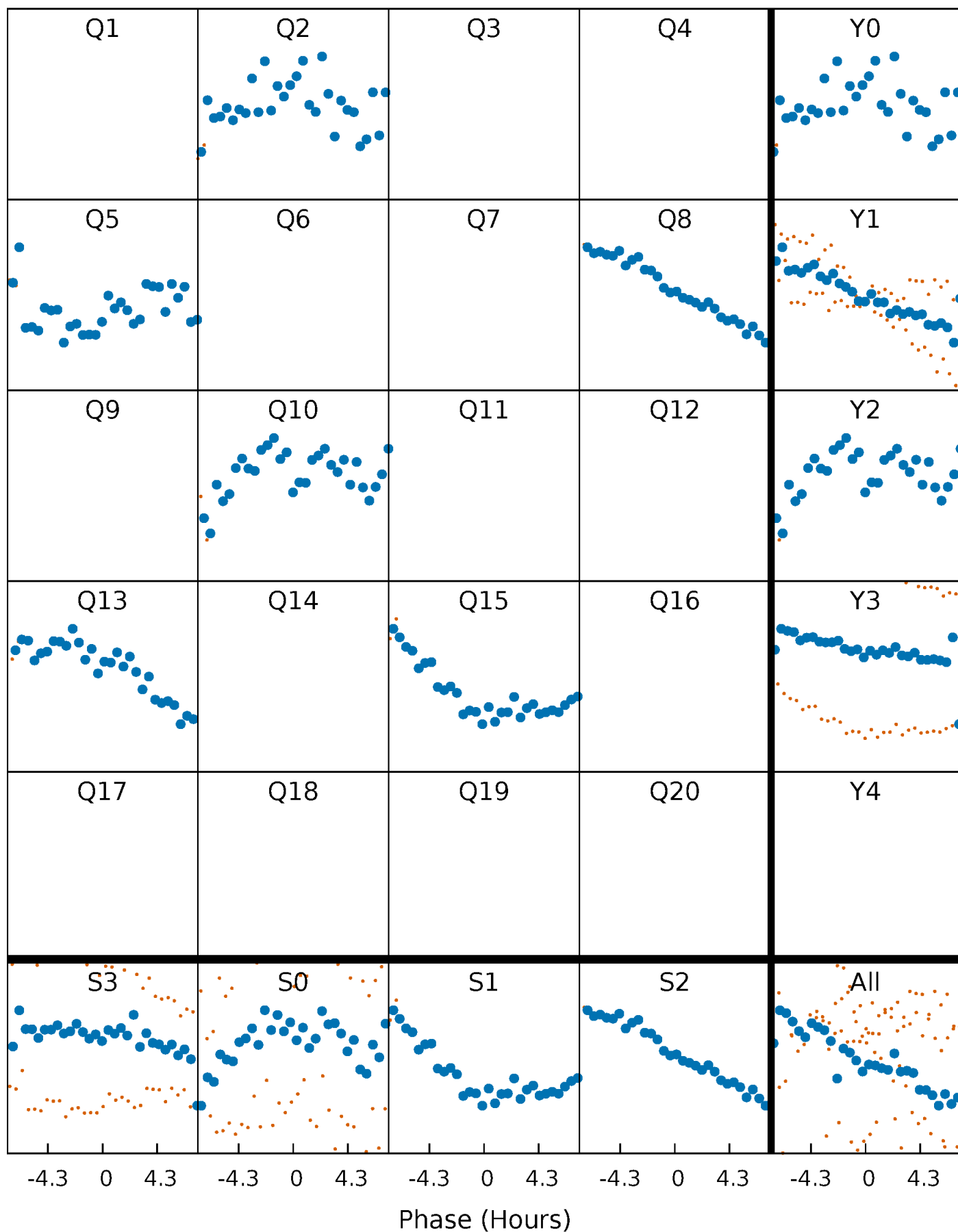


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



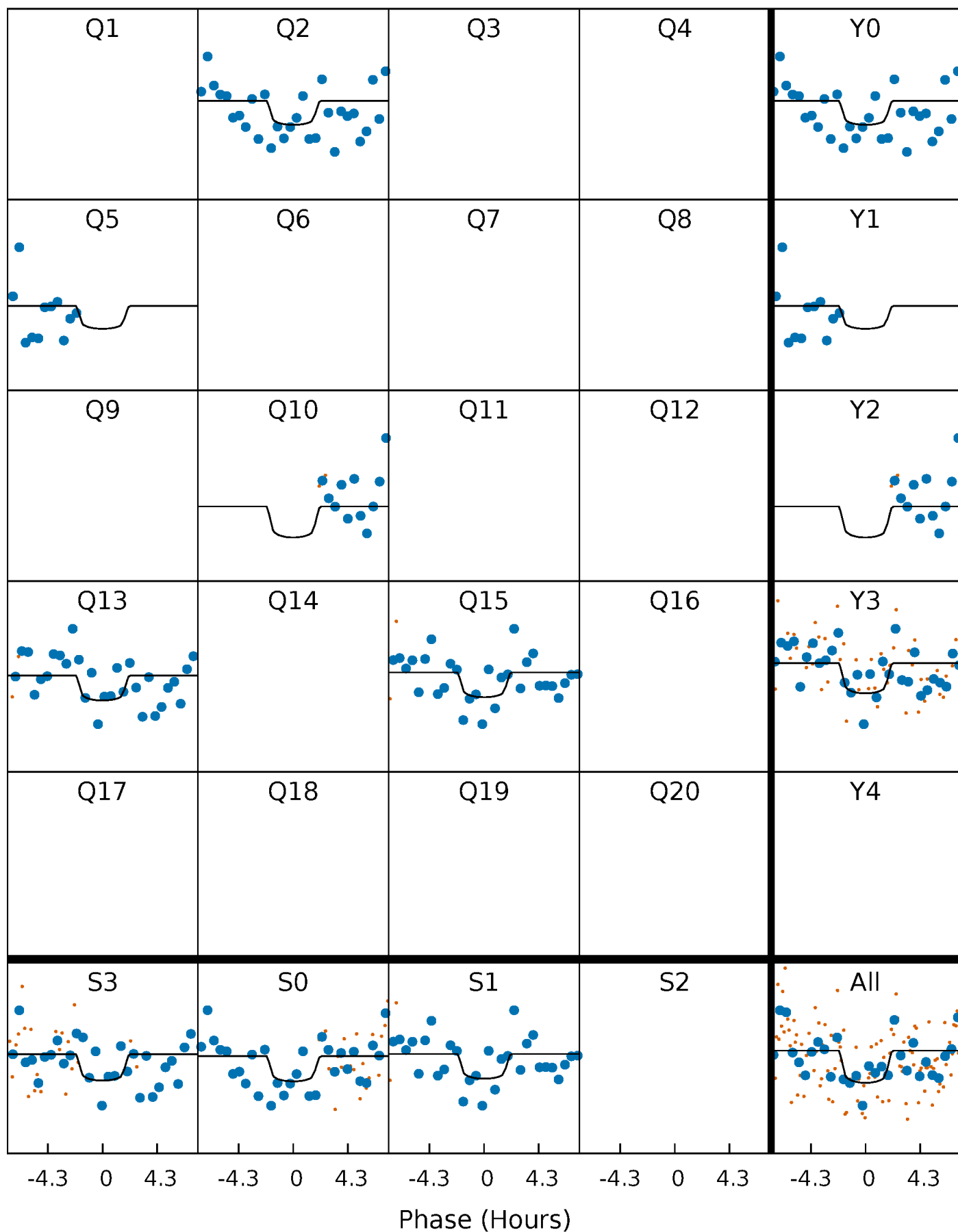
PDC Quarter-Phased Transit Curves

TCE 009714572-02 $P=243.129671$ Days $T_0=253.283211$ (BKJD)



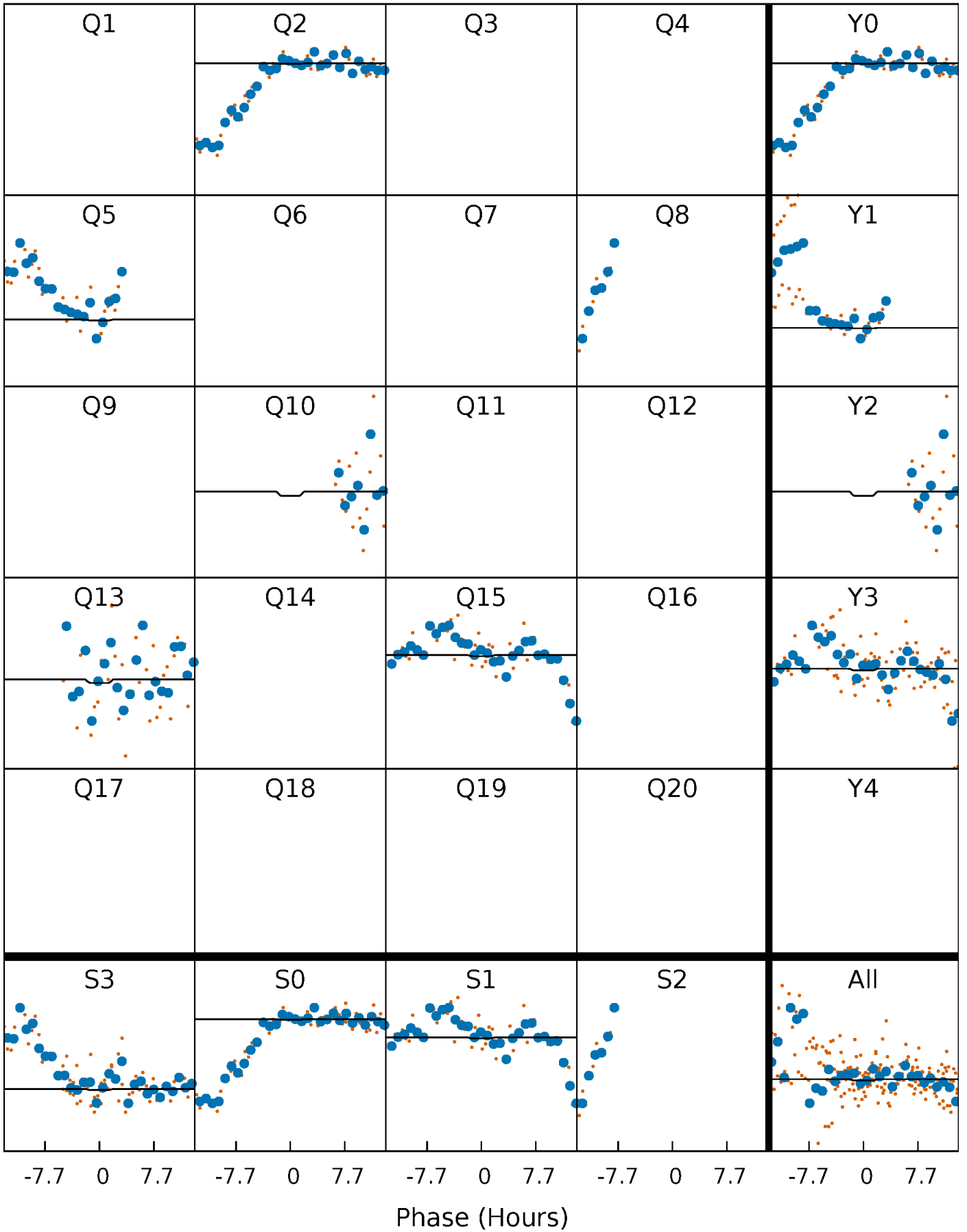
DV Quarter-Phased Transit Curves

TCE 009714572-02 P=243.129671 Days $T_0=253.283211$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

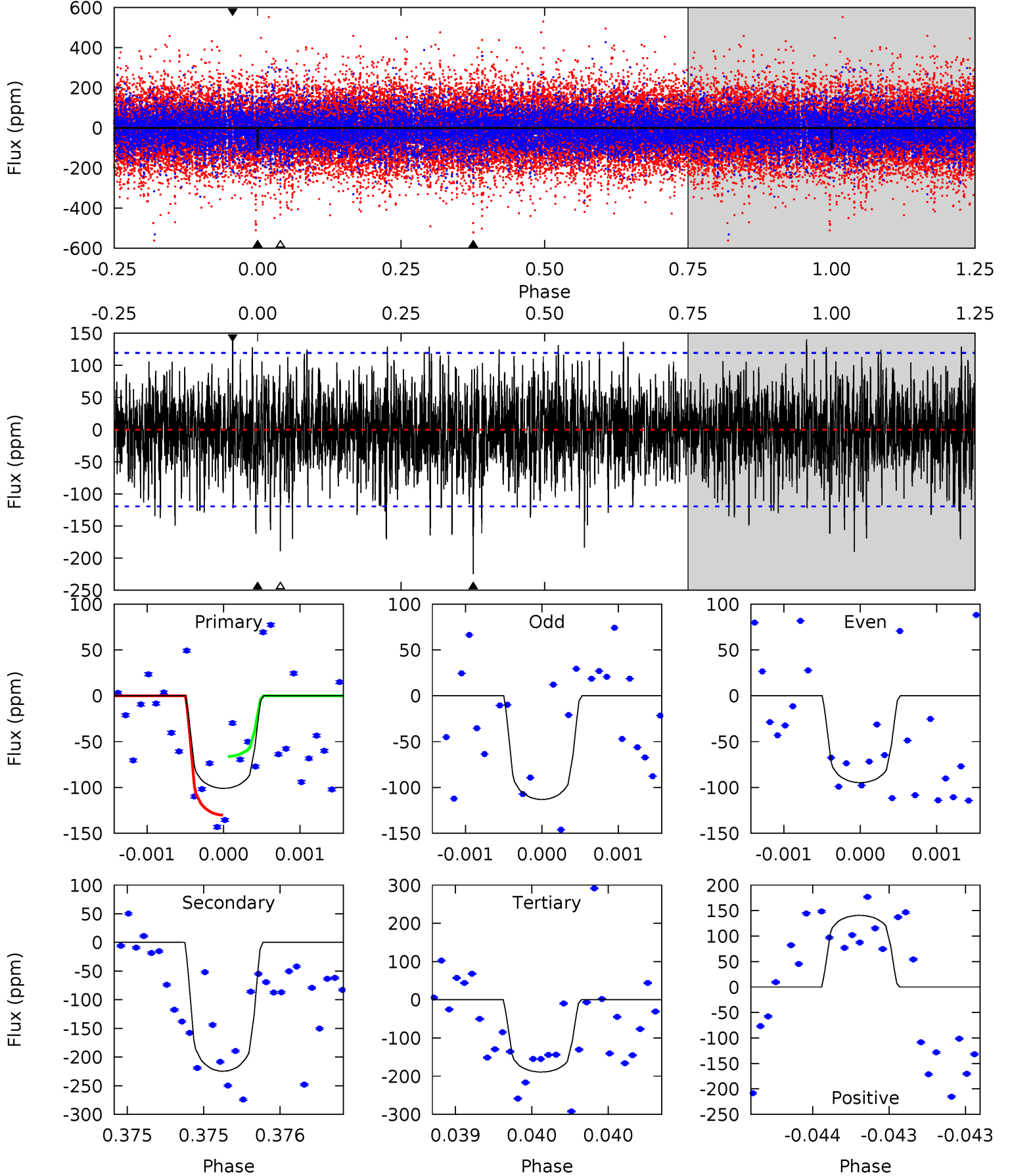
TCE 009714572-02 $P=243.145742$ Days $T_0=253.053728$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-02, P = 243.129671 Days, E = 10.153540 Days

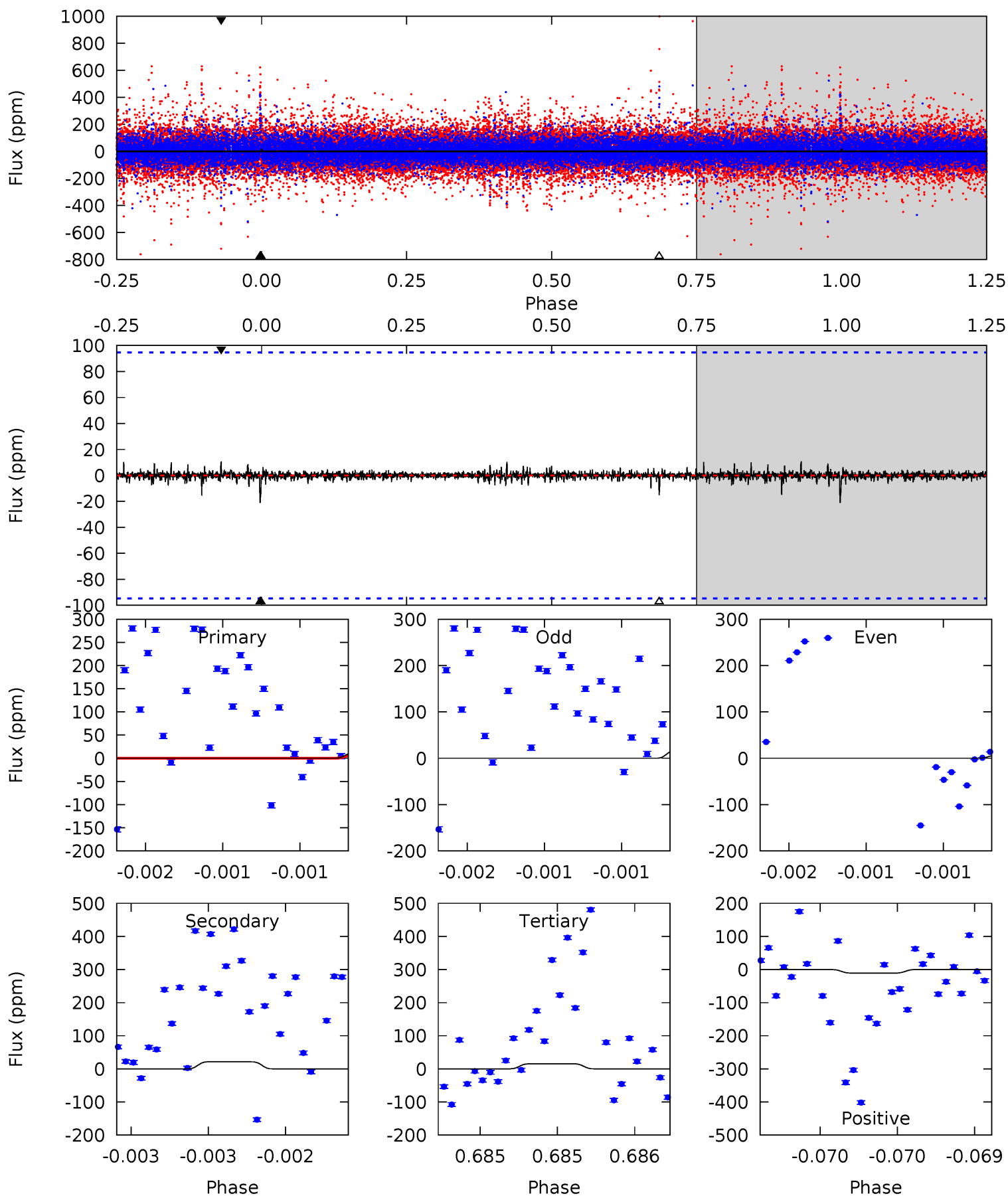
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.66	10.4	8.73	6.49	5.51	3.38	2.07	-4.07	-1.83	1.64	3.88	0.41	0.89	0.38	1.48



Alt Model-Shift Uniqueness Test

009714572-02, P = 243.145742 Days, E = 9.907986 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.72	1.23	0.89	0.63	5.52	3.39	0.11	-0.17	0.09	0.34	0.61	0.26	0.69	0.34	0.30



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-225 ± 22	$2.64^{+2.32}_{-1.73}$	637^{+49}_{-52}	7473^{+9267}_{-2099}	12376^{+90034}_{-8791}
Alt.	-21 ± 17	$2.17^{+2.07}_{-1.49}$	644^{+48}_{-55}	4368^{+3664}_{-1405}	1233^{+14597}_{-1118}

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

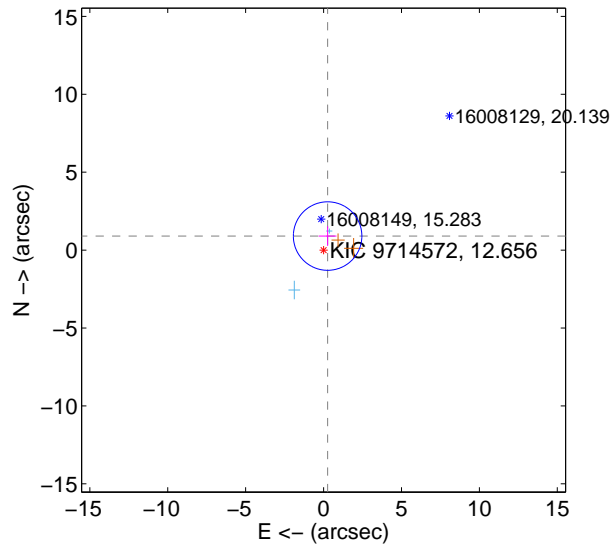
Supplemental centroid analysis for 009714572-02. Kepler magnitude: 12.66. Transit SNR 2.97

There are 2 quarters with good PRF difference image offsets

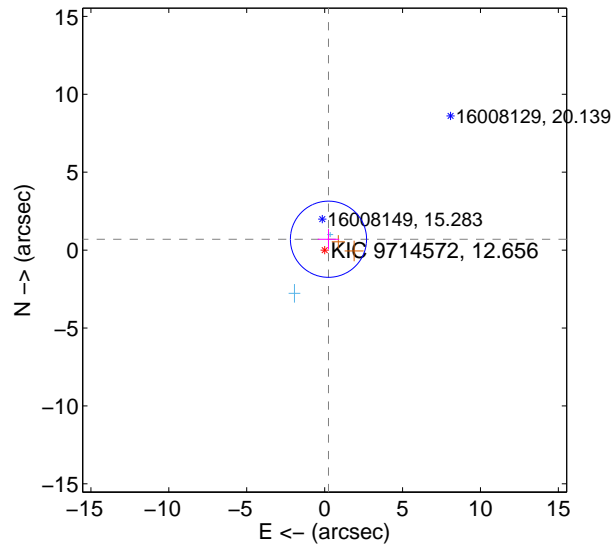
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.938 ± 0.733	1.28	-0.260 ± 0.570	0.901 ± 0.632
PRF-fit source offset from KIC position	0.739 ± 0.815	0.91	-0.246 ± 0.688	0.697 ± 0.649
photometric centroid source offset	5.02 ± 2.64	1.90	1.95 ± 1.89	4.62 ± 2.75

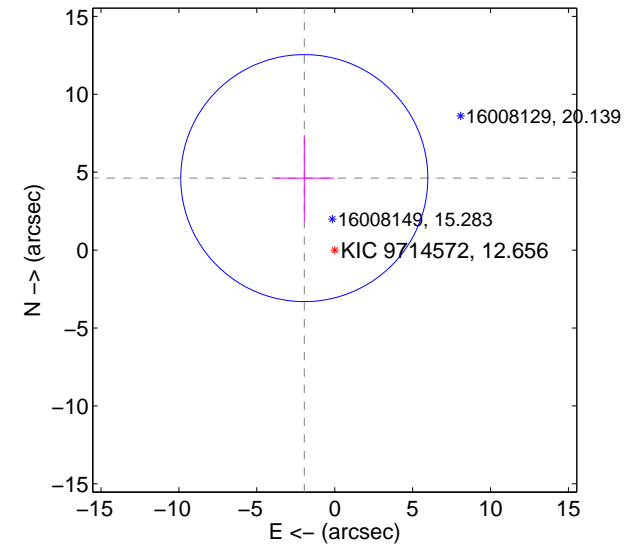
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

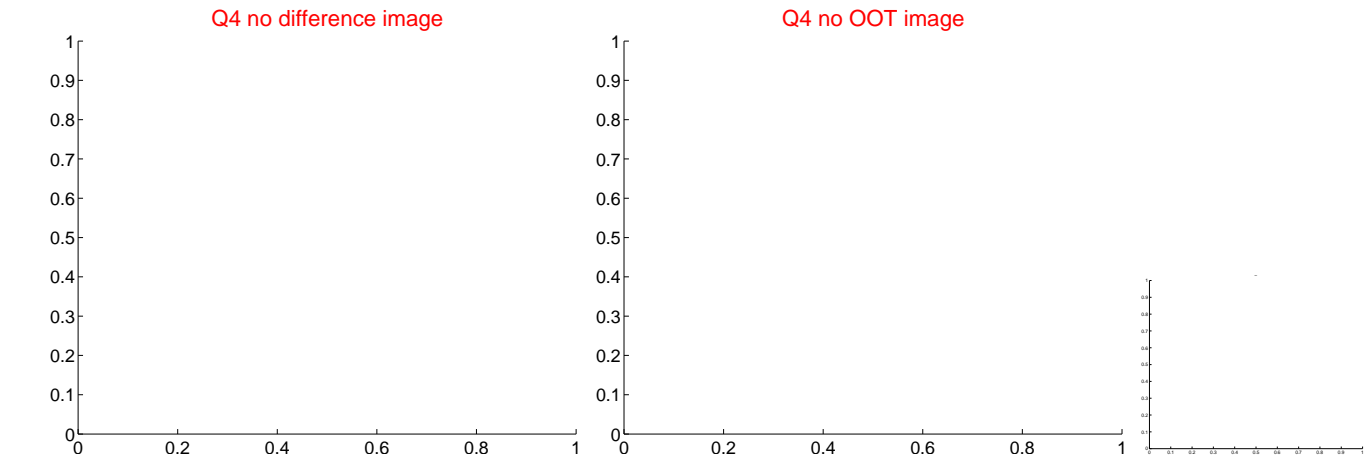
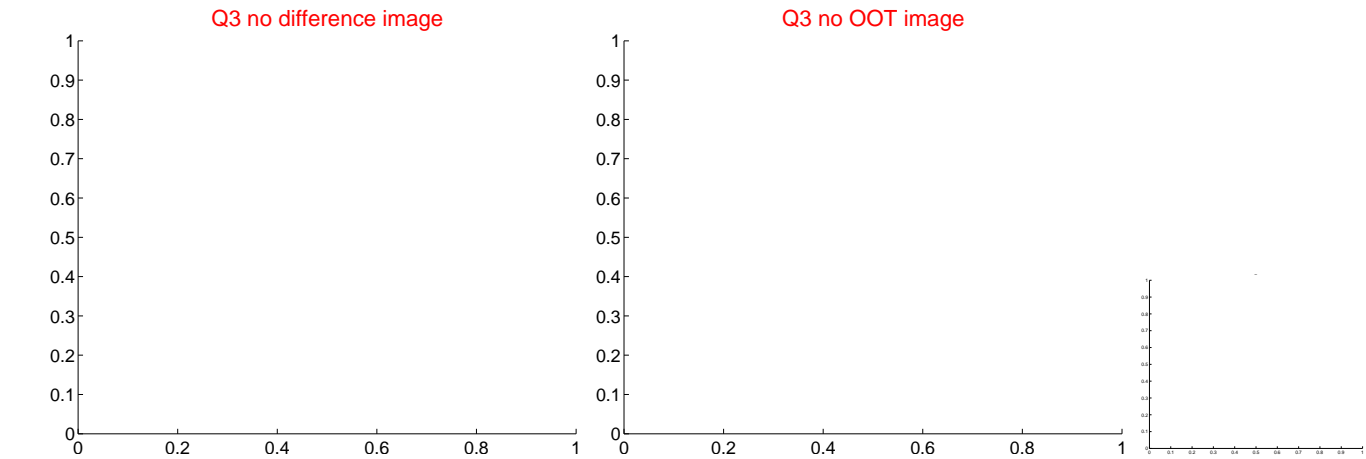
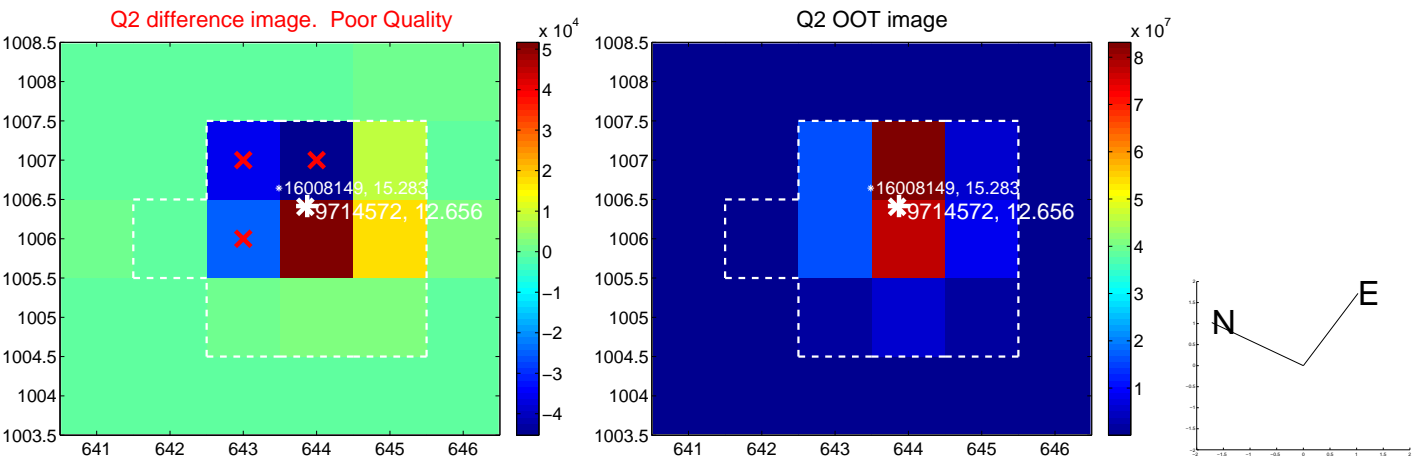
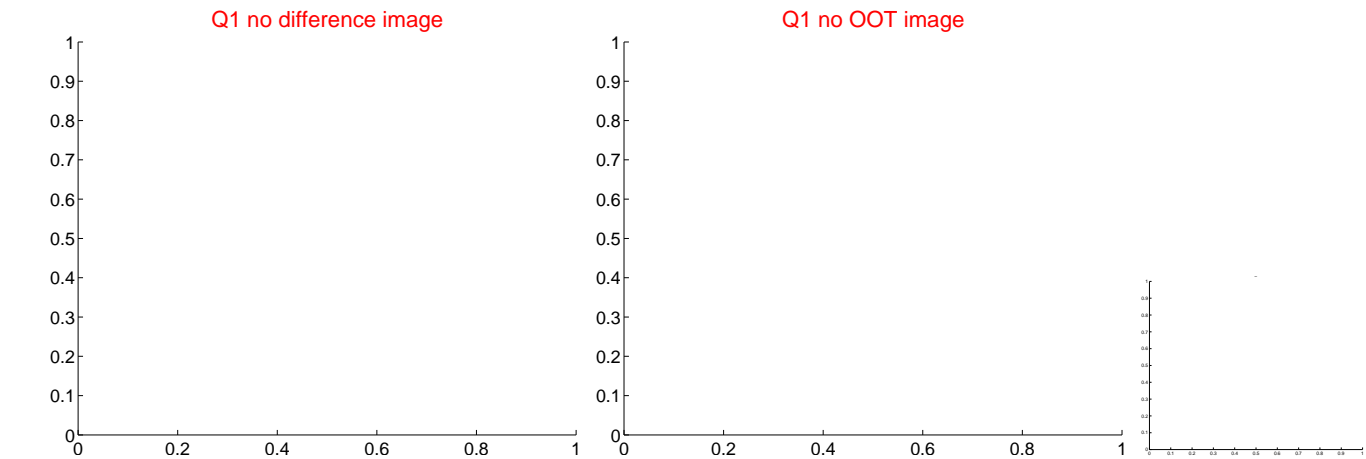


offset from photometric centroids

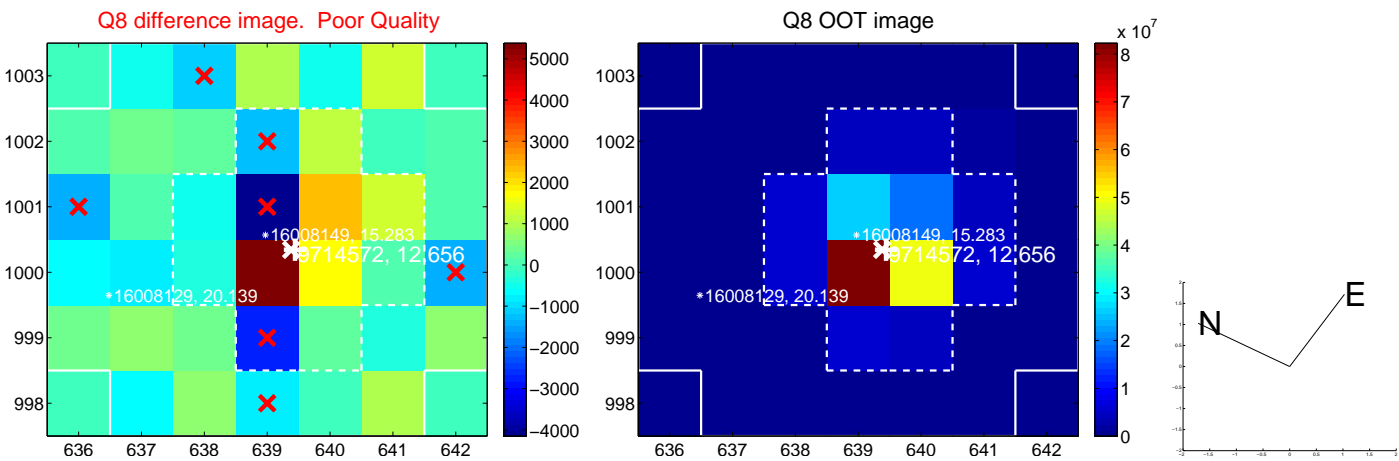
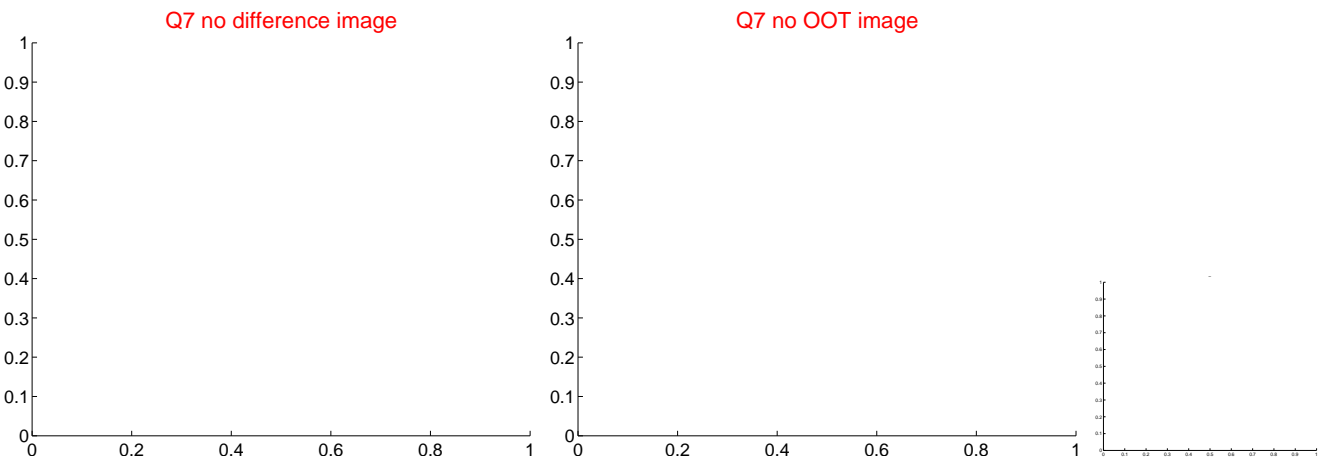
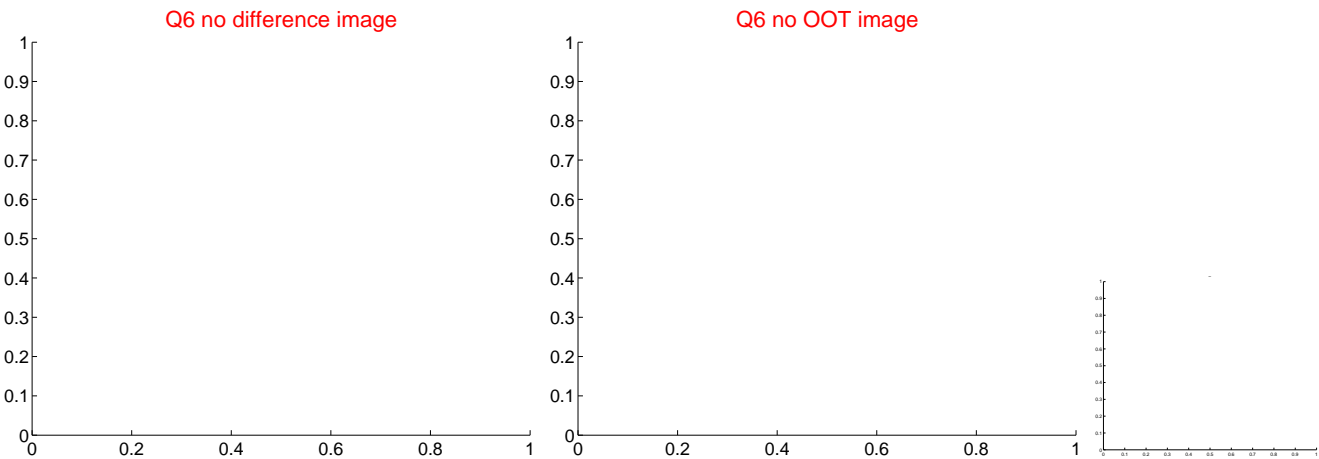
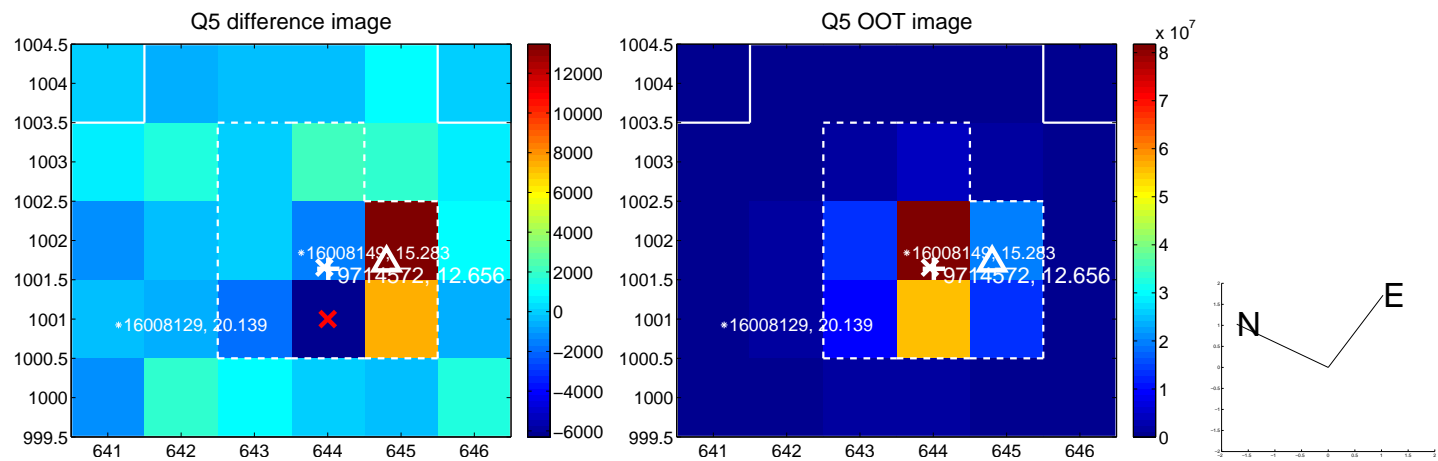


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

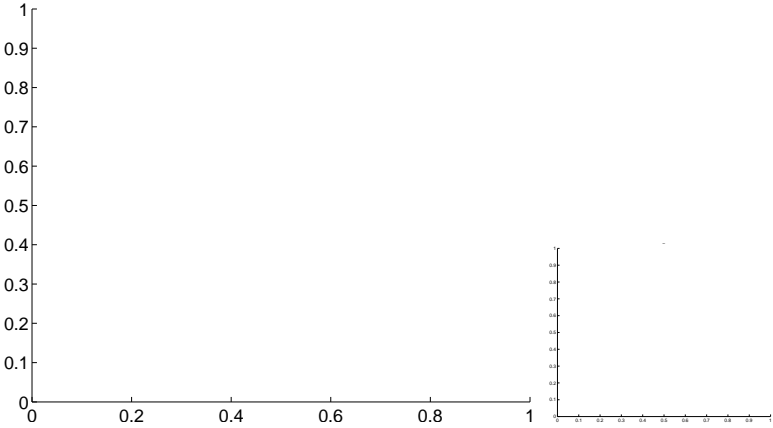


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

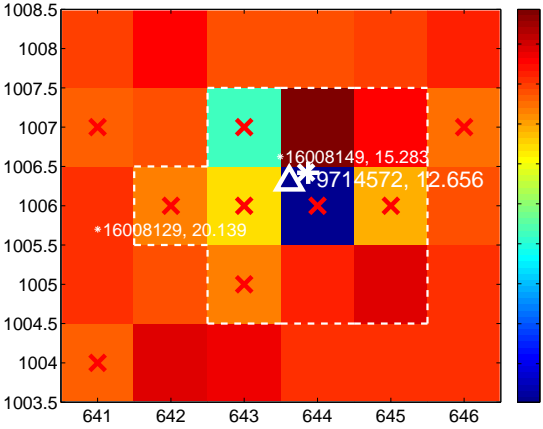
Q9 no difference image



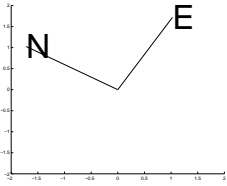
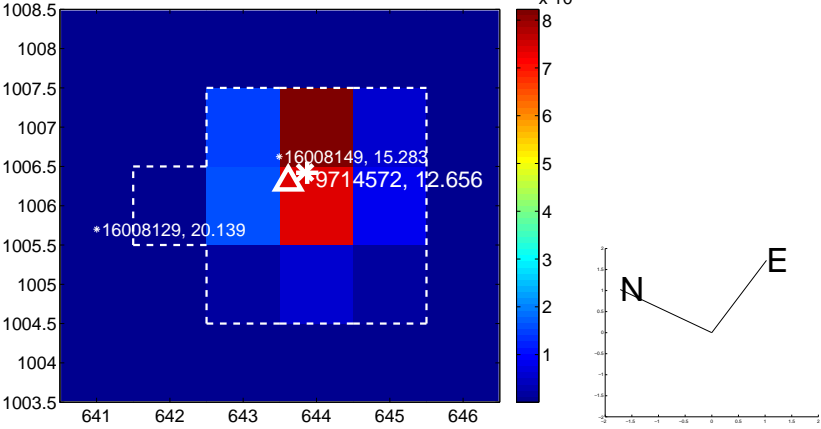
Q9 no OOT image



Q10 difference image. Poor Quality



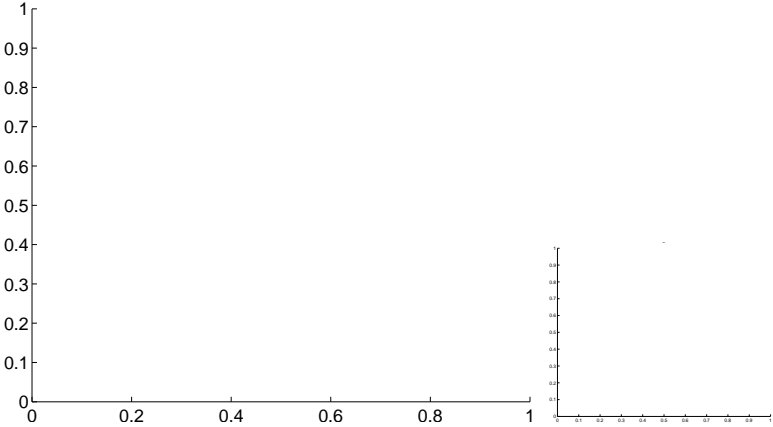
Q10 OOT image



Q11 no difference image



Q11 no OOT image



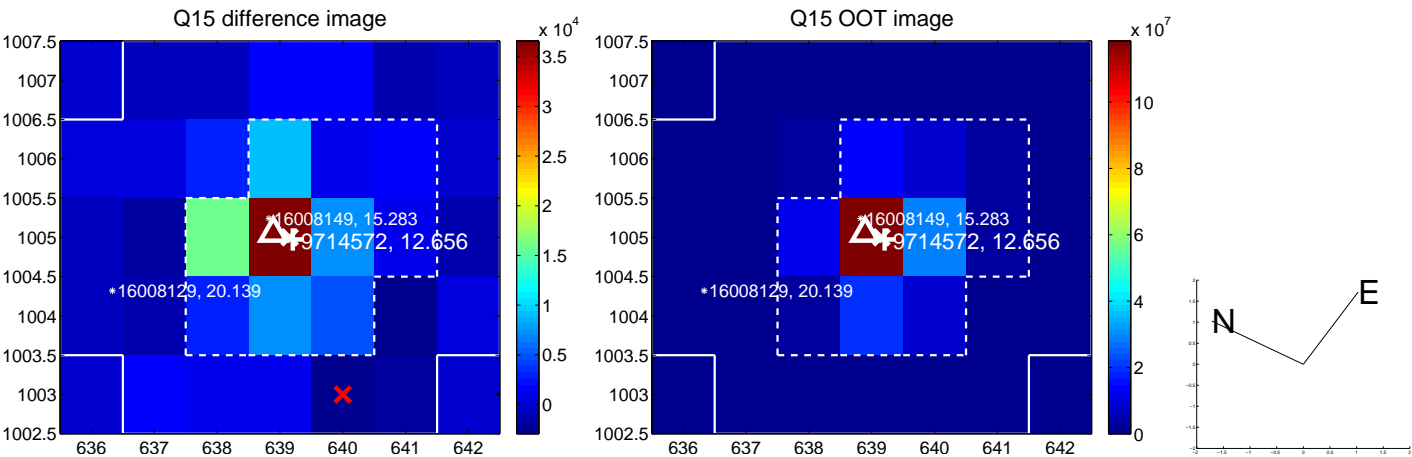
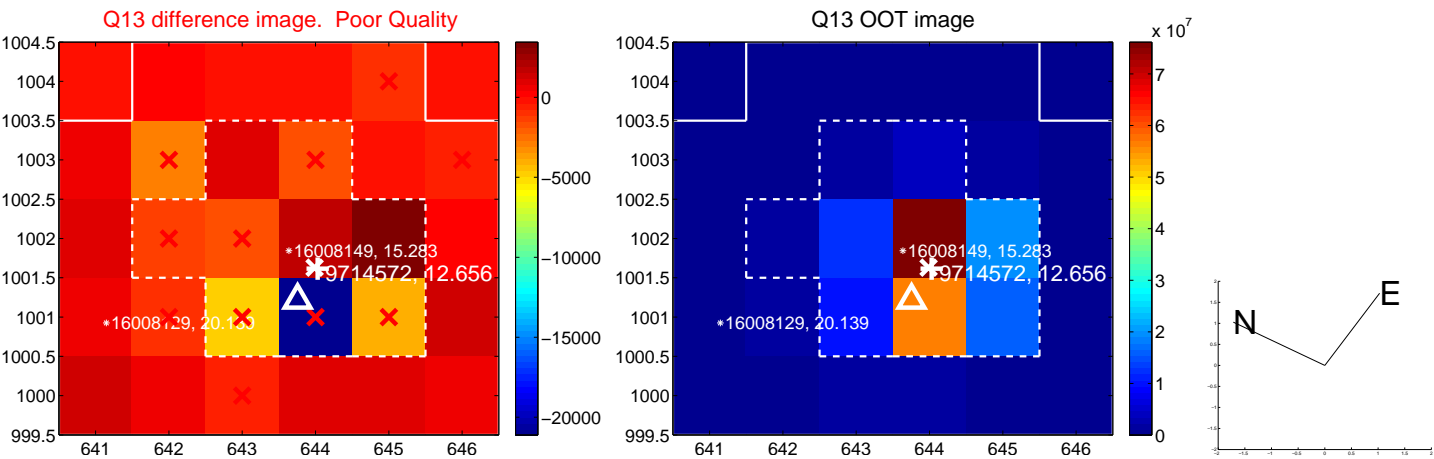
Q12 no difference image



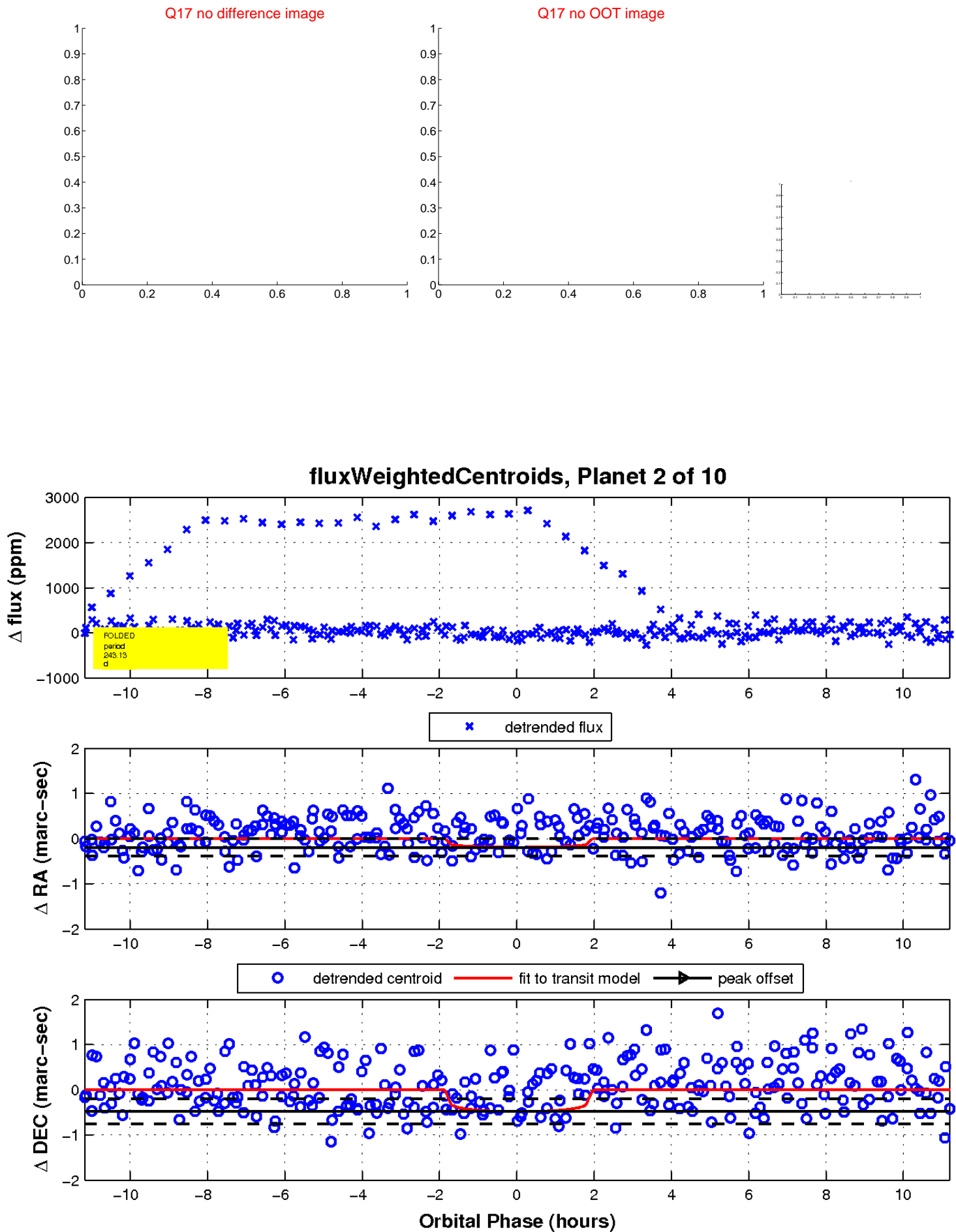
Q12 no OOT image



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

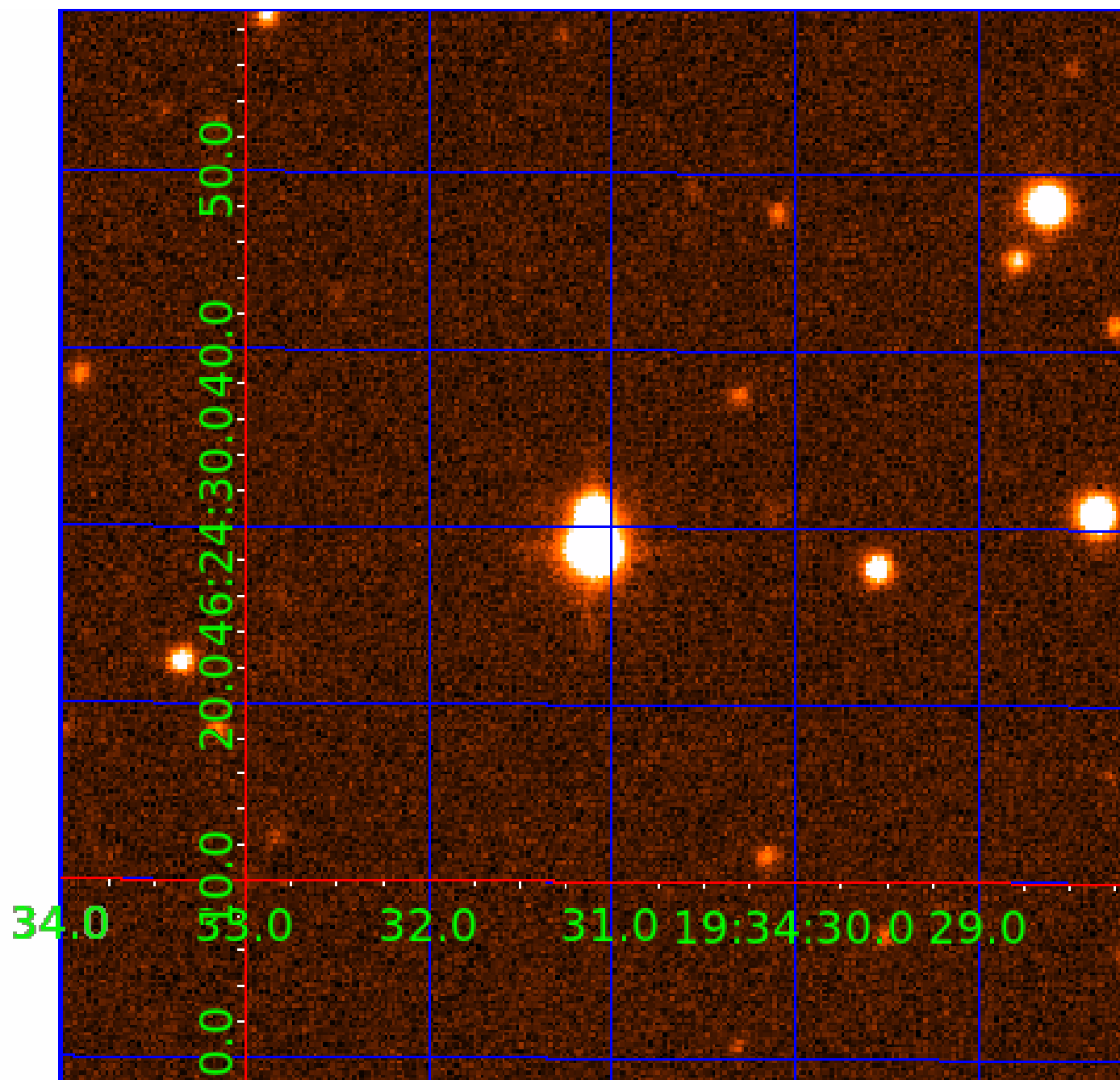


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD— CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

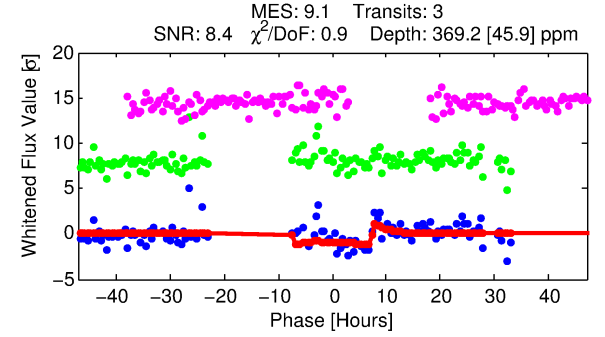
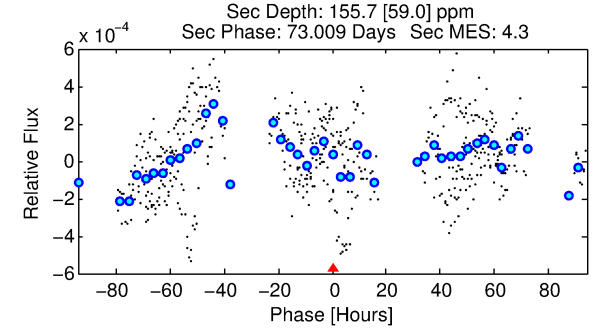
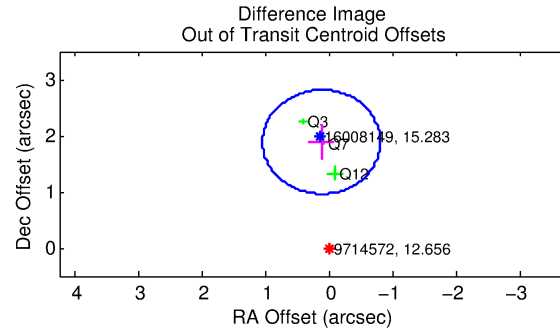
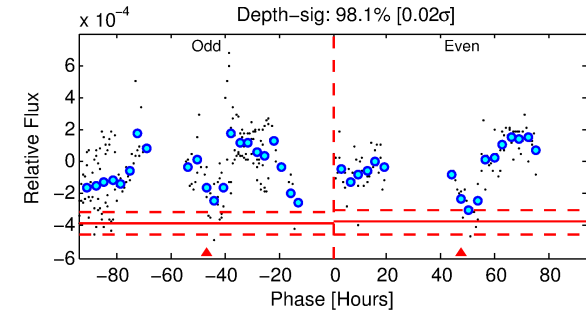
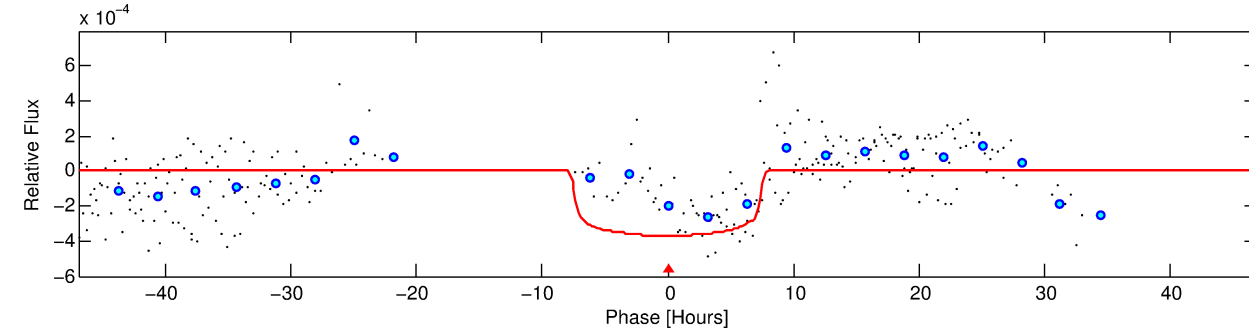
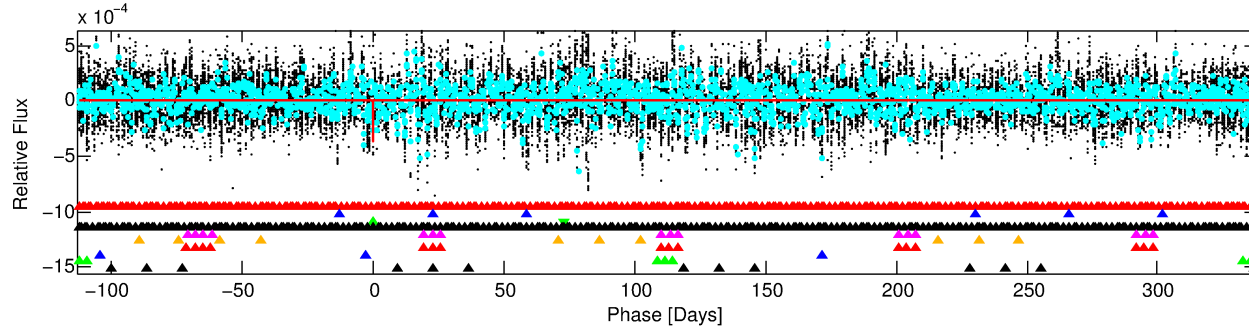
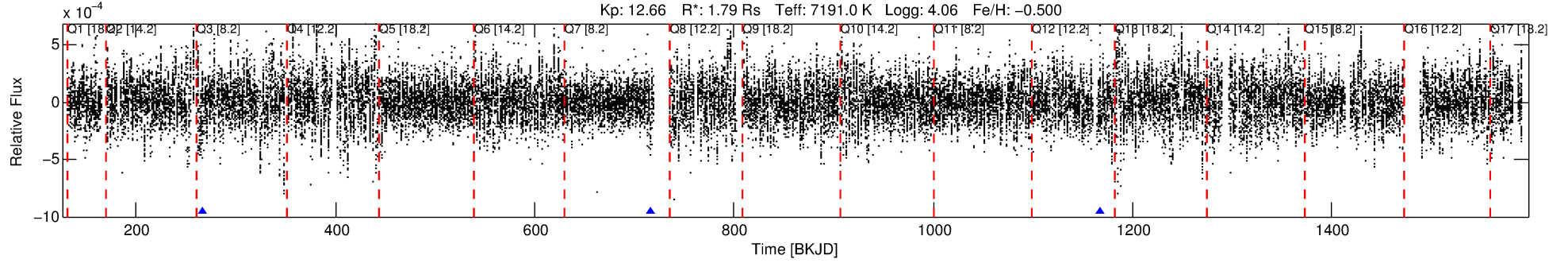
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-03

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 3 of 10 Period: 450.553 d



DV Fit Results:

Period = 450.55334 [0.00901] d
Epoch = 266.2834 [0.0164] BKJD
Rp/R* = 0.0193 [0.0022]
a/R* = 143.69 [76.88]
b = 0.78 [0.26]
Seff = 4.78 [2.31]
Teq = 377 [46] K
Rp = 3.78 [1.29] Re
a = 1.2698 [0.3719] AU
Ag = 9687.68 [6126.51] [1.58σ]
Teffp = 5784 [683] K [7.90σ]

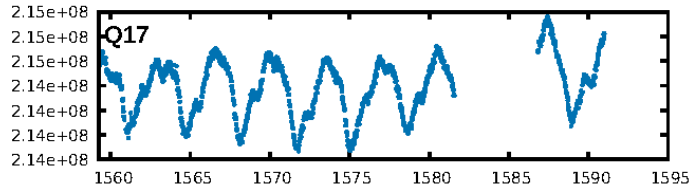
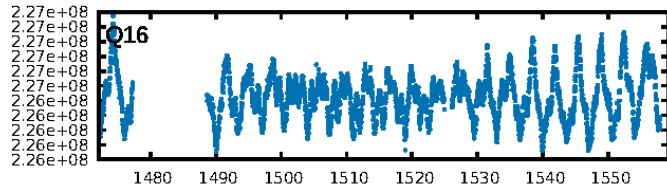
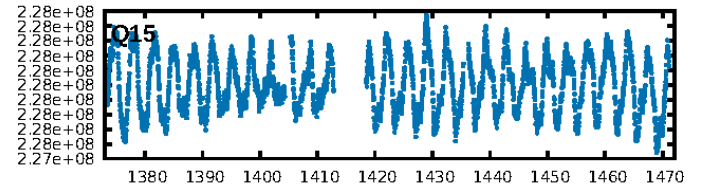
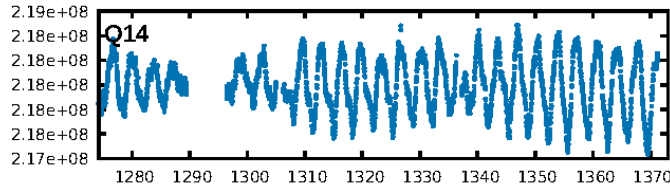
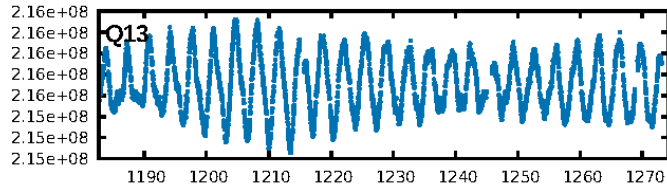
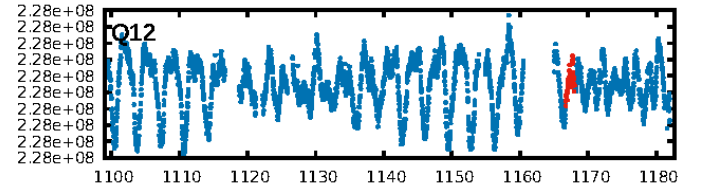
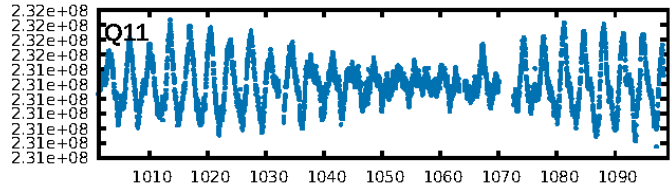
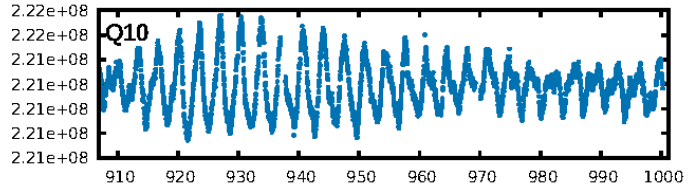
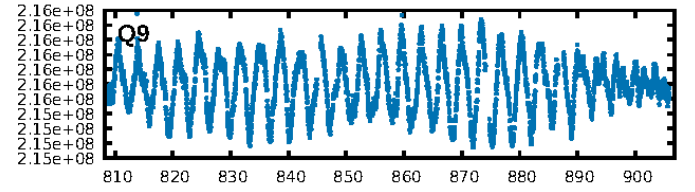
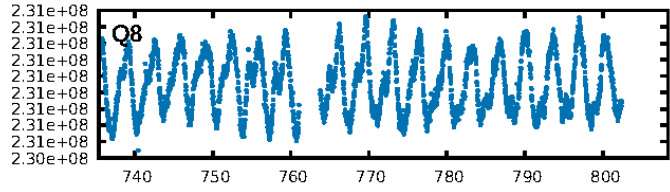
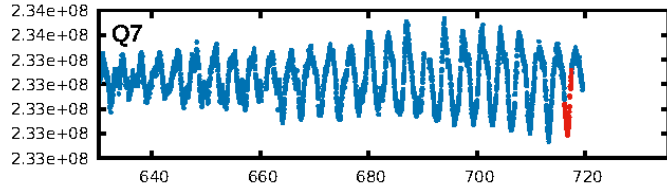
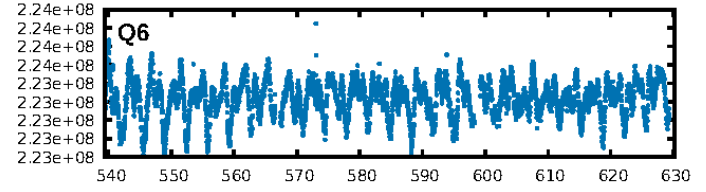
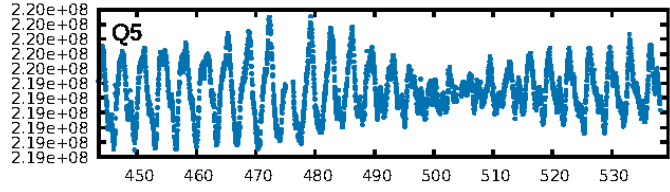
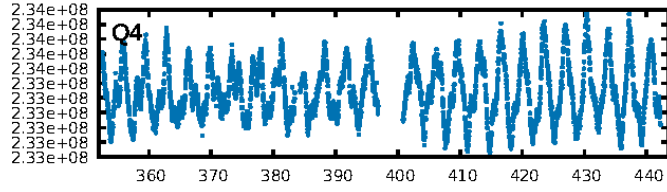
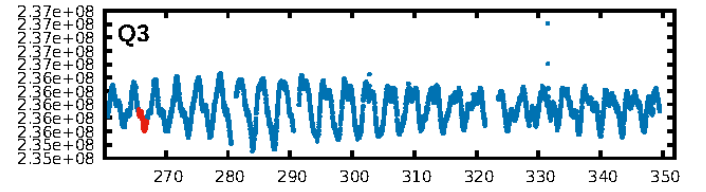
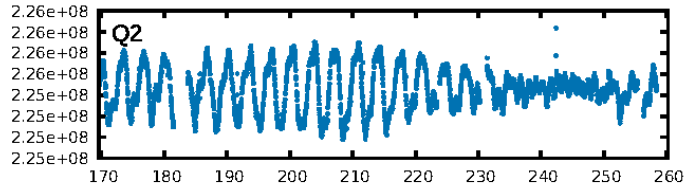
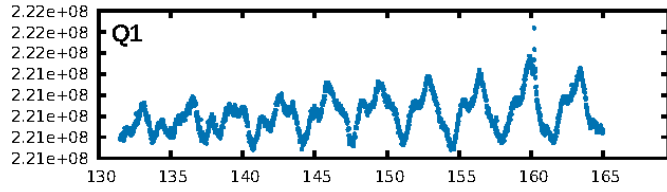
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [309.15σ]
LongPeriod-sig: 100.0% [141.74σ]
ModelChiSquare2-sig: 87.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.592
Centroid-sig: 2.7%
Centroid-so: 1.369 arcsec [1.26σ]
OotOffset-rm: 1.891 arcsec [6.13σ]
KicOffset-rm: 1.650 arcsec [5.83σ]
OotOffset-st: 0/2/1/0 [3]
KicOffset-st: 0/2/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

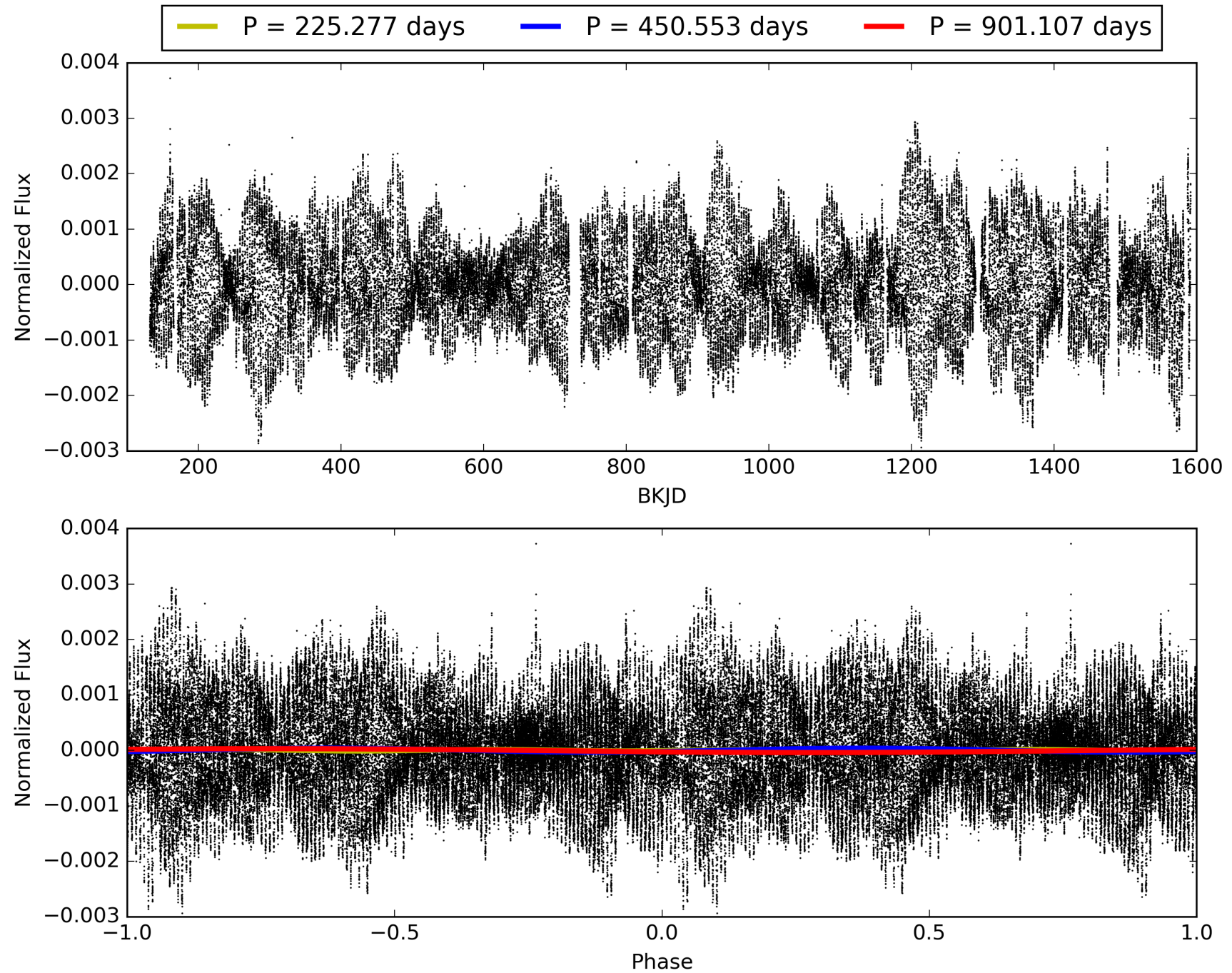
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:20 Z

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

TCE 009714572-03, PDC Light Curves

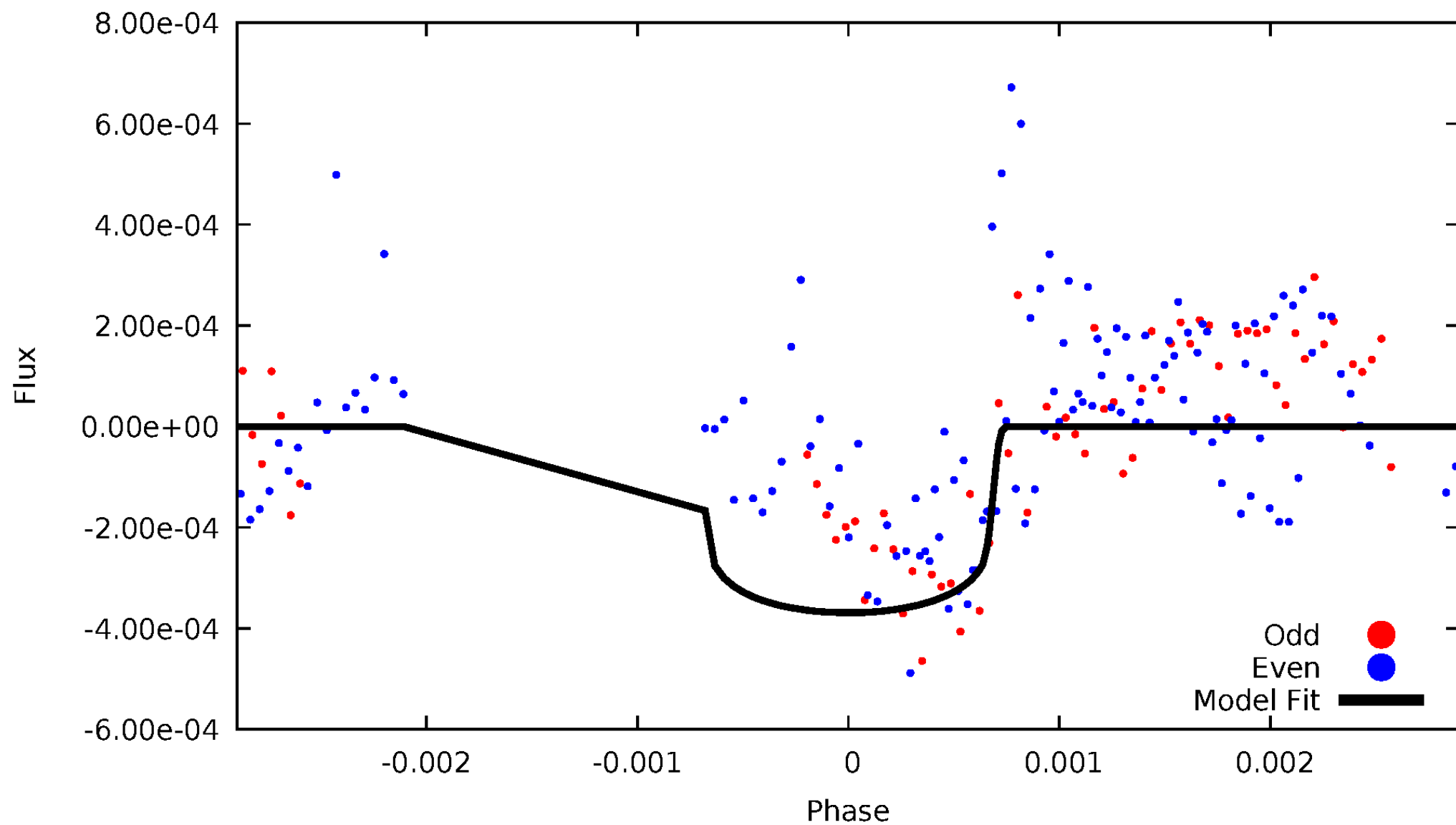


TCE 009714572-03



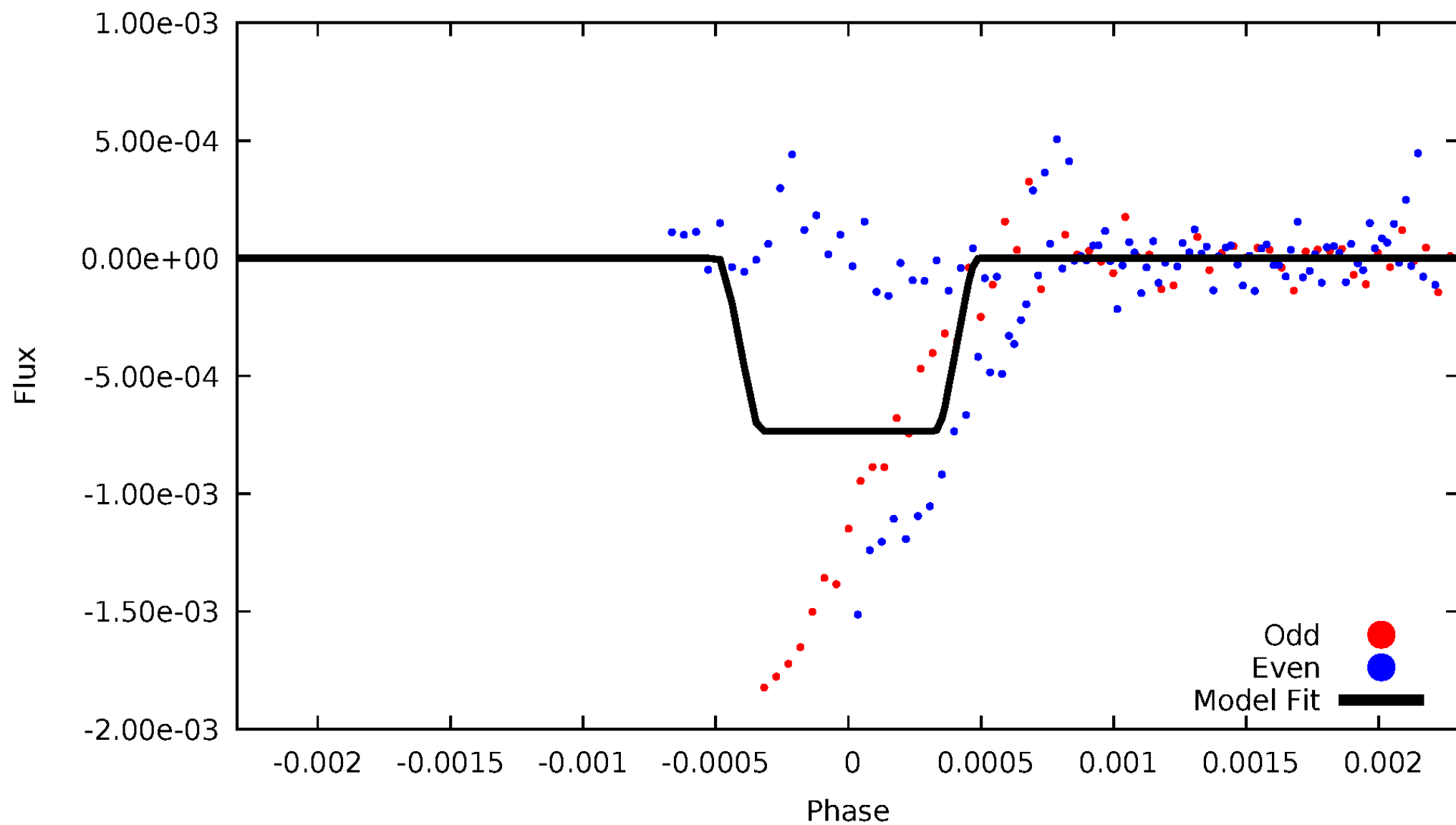
DV Odd/Even

TCE 009714572-03



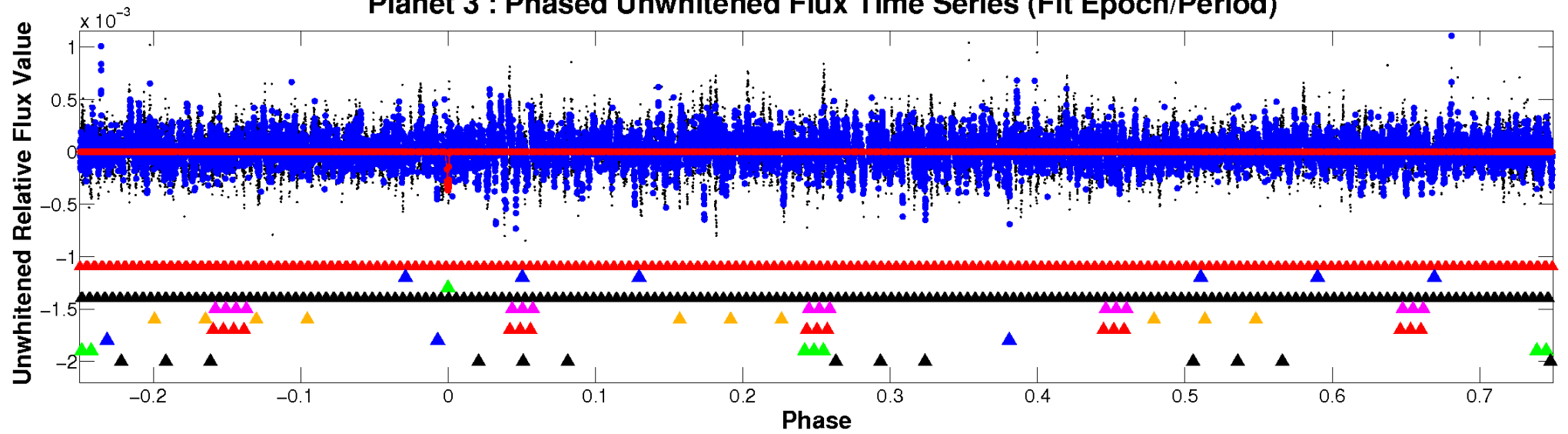
ALT Odd/Even

TCE 009714572-03

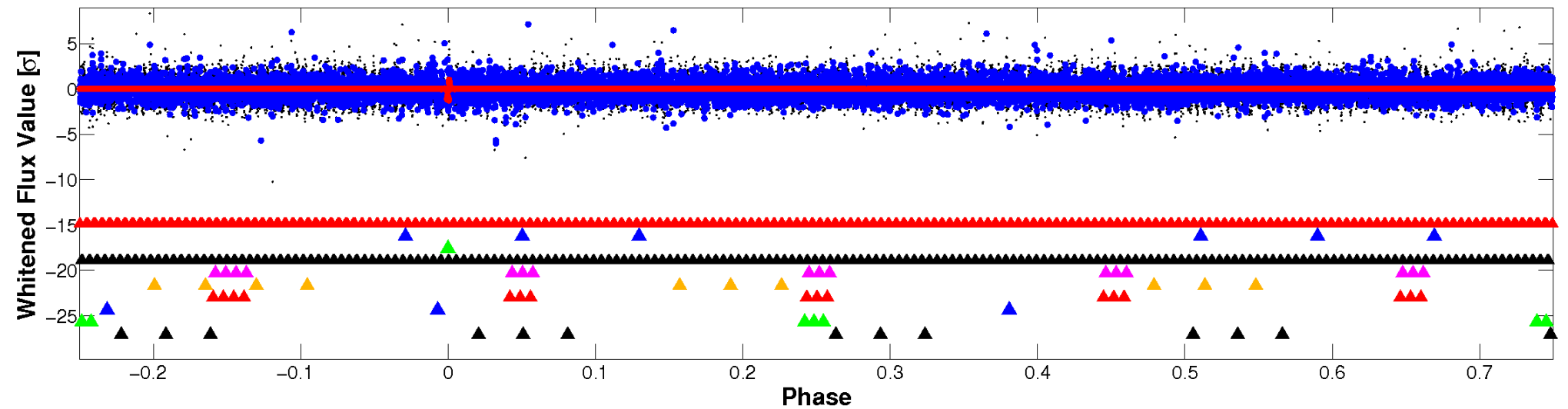


Non-Whitened Vs. Whitened Light Curve

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

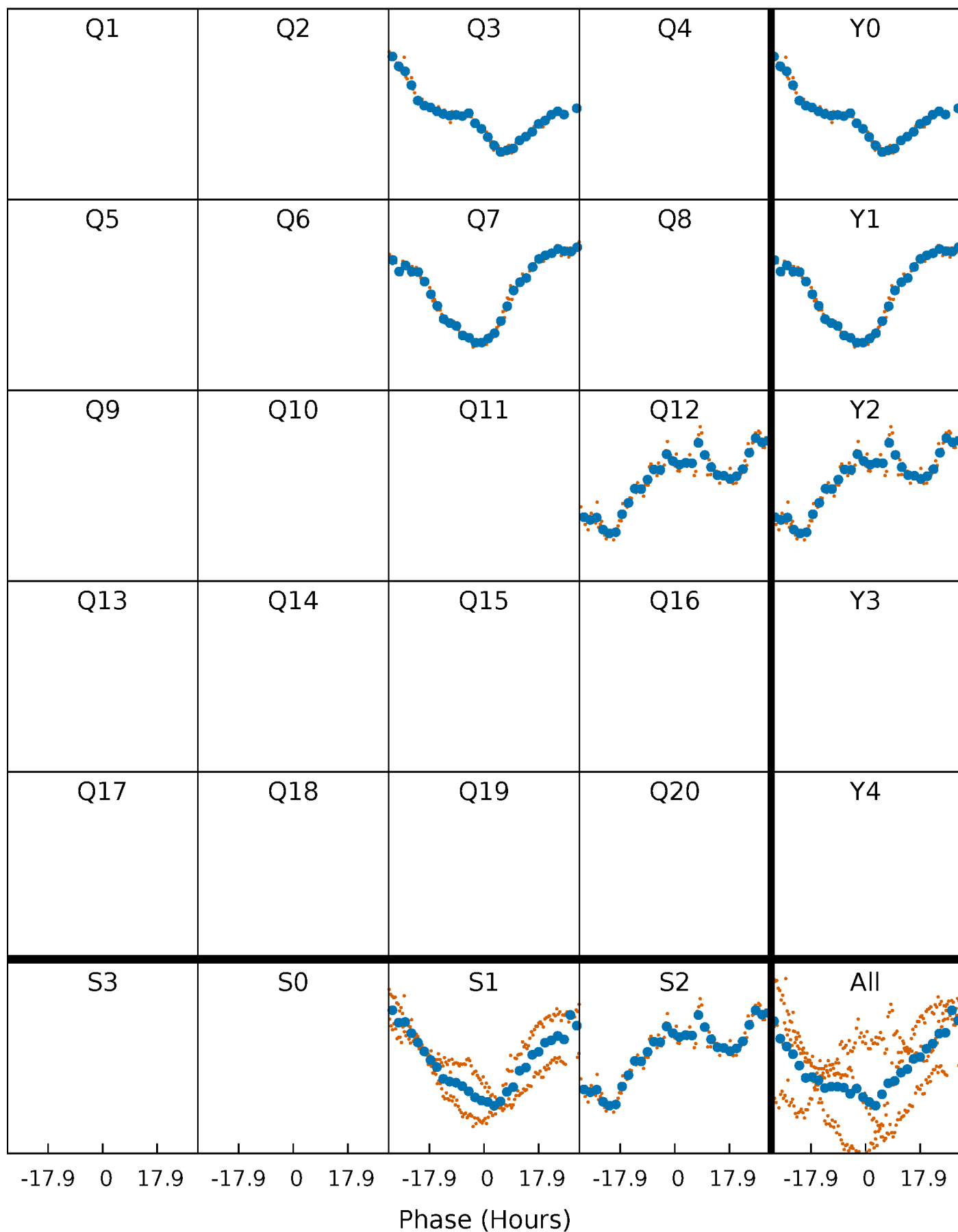


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



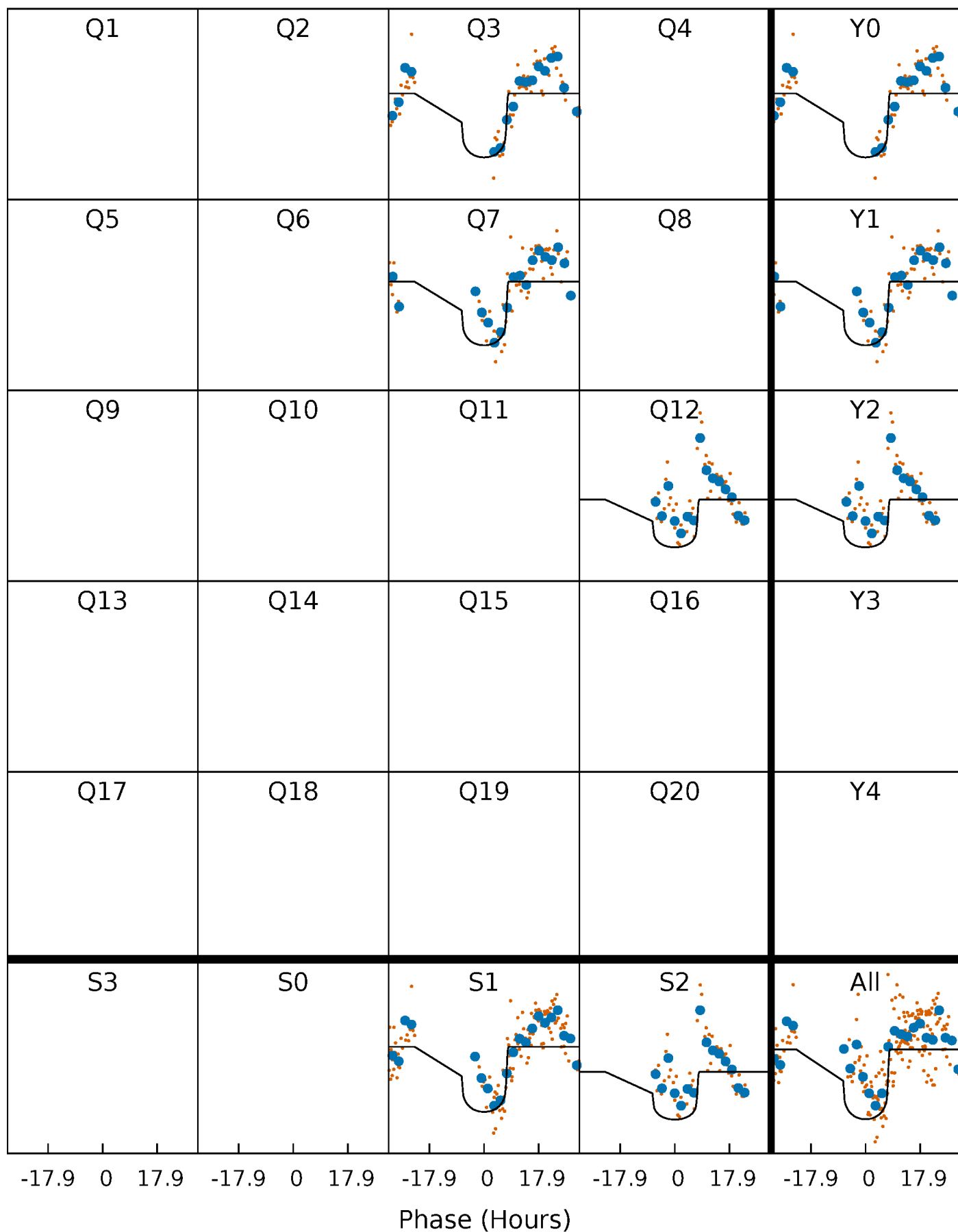
PDC Quarter-Phased Transit Curves

TCE 009714572-03 $P=450.553342$ Days $T_0=266.283433$ (BKJD)



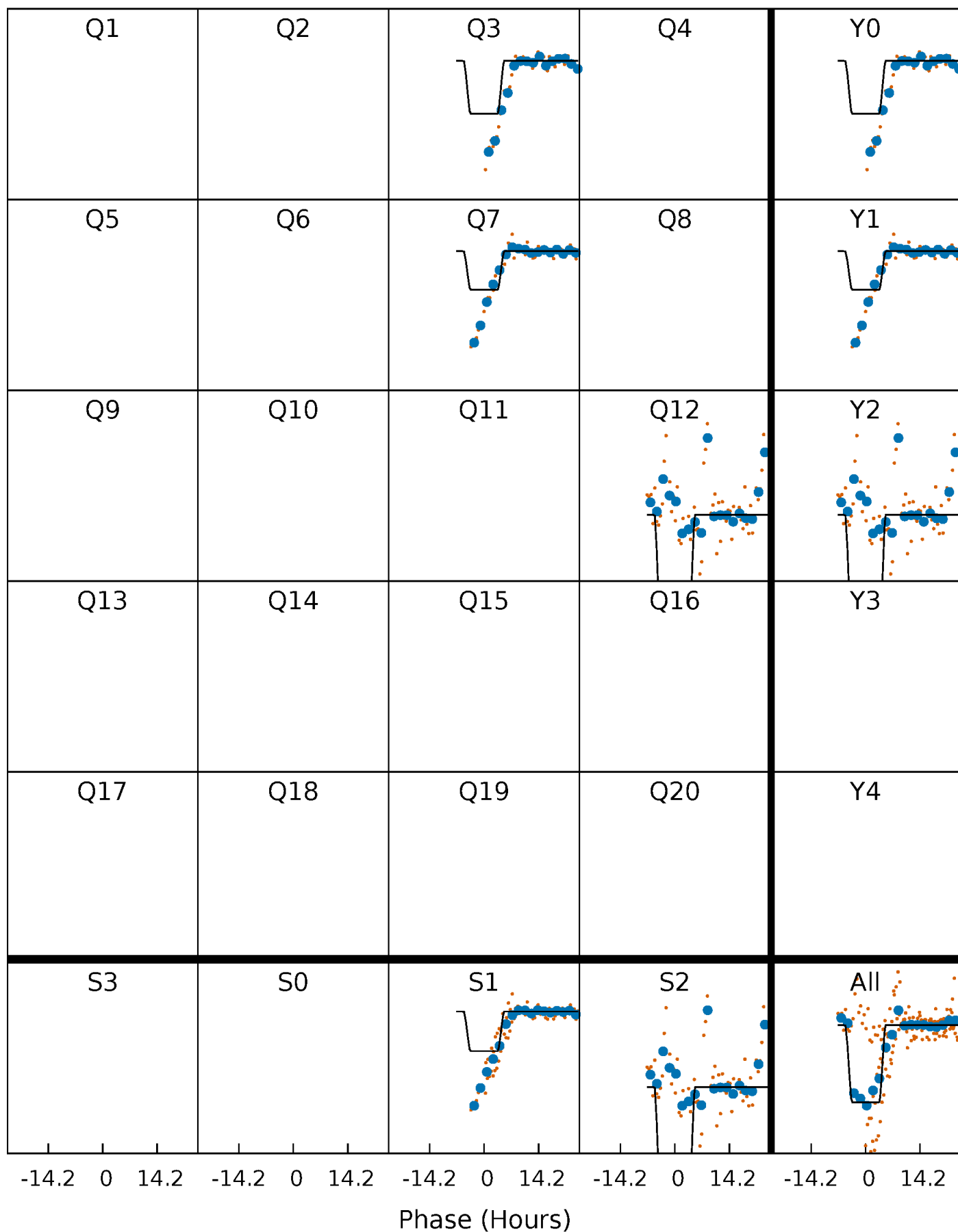
DV Quarter-Phased Transit Curves

TCE 009714572-03 $P=450.553342$ Days $T_0=266.283433$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

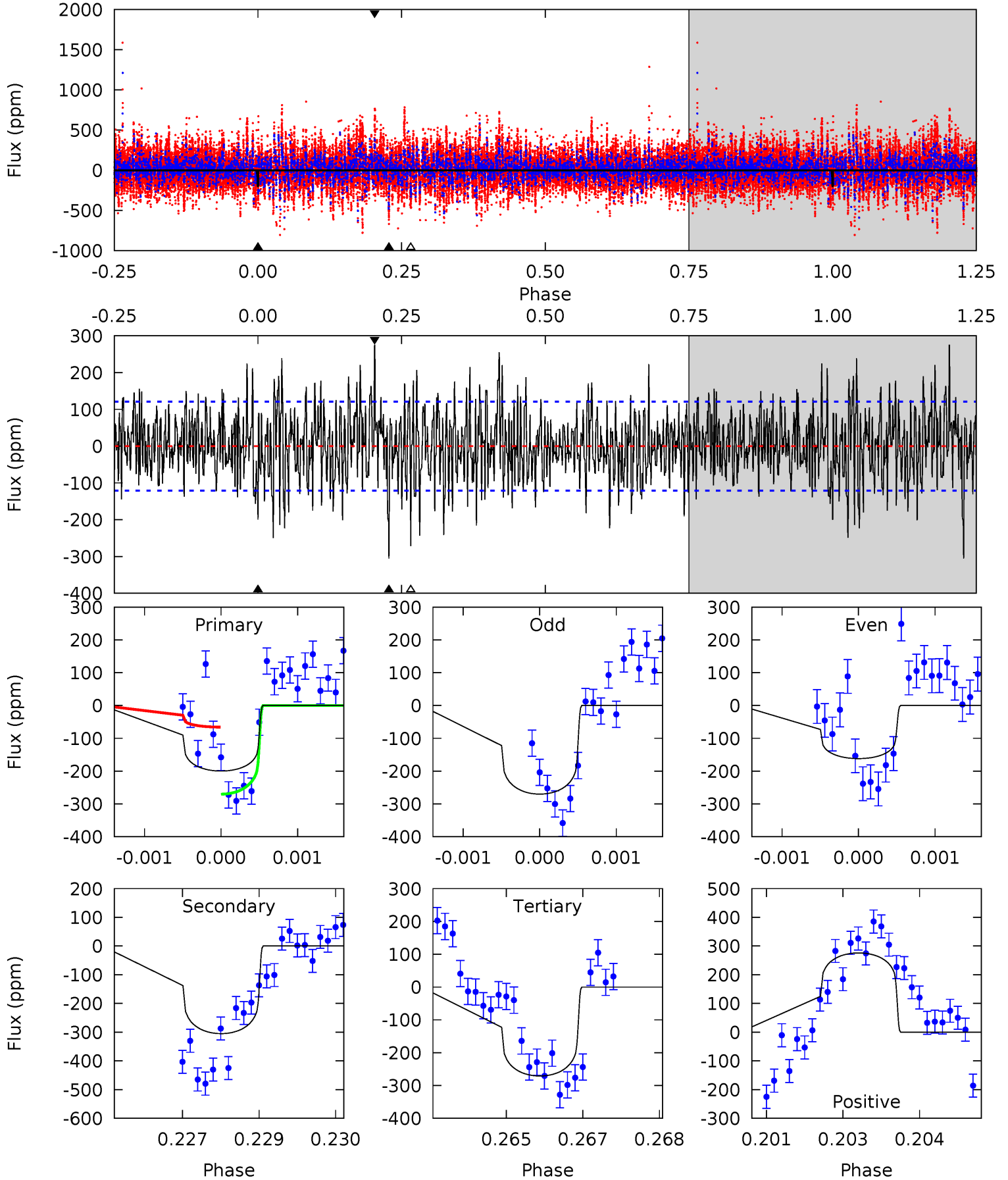
TCE 009714572-03 P=450.491886 Days $T_0=266.400088$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-03, P = 450.553342 Days, E = 266.283433 Days

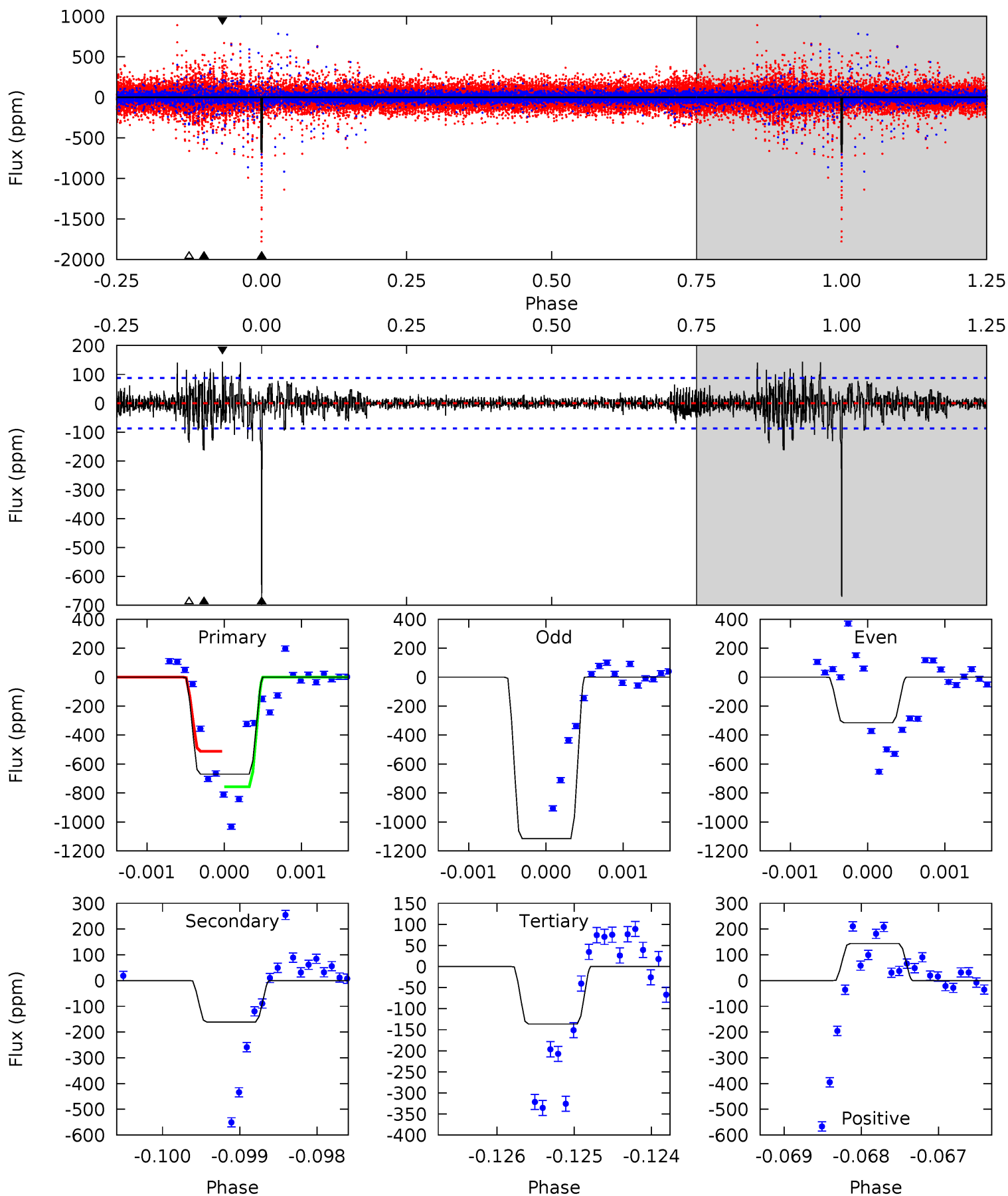
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.90	13.6	12.1	12.3	5.40	3.20	3.42	-3.18	-3.39	1.52	1.30	2.34	0.90	0.47	4.32



Alt Model-Shift Uniqueness Test

009714572-03, P = 450.491886 Days, E = 266.400088 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.8	10.0	8.51	8.96	5.45	3.30	1.28	33.3	32.8	1.54	1.08	26.8	0.68	0.18	7.36



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-305 ± 22	$3.75^{+0.73}_{-0.74}$	522^{+39}_{-46}	6762^{+530}_{-449}	19056^{+9962}_{-5526}
Alt.	-161 ± 16	$5.15^{+0.96}_{-0.90}$	519^{+44}_{-44}	4958^{+249}_{-235}	5276^{+2509}_{-1467}

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 $A_{obs} \gg 1.0$

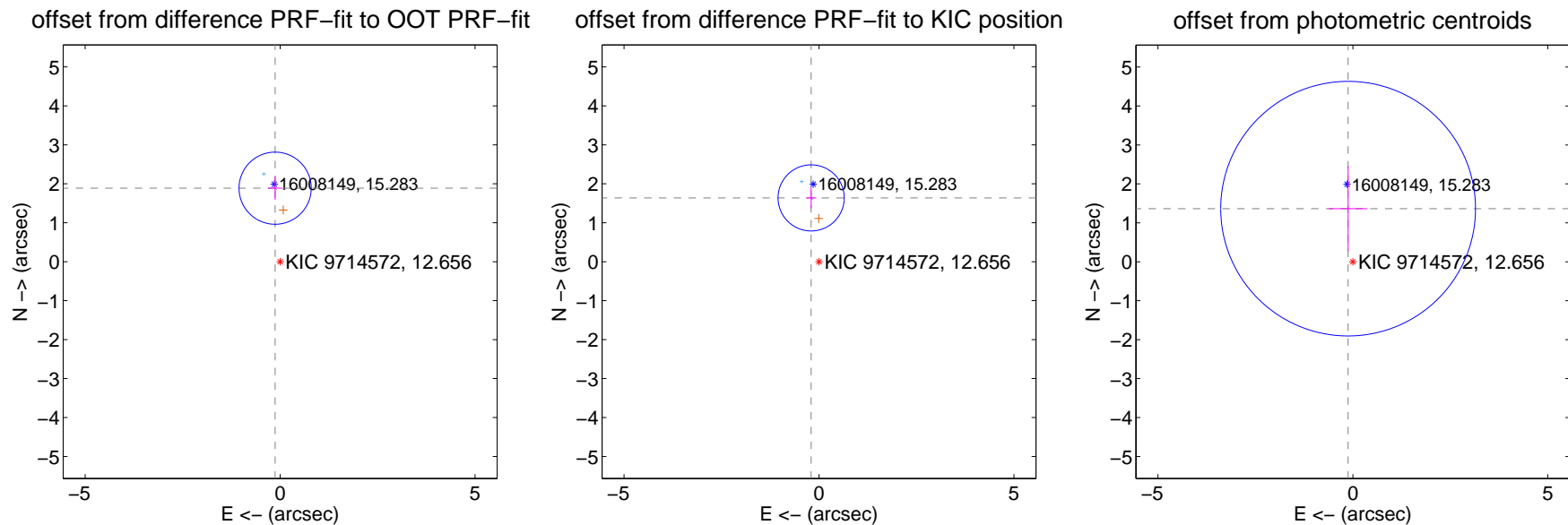
DV Centroid Data

Supplemental centroid analysis for 009714572-03. Kepler magnitude: 12.66. Transit SNR 8.40

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.891 ± 0.309	6.13	0.128 ± 0.184	1.887 ± 0.298
PRF-fit source offset from KIC position	1.650 ± 0.283	5.83	0.201 ± 0.135	1.638 ± 0.271
photometric centroid source offset	1.37 ± 1.09	1.26	0.12 ± 0.50	1.36 ± 1.09



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



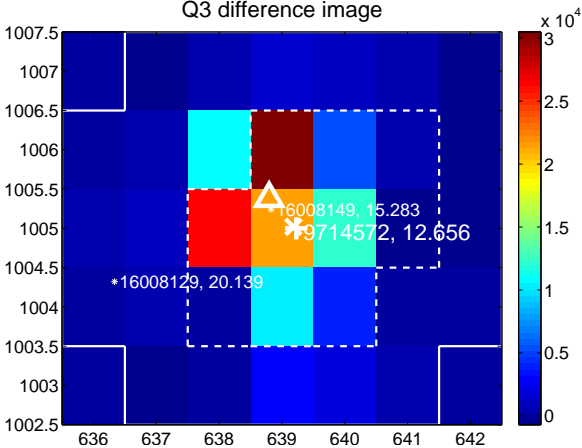
Q2 no difference image



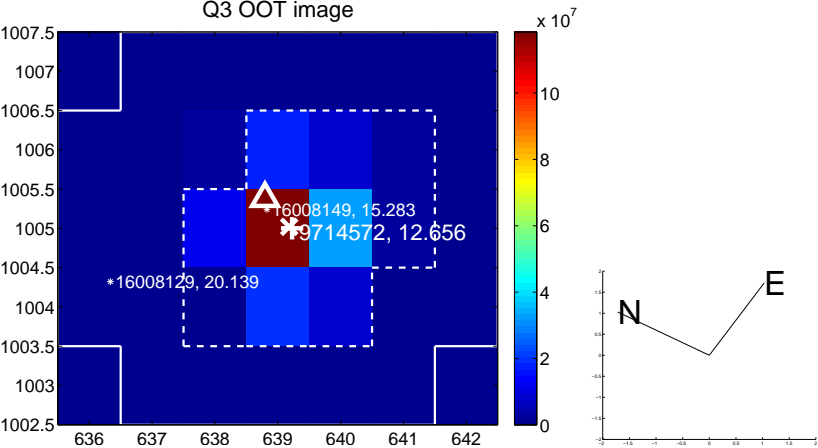
Q2 no OOT image



Q3 difference image



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.

Q5 no difference image



Q5 no OOT image



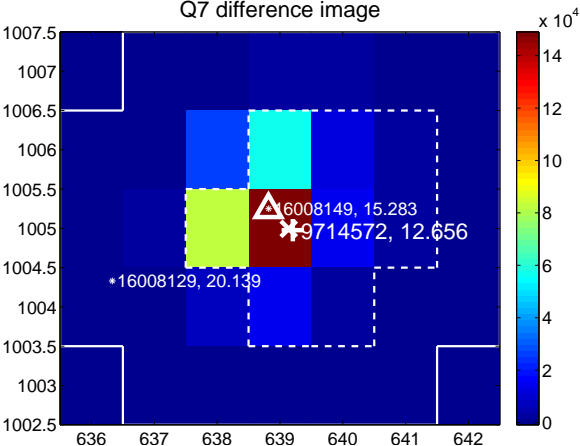
Q6 no difference image



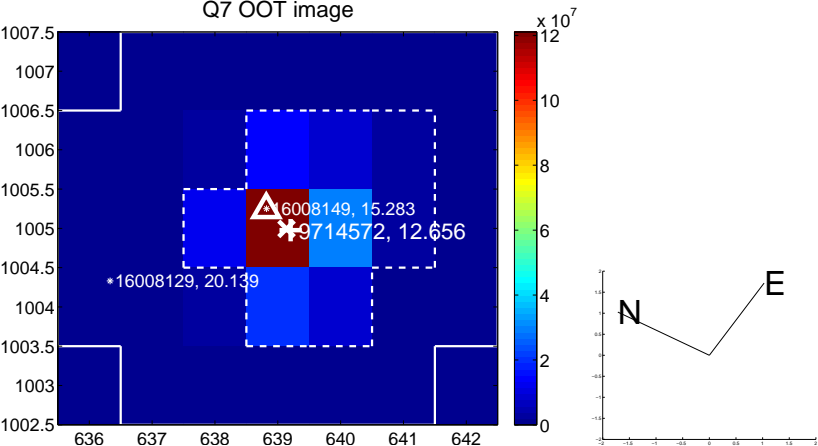
Q6 no OOT image



Q7 difference image



Q7 OOT image



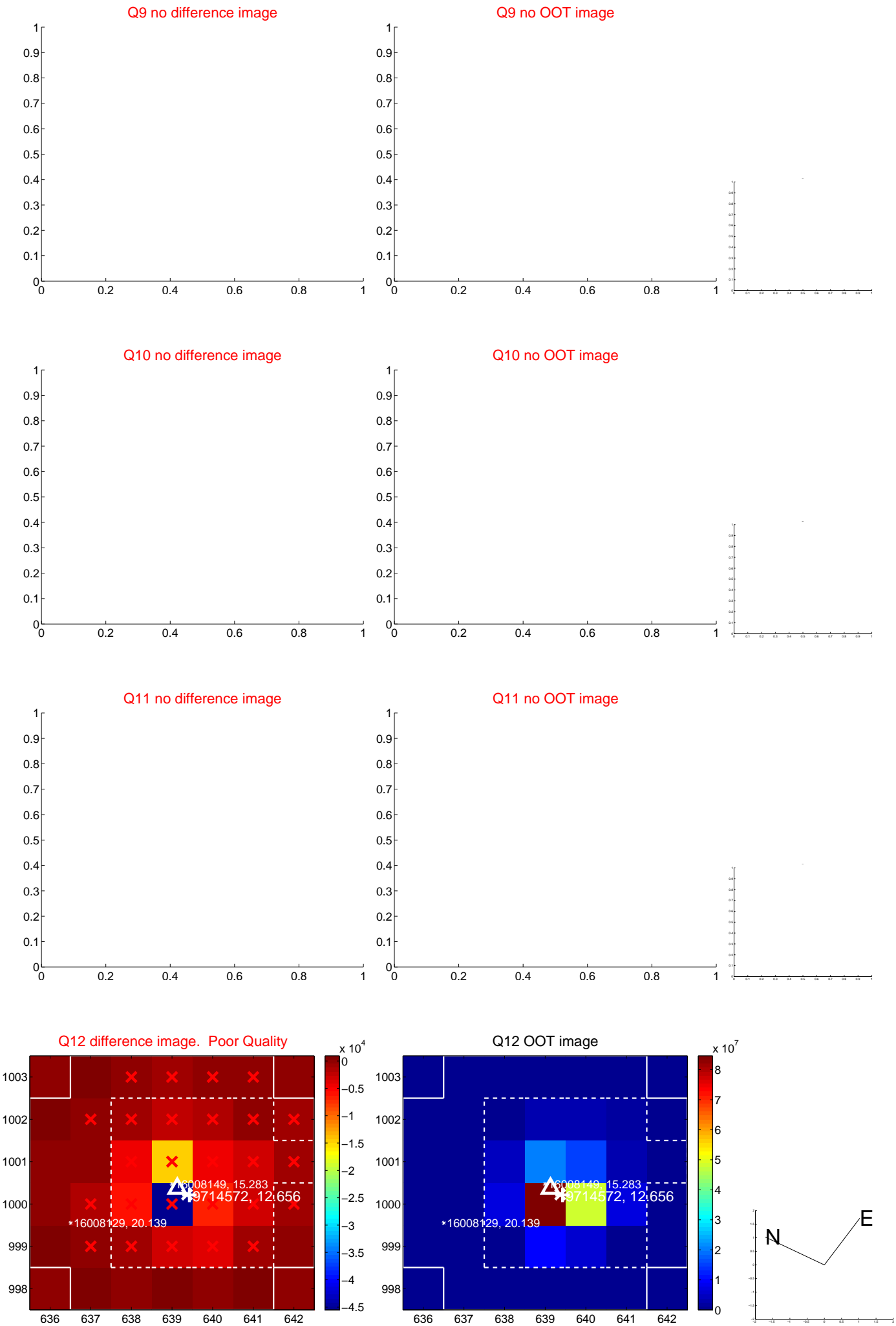
Q8 no difference image



Q8 no OOT image



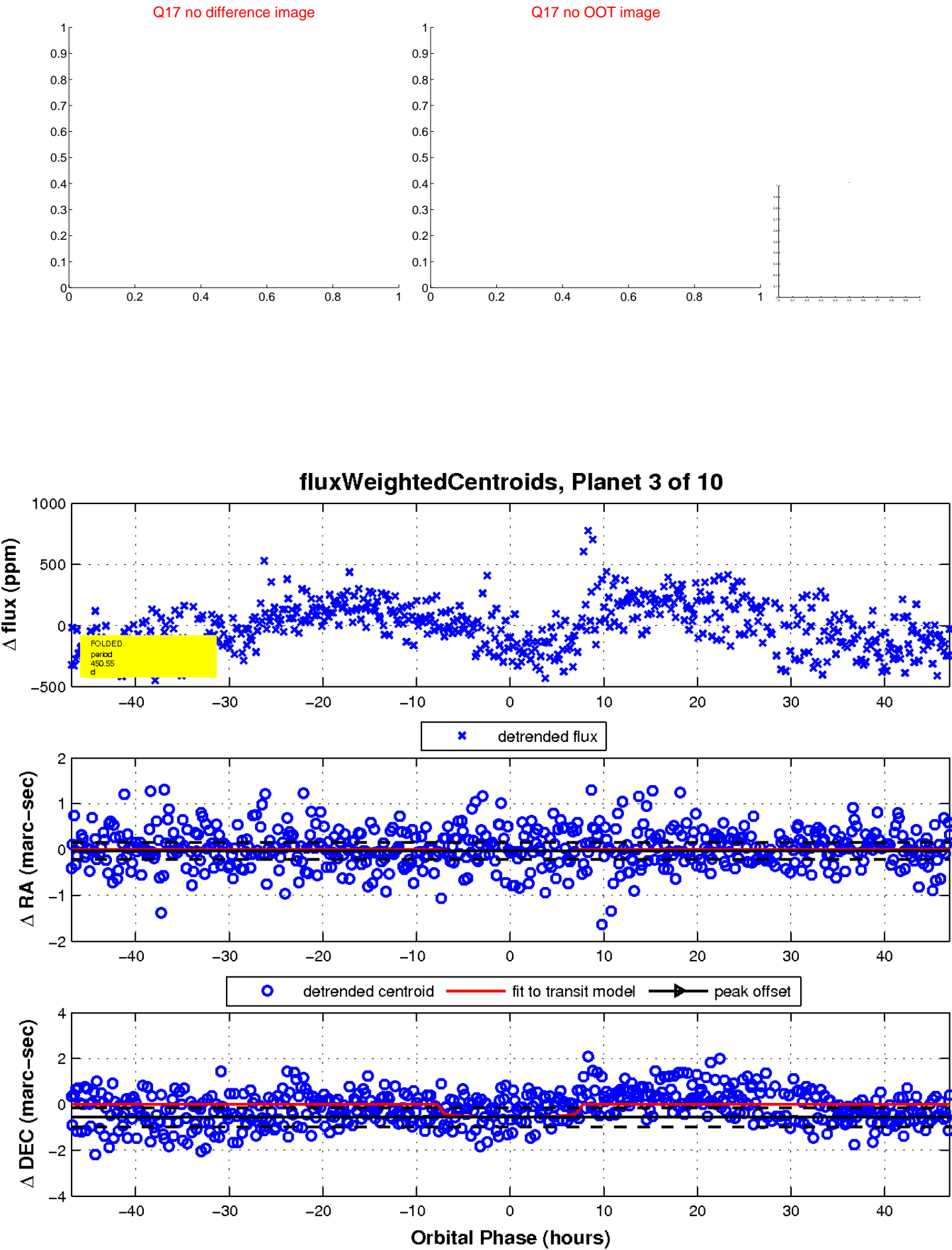
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

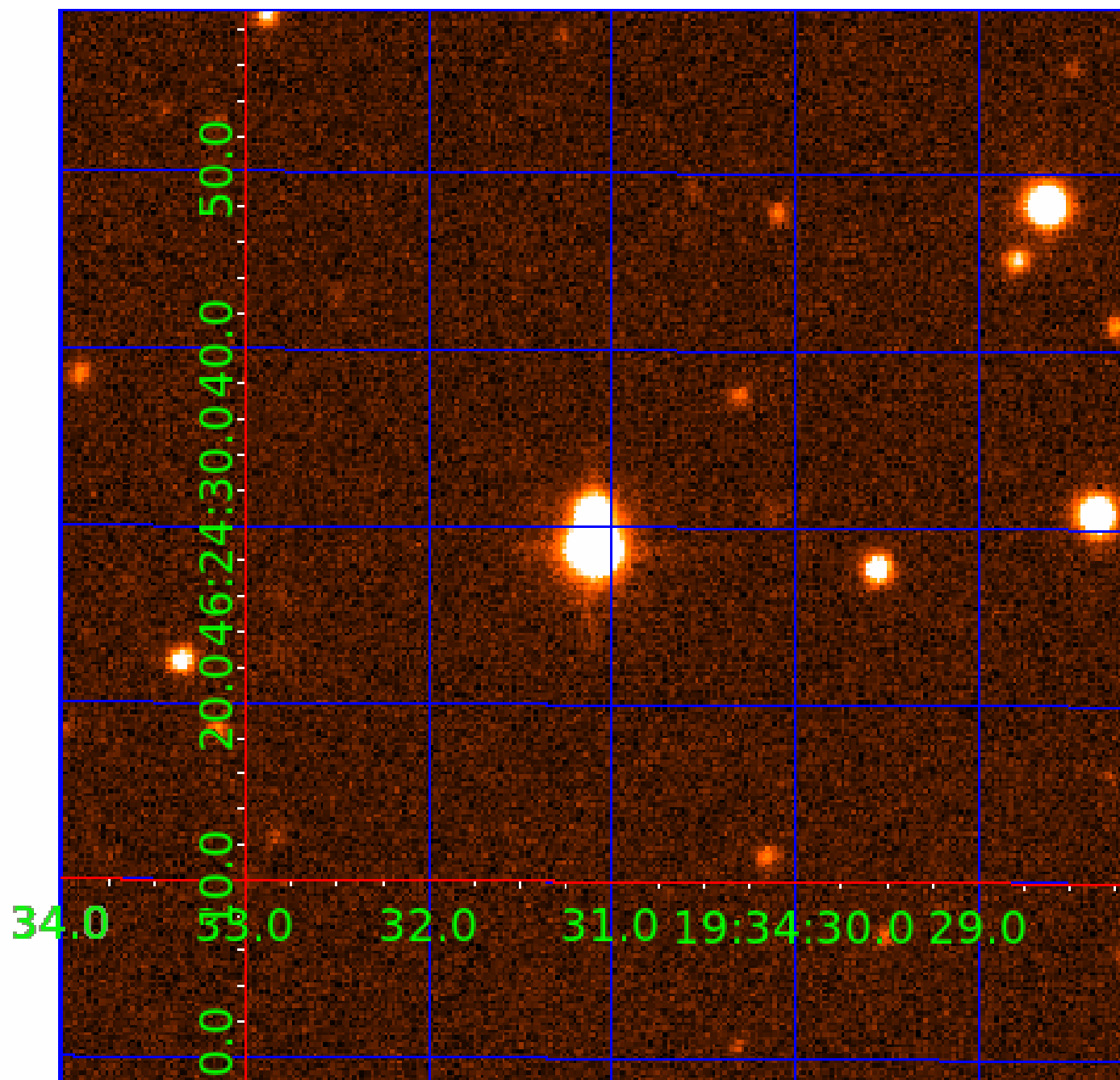


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD— CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

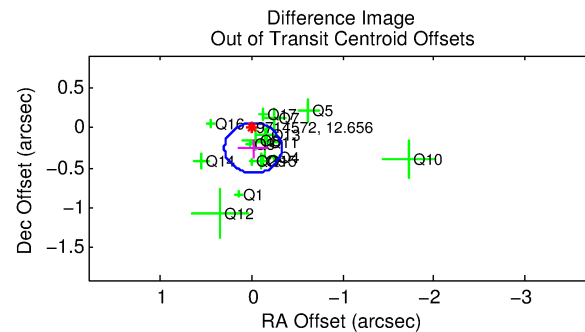
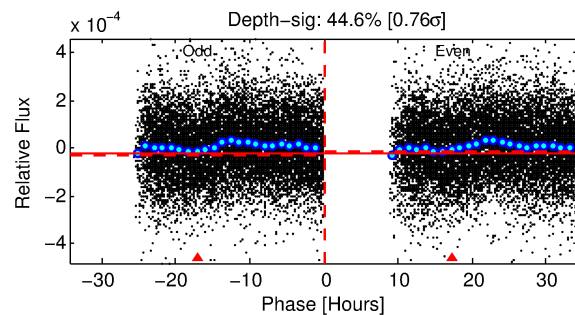
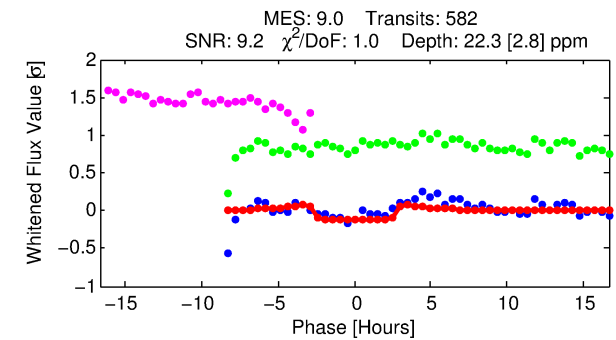
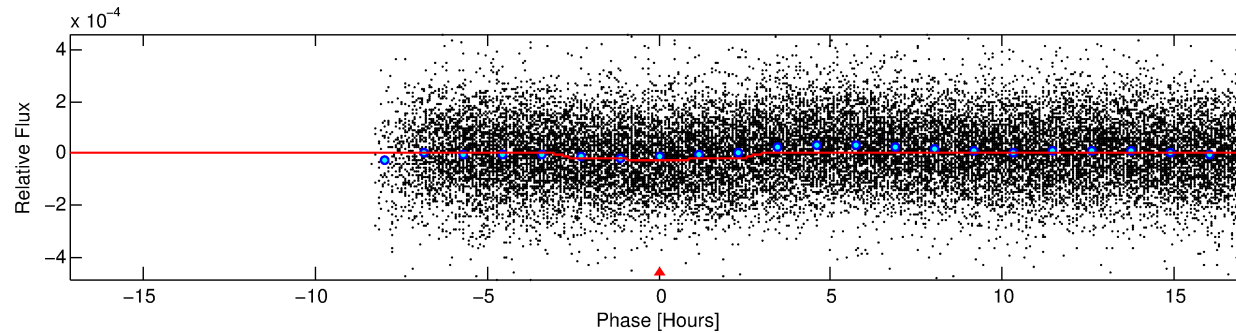
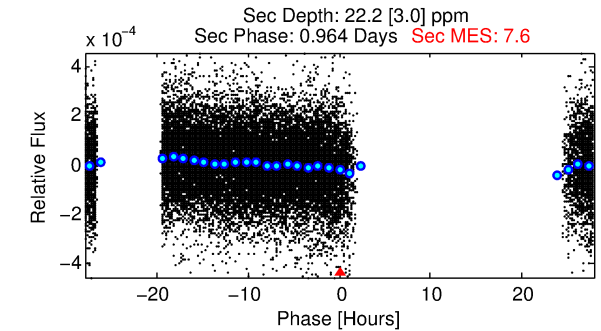
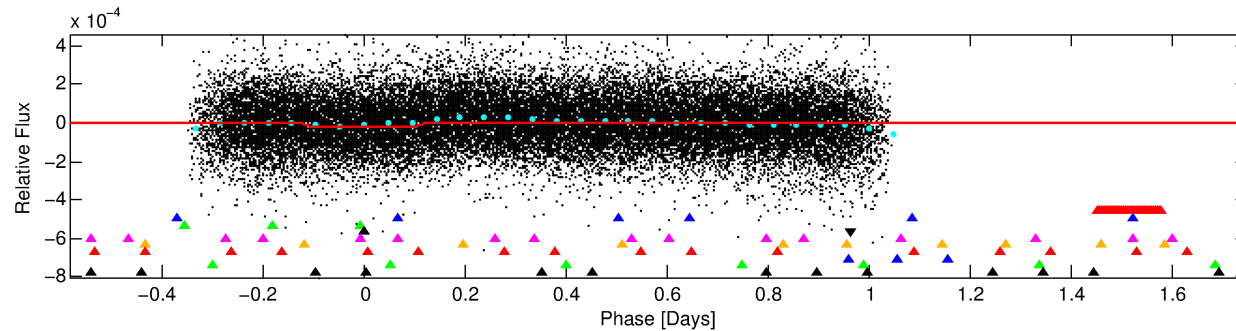
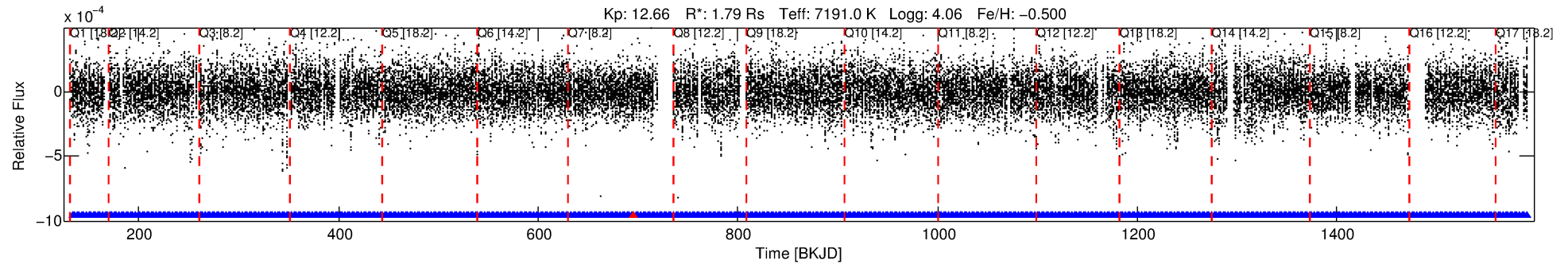
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-04

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 4 of 10 Period: 2.334 d



DV Fit Results:

Period = 2.33357 [0.00002] d
Epoch = 133.6253 [0.0042] BKJD
Rp/R* = 0.0051 [0.0010]
a/R* = 1.56 [1.13]
b = 0.92 [0.20]
Seff = 5336.29 [2580.59]
Teq = 2179 [263] K
Rp = 1.00 [0.38] Re
a = 0.0380 [0.0111] AU
Ag = 17.58 [10.96] [1.51σ]
Teffp = 6900 [795] K [5.64σ]

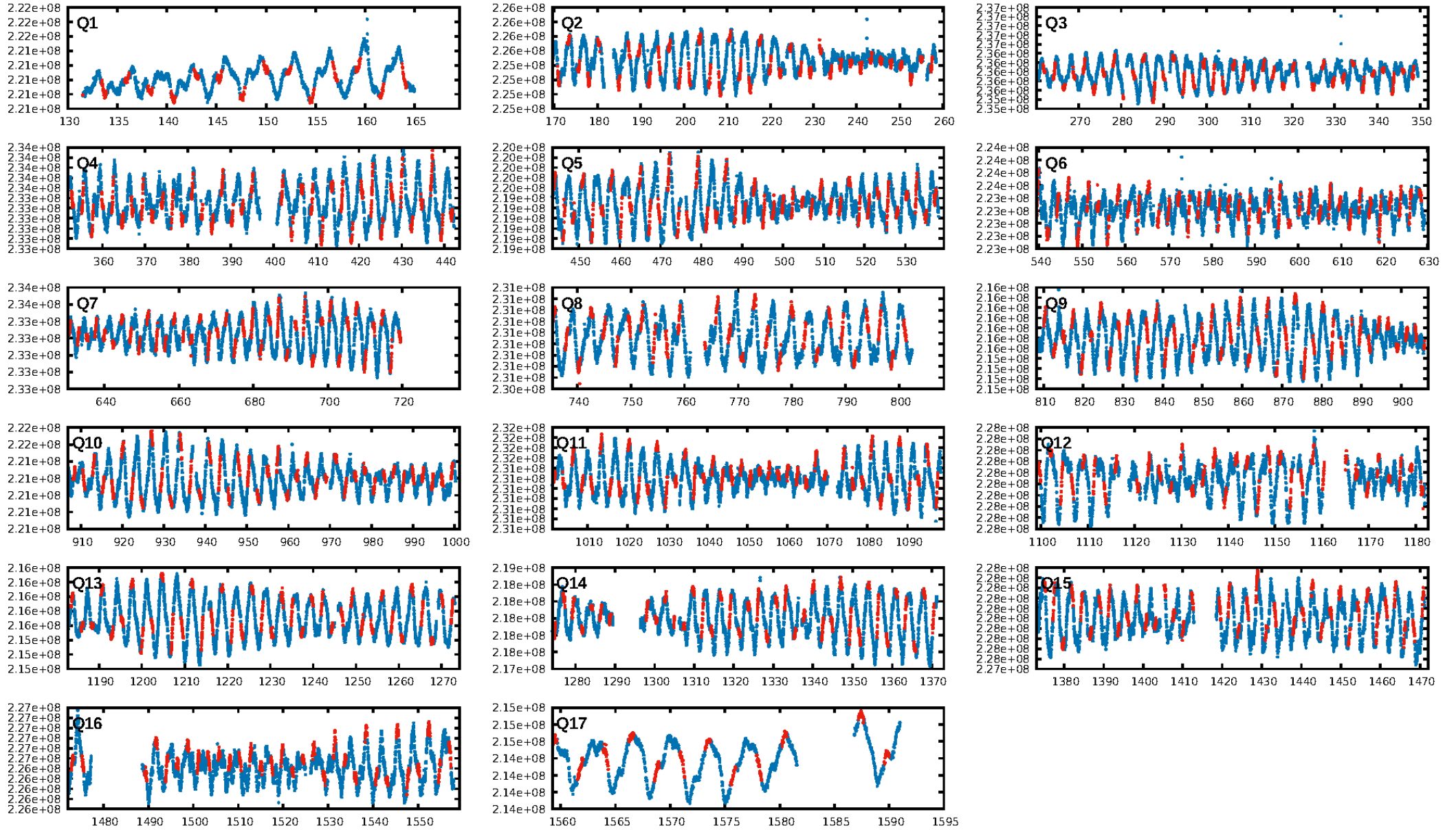
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [199.02σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [555/556]
GhostDiagnostic-chr: 1.97
Centroid-sig: 0.1%
Centroid-so: 1.988 arcsec [2.23σ]
OotOffset-rm: 0.256 arcsec [2.44σ]
KicOffset-rm: 0.440 arcsec [4.02σ]
OotOffset-st: 3/4/4/5 [16]
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DiffImageQuality-fgm: 0.31 [5/16]
DiffImageOverlap-fno: 1.00 [17/17]

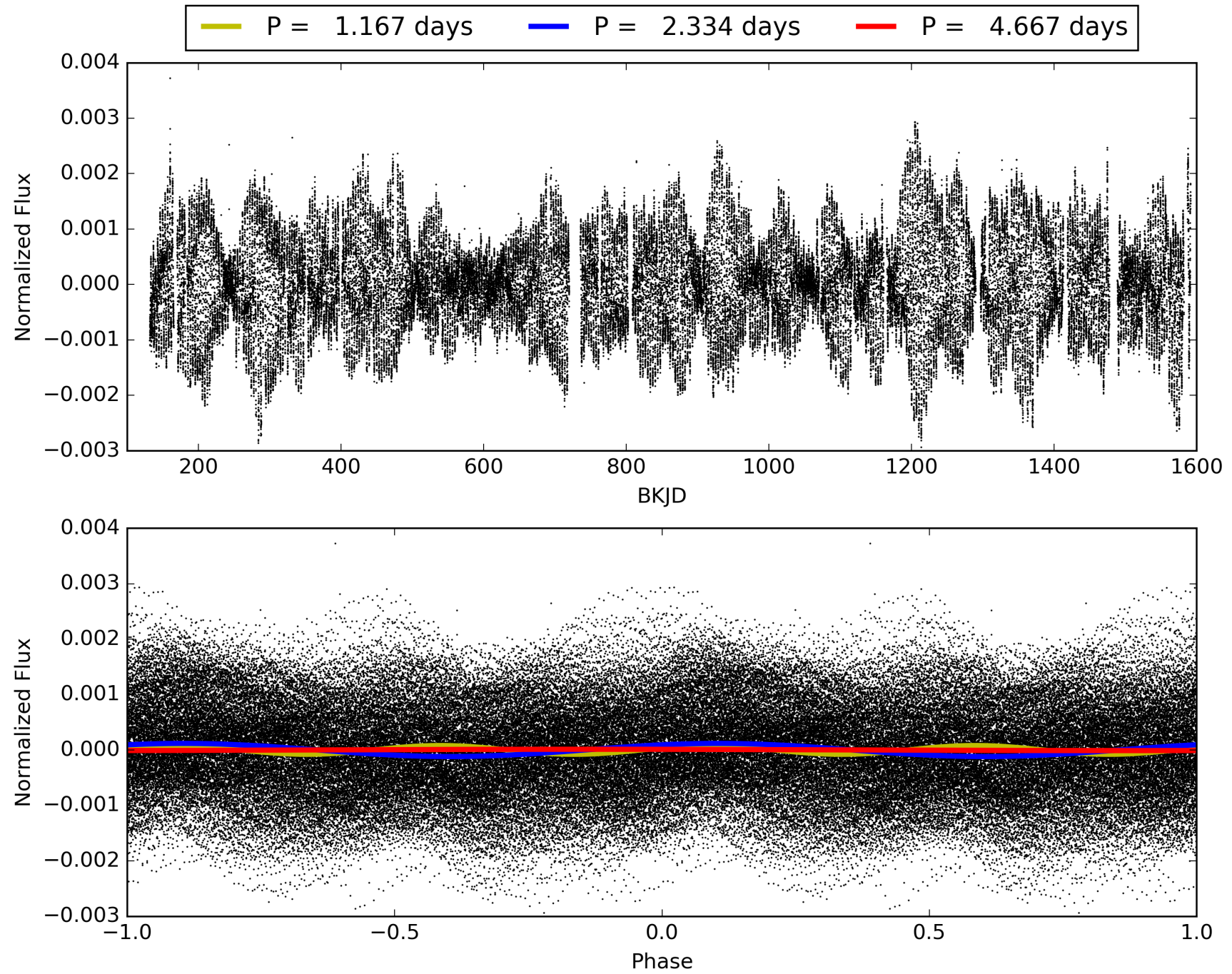
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:26 Z

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

TCE 009714572-04, PDC Light Curves

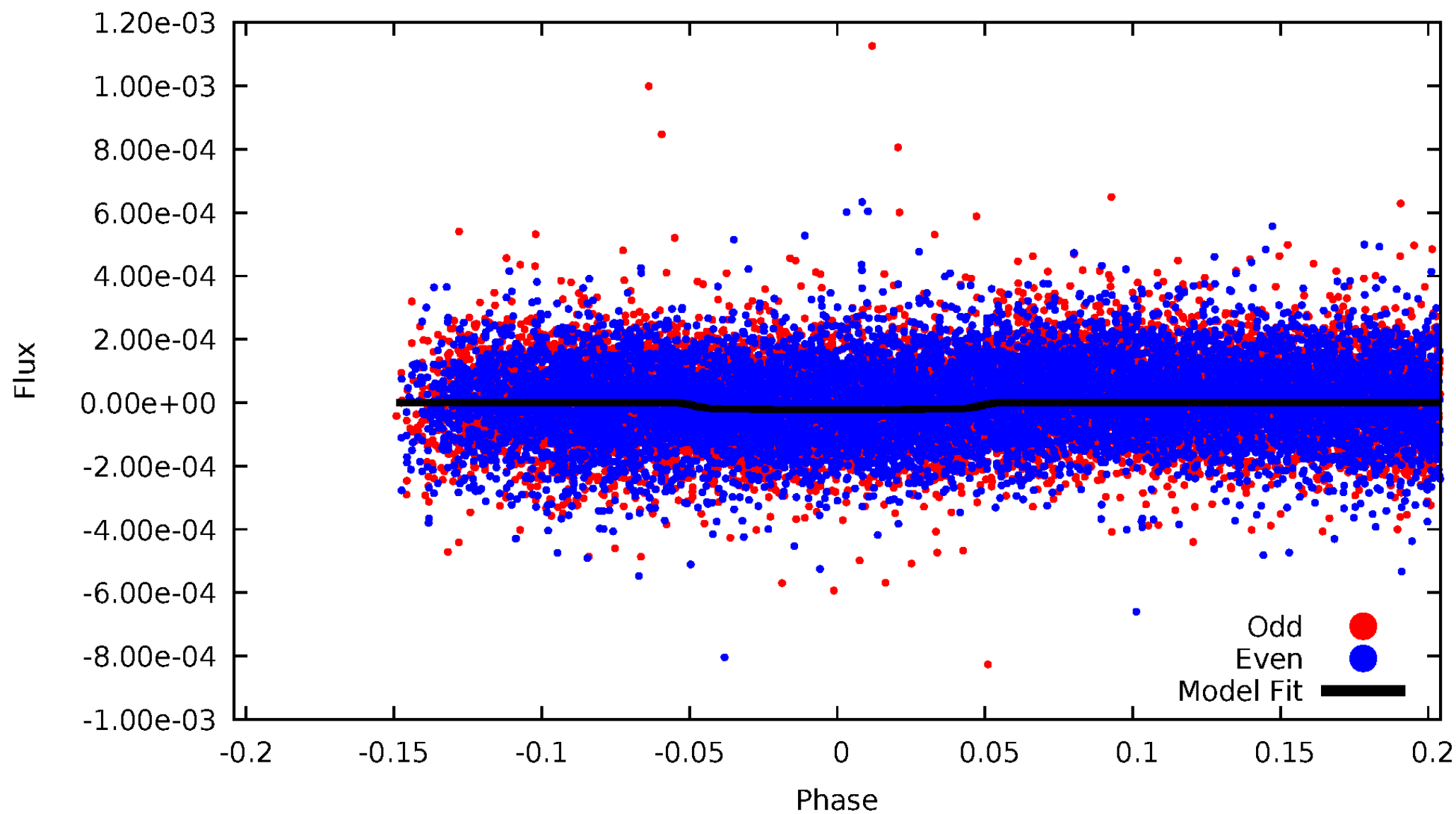


TCE 009714572-04



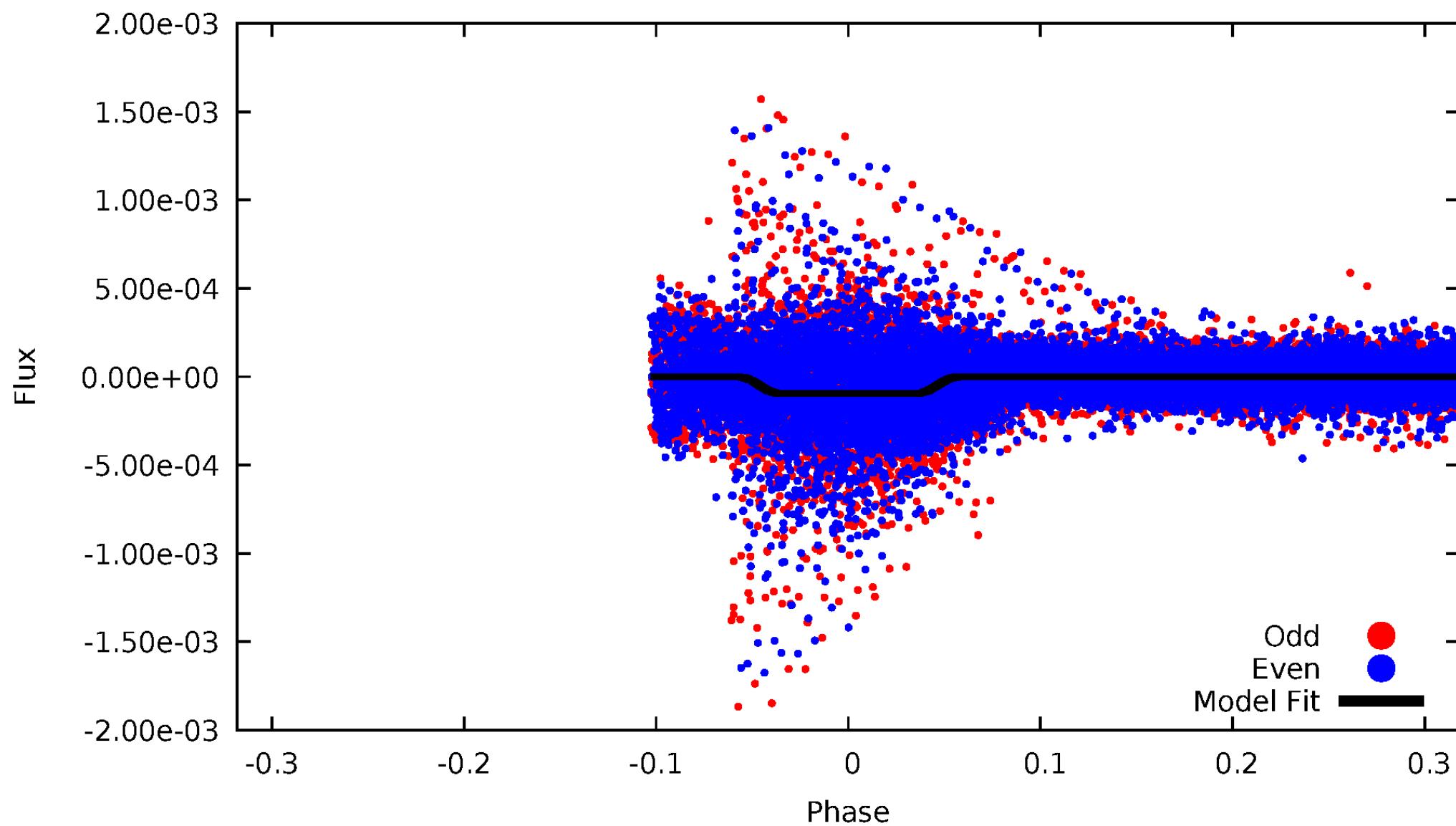
DV Odd/Even

TCE 009714572-04



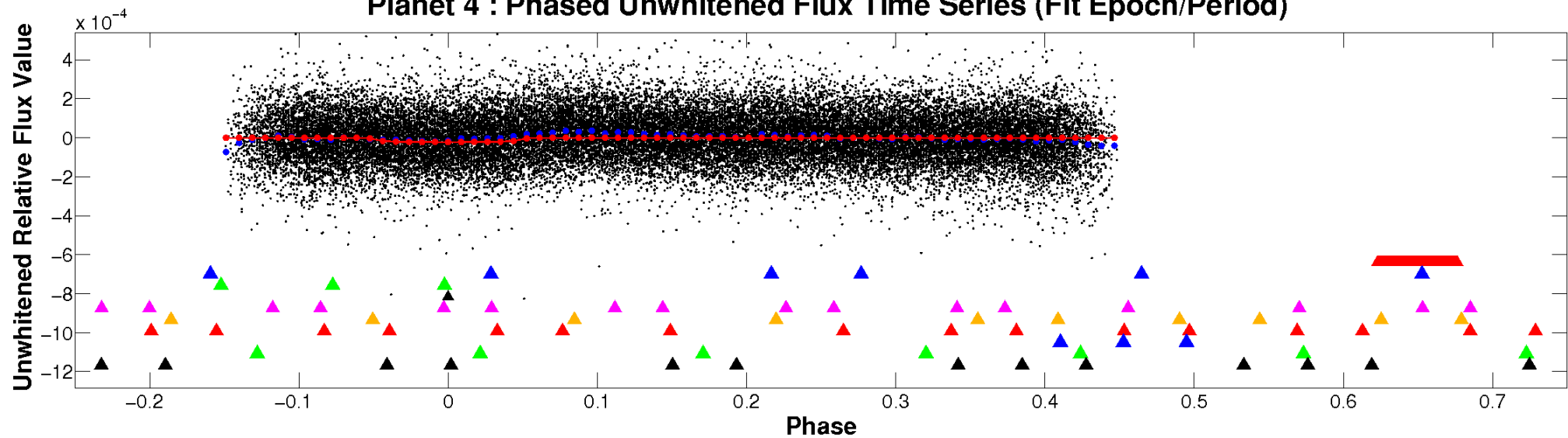
ALT Odd/Even

TCE 009714572-04

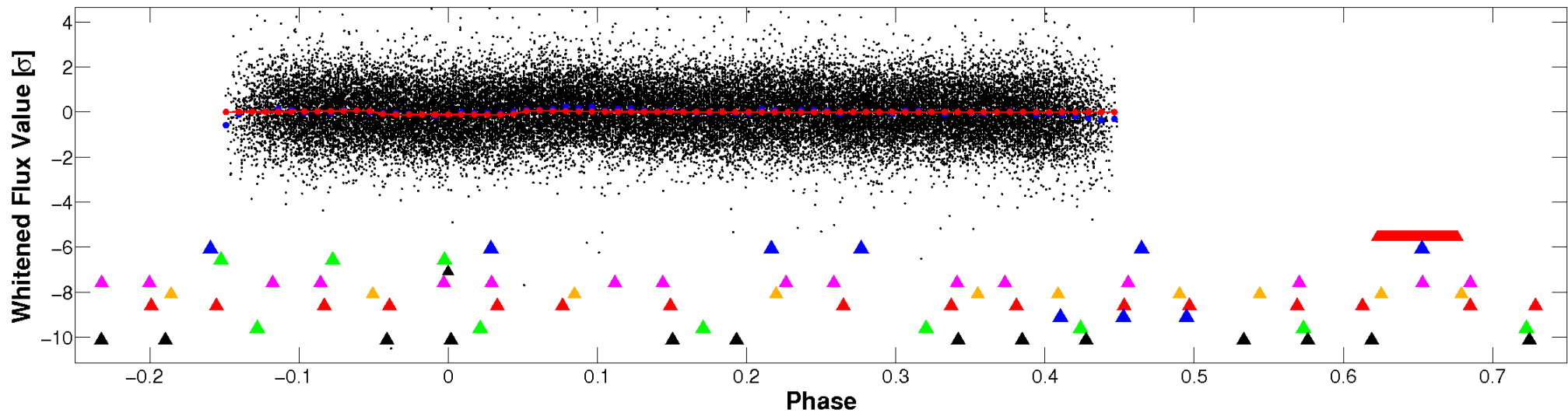


Non-Whitened Vs. Whitened Light Curve

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

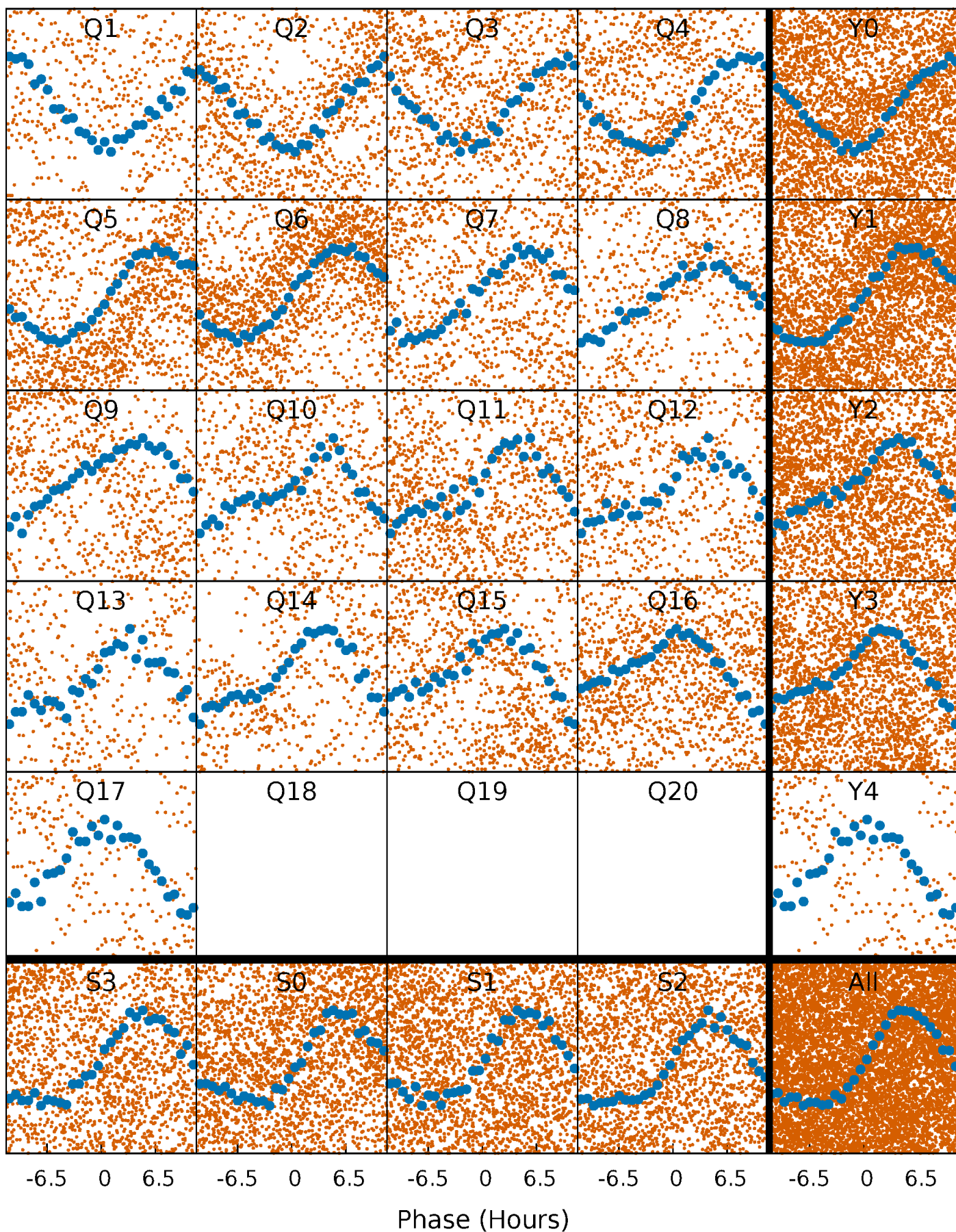


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



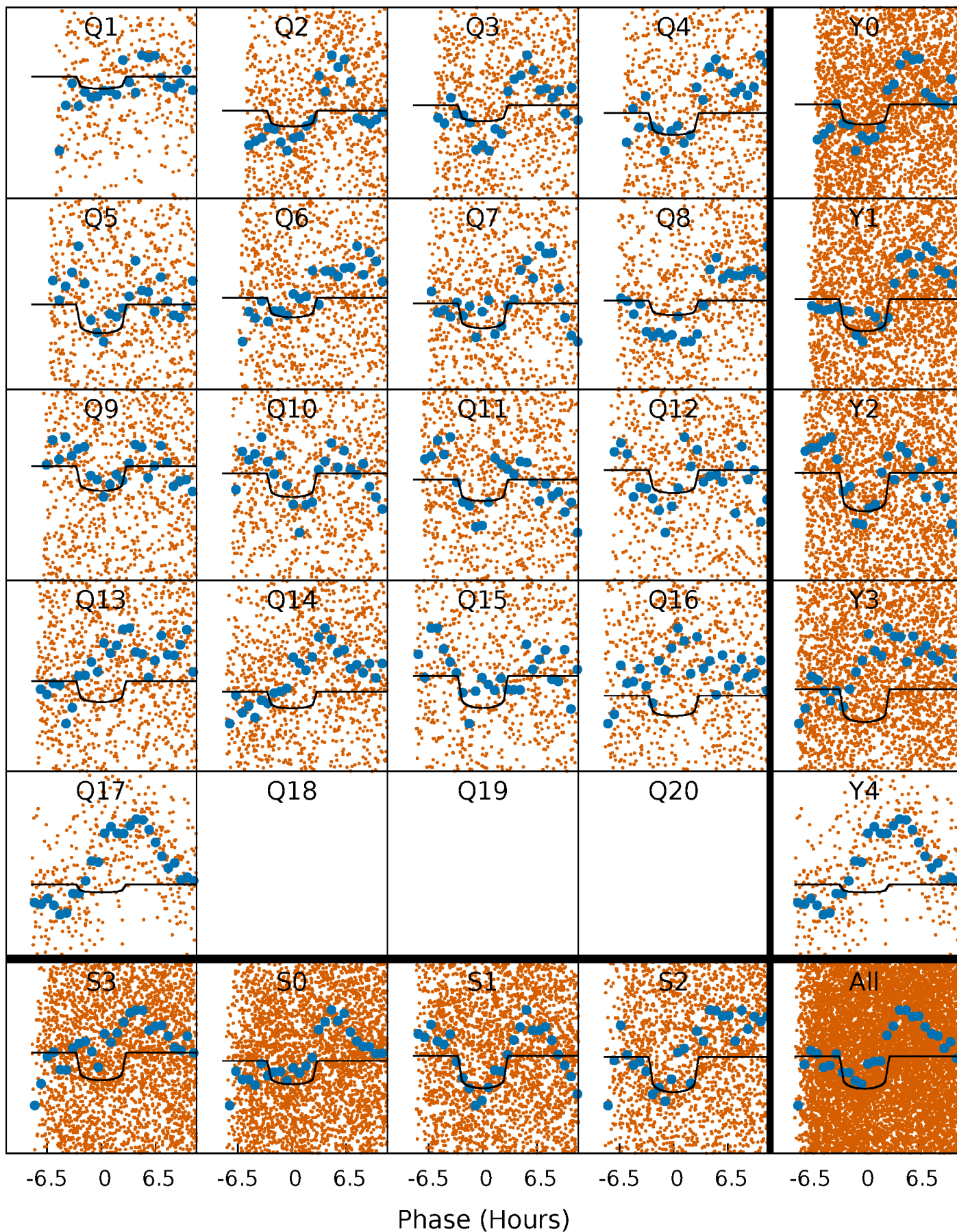
PDC Quarter-Phased Transit Curves

TCE 009714572-04 P= 2.333568 Days $T_0=133.625316$ (BKJD)



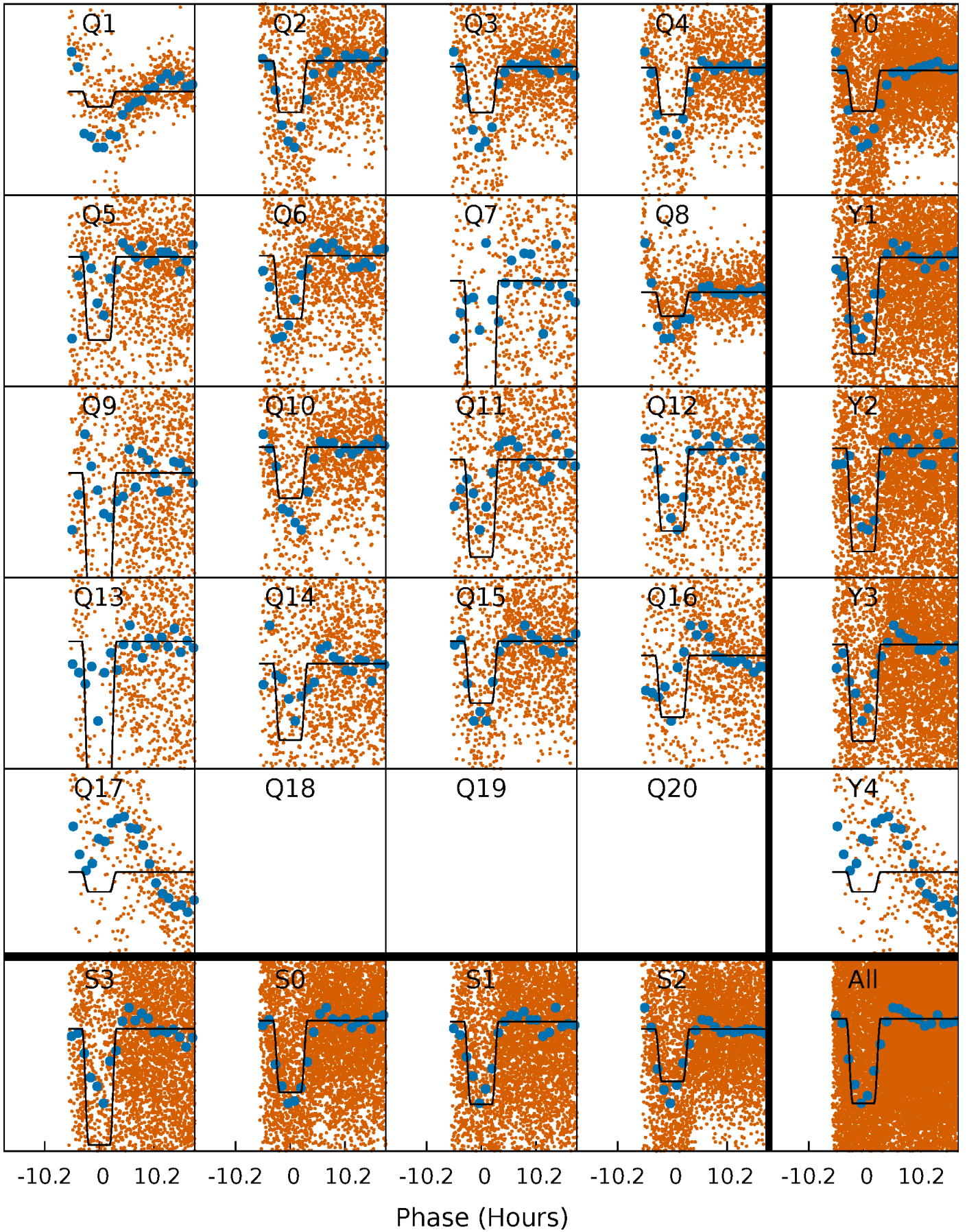
DV Quarter-Phased Transit Curves

TCE 009714572-04 P= 2.333568 Days $T_0=133.625316$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

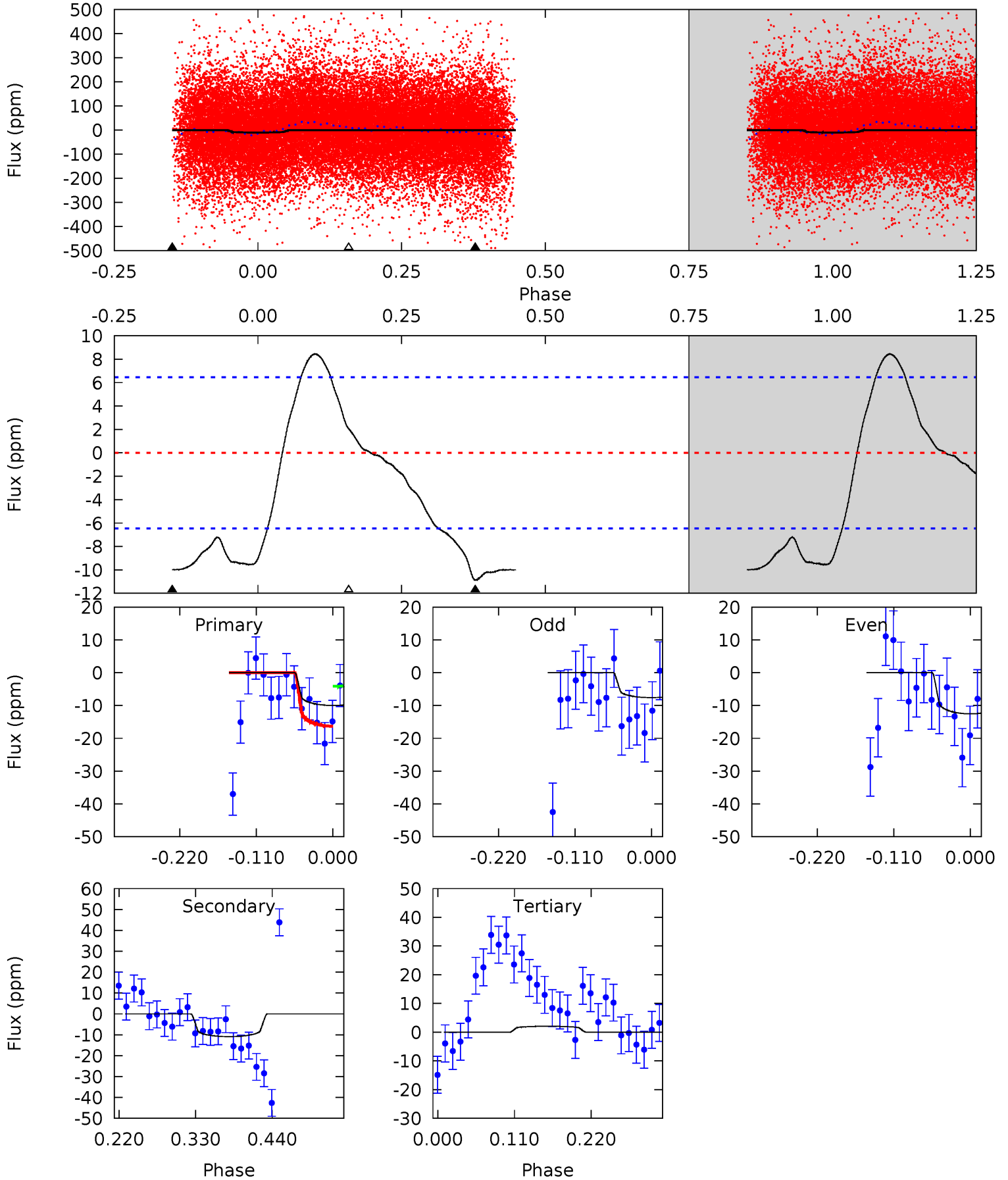
TCE 009714572-04 P= 2.333350 Days $T_0=133.643240$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-04, P = 2.333568 Days, E = 131.291748 Days

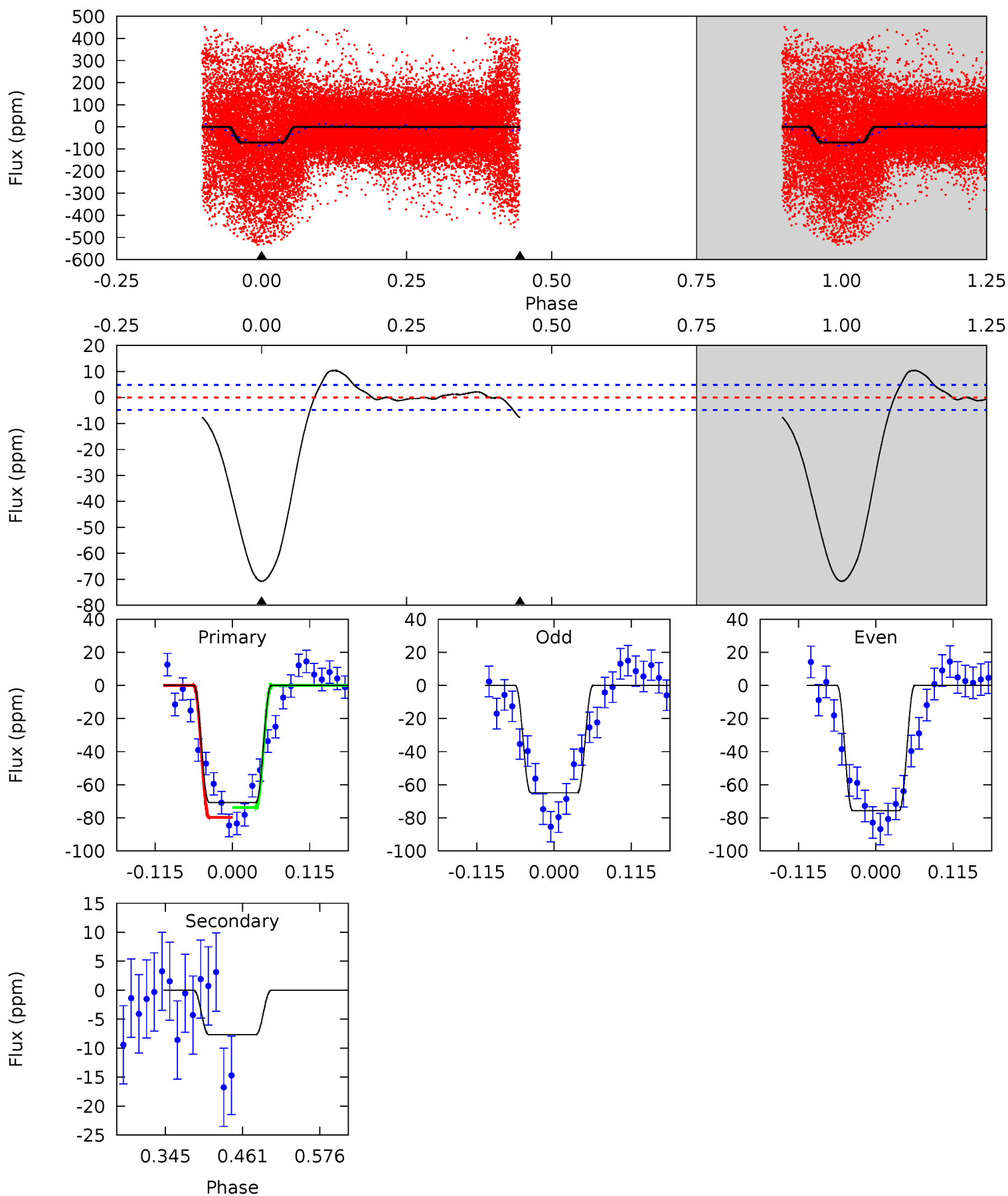
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.03	7.66	-1.44	0	4.54	1.60	3.88	8.47	7.03	9.10	7.66	1.74	0.94	0.44	4.19



Alt Model-Shift Uniqueness Test

009714572-04, P = 2.333350 Days, E = 131.309890 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
66.7	7.24	0	0	4.54	1.58	3.52	66.7	66.7	7.24	7.24	5.03	1.07	0.13	1.24



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 1	$0.99^{+0.25}_{-0.22}$	3015^{+244}_{-262}	5601^{+706}_{-477}	$8.863^{+5.968}_{-3.362}$
Alt.	-8 ± 1	$1.88^{+0.38}_{-0.34}$	3042^{+233}_{-291}	3937^{+251}_{-240}	$1.674^{+0.881}_{-0.493}$

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

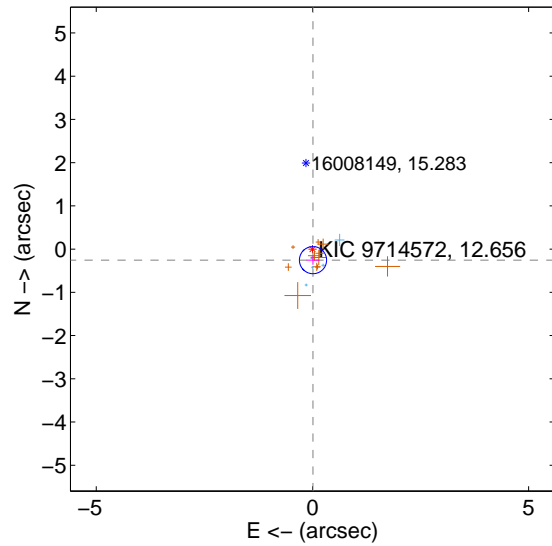
Supplemental centroid analysis for 009714572-04. Kepler magnitude: 12.66. Transit SNR 9.23

There are 5 quarters with good PRF difference image offsets

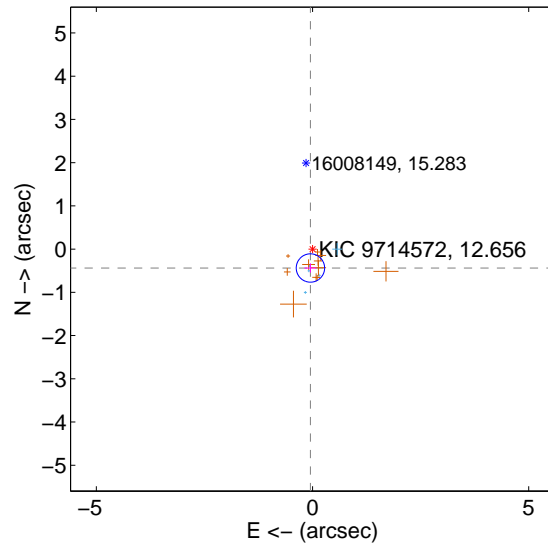
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.256 ± 0.105	2.44	-0.013 ± 0.149	-0.256 ± 0.105
PRF-fit source offset from KIC position	0.440 ± 0.109	4.02	0.049 ± 0.139	-0.437 ± 0.106
photometric centroid source offset	1.99 ± 0.89	2.23	-1.63 ± 0.73	1.14 ± 1.16

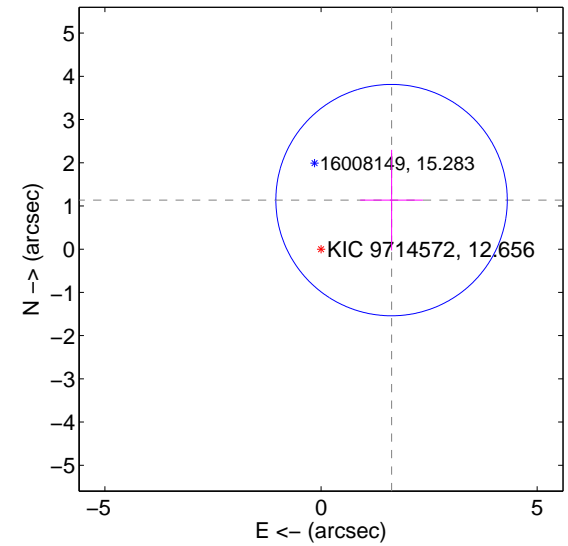
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

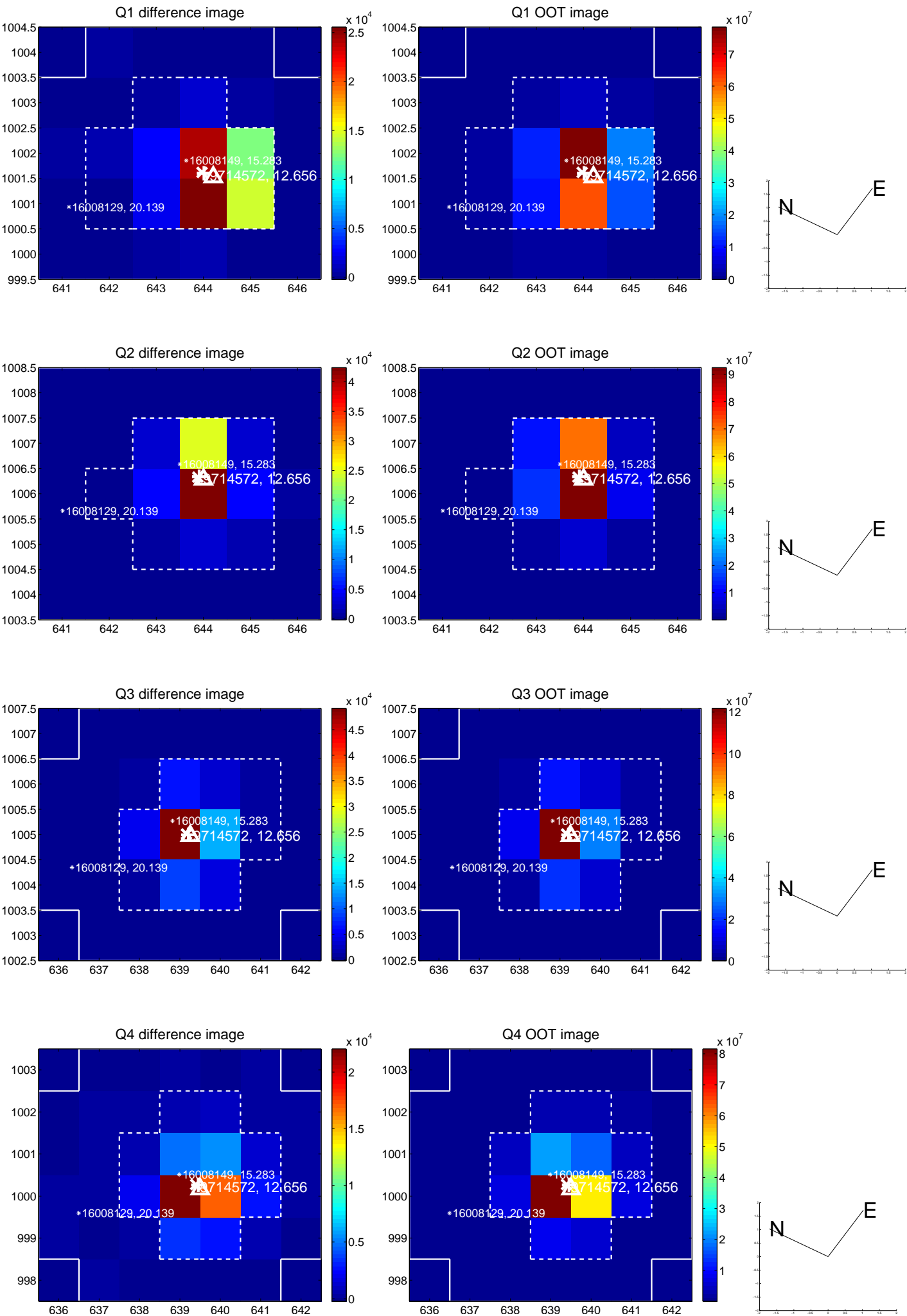


offset from photometric centroids

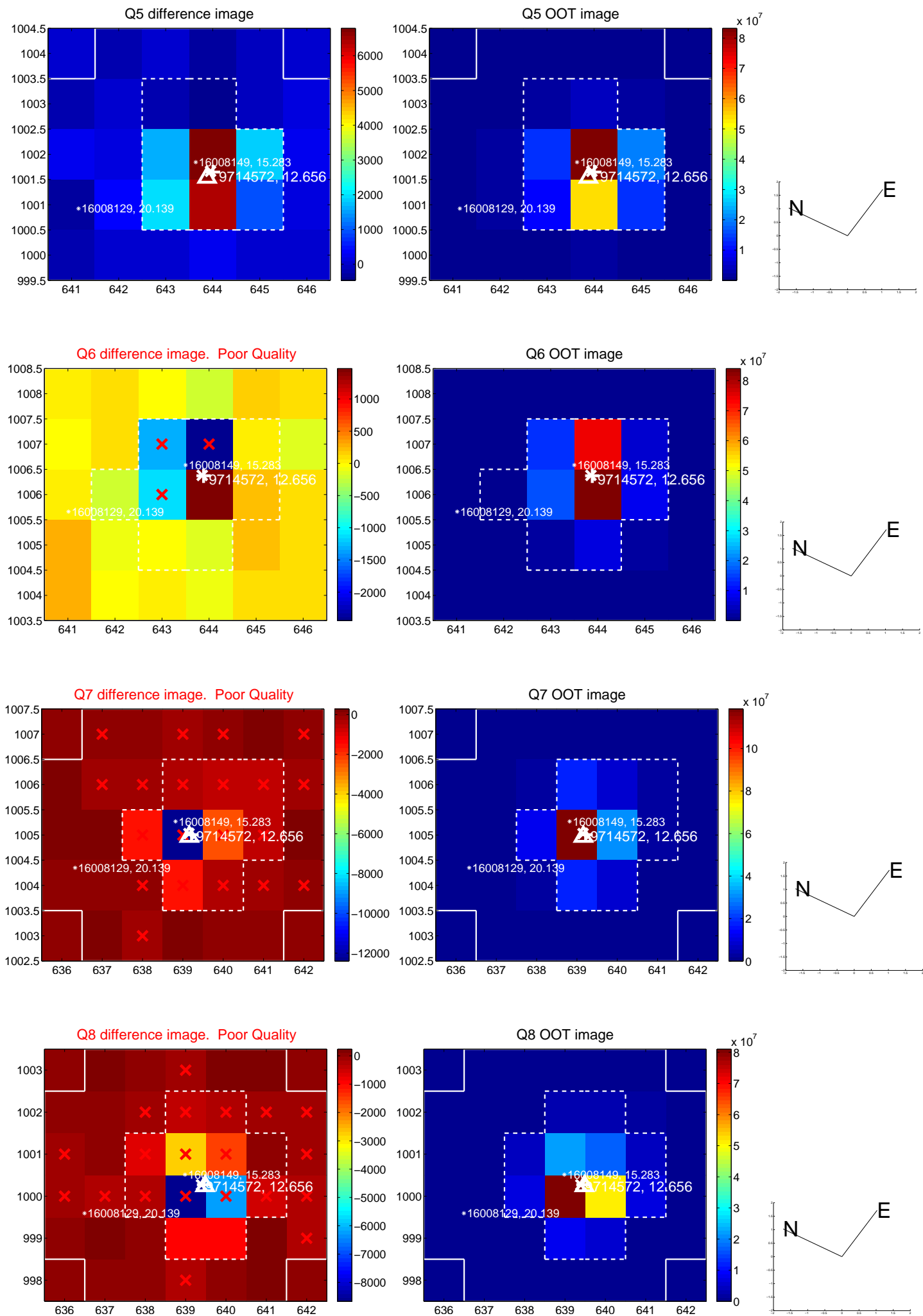


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

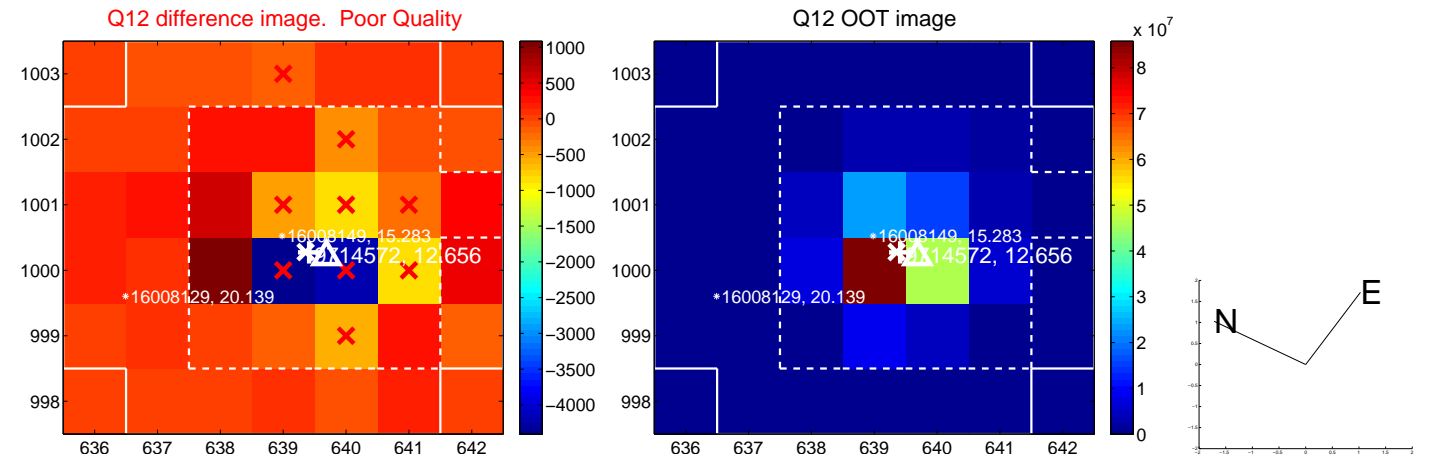
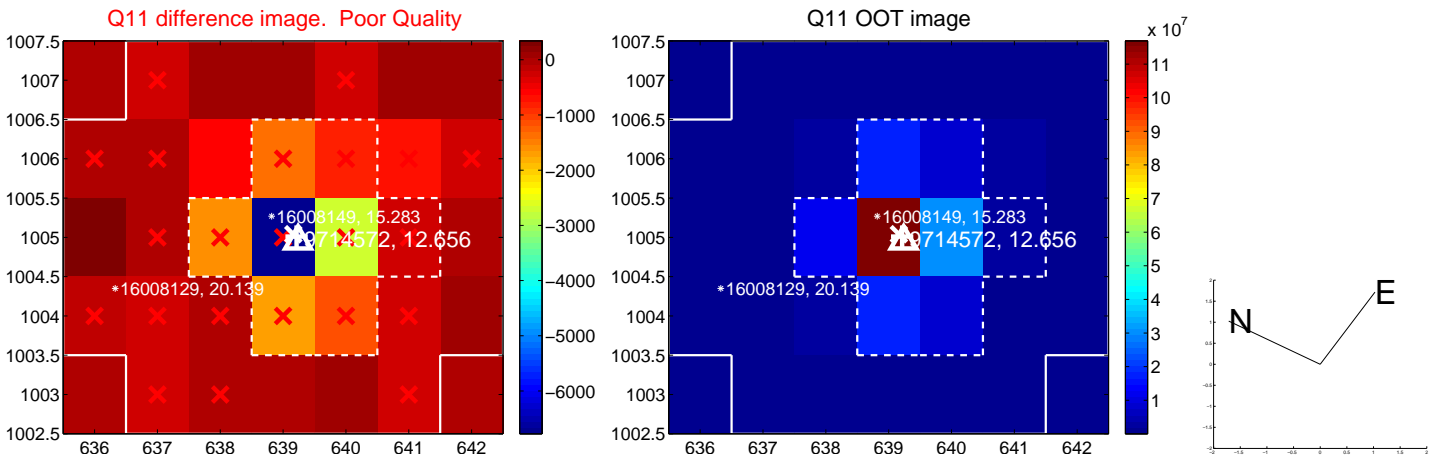
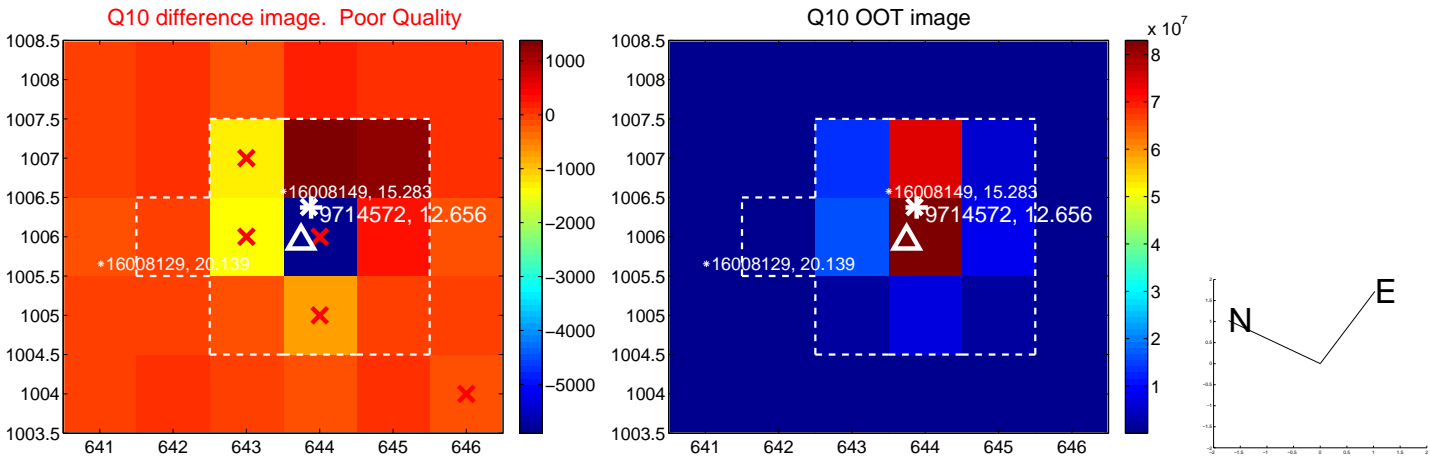
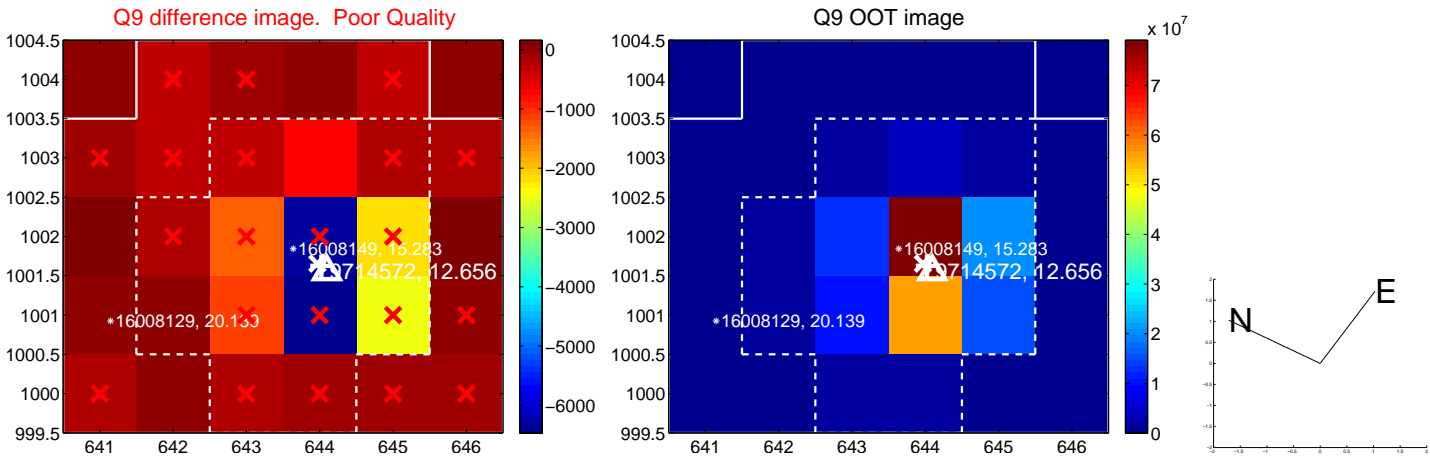
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



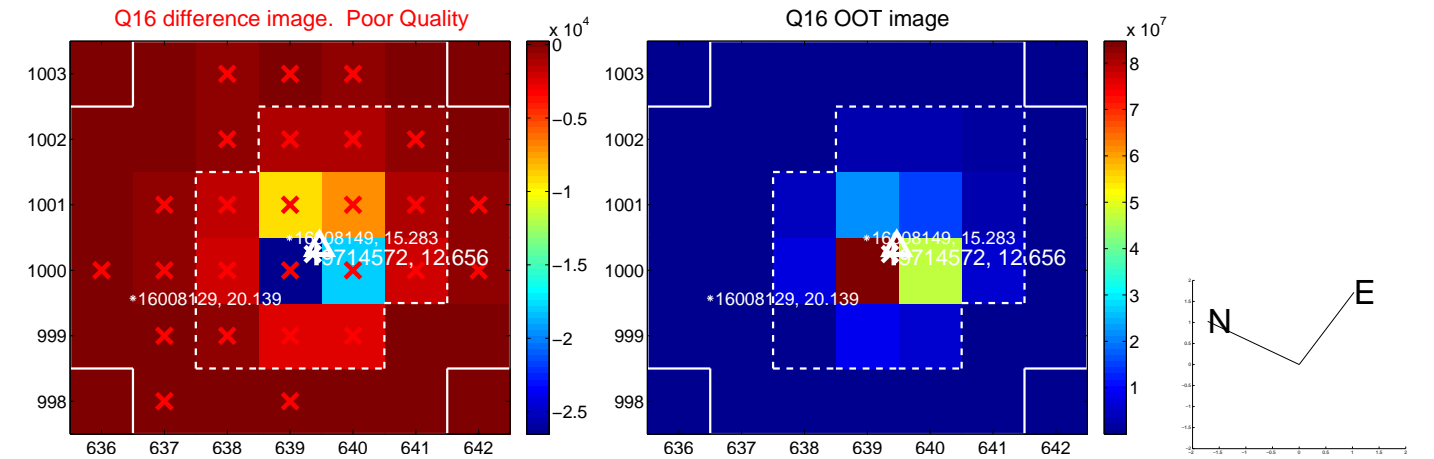
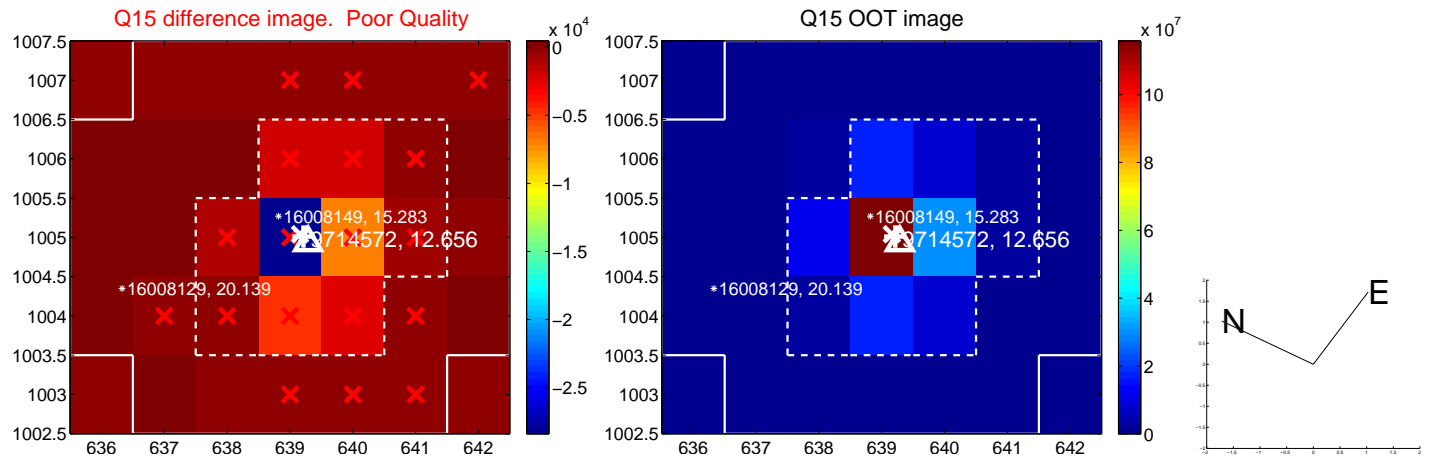
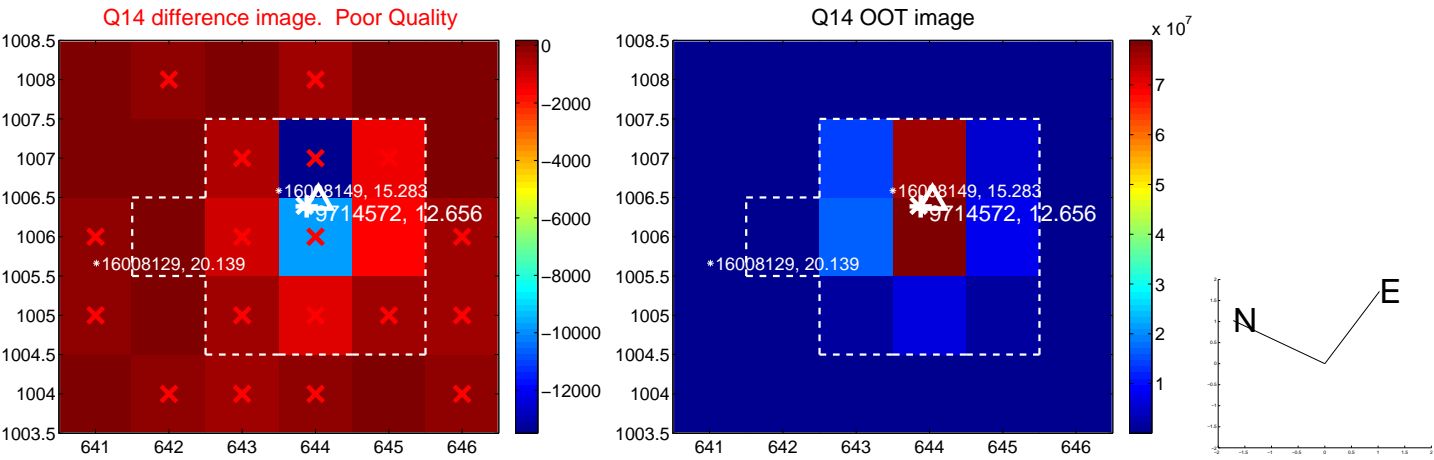
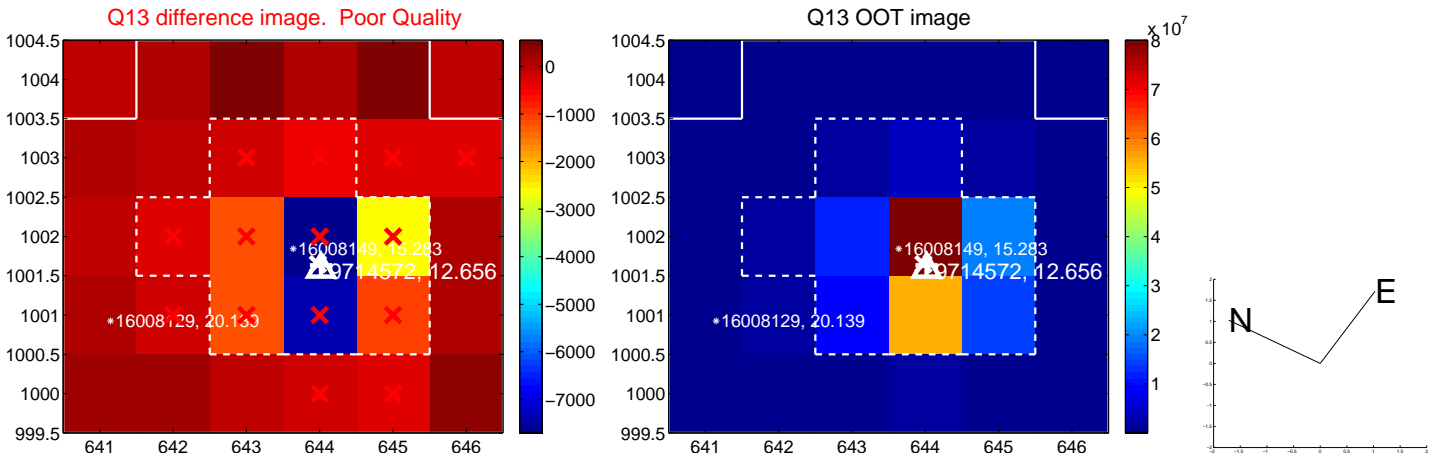
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



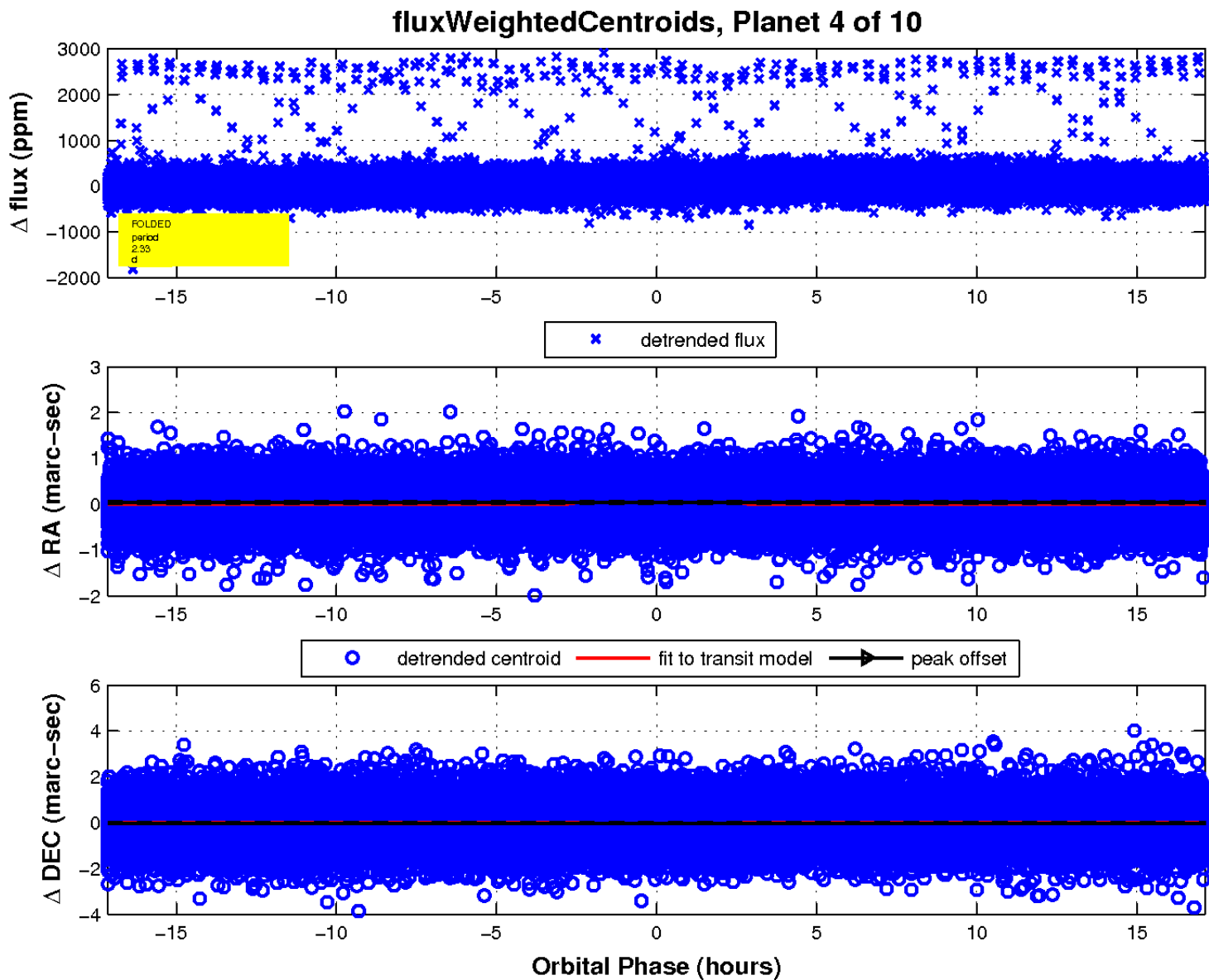
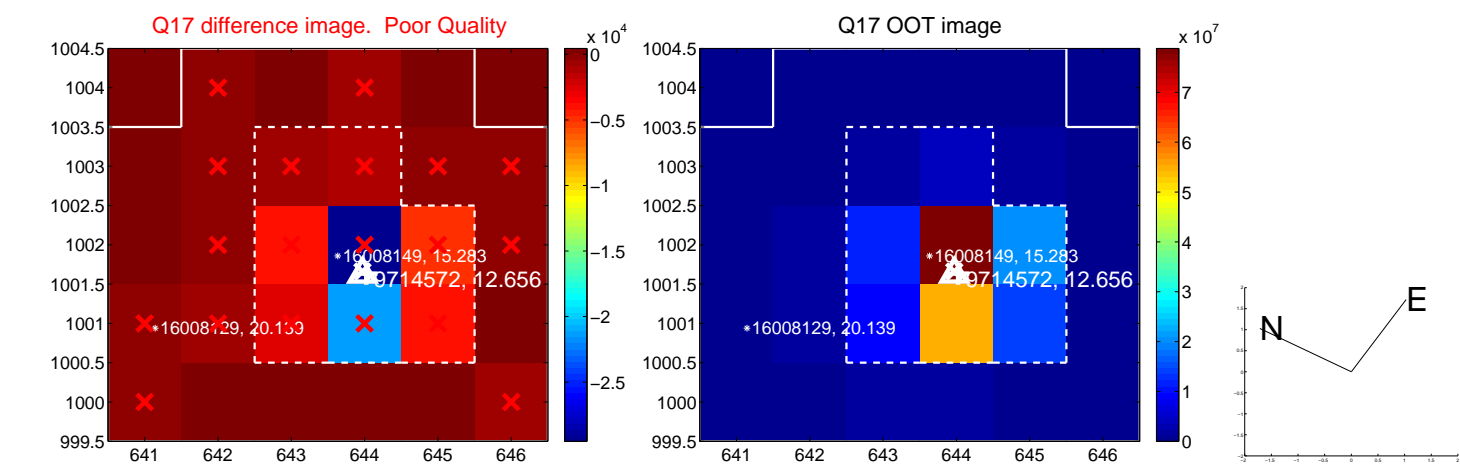
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

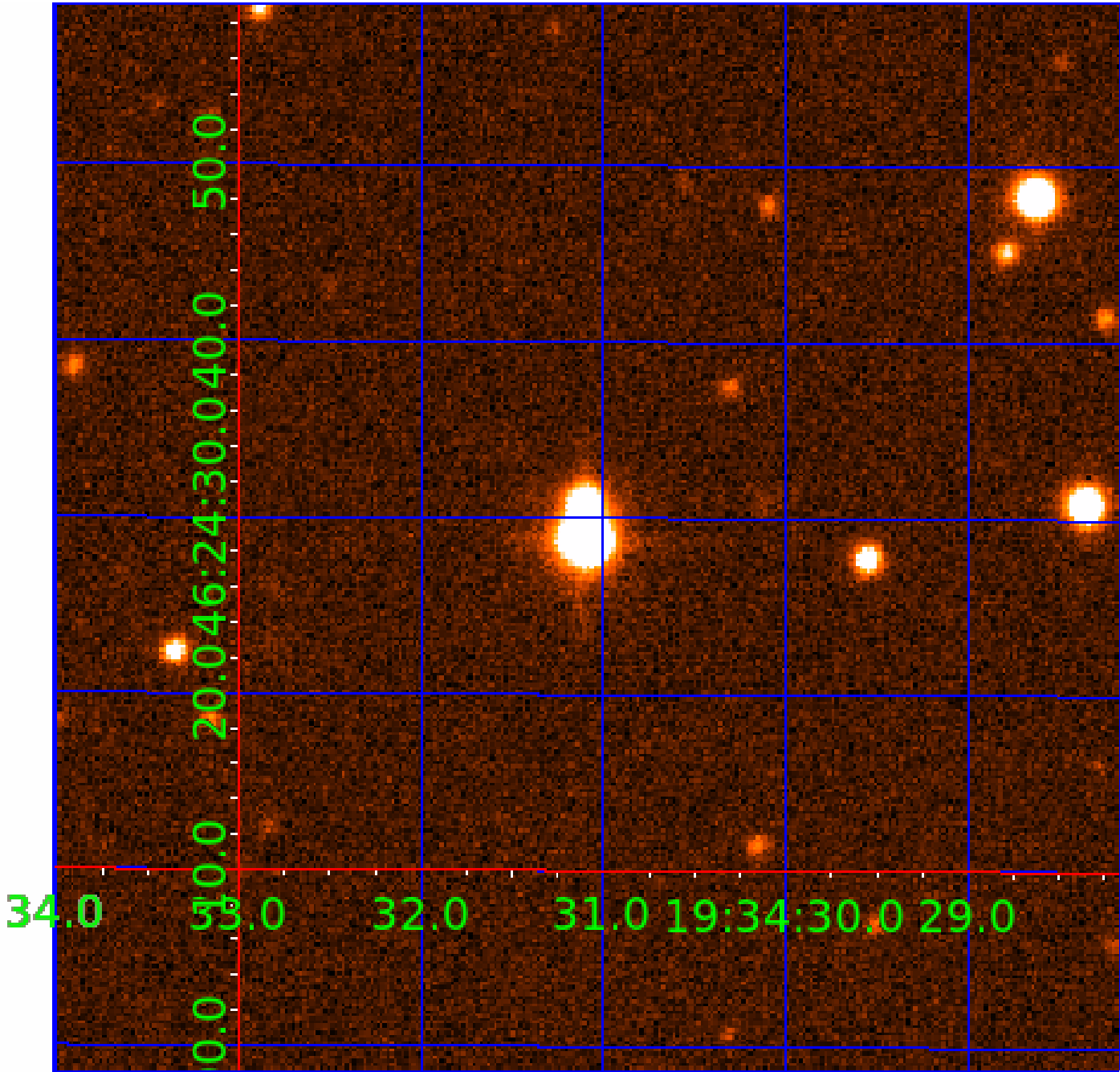


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD— CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

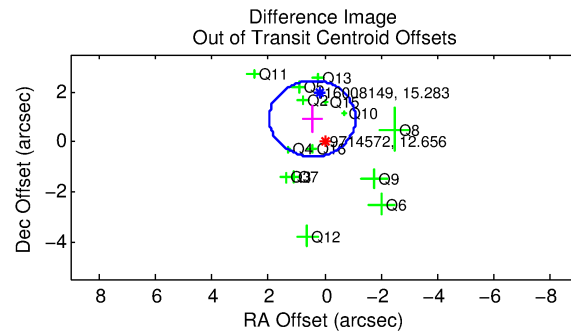
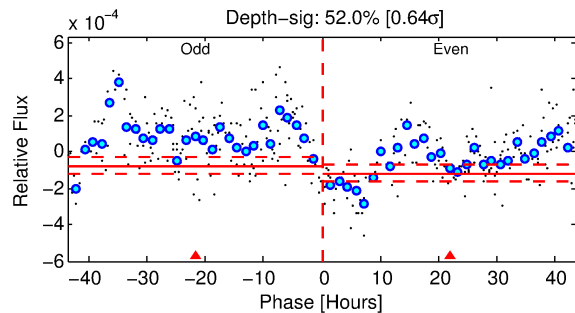
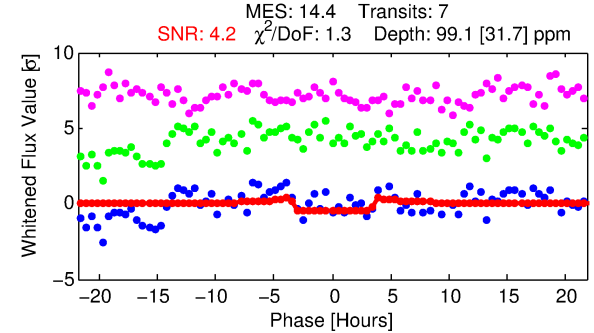
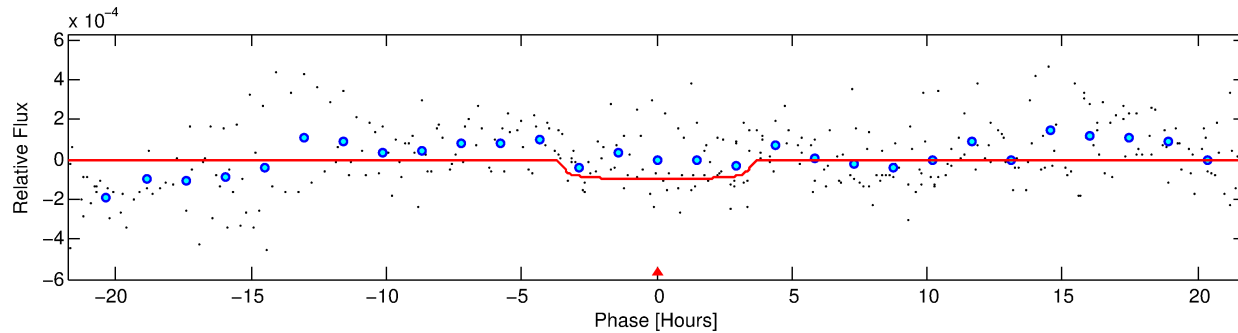
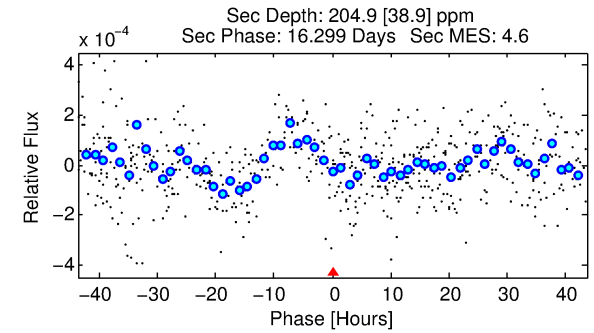
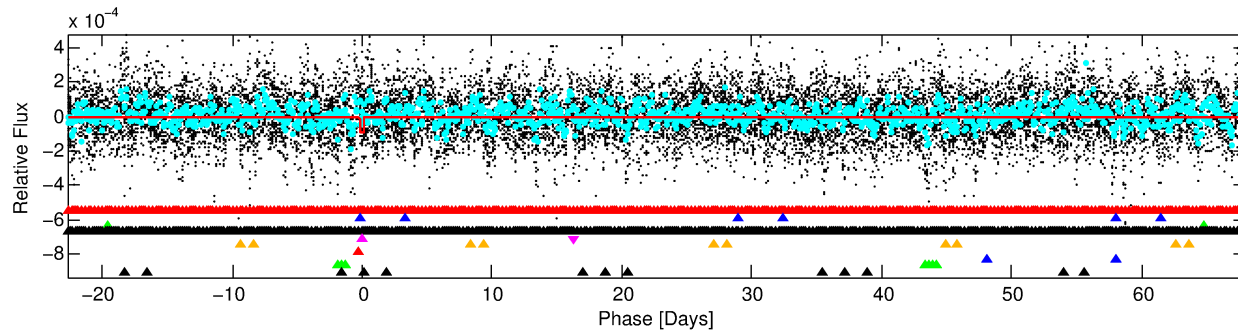
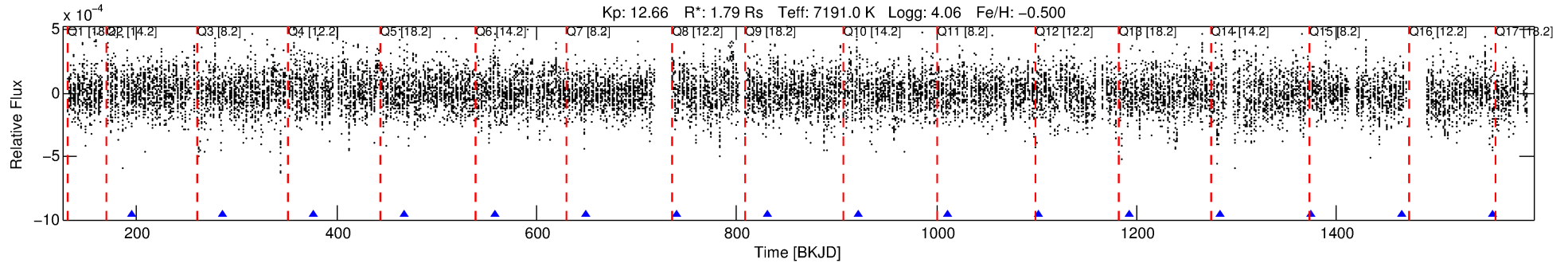
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-05

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 5 of 10 Period: 90.742 d



DV Fit Results:

Period = 90.74154 [0.00241] d
Epoch = 195.1689 [0.0153] BKJD
Rp/R* = 0.0104 [0.0047]
a/R* = 48.29 [118.29]
b = 0.87 [0.66]
Seff = 40.51 [19.59]
Teff = 643 [78] K
Rp = 2.04 [1.12] Re
a = 0.4363 [0.1278] AU
Ag = 5178.29 [5297.38] [0.98σ]
Teffp = 8437 [1967] K [3.96σ]

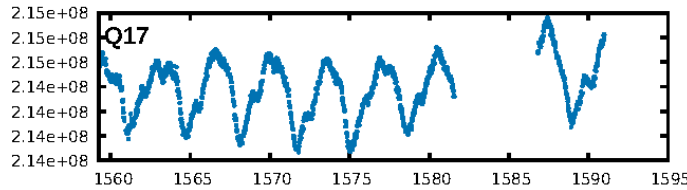
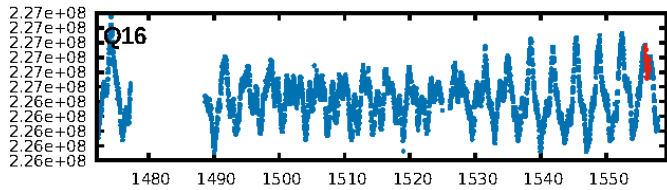
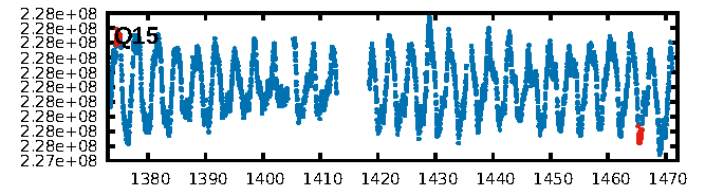
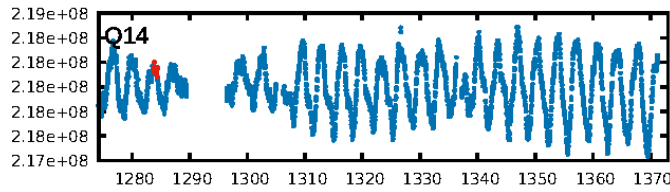
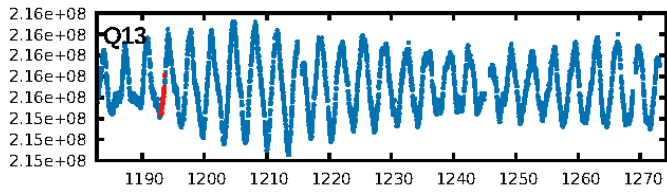
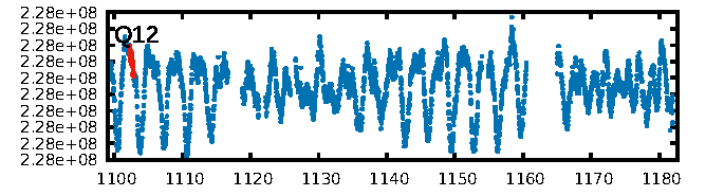
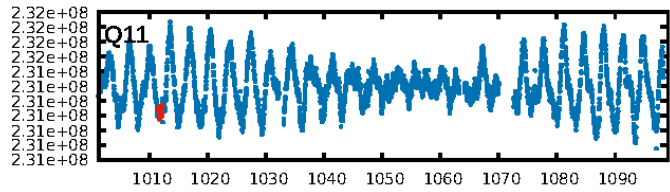
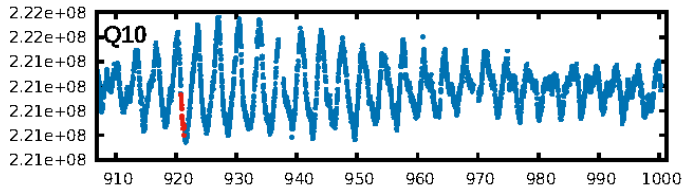
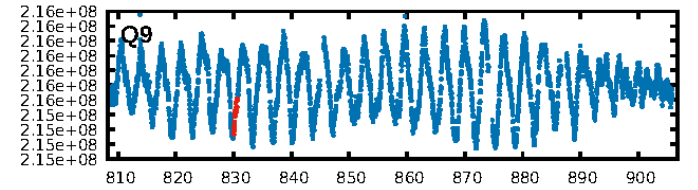
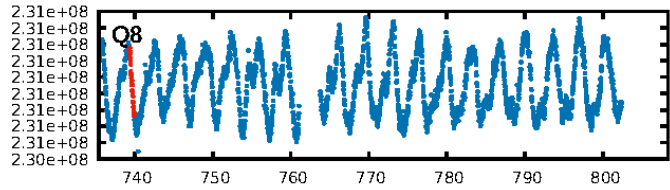
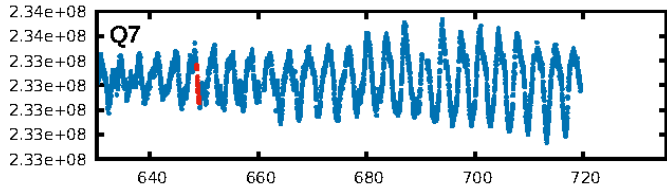
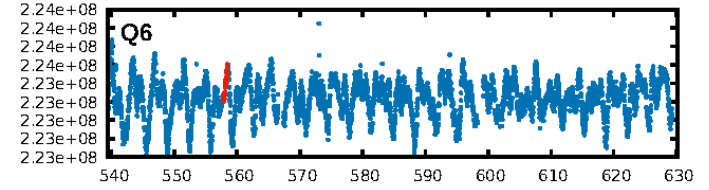
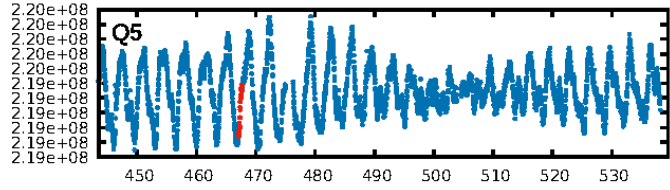
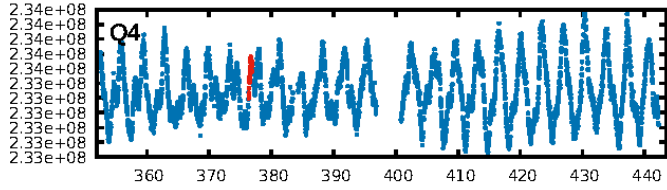
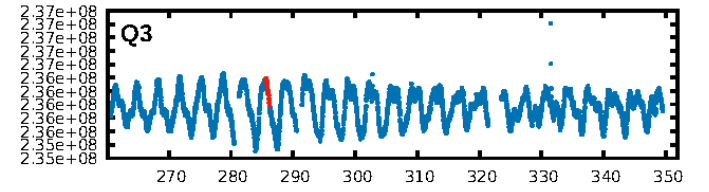
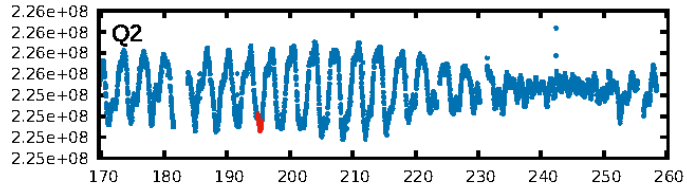
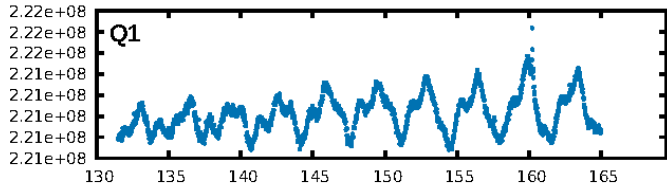
DV Diagnostic Results:

ShortPeriod-sig: 0.5% [0.01σ]
LongPeriod-sig: 100.0% [23.78σ]
ModelChiSquare2-sig: 26.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 13.49
Centroid-sig: 33.5%
Centroid-so: 1.029 arcsec [1.06σ]
OotOffset-rm: 1.023 arcsec [2.02σ]
KicOffset-rm: 0.891 arcsec [1.76σ]
OotOffset-st: 3/4/4/3 [14]
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DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 0.00 [0/15]

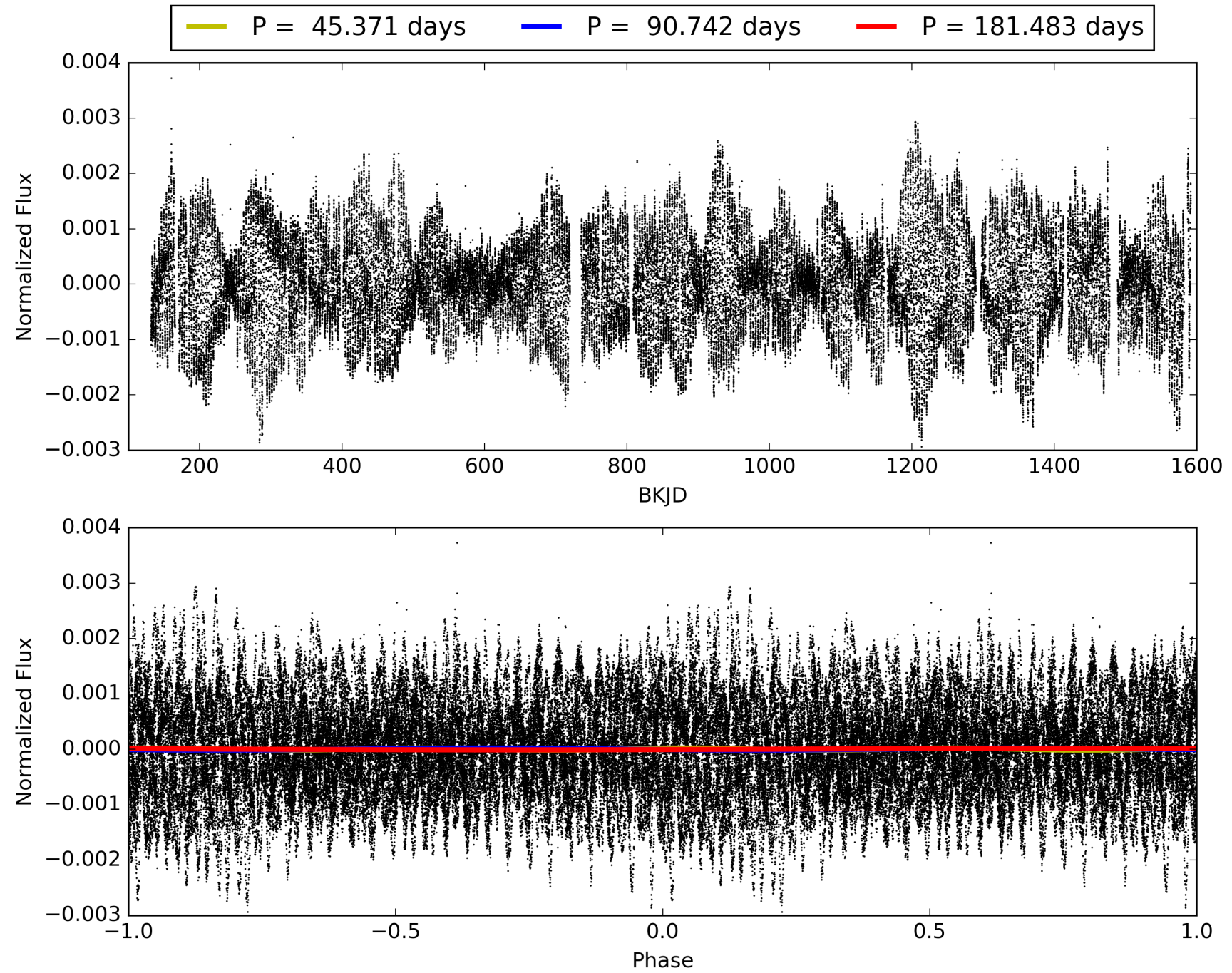
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:33 Z

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

TCE 009714572-05, PDC Light Curves

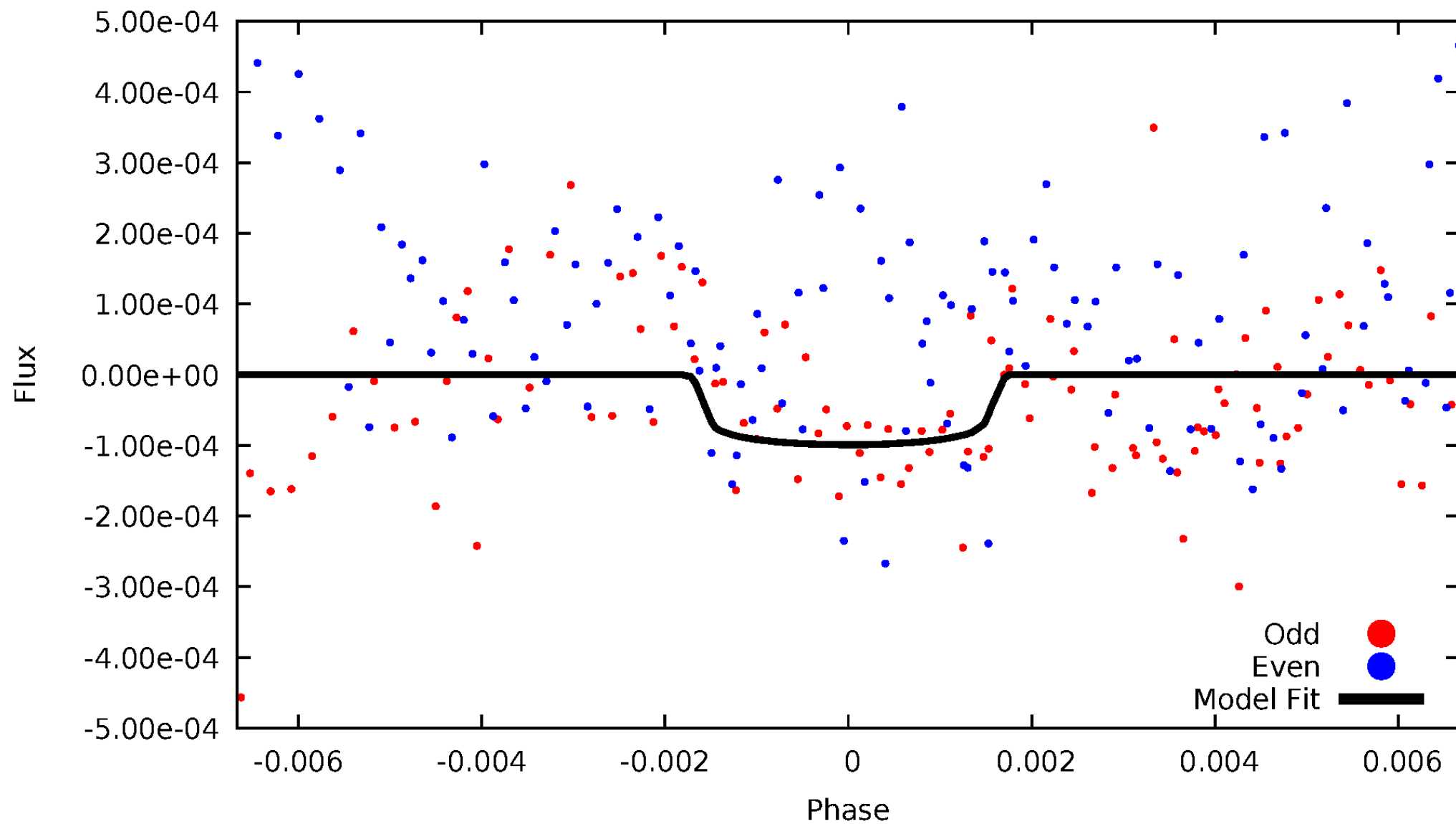


TCE 009714572-05



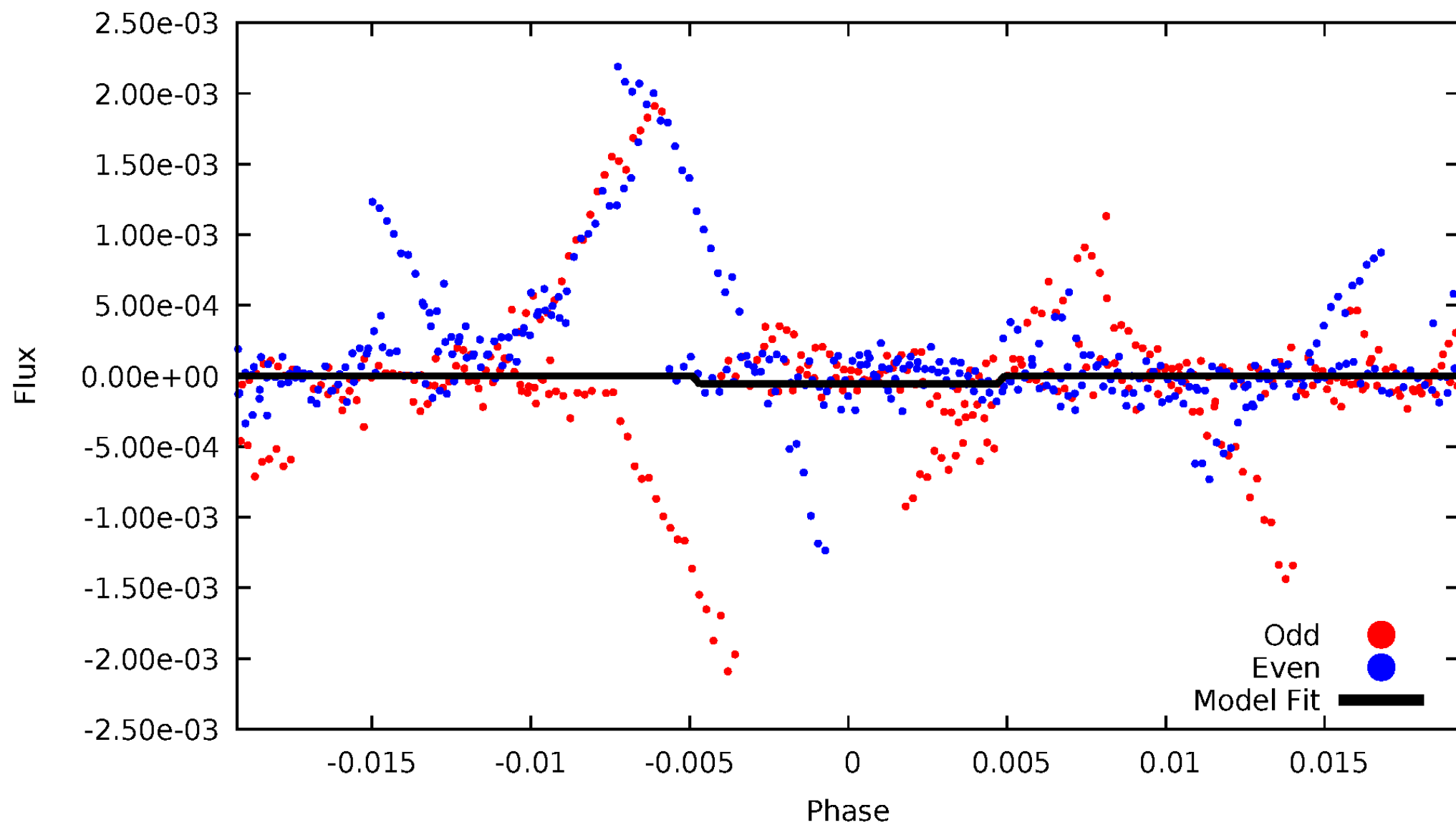
DV Odd/Even

TCE 009714572-05

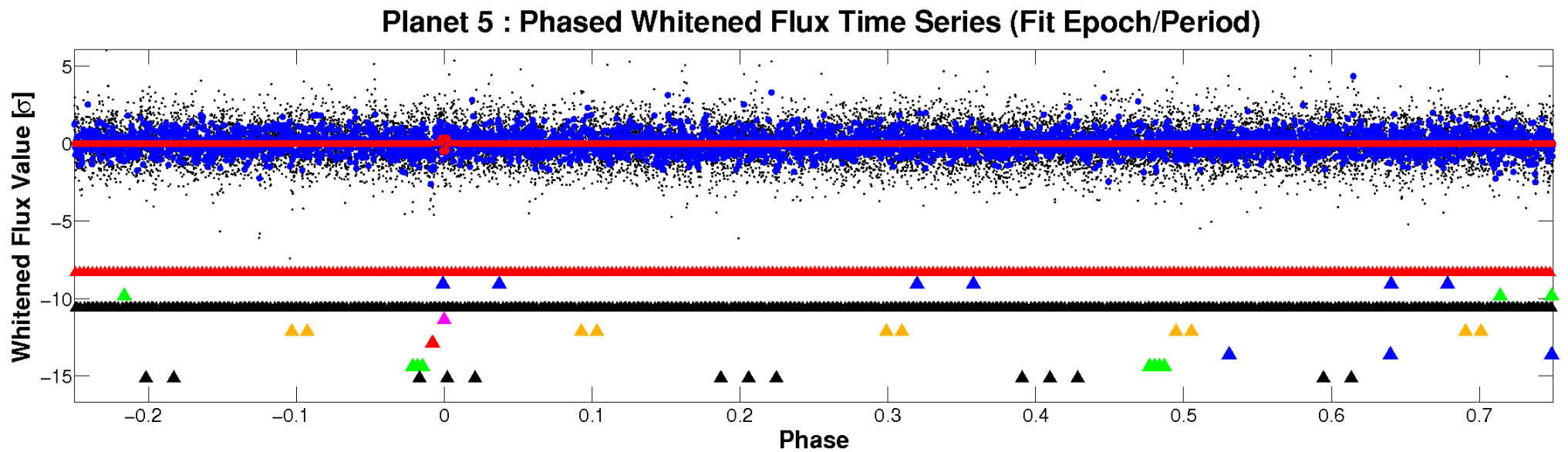
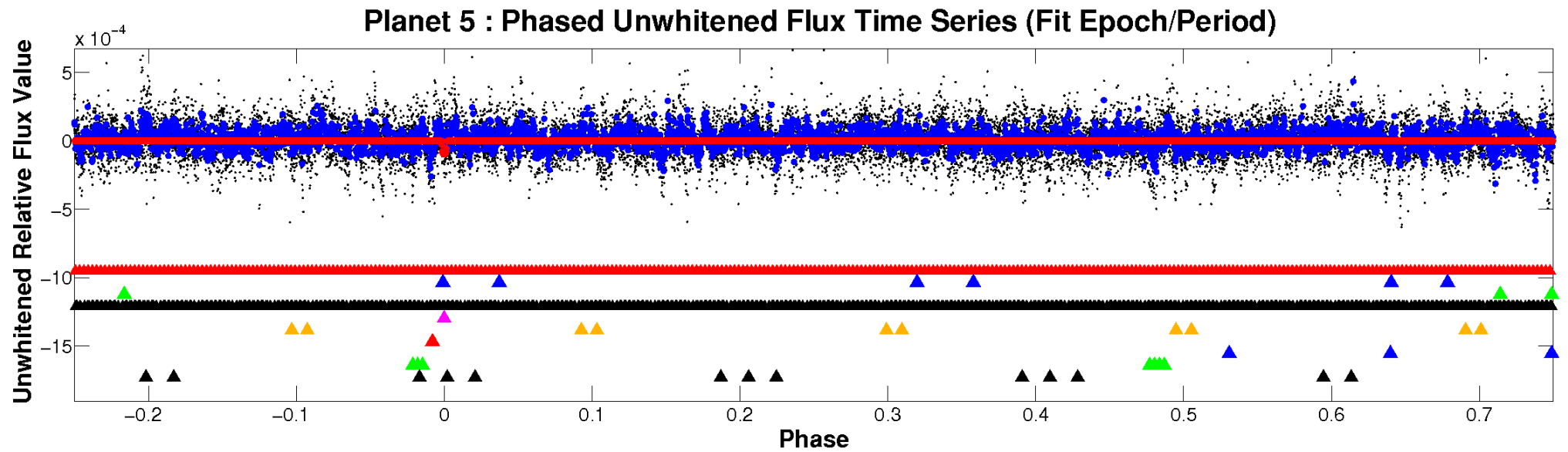


ALT Odd/Even

TCE 009714572-05

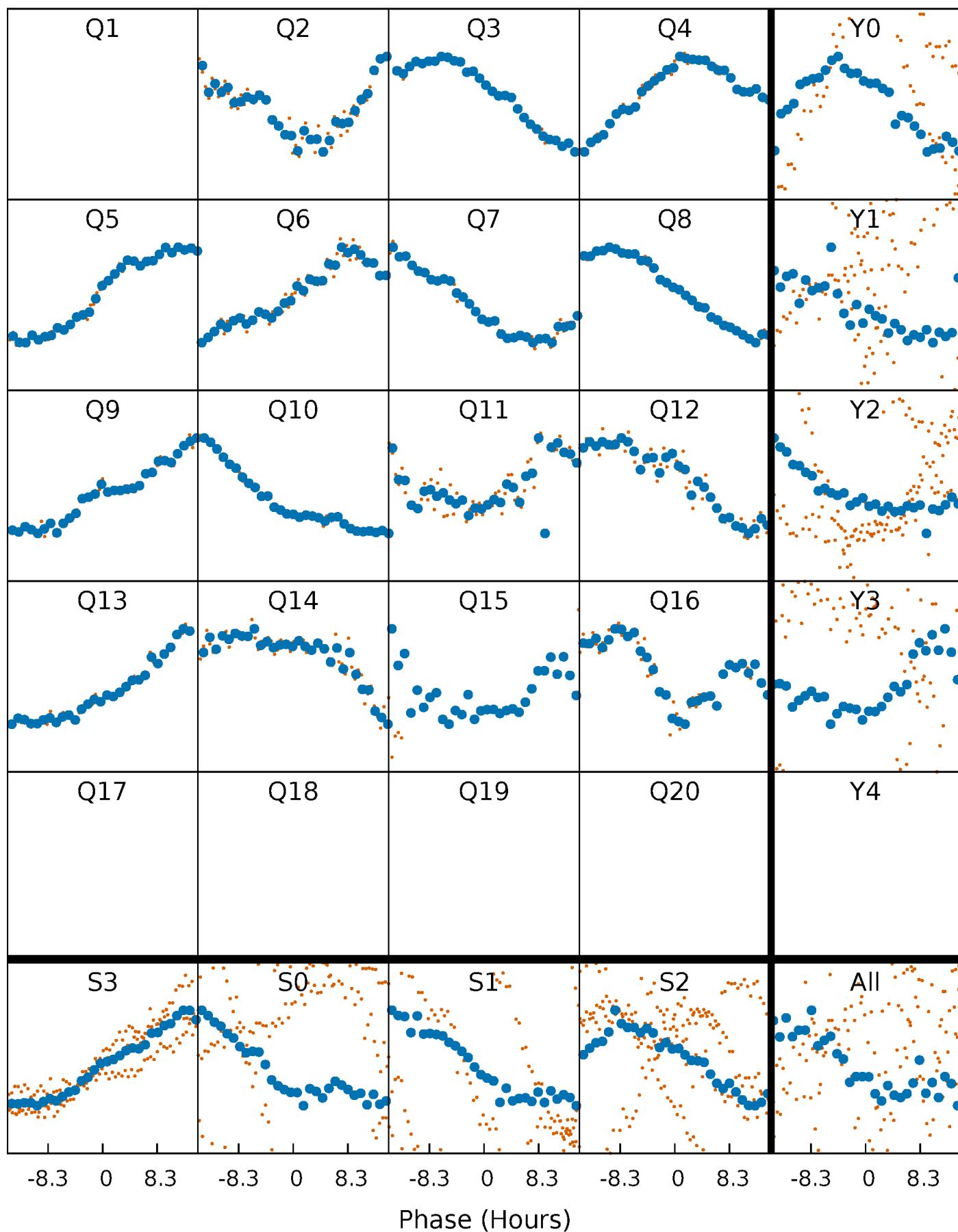


Non-Whitened Vs. Whitened Light Curve



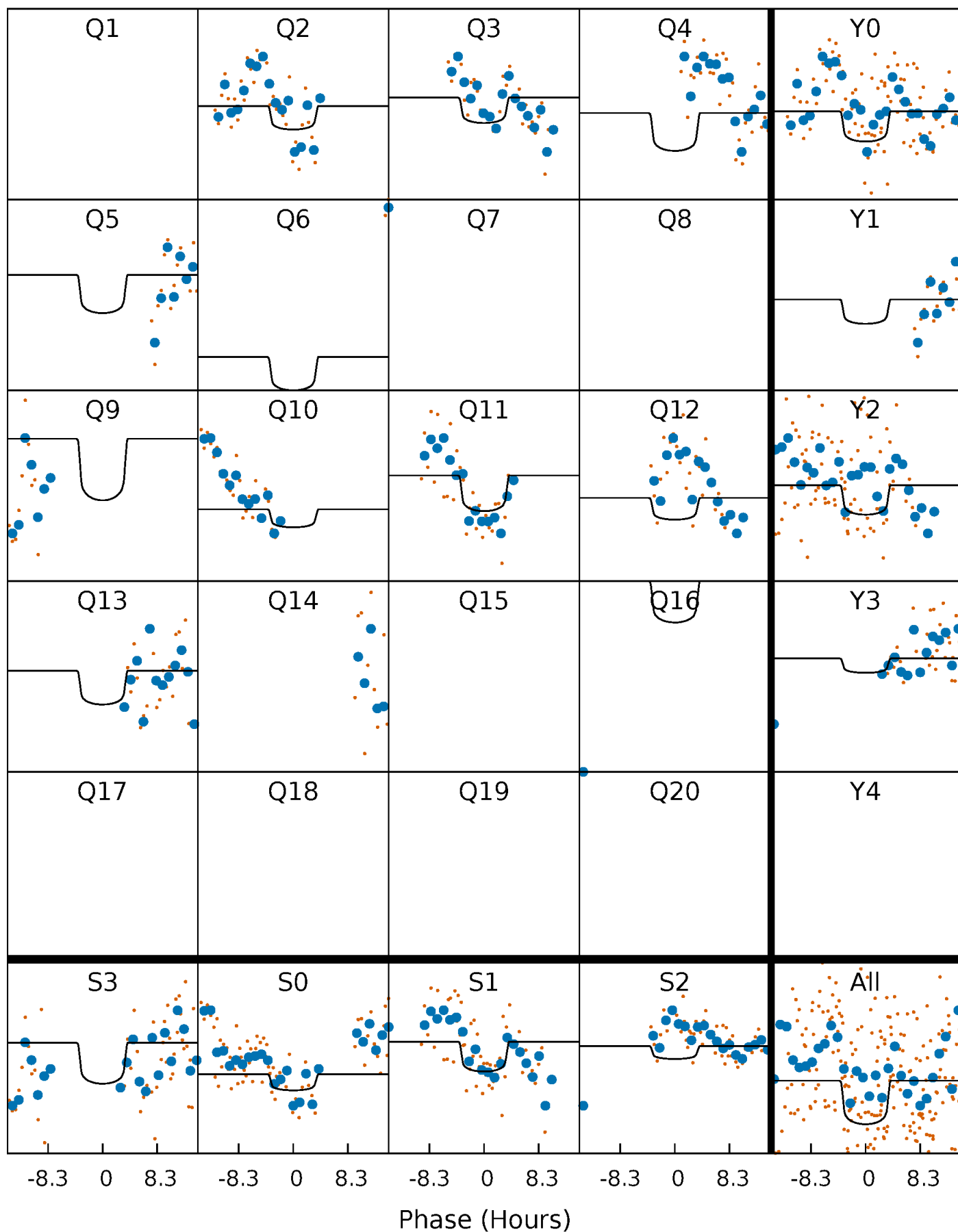
PDC Quarter-Phased Transit Curves

TCE 009714572-05 P= 90.741543 Days $T_0=195.168891$ (BKJD)



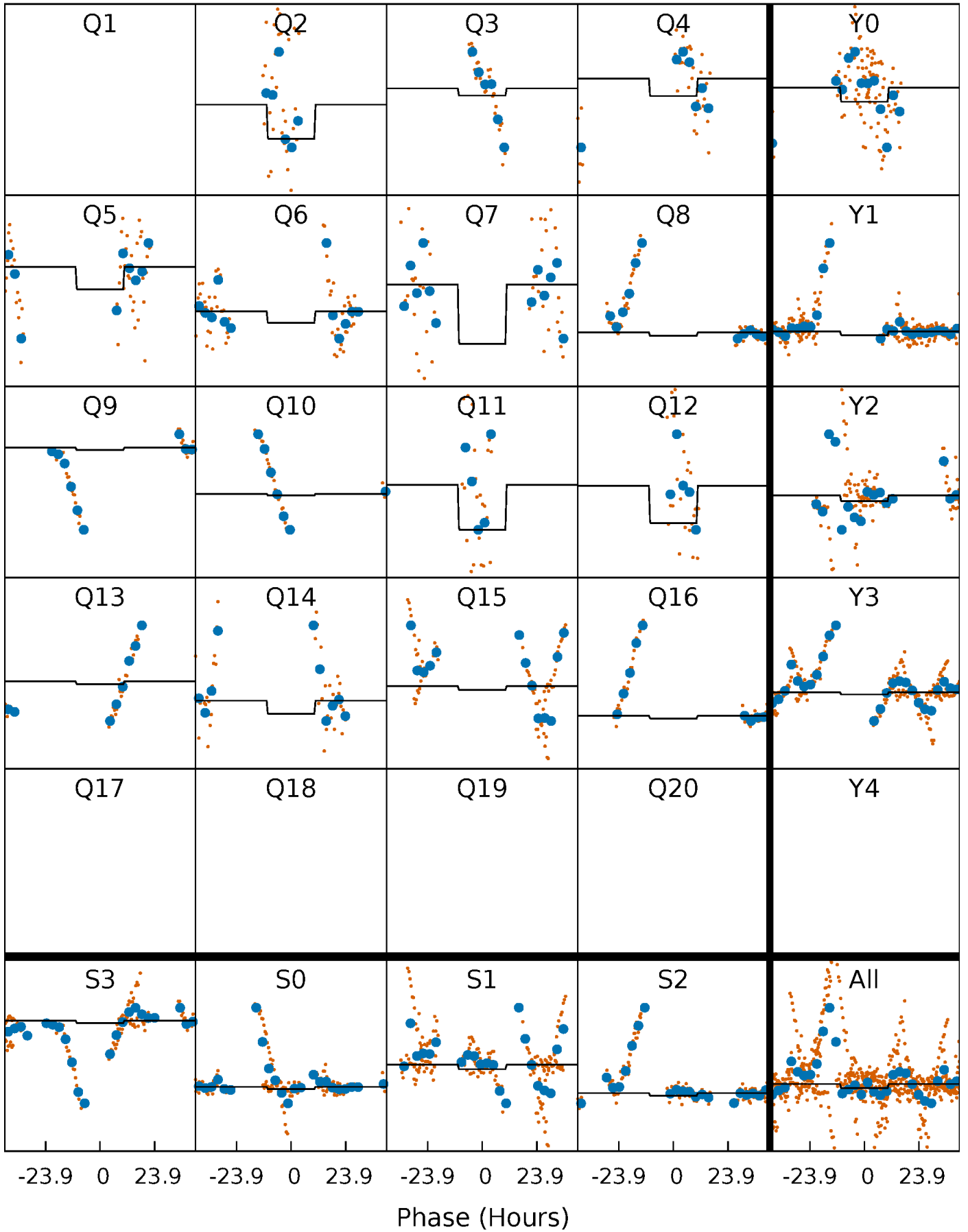
DV Quarter-Phased Transit Curves

TCE 009714572-05 $P = 90.741543$ Days $T_0 = 195.168891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

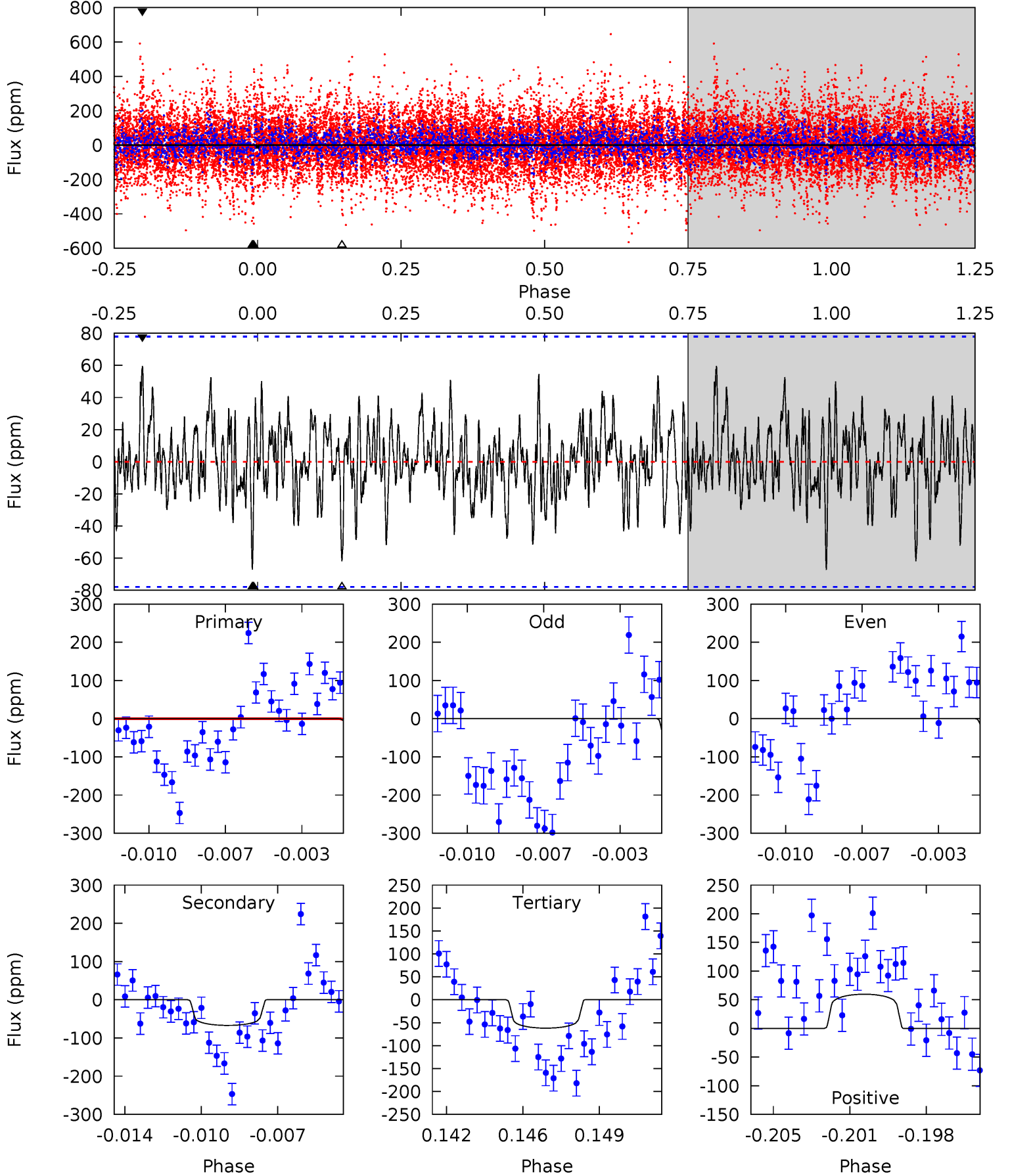
TCE 009714572-05 $P = 90.735870$ Days $T_0 = 195.185553$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-05, P = 90.741543 Days, E = 104.427348 Days

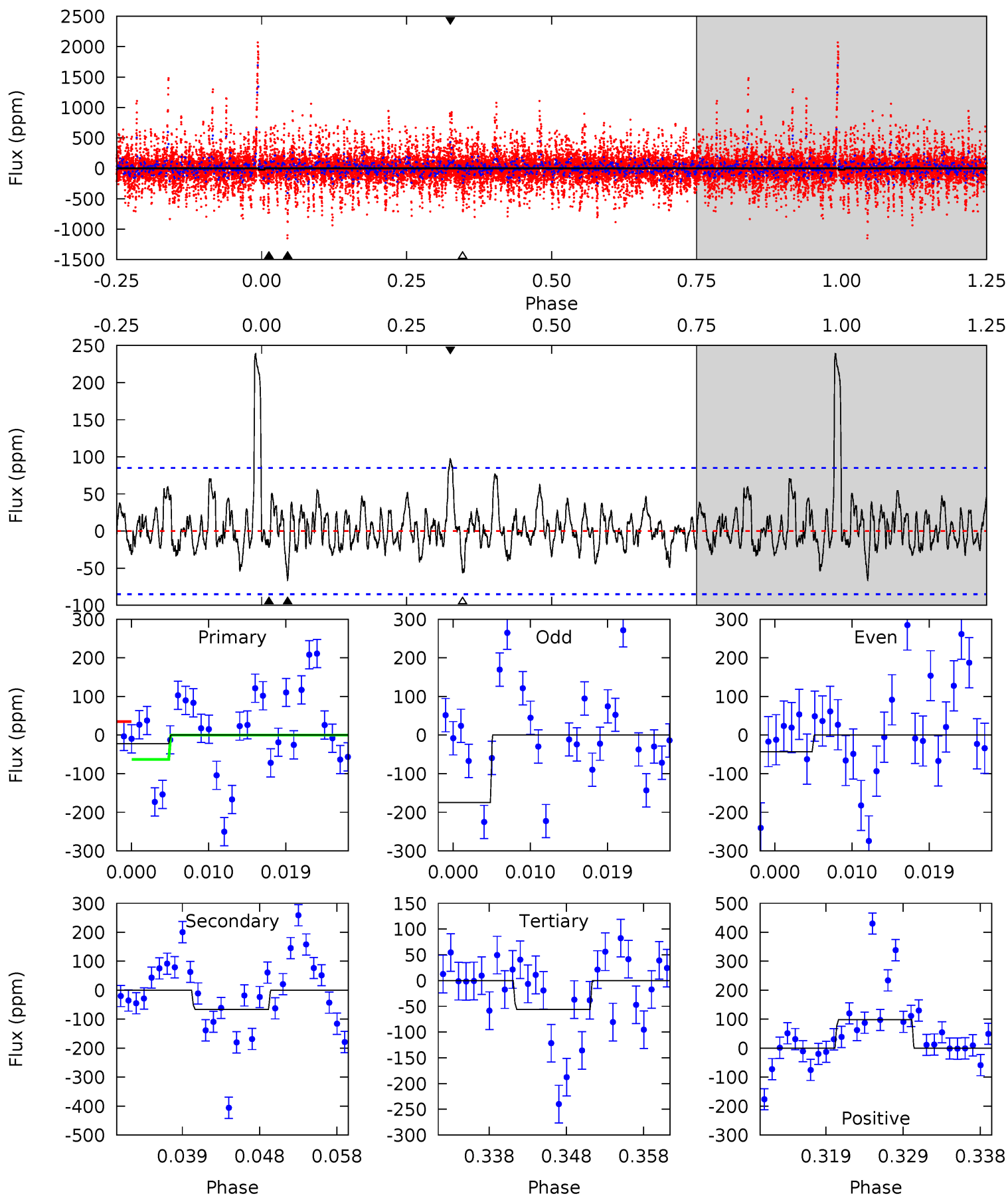
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.00	4.50	4.15	4.00	5.23	2.92	1.29	-3.15	-3.00	0.35	0.50	1.40	0.44	0.47	0.47



Alt Model-Shift Uniqueness Test

009714572-05, P = 90.735870 Days, E = 104.449683 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.33	3.92	3.33	5.80	5.03	2.59	1.86	-2.00	-4.48	0.59	-1.89	3.67	24.4	0.78	0.87



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-67 ± 15	$1.96^{+1.06}_{-0.86}$	892^{+66}_{-80}	6229^{+2434}_{-1059}	1846^{+3802}_{-1116}
Alt.	-66 ± 17	$1.43^{+0.88}_{-0.77}$	892^{+65}_{-75}	7415^{+5468}_{-1678}	3316^{+12559}_{-2076}

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 $A_{obs} \gg 1.0$

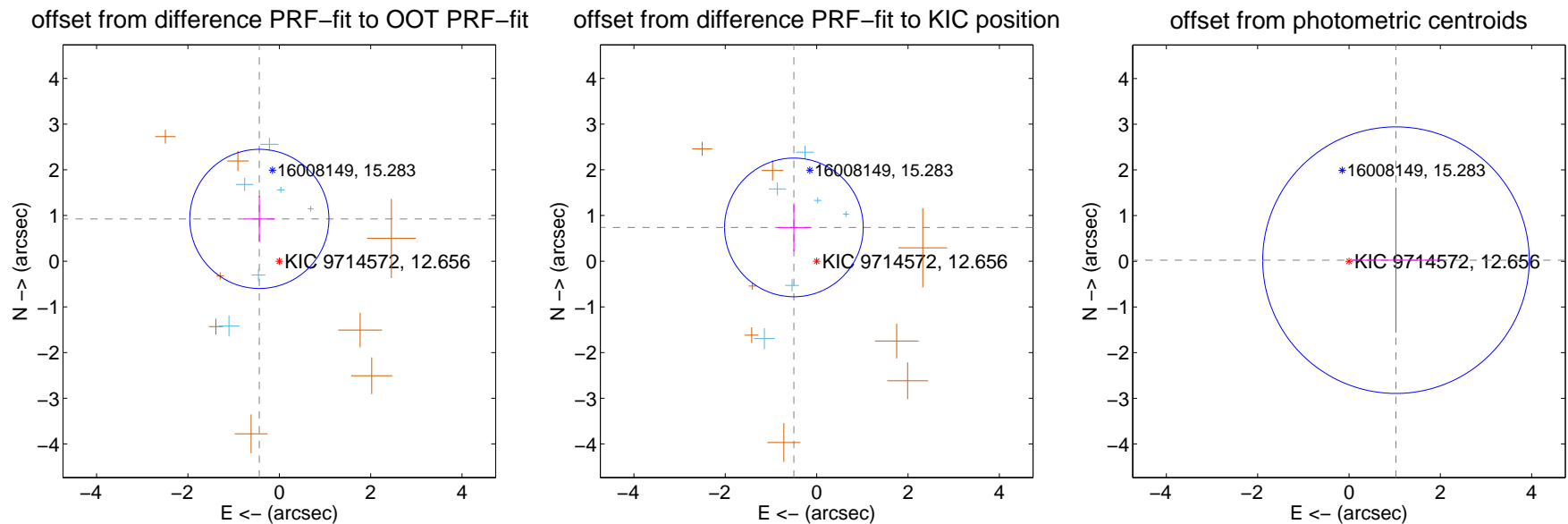
DV Centroid Data

Supplemental centroid analysis for 009714572-05. Kepler magnitude: 12.66. Transit SNR 4.19

There are 6 quarters with good PRF difference image offsets

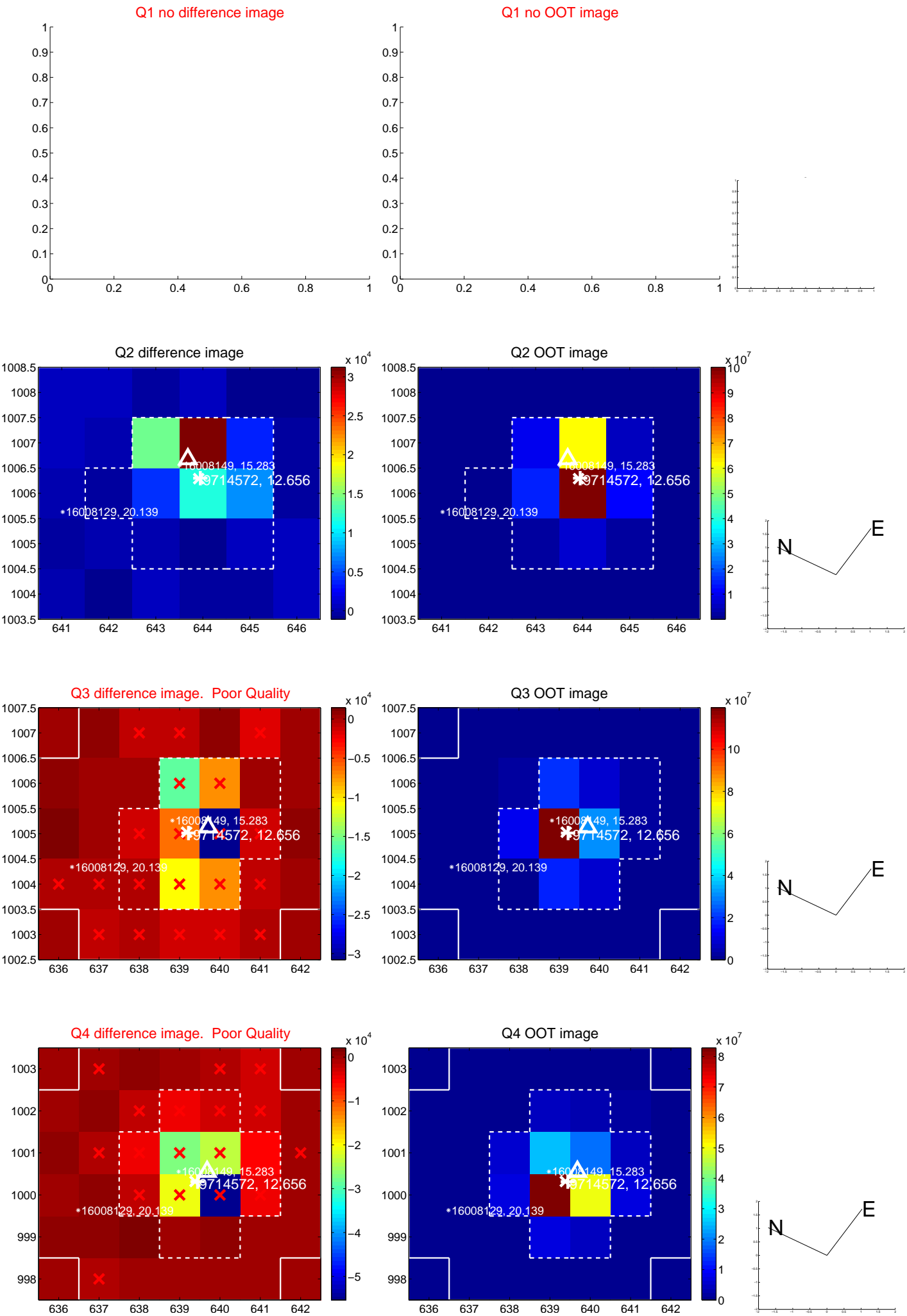
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.023 ± 0.508	2.02	0.437 ± 0.339	0.925 ± 0.503
PRF-fit source offset from KIC position	0.891 ± 0.506	1.76	0.498 ± 0.357	0.739 ± 0.525
photometric centroid source offset	1.03 ± 0.97	1.06	-1.03 ± 0.97	0.02 ± 1.59

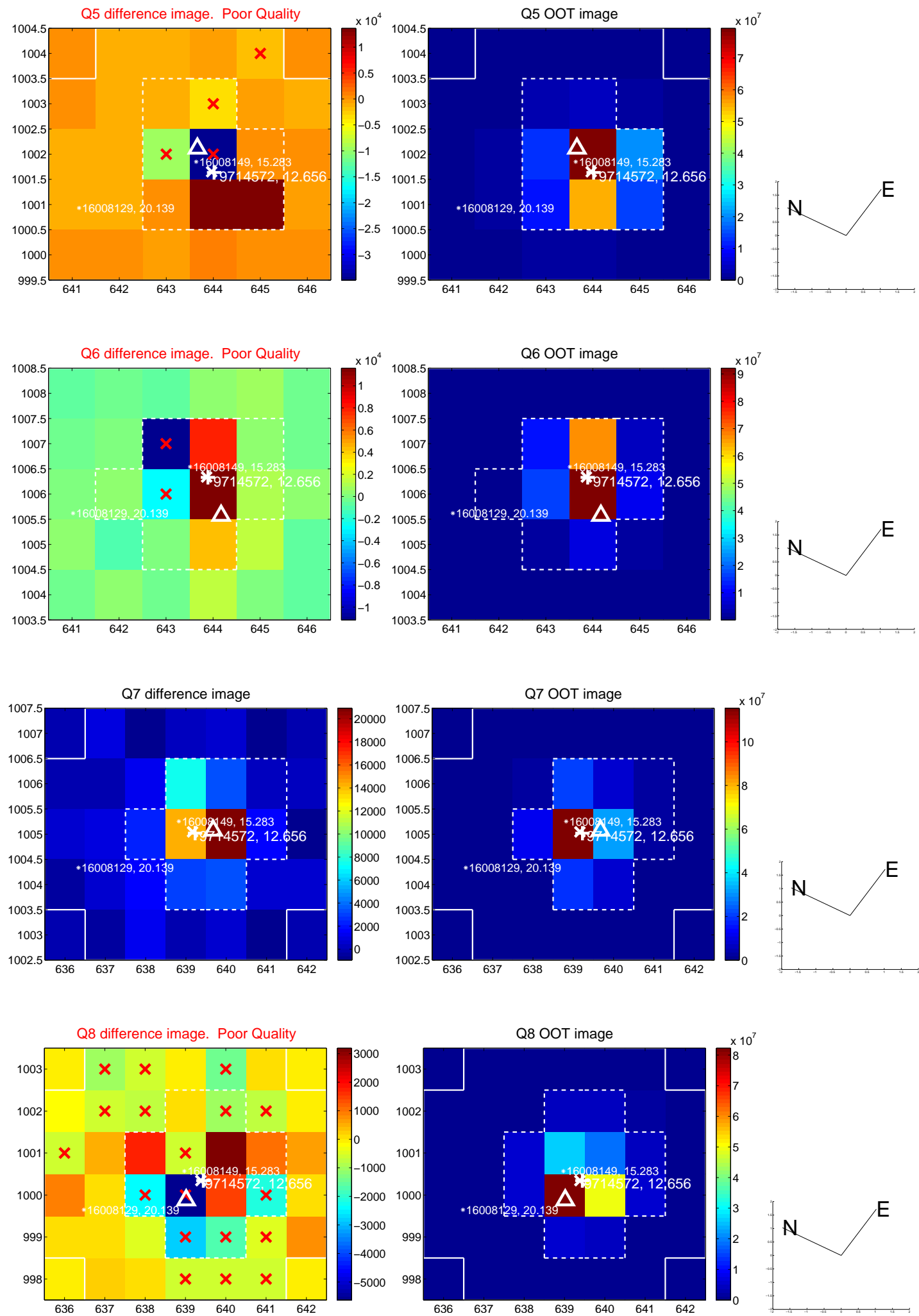


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

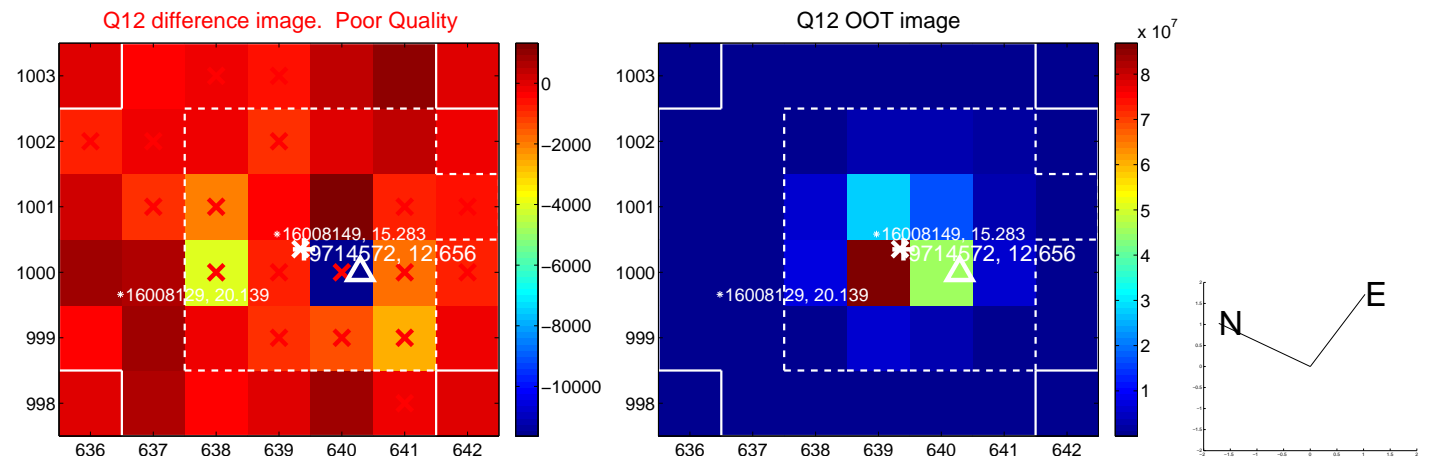
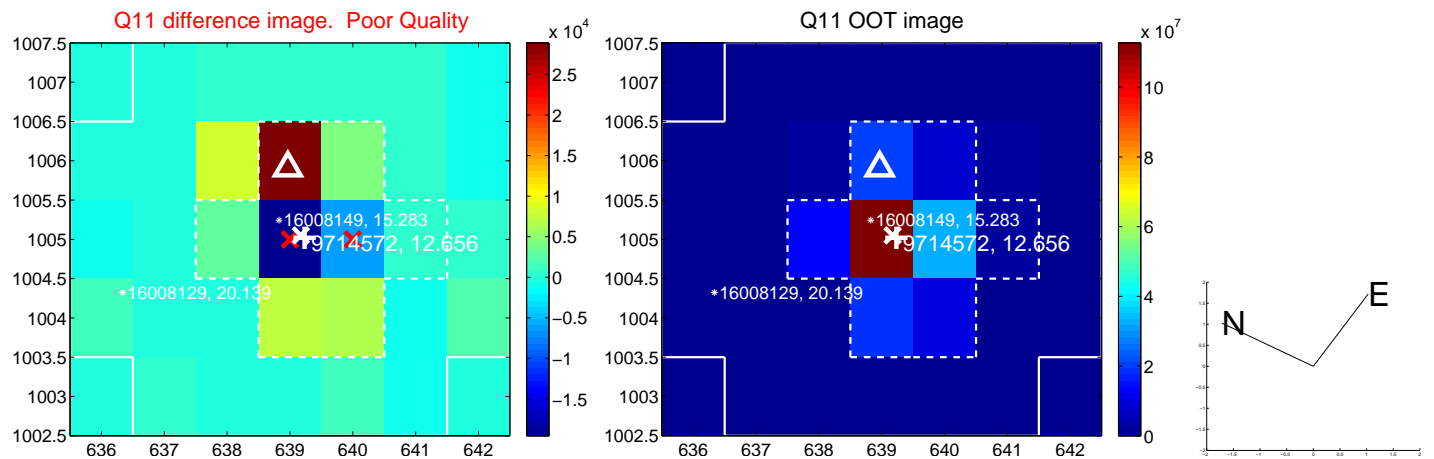
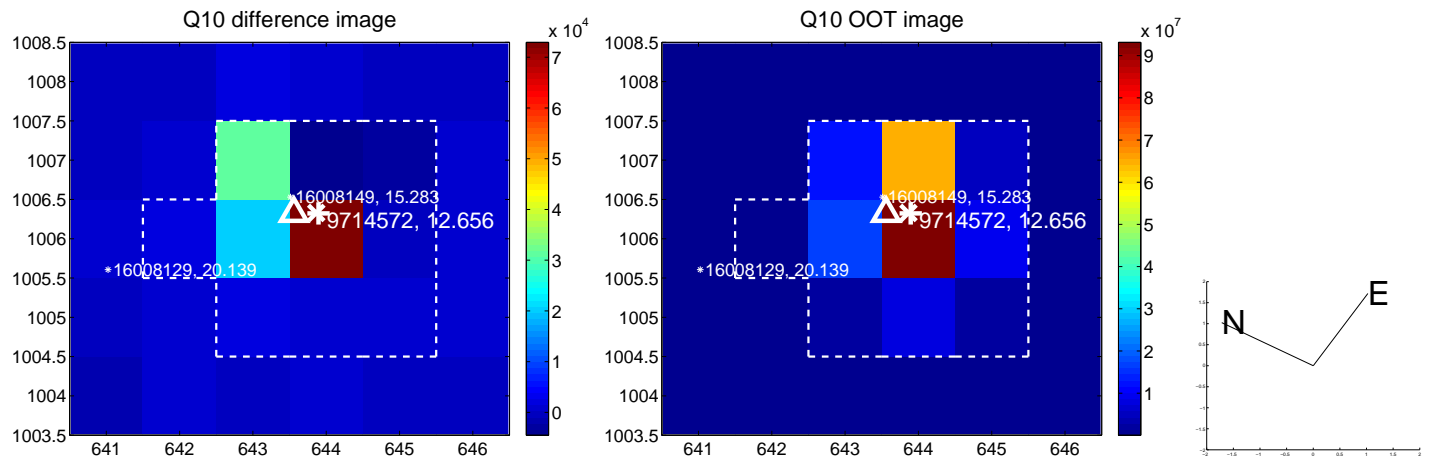
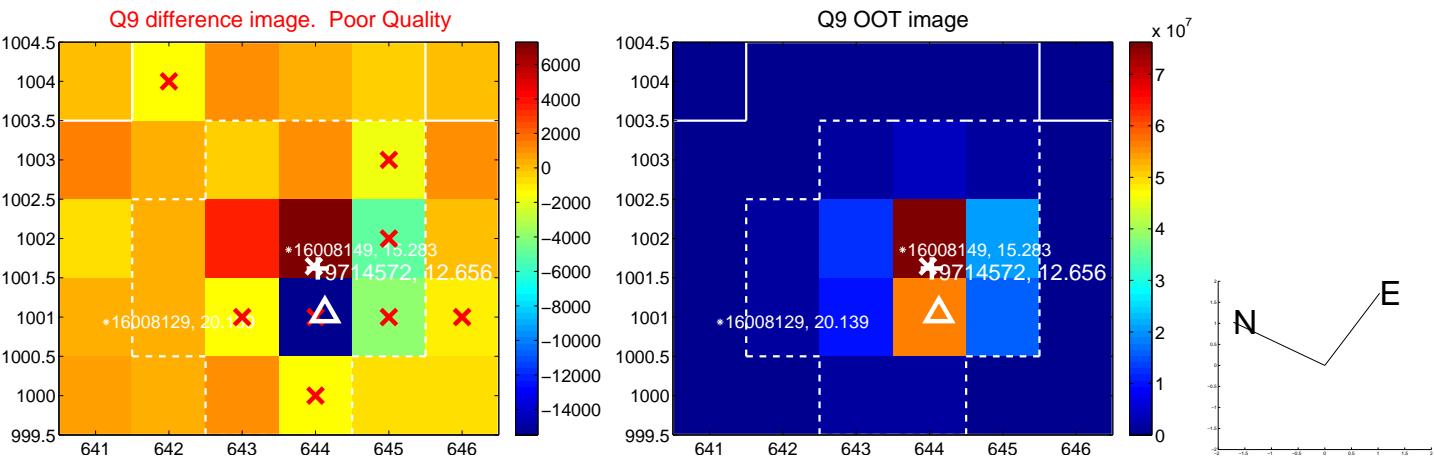
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



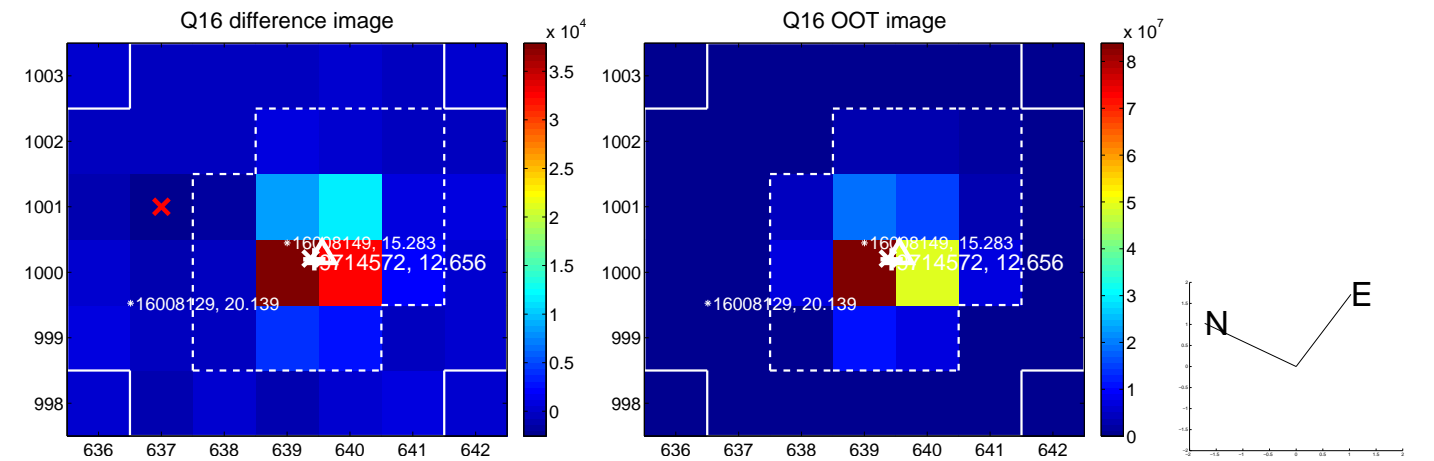
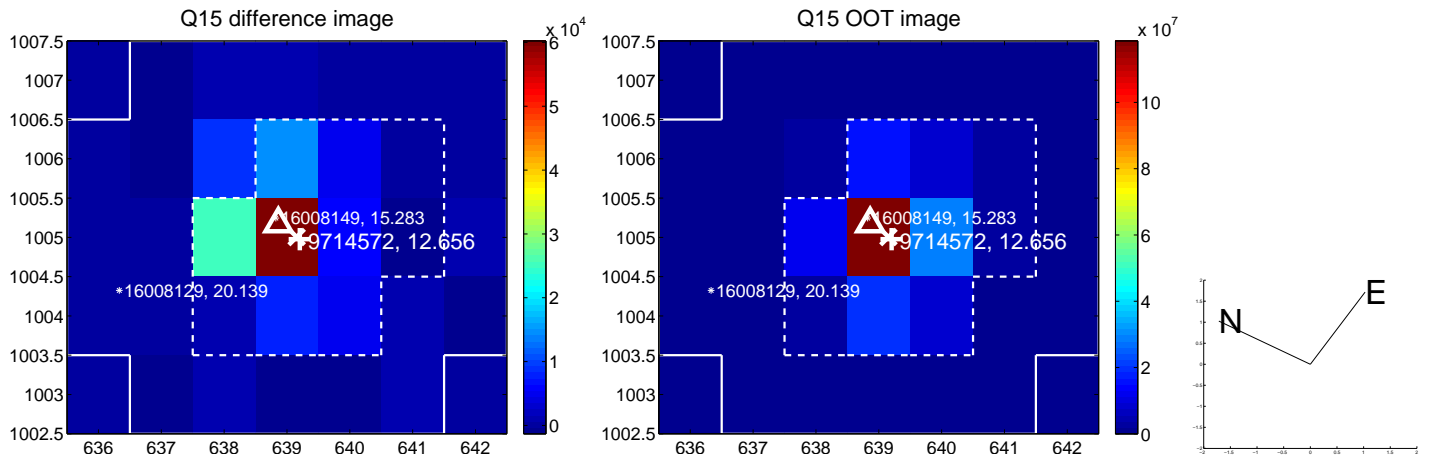
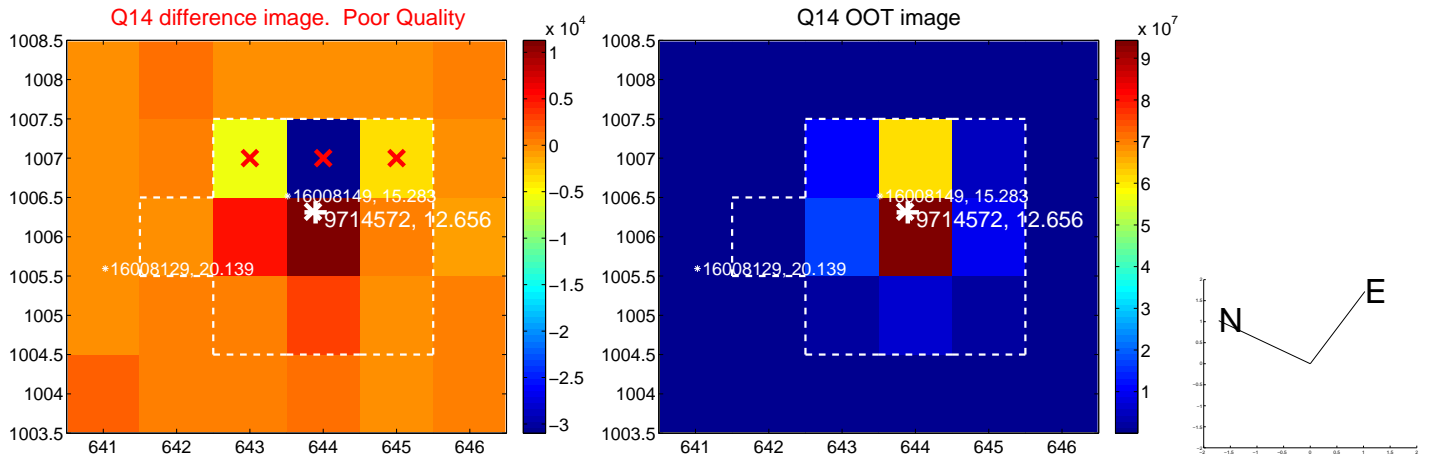
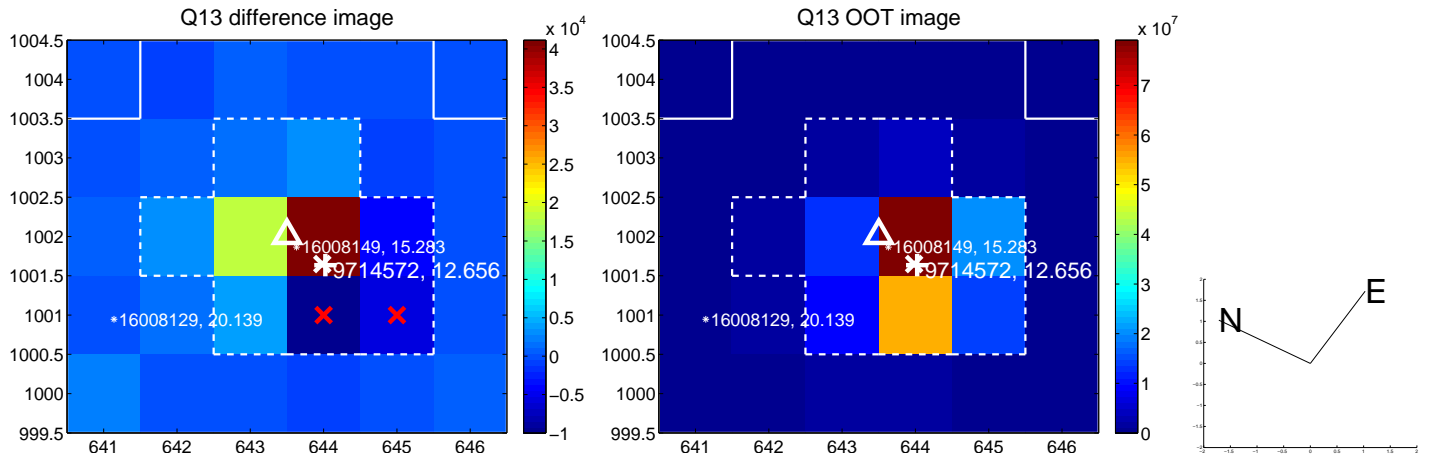
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



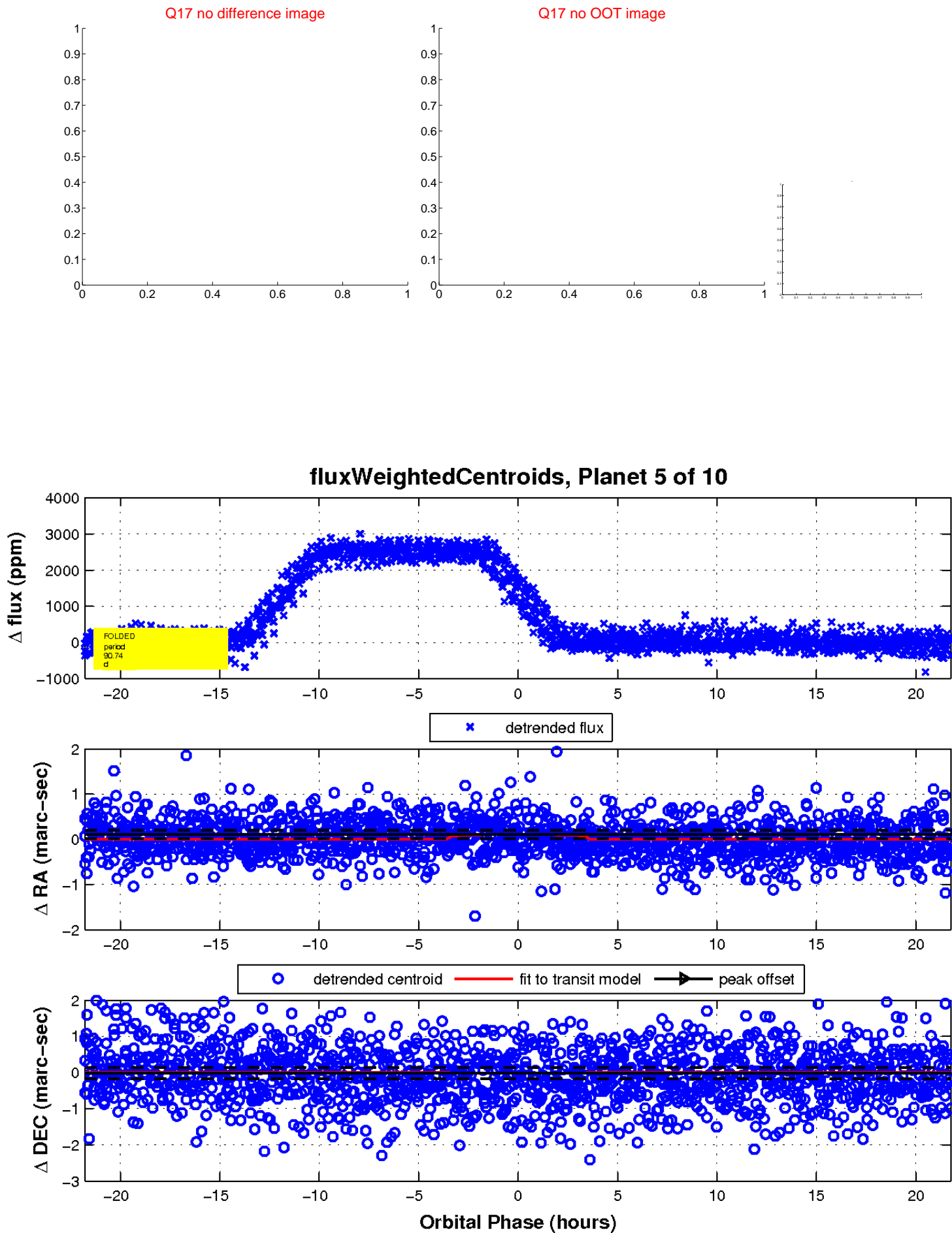
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

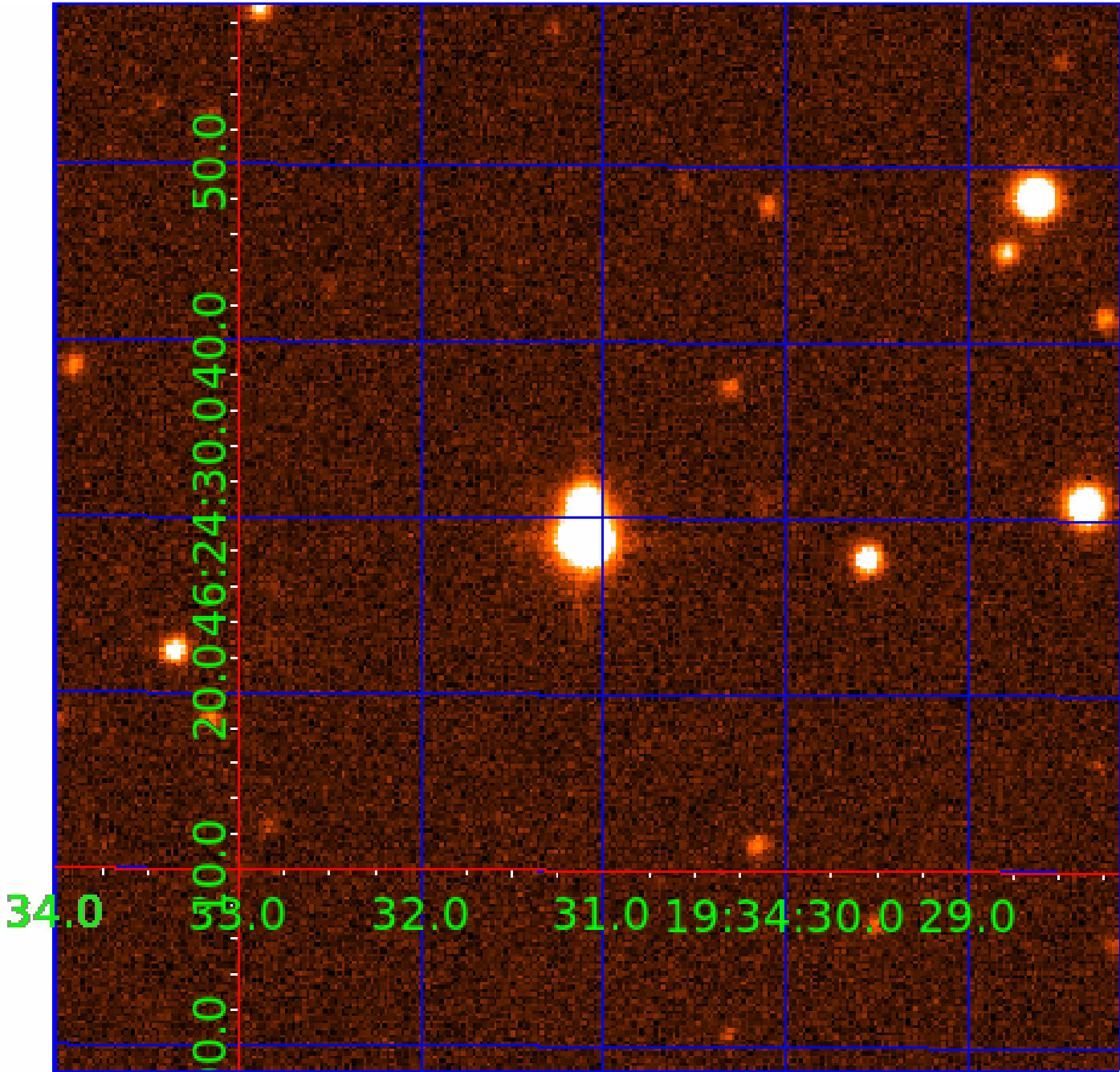


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD— CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

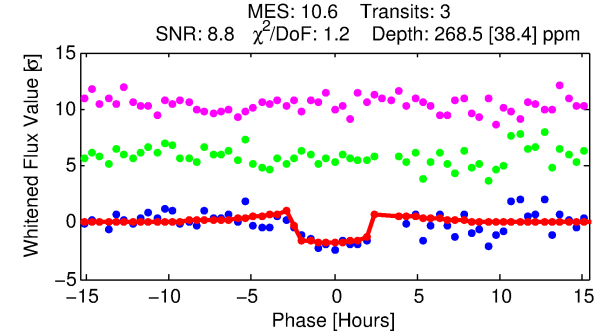
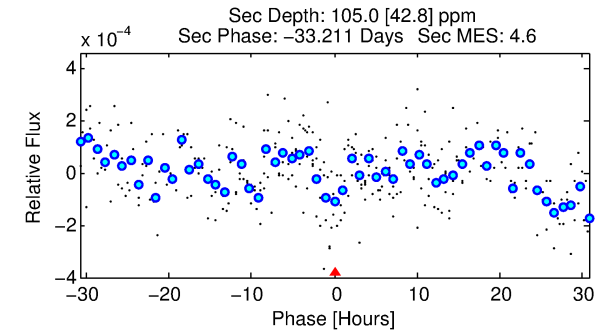
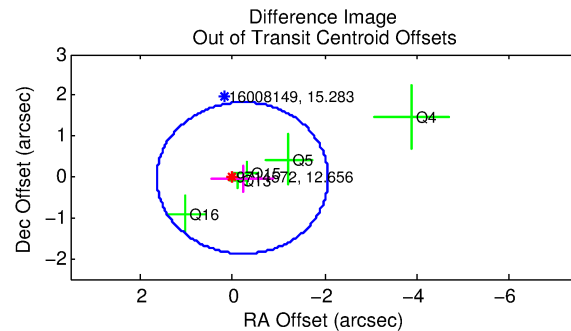
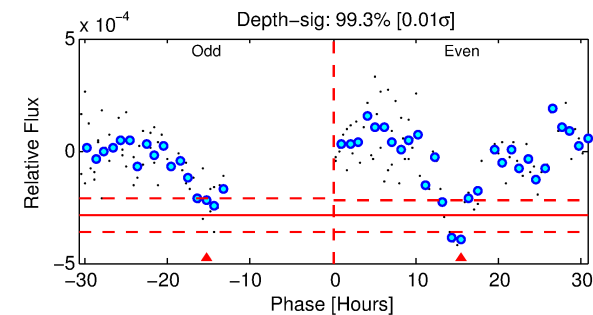
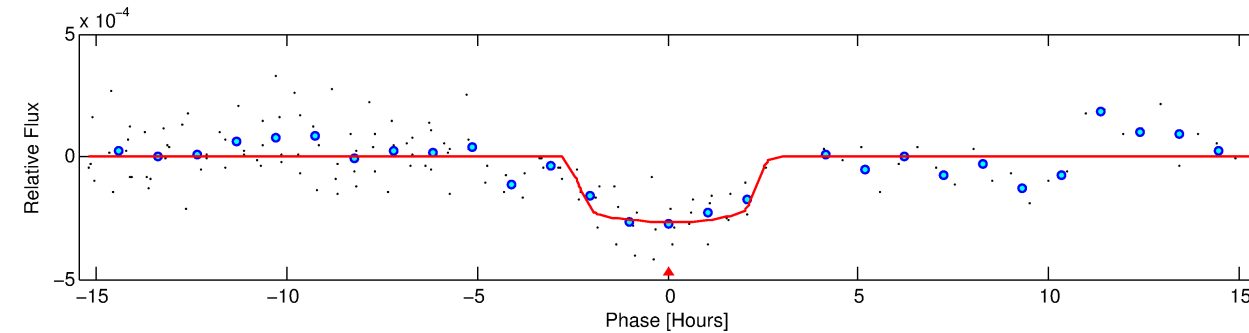
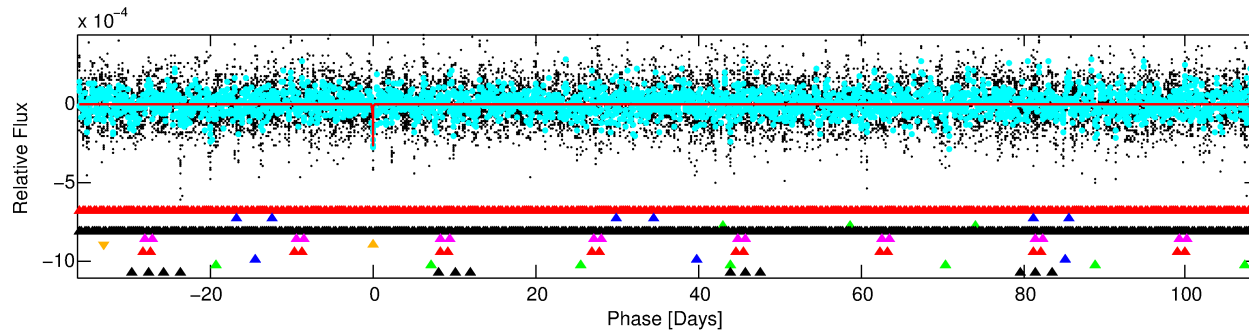
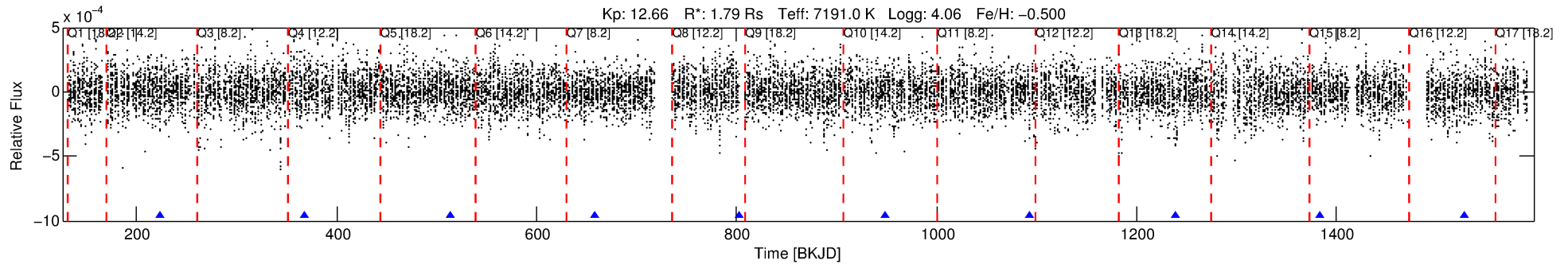
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-06

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 6 of 10 Period: 144.997 d



DV Fit Results:

Period = 144.99664 [0.00173] d
Epoch = 223.2548 [0.0119] BKJD
Rp/R* = 0.0173 [0.0049]
a/R* = 105.67 [175.77]
b = 0.89 [0.39]
Seff = 21.68 [10.49]
Teff = 550 [67] K
Rp = 3.39 [1.45] Re
a = 0.5963 [0.1747] AU
Ag = 1791.05 [1488.23] [1.20 σ]
Teffp = 5534 [992] K [5.01 σ]

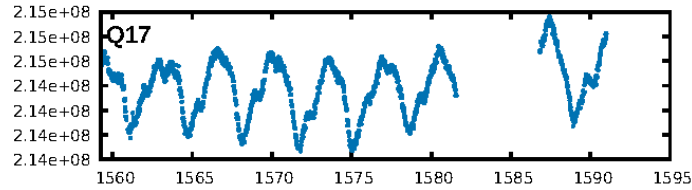
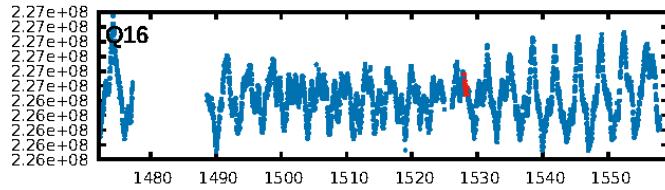
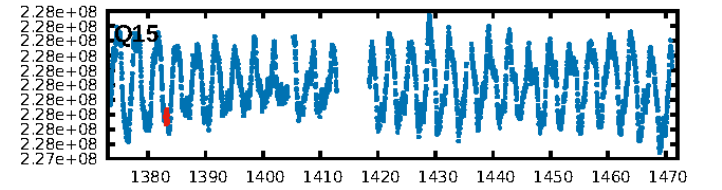
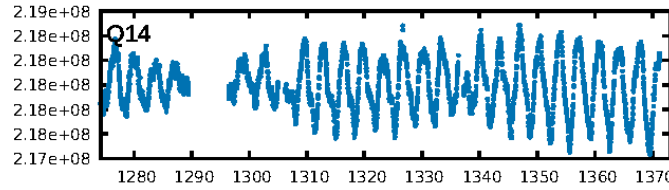
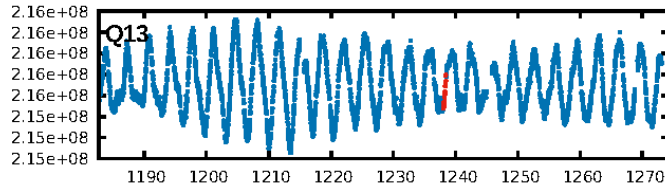
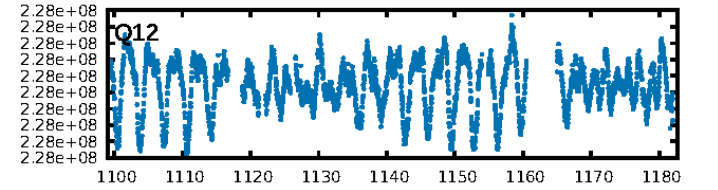
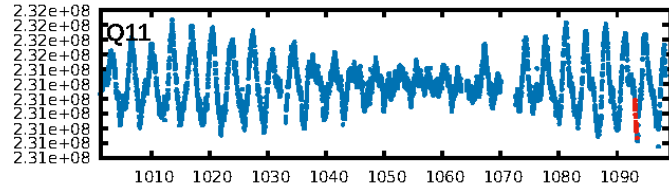
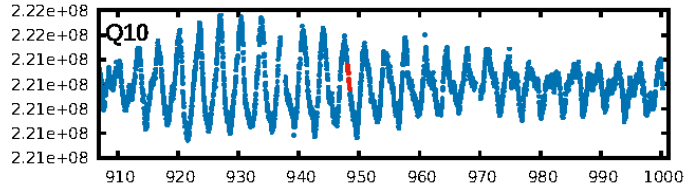
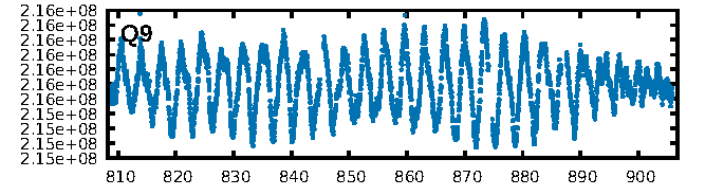
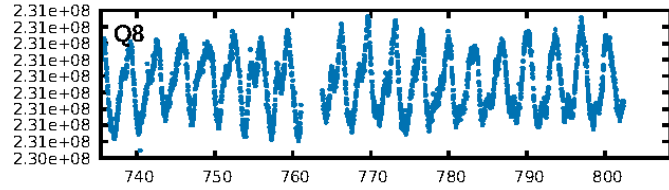
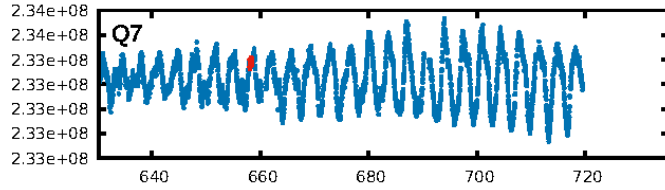
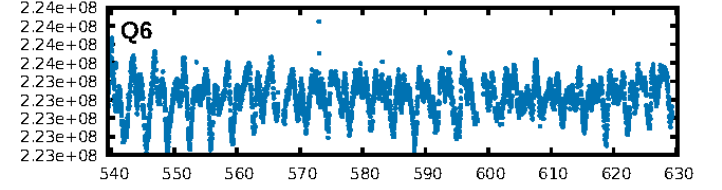
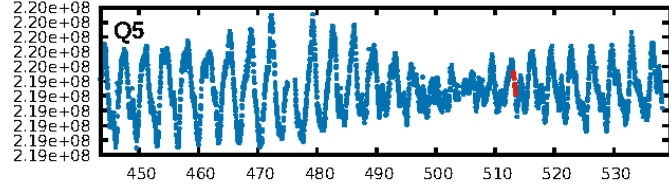
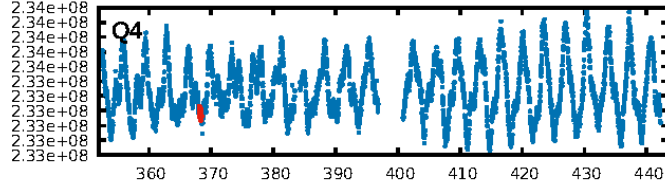
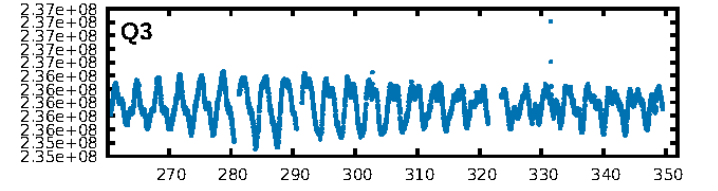
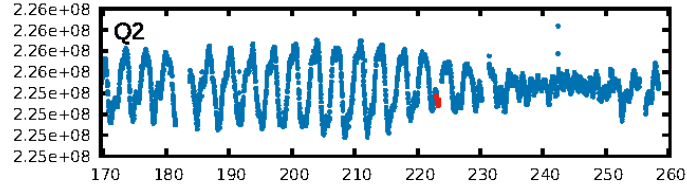
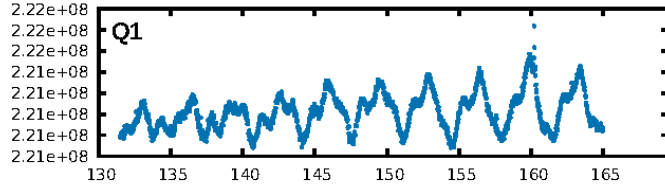
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.83 σ]
LongPeriod-sig: 100.0% [329.98 σ]
ModelChiSquare2-sig: 7.9%
ModelChiSquareGof-sig: 97.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.3115
Centroid-sig: 92.7%
Centroid-so: 0.134 arcsec [0.20 σ]
OotOffset-rm: 0.227 arcsec [0.37 σ]
OotOffset-st: 0/1/2/2 [5]
KicOffset-rm: 0.299 arcsec [0.89 σ]
KicOffset-st: 0/1/2/2 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.14 [1/7]

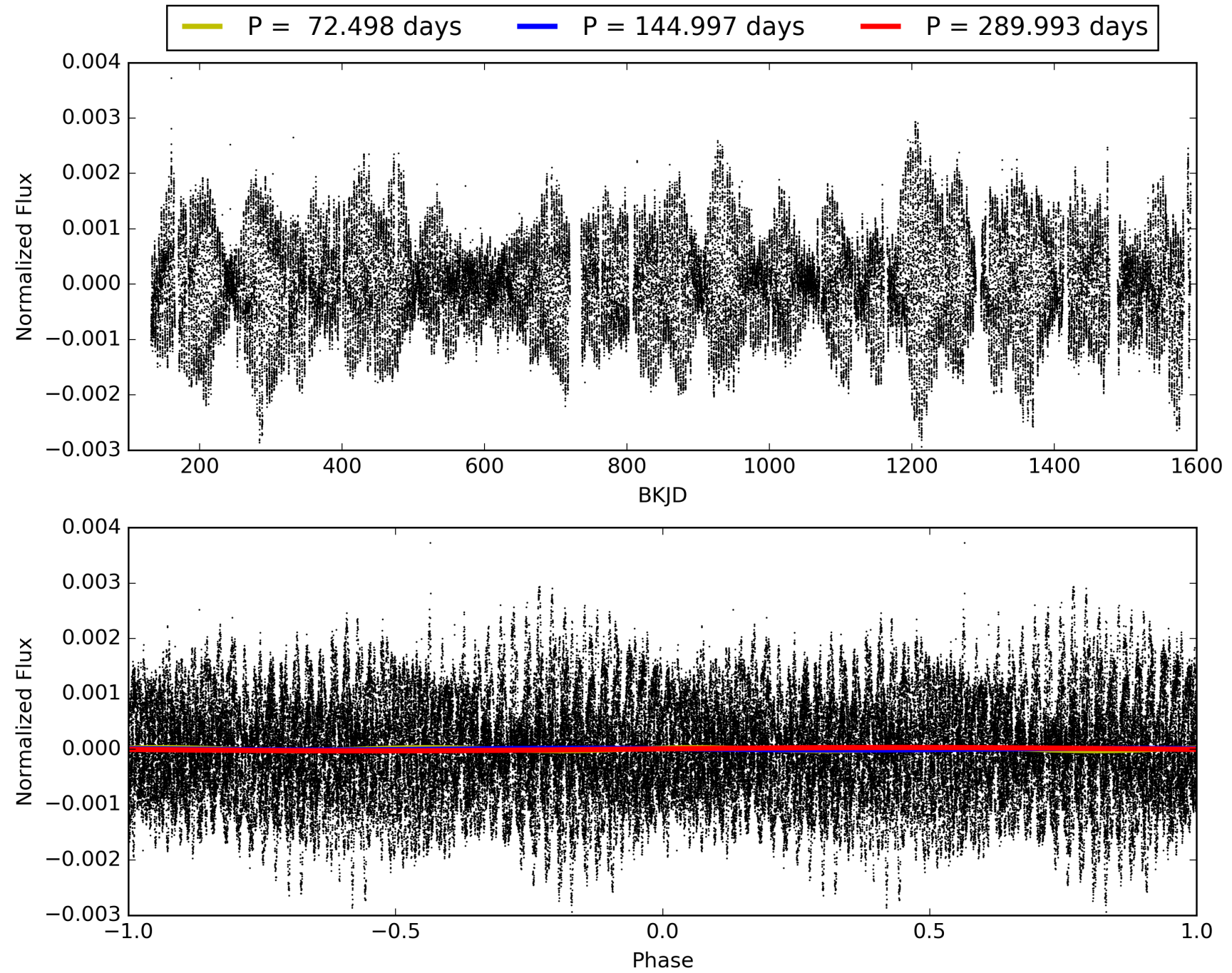
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:38 Z

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

TCE 009714572-06, PDC Light Curves

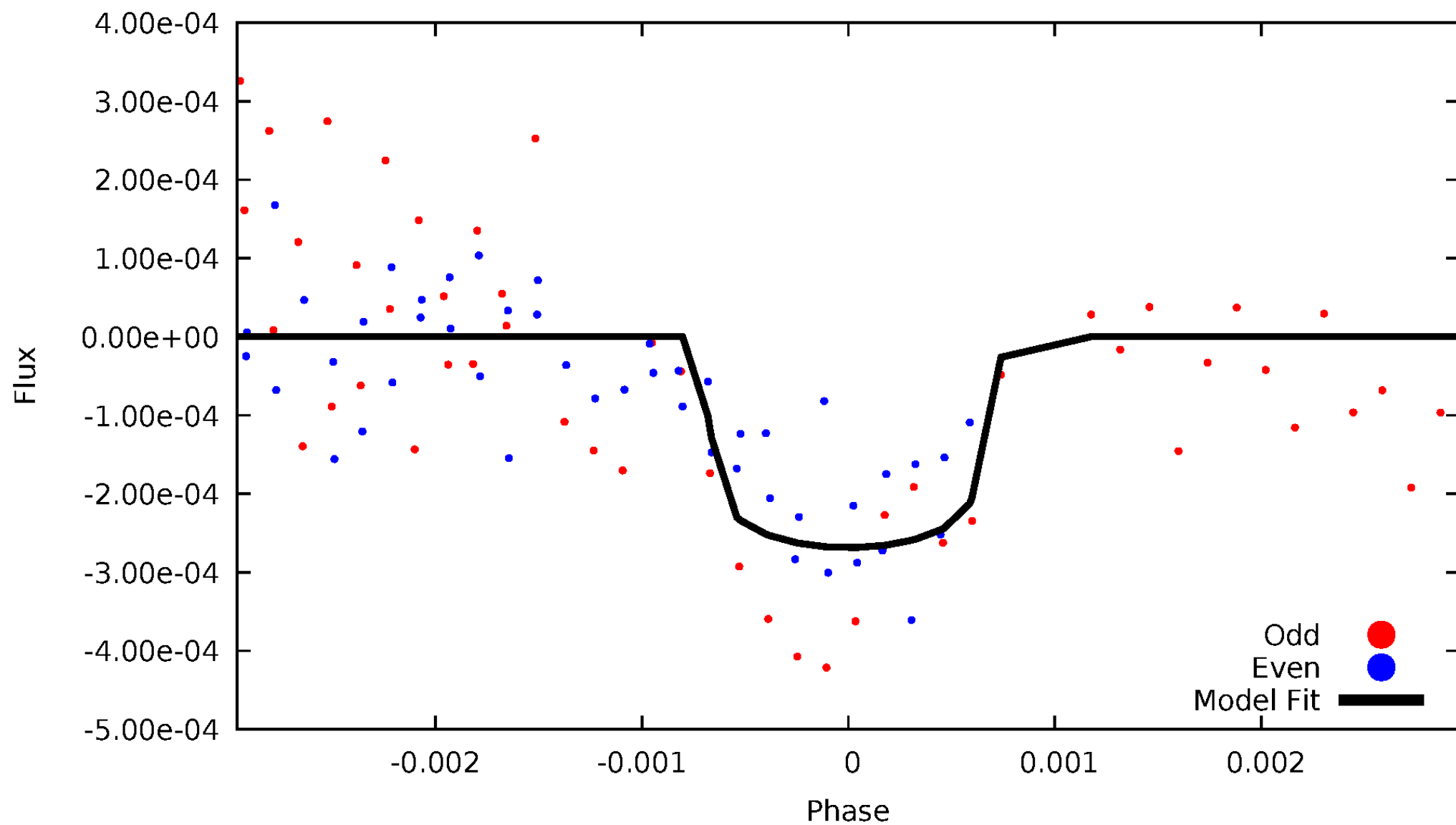


TCE 009714572-06



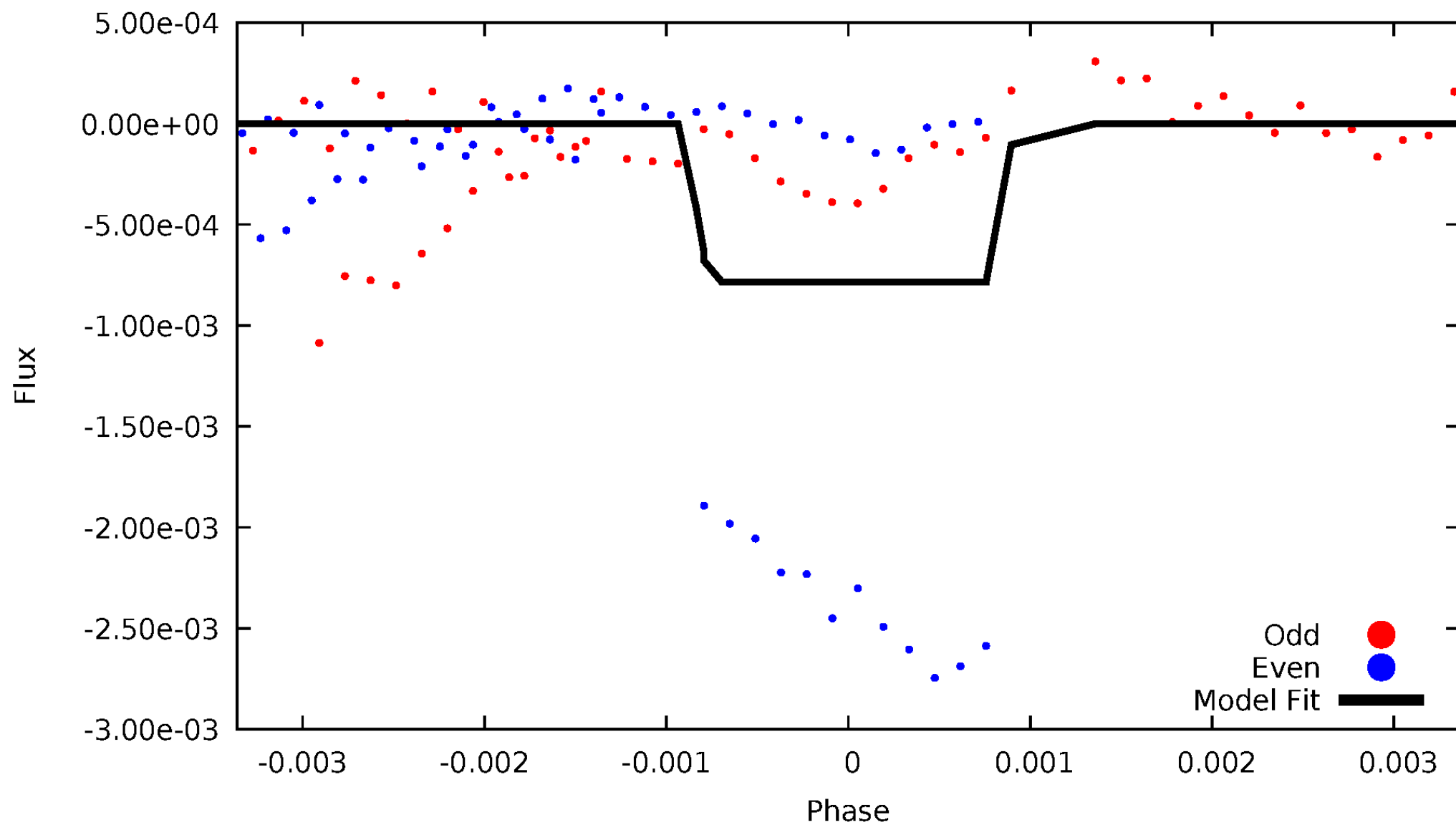
DV Odd/Even

TCE 009714572-06



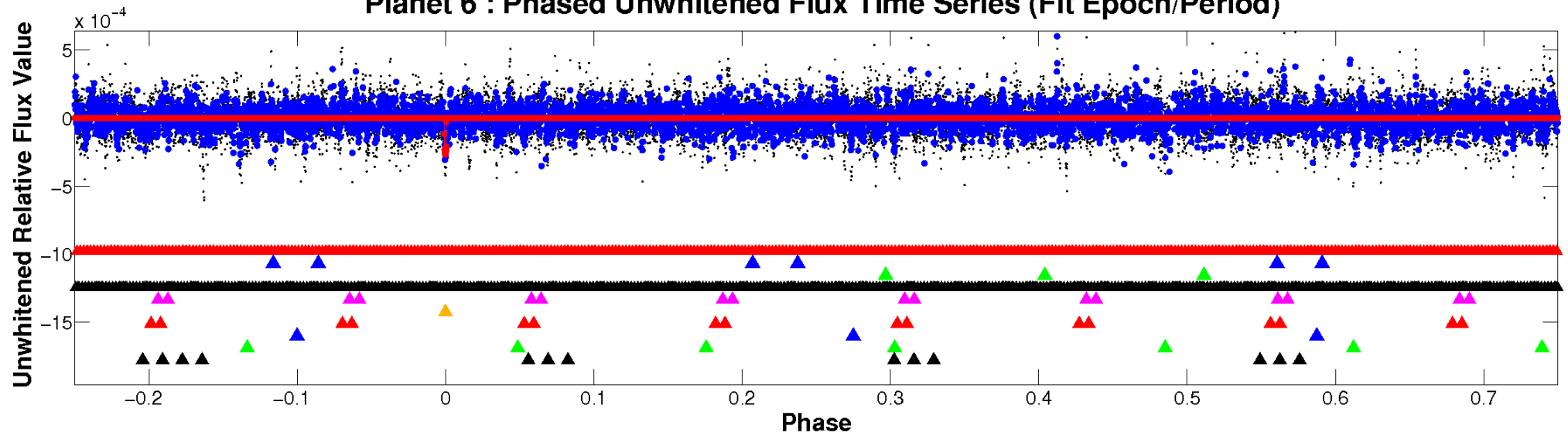
ALT Odd/Even

TCE 009714572-06

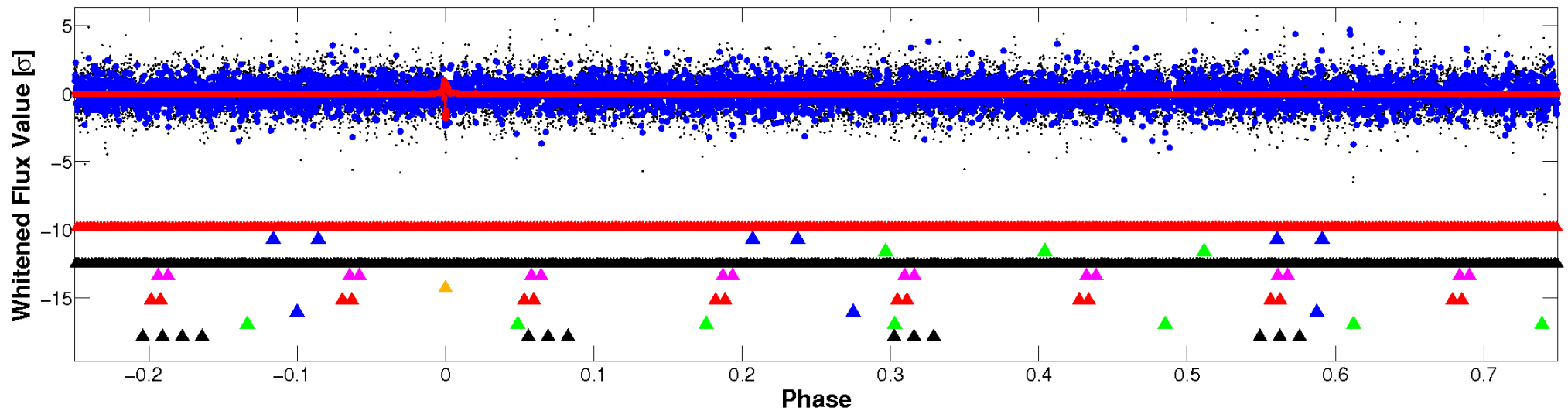


Non-Whitened Vs. Whitened Light Curve

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

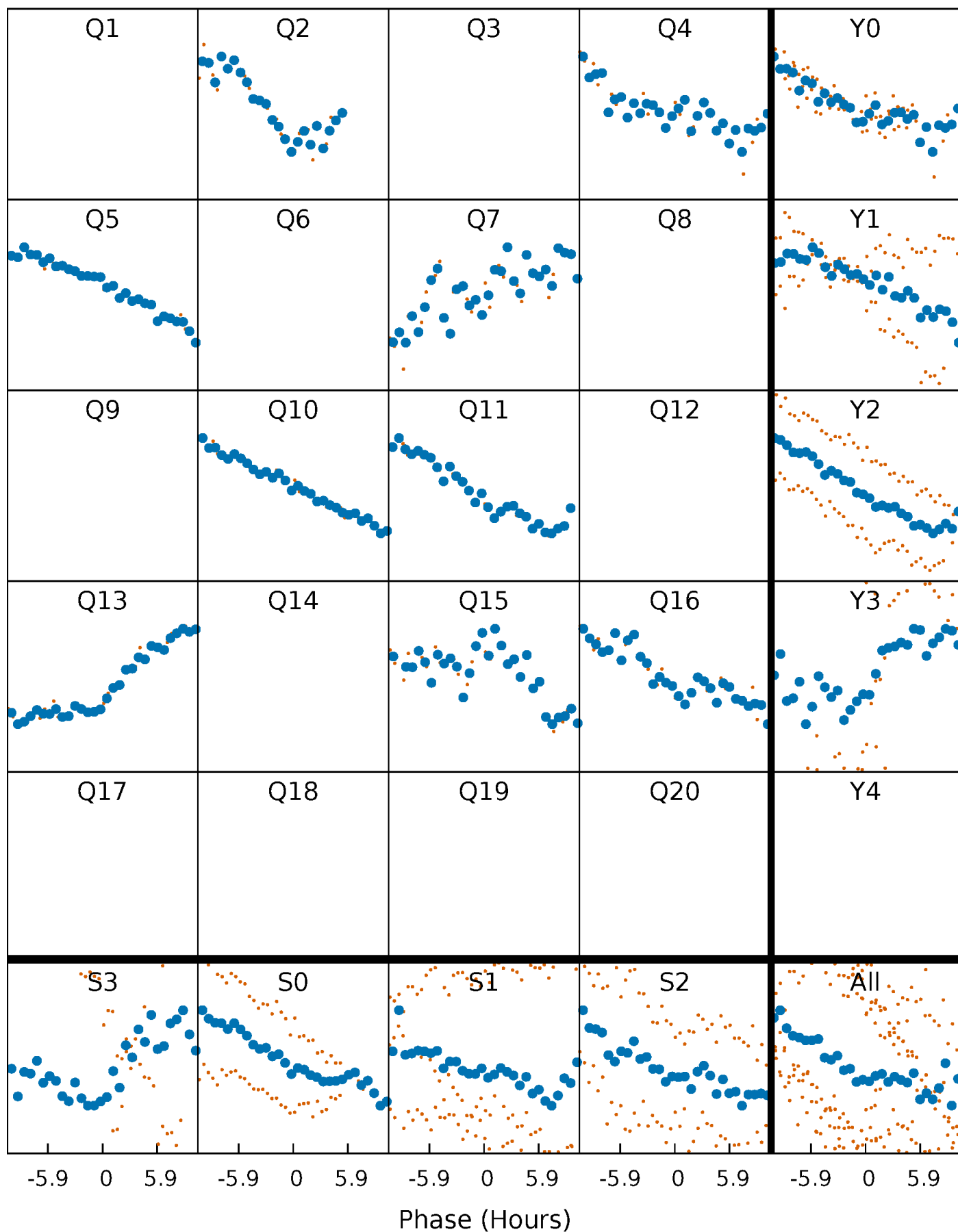


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



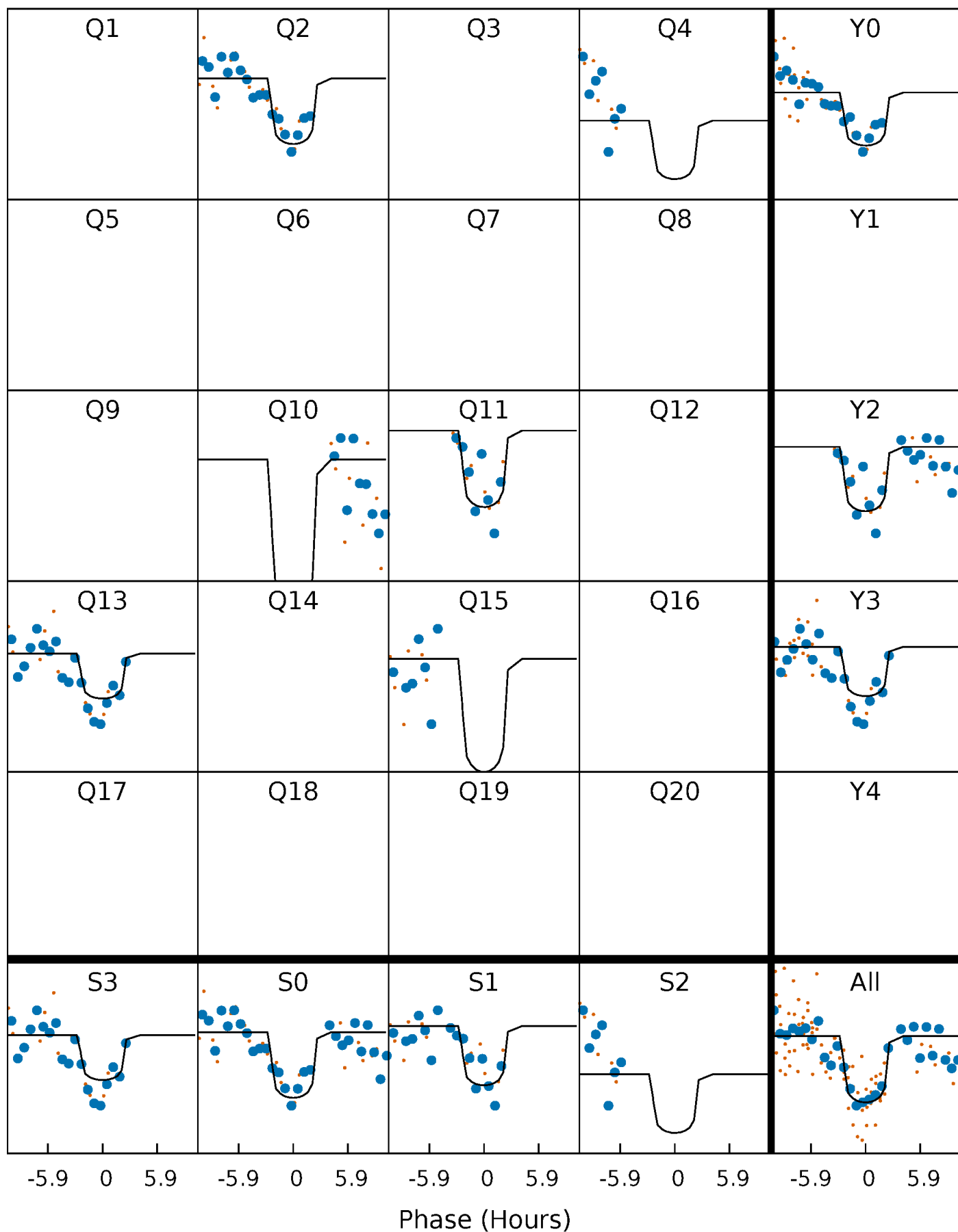
PDC Quarter-Phased Transit Curves

TCE 009714572-06 P=144.996638 Days $T_0=223.254785$ (BKJD)



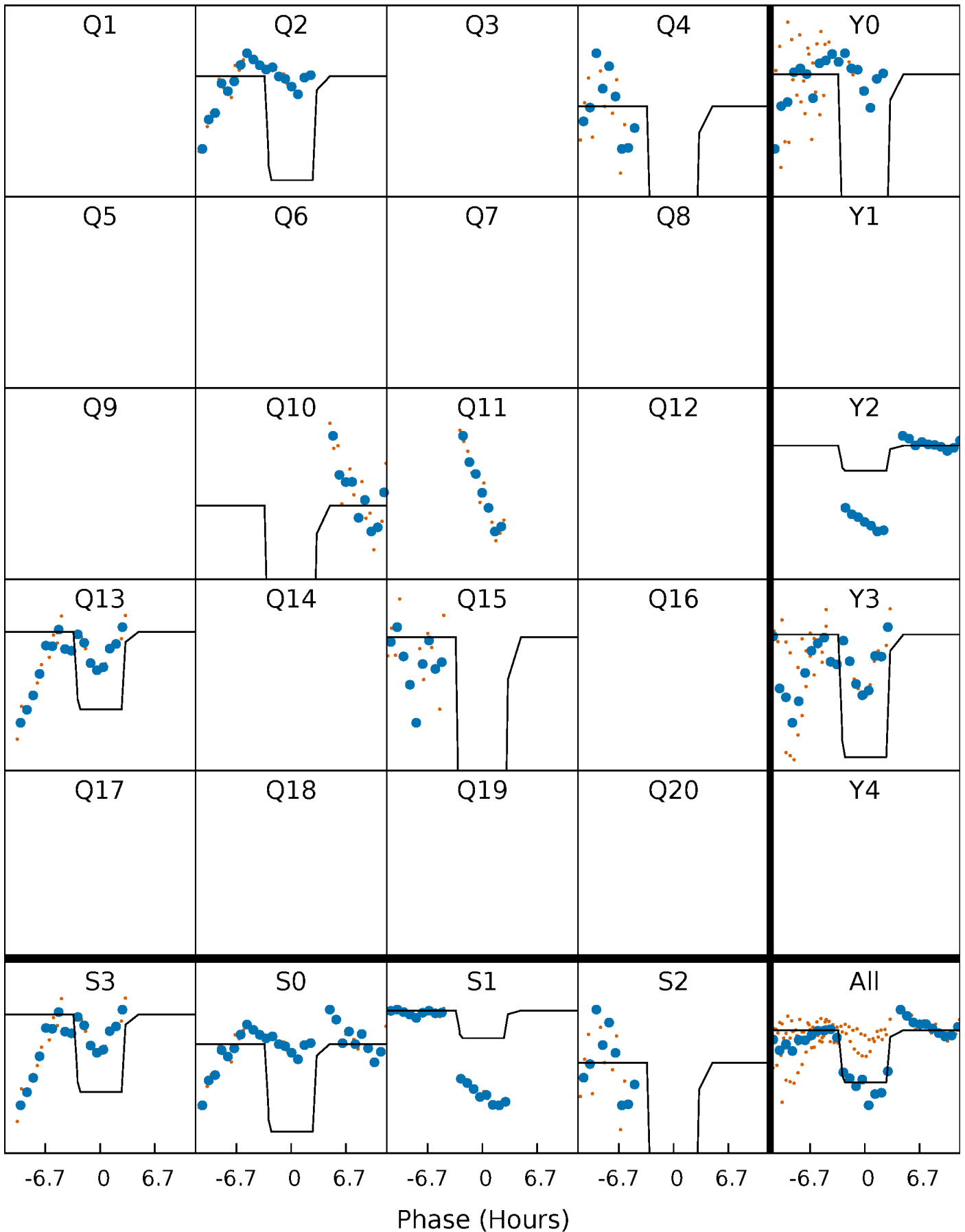
DV Quarter-Phased Transit Curves

TCE 009714572-06 P=144.996638 Days $T_0=223.254785$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

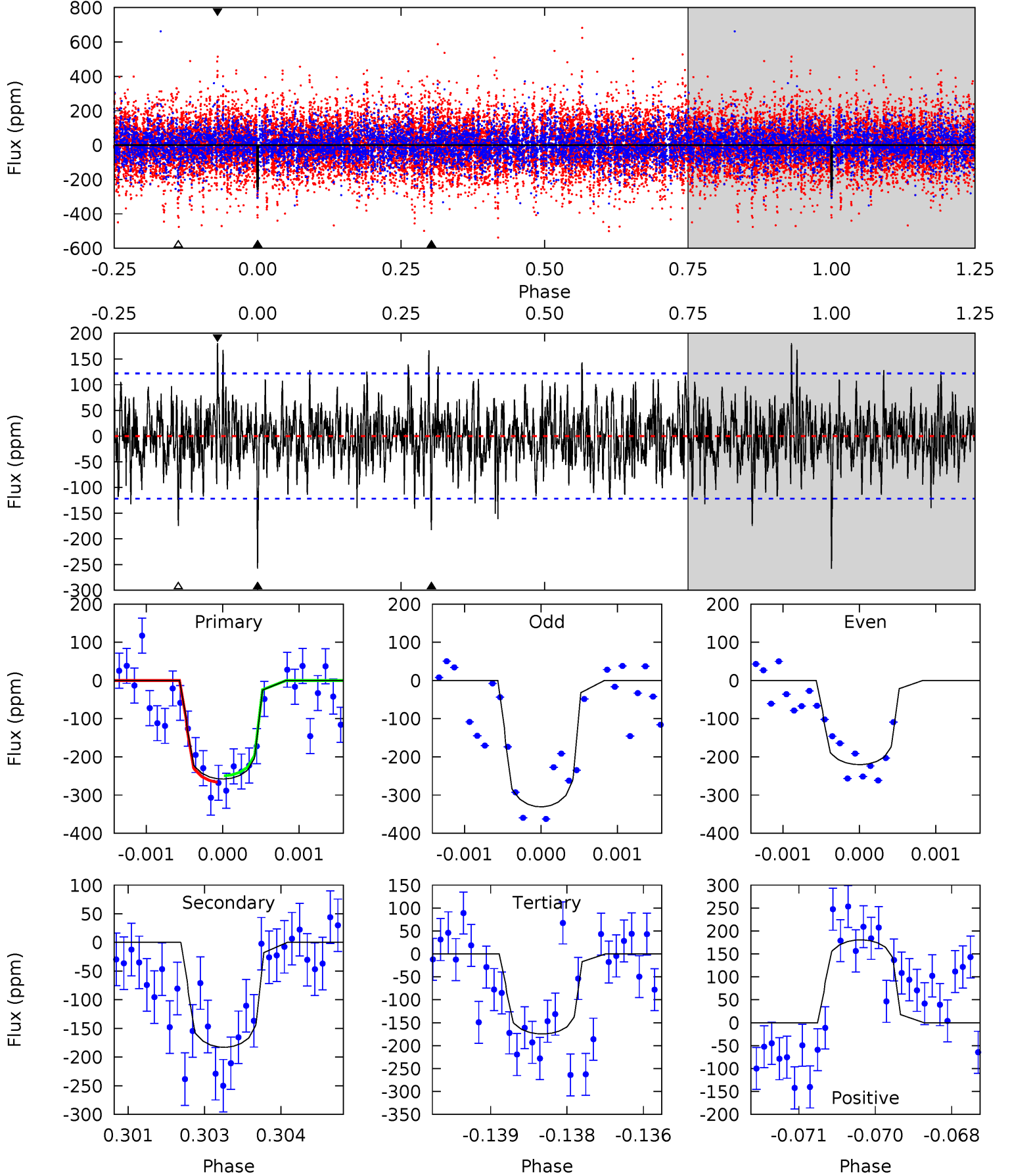
TCE 009714572-06 P=144.998540 Days $T_0=223.218799$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-06, P = 144.996638 Days, E = 78.258147 Days

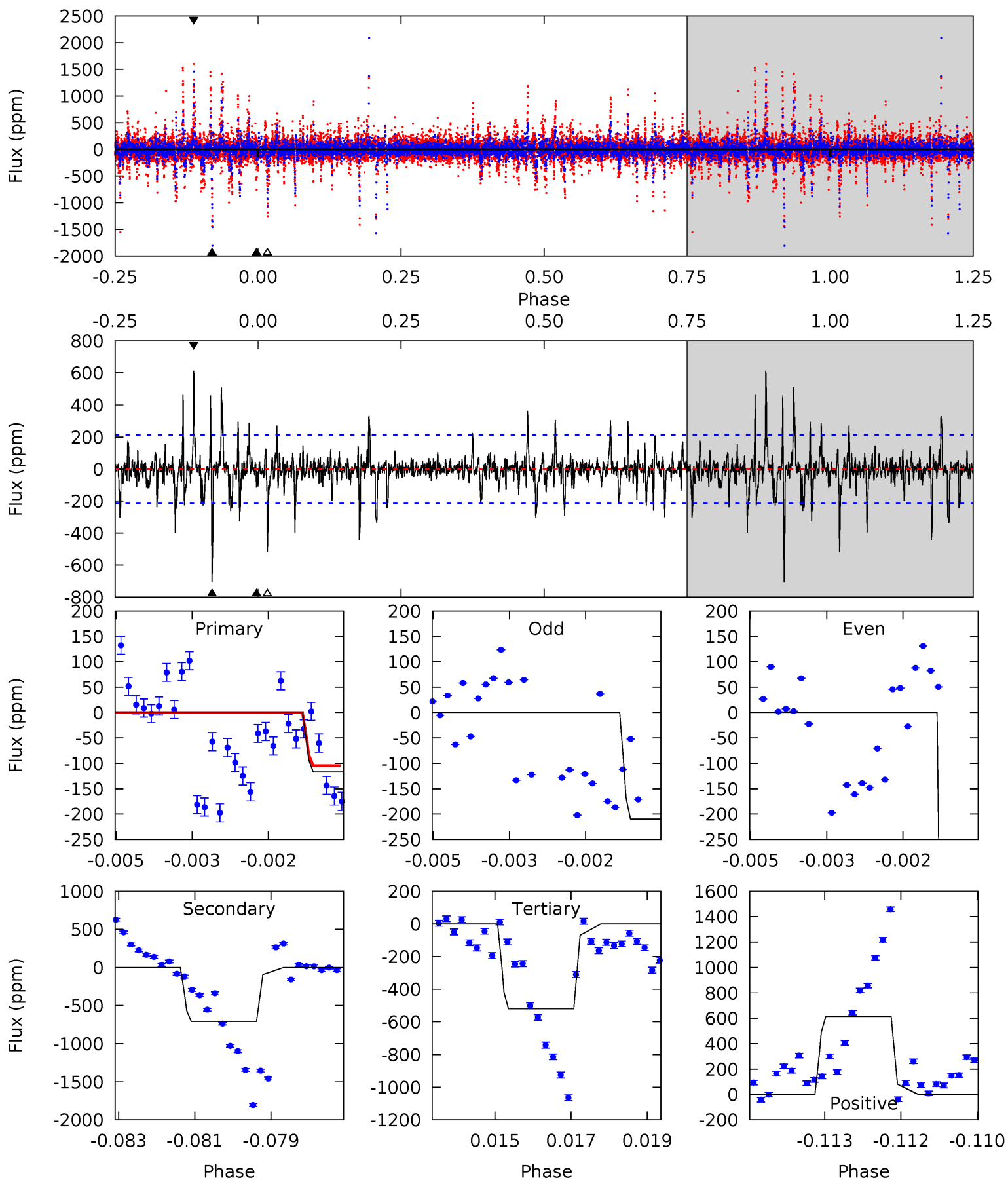
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	8.10	7.73	7.99	5.39	3.19	2.00	3.69	3.42	0.37	0.10	2.31	1.16	0.41	0.37



Alt Model-Shift Uniqueness Test

009714572-06, P = 144.998540 Days, E = 78.220259 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.95	17.8	13.1	15.5	5.36	3.14	2.10	-10.2	-12.5	4.72	2.37	12.1	4.15	0.46	0



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-183 ± 23	$3.26^{+1.14}_{-1.00}$	758^{+65}_{-71}	6312^{+1200}_{-784}	3304^{+3597}_{-1468}
Alt.	-707 ± 40	$5.31^{+1.29}_{-1.21}$	755^{+62}_{-65}	6944^{+828}_{-606}	4842^{+3244}_{-1641}

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

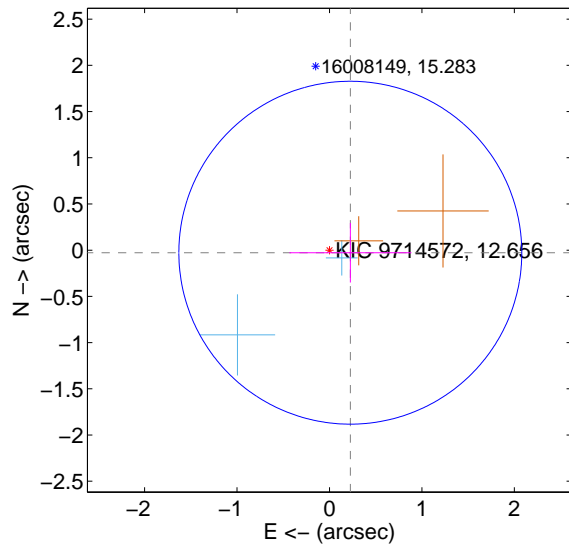
Supplemental centroid analysis for 009714572-06. Kepler magnitude: 12.66. Transit SNR 8.77

There are 2 quarters with good PRF difference image offsets

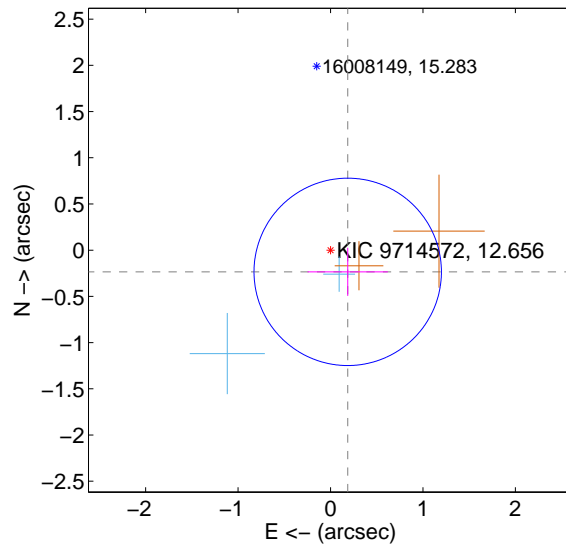
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.227 ± 0.618	0.37	-0.226 ± 0.660	-0.027 ± 0.322
PRF-fit source offset from KIC position	0.299 ± 0.338	0.89	-0.186 ± 0.434	-0.235 ± 0.260
photometric centroid source offset	0.13 ± 0.68	0.20	-0.10 ± 0.54	-0.09 ± 0.83

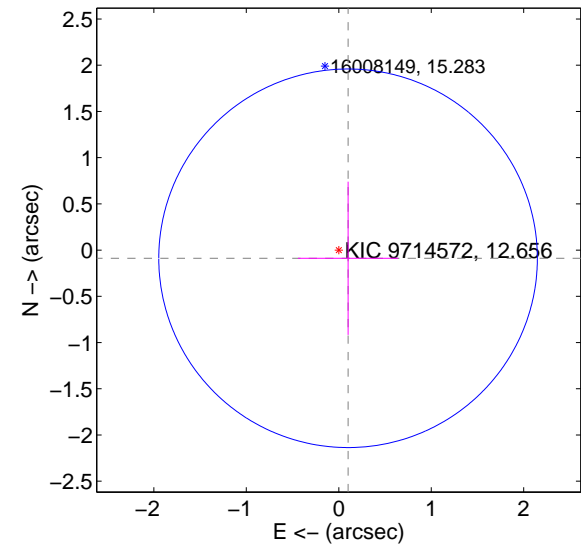
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

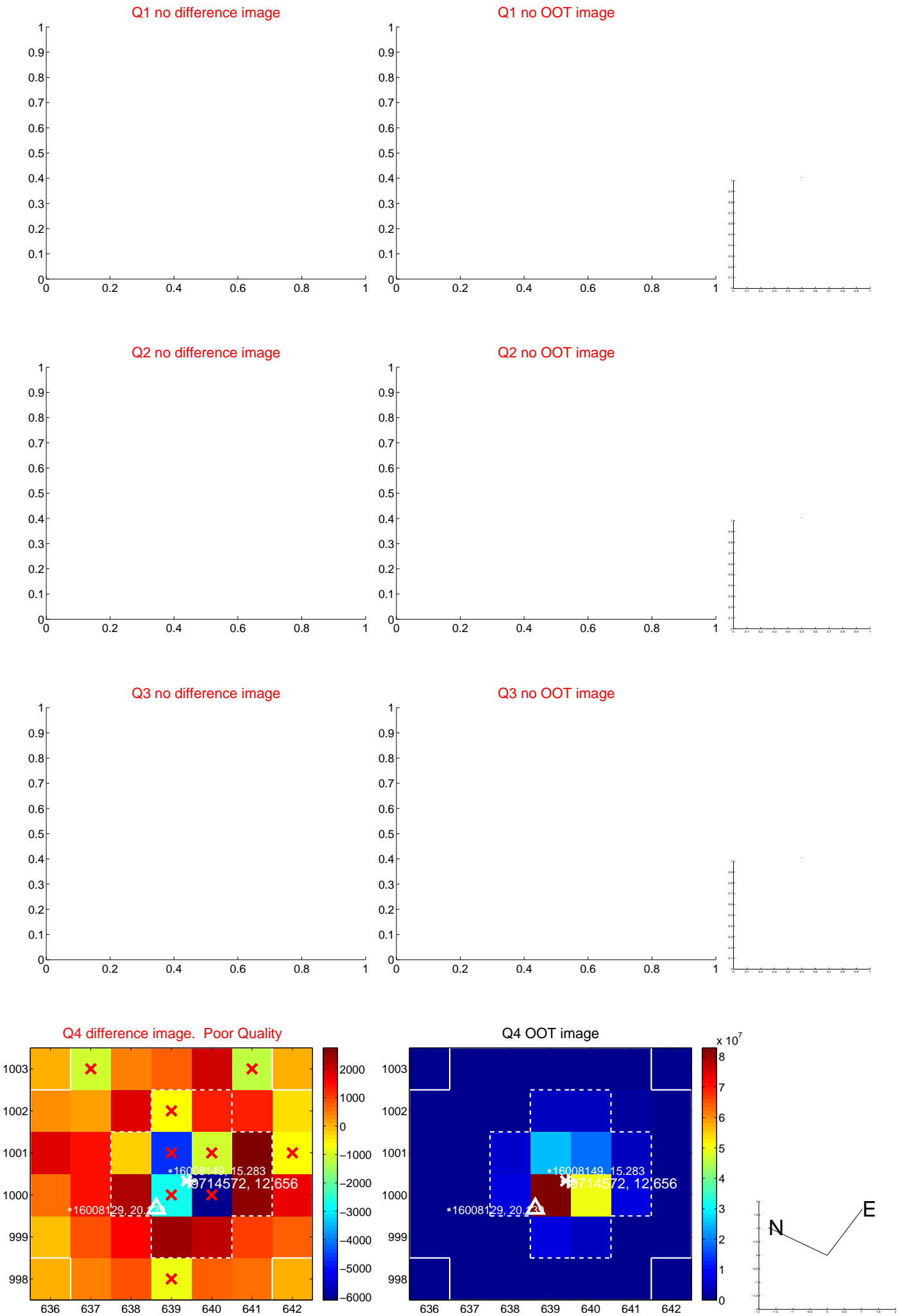


offset from photometric centroids

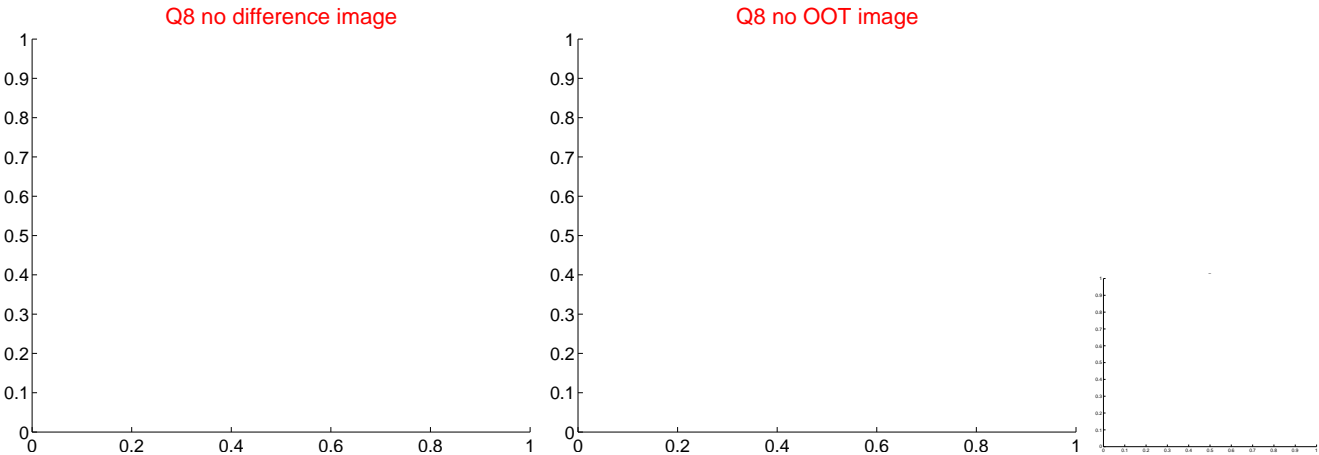
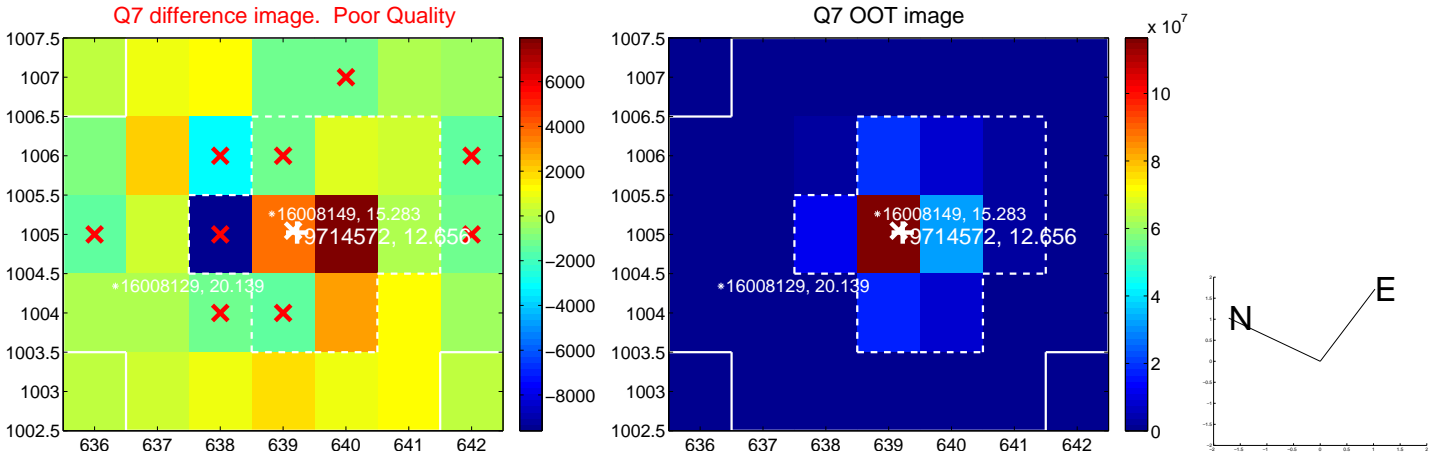
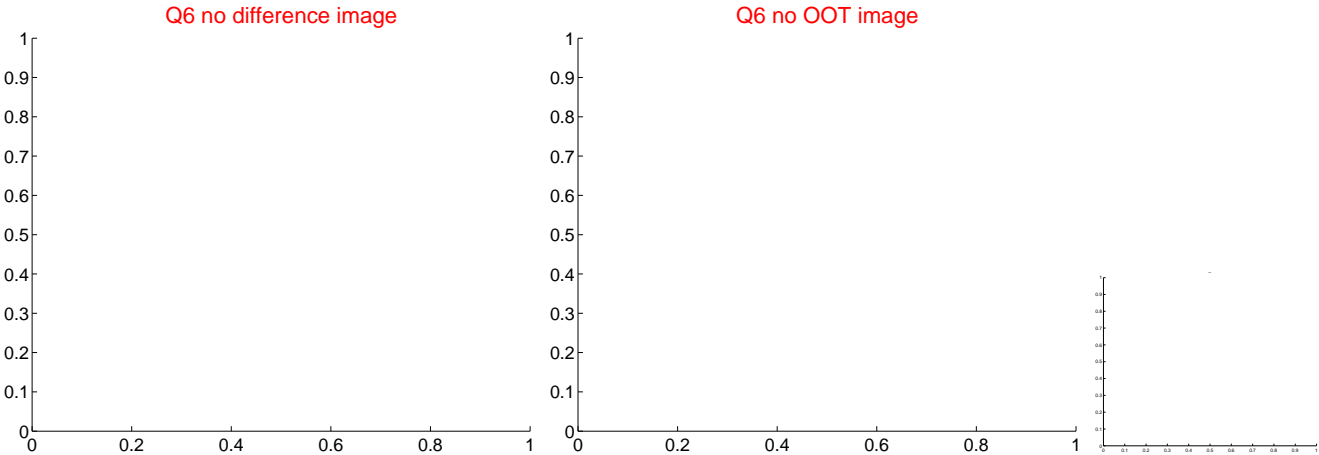
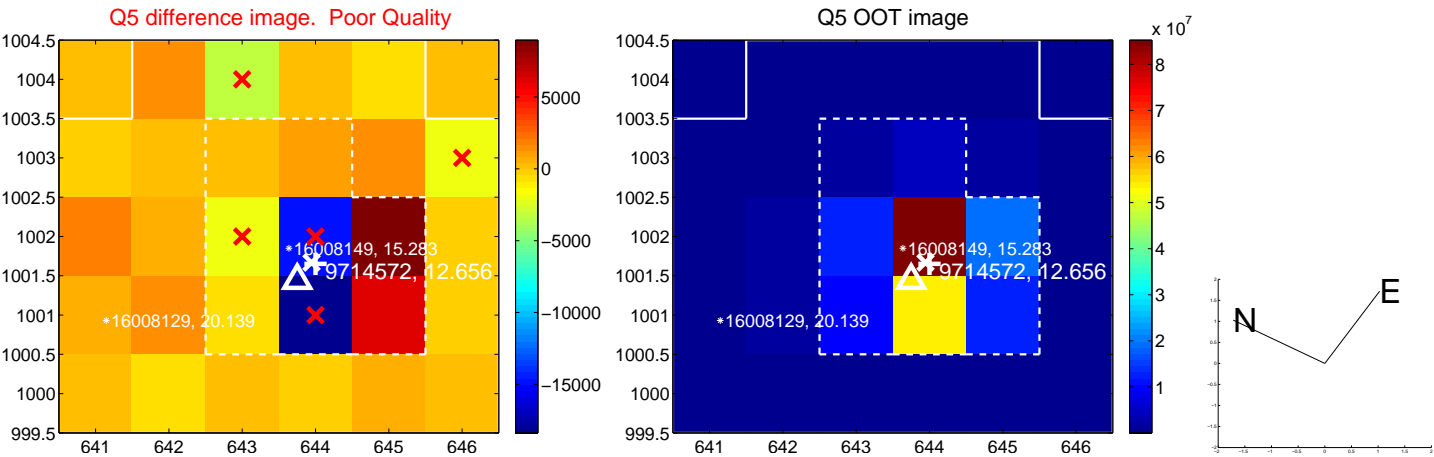


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

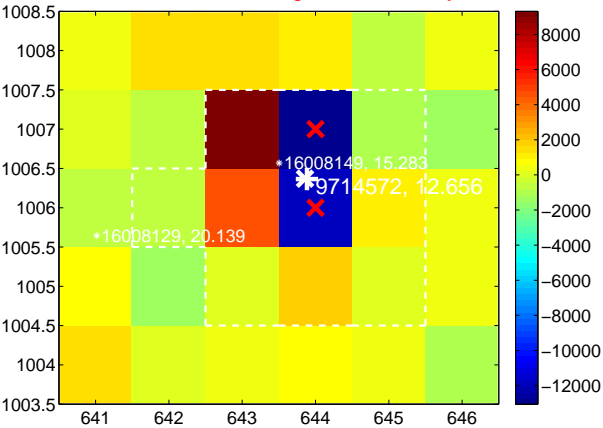
Q9 no difference image



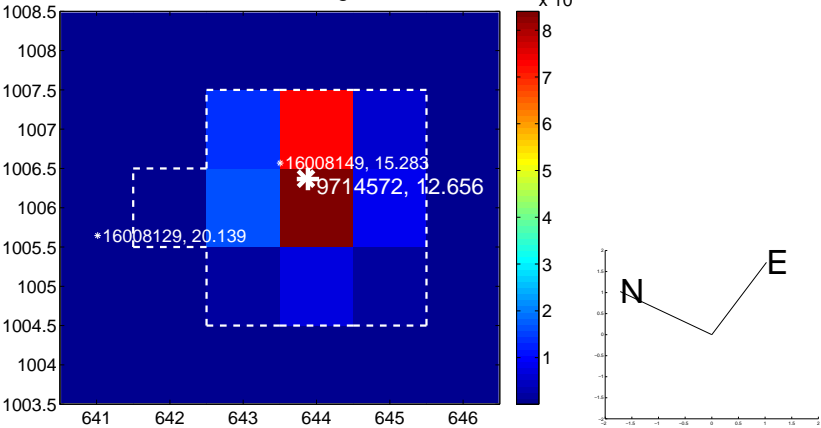
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



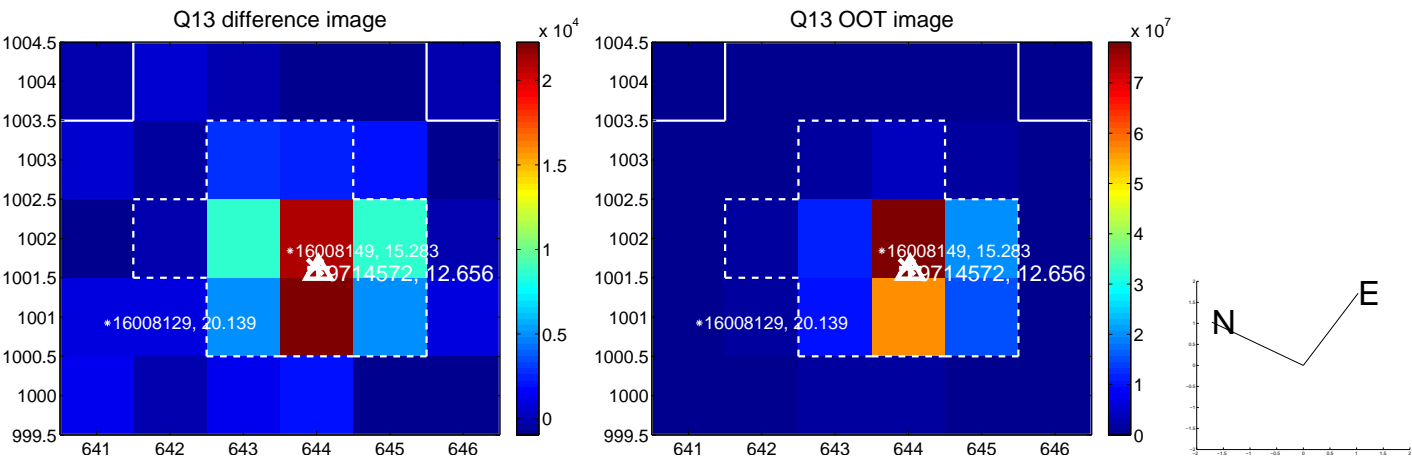
Q12 no difference image



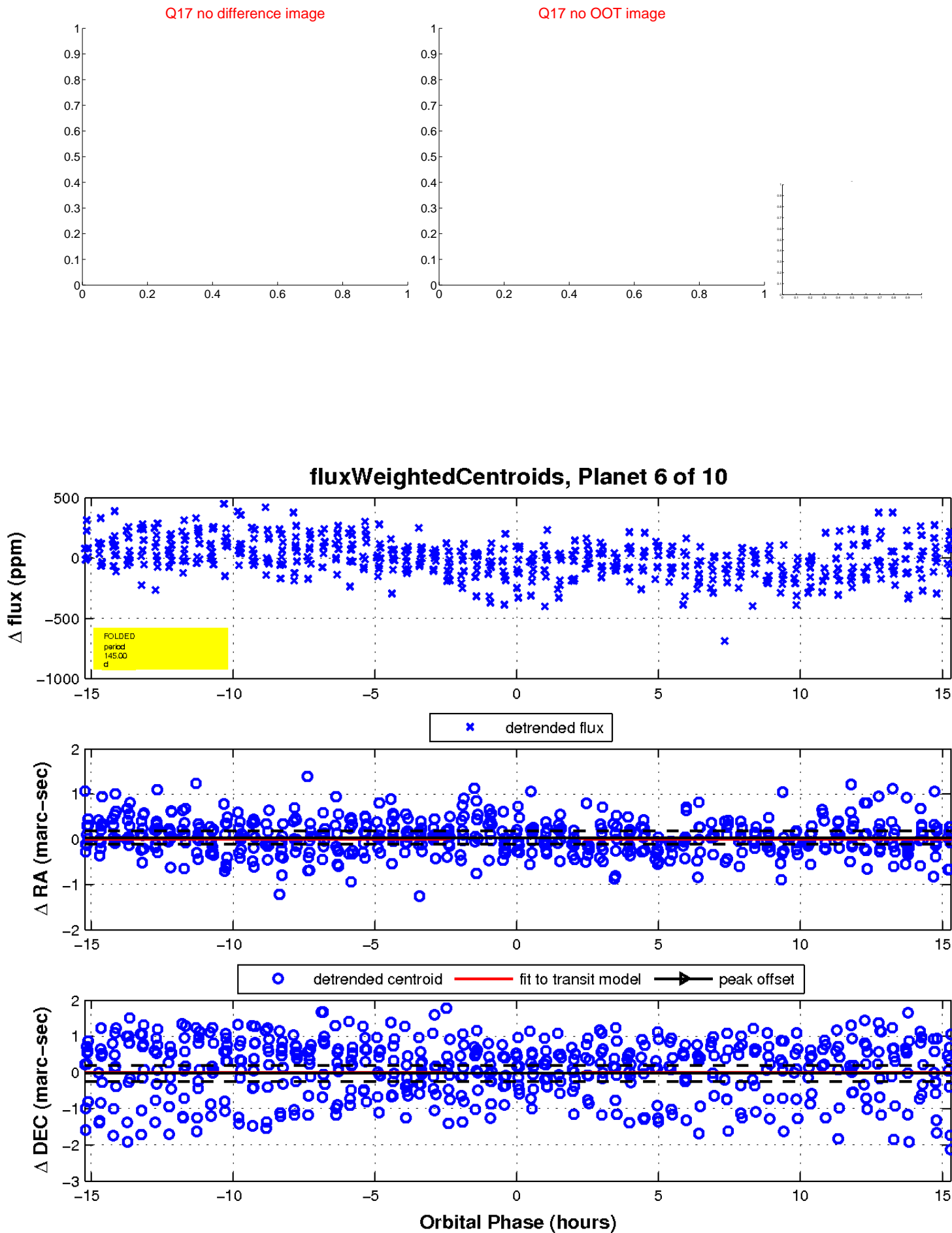
Q12 no OOT image



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

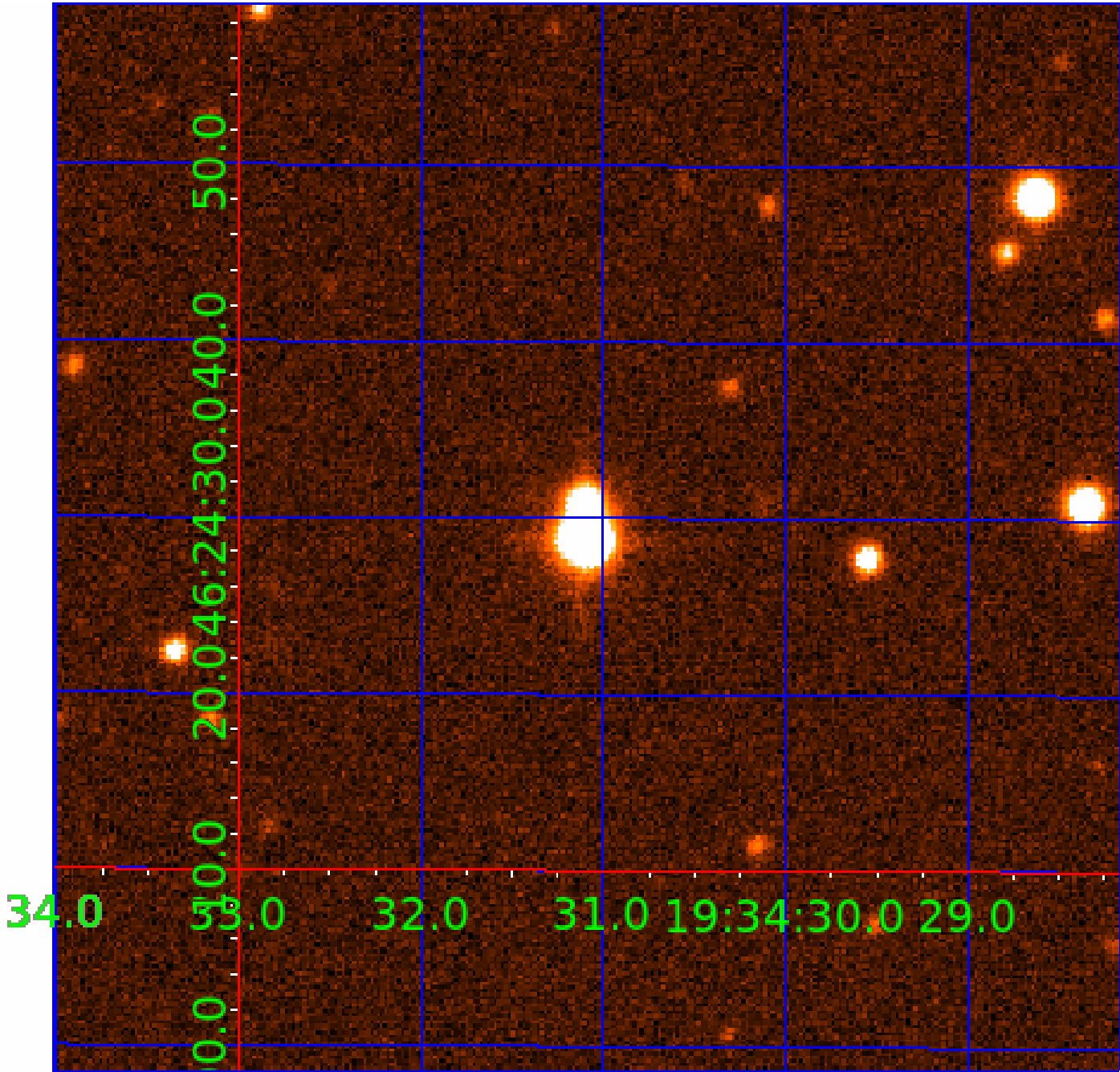


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD— CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

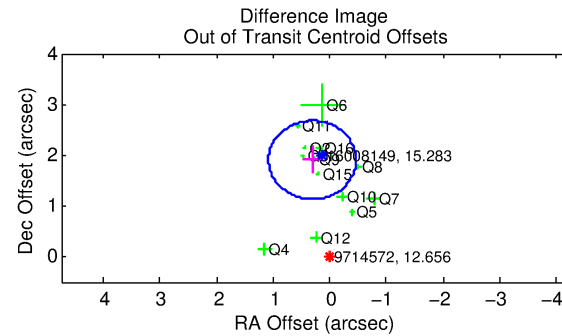
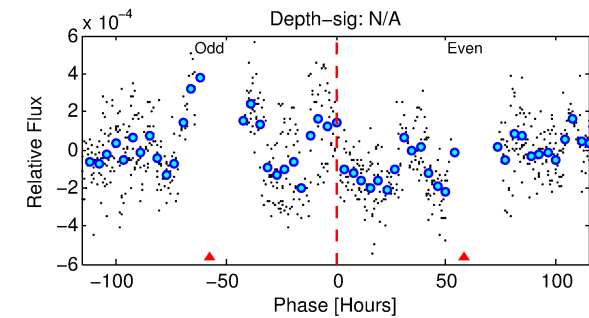
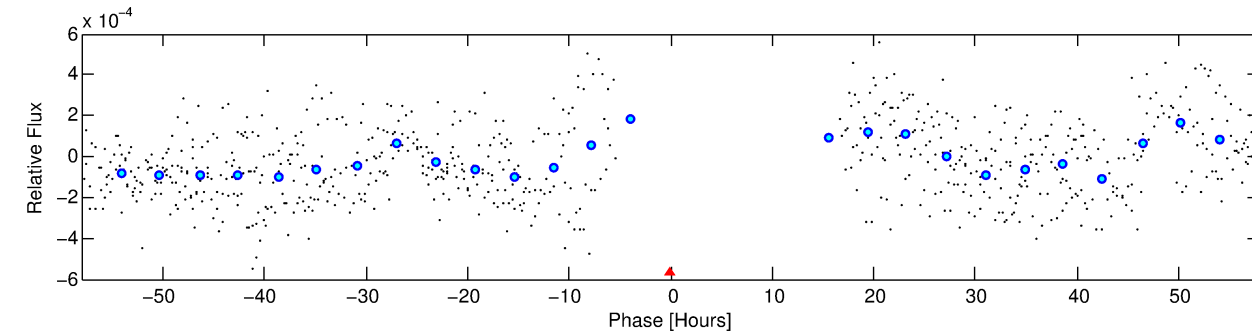
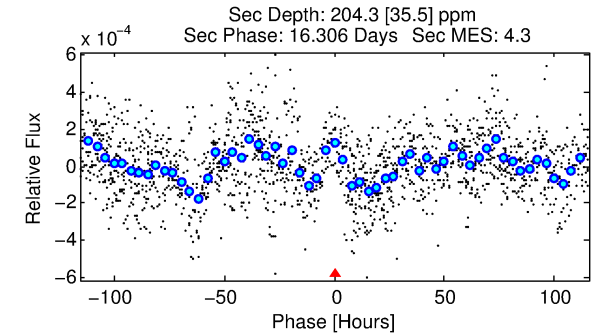
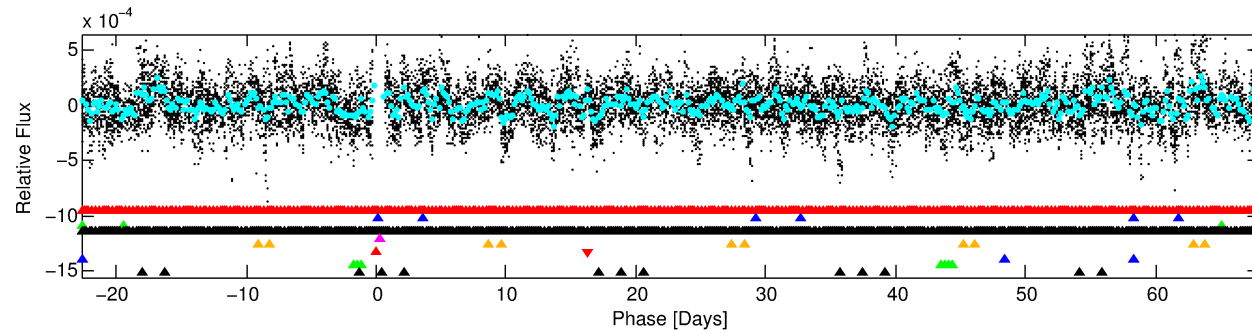
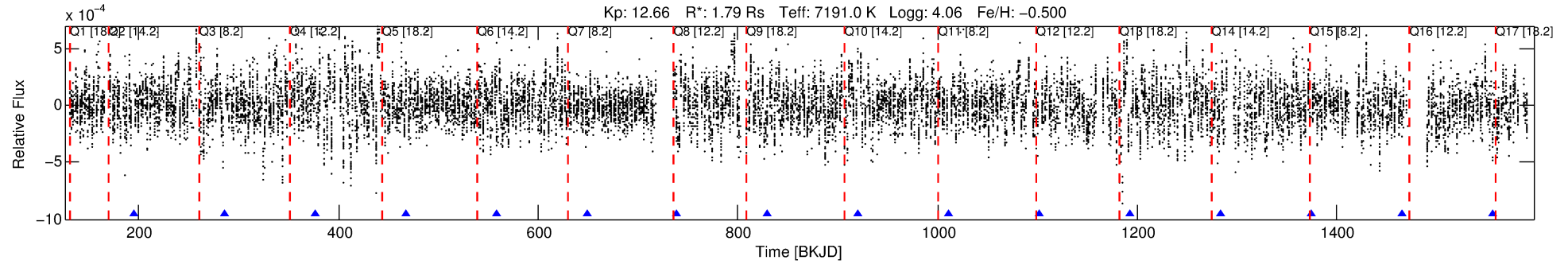
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-07

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 7 of 10 Period: 90.739 d



TPS TCE Results:

Period = 90.73852 d
Epoch = 194.4770 BKJD

DV fit results are unavailable

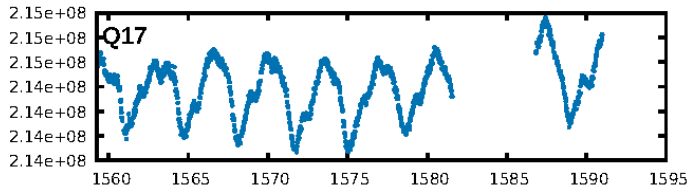
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [199.02σ]
LongPeriod-sig: 0.5% [0.01σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -3.212
Centroid-sig: 16.1%
Centroid-so: 0.219 arcsec [3.02σ]
OotOffset-rm: 1.927 arcsec [7.47σ]
KicOffset-rm: 1.746 arcsec [8.11σ]
OotOffset-st: 3/4/4/2 [13]
KicOffset-st: 3/4/4/2 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 0.00 [0/13]

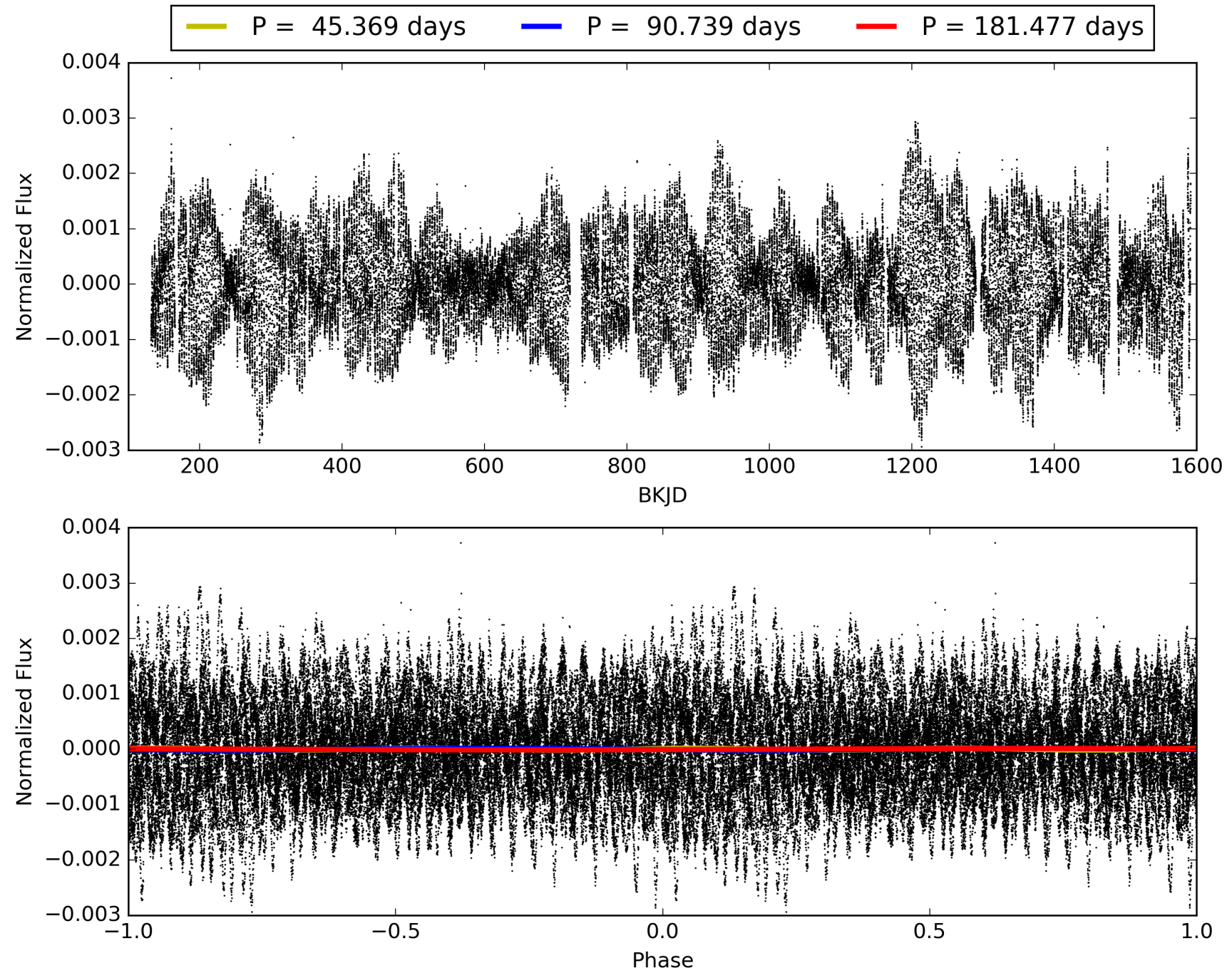
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:42 Z

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

TCE 009714572-07, PDC Light Curves

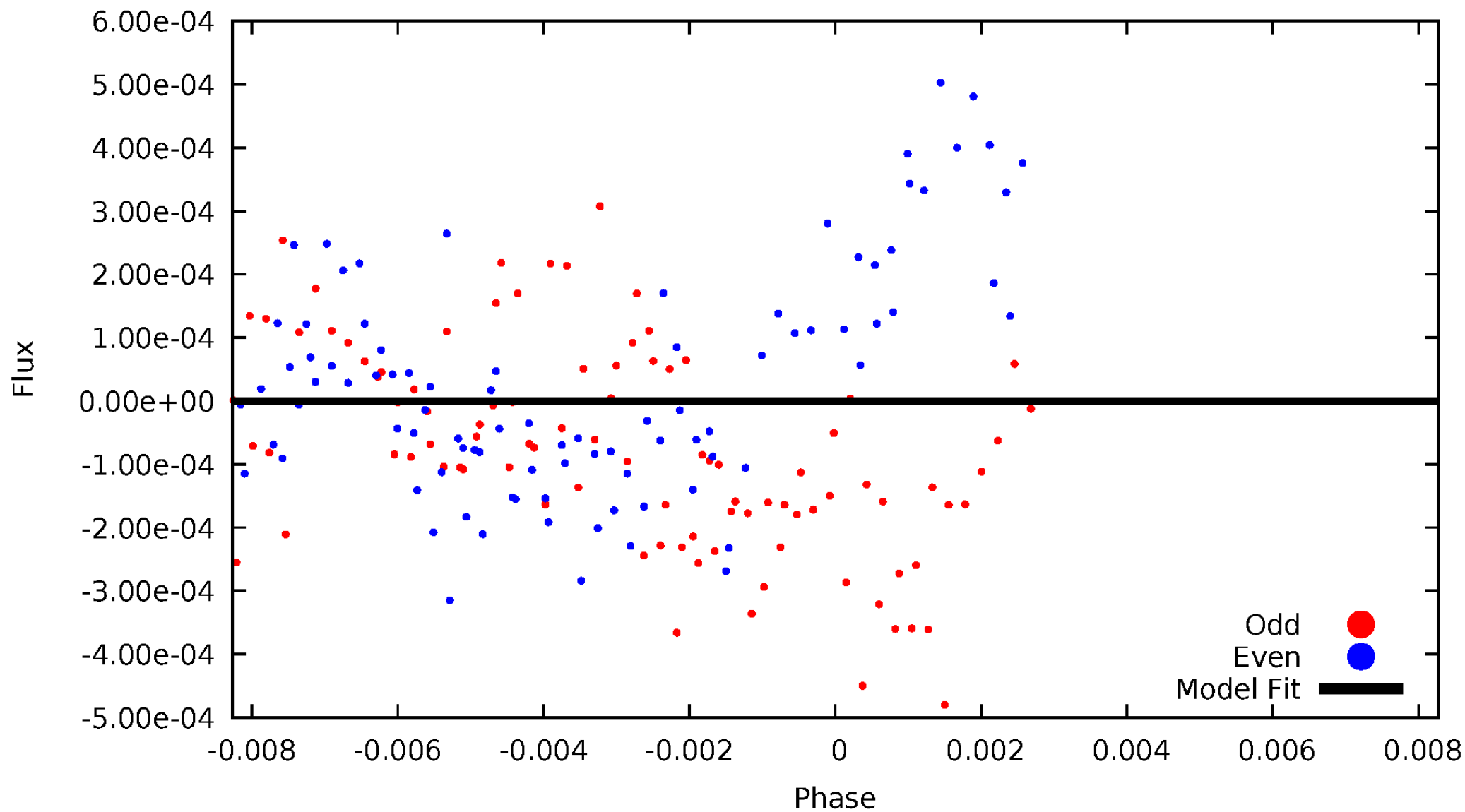


TCE 009714572-07



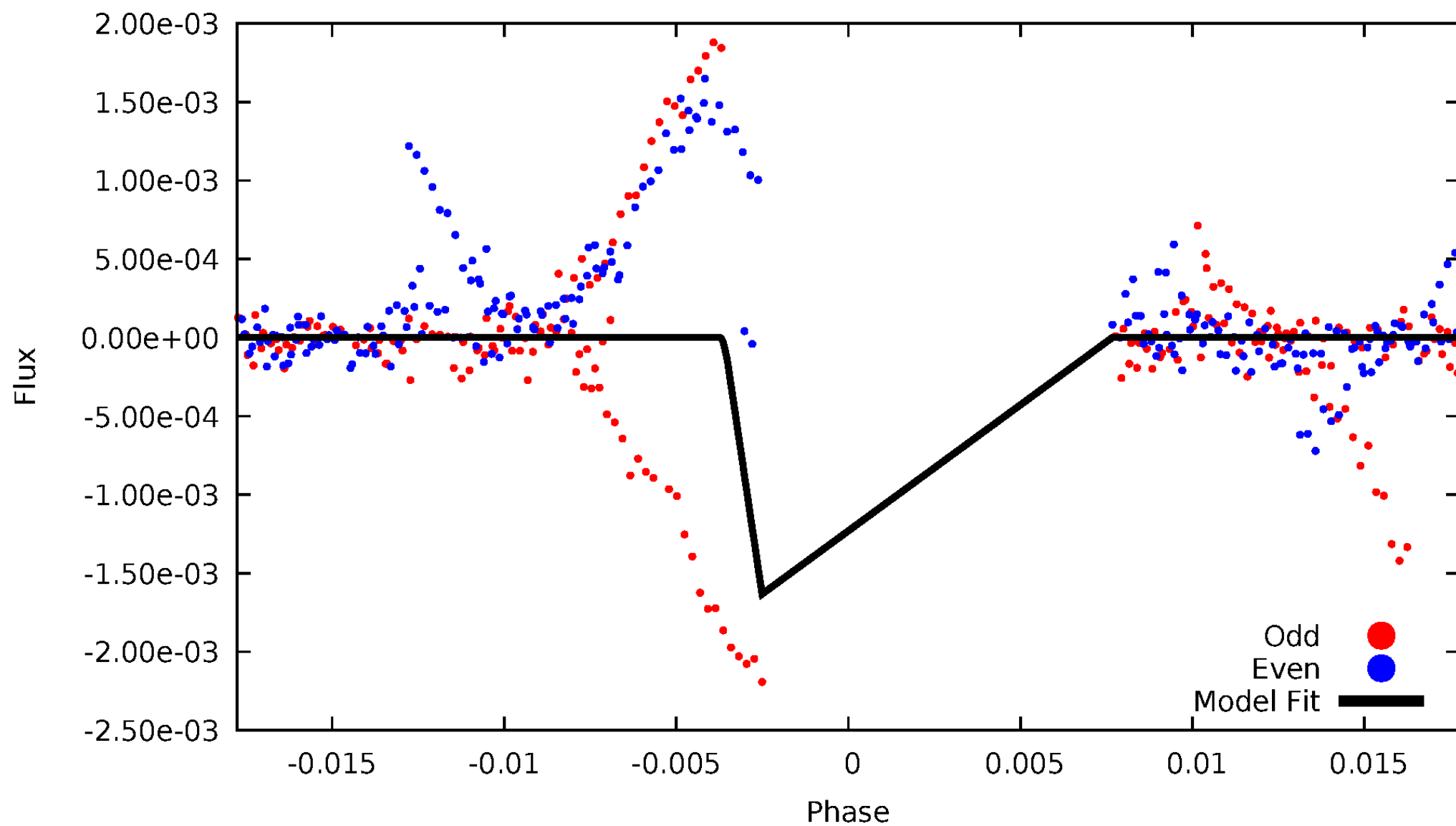
DV Odd/Even

TCE 009714572-07

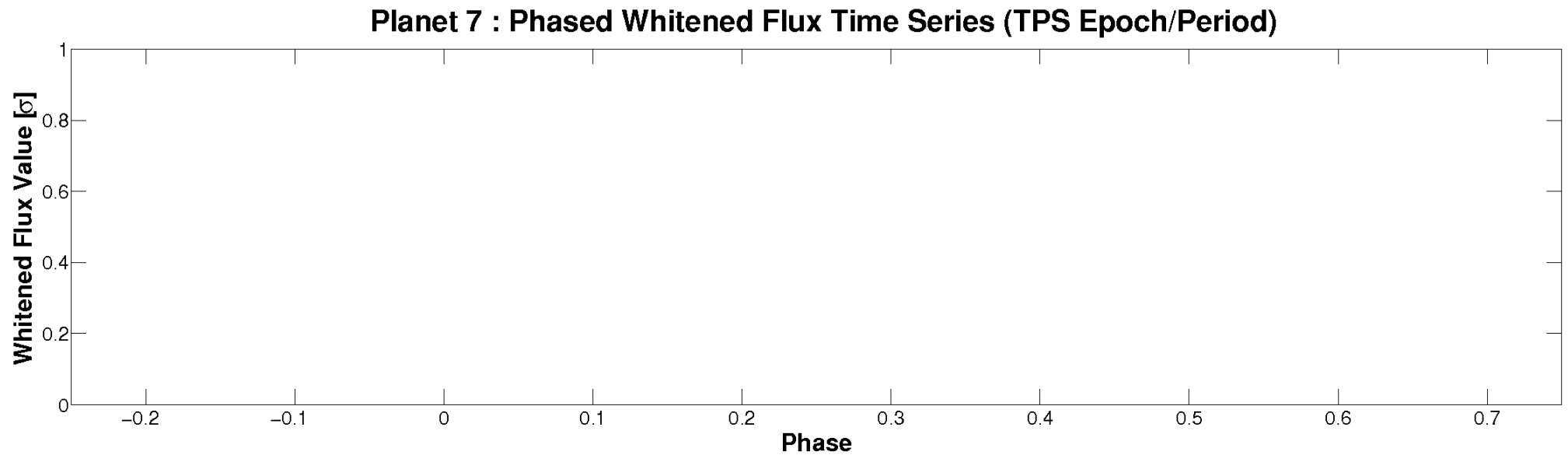
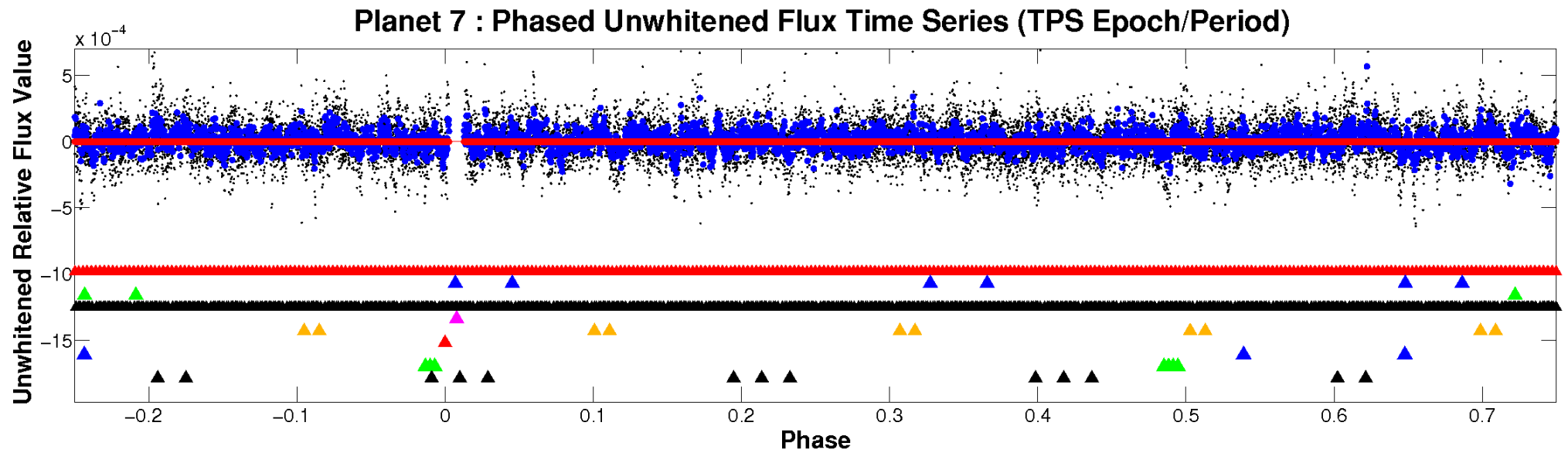


ALT Odd/Even

TCE 009714572-07

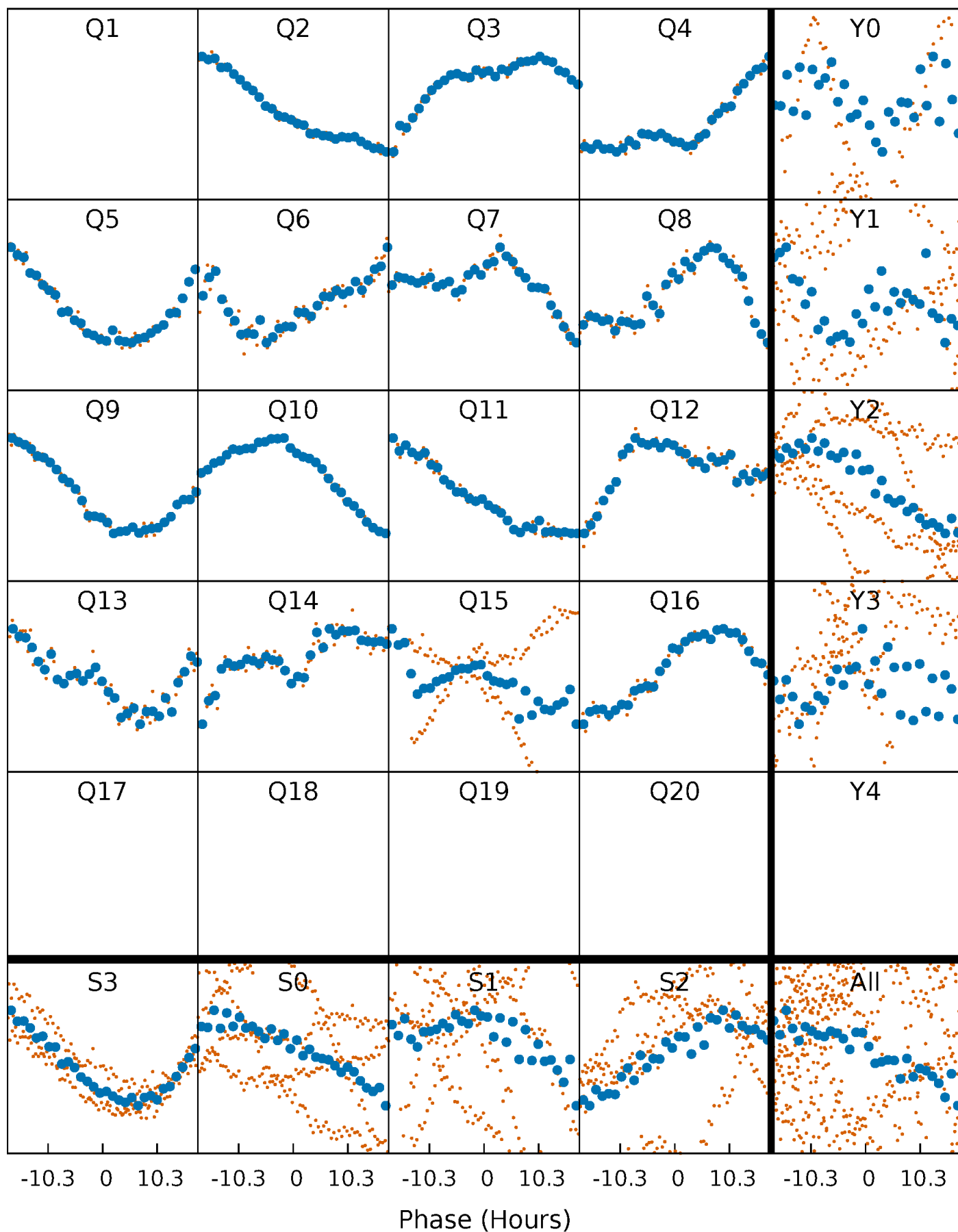


Non-Whitened Vs. Whitened Light Curve



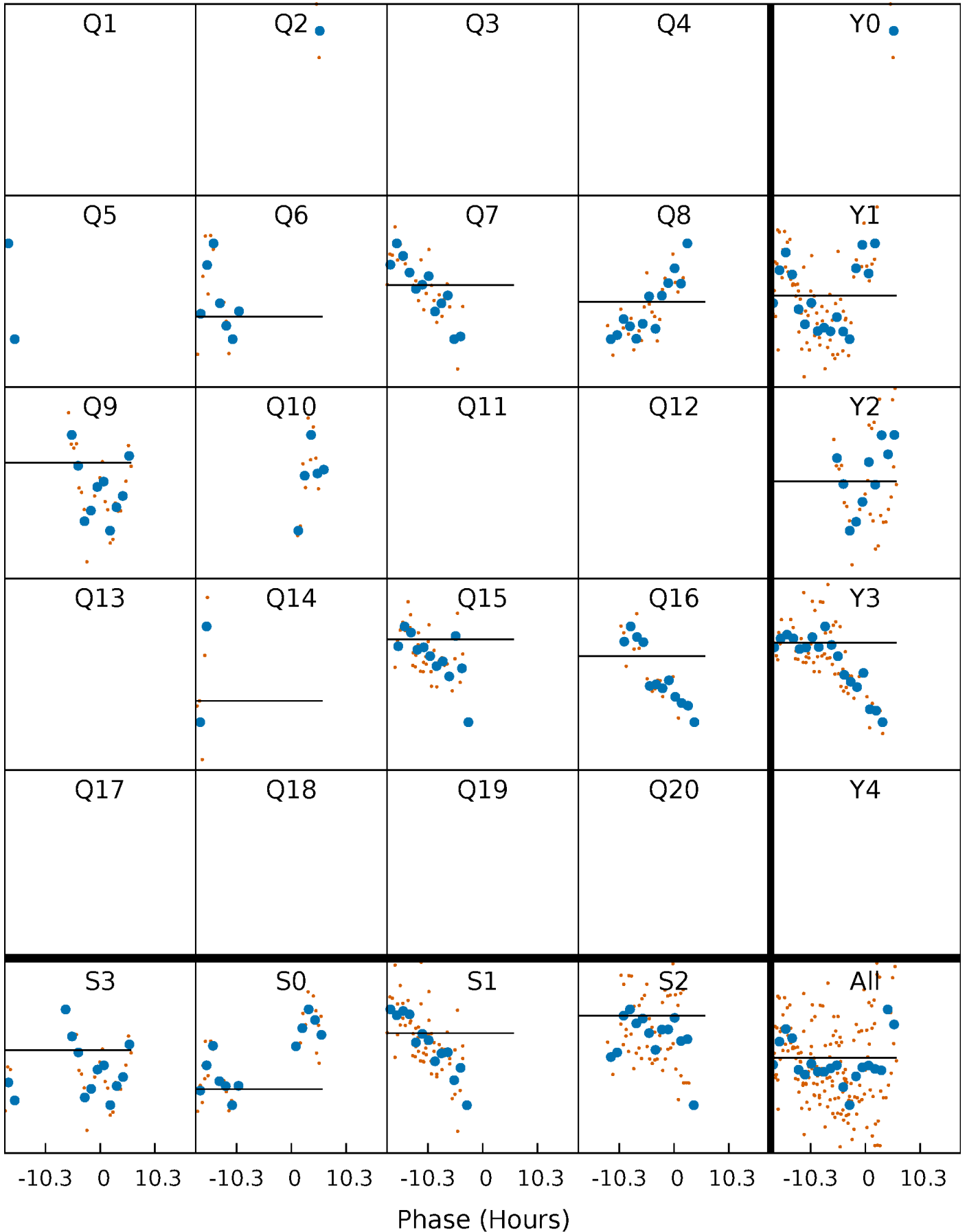
PDC Quarter-Phased Transit Curves

TCE 009714572-07 $P = 90.738517$ Days $T_0 = 194.477009$ (BKJD)



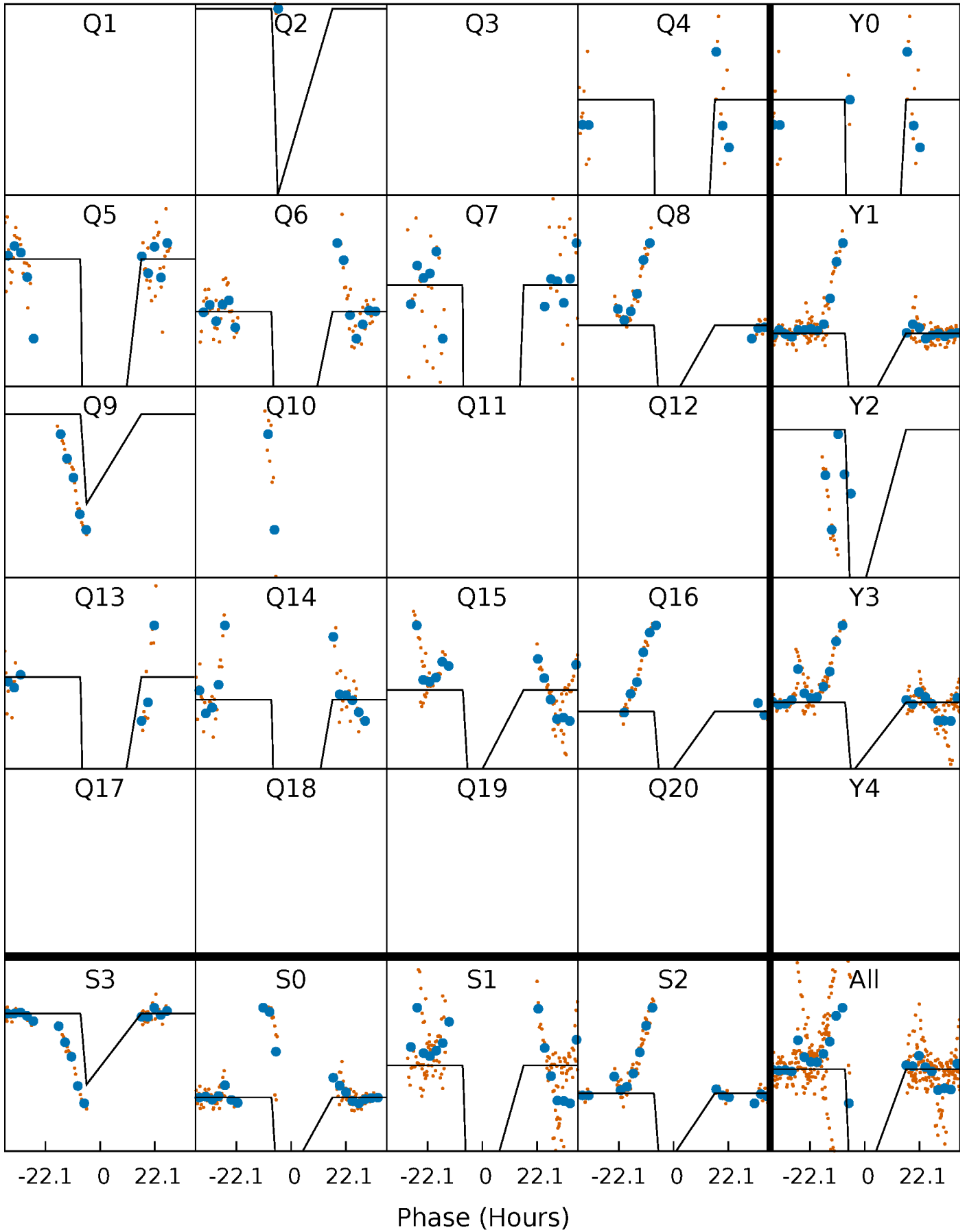
DV Quarter-Phased Transit Curves

TCE 009714572-07 $P = 90.738517$ Days $T_0 = 194.477009$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

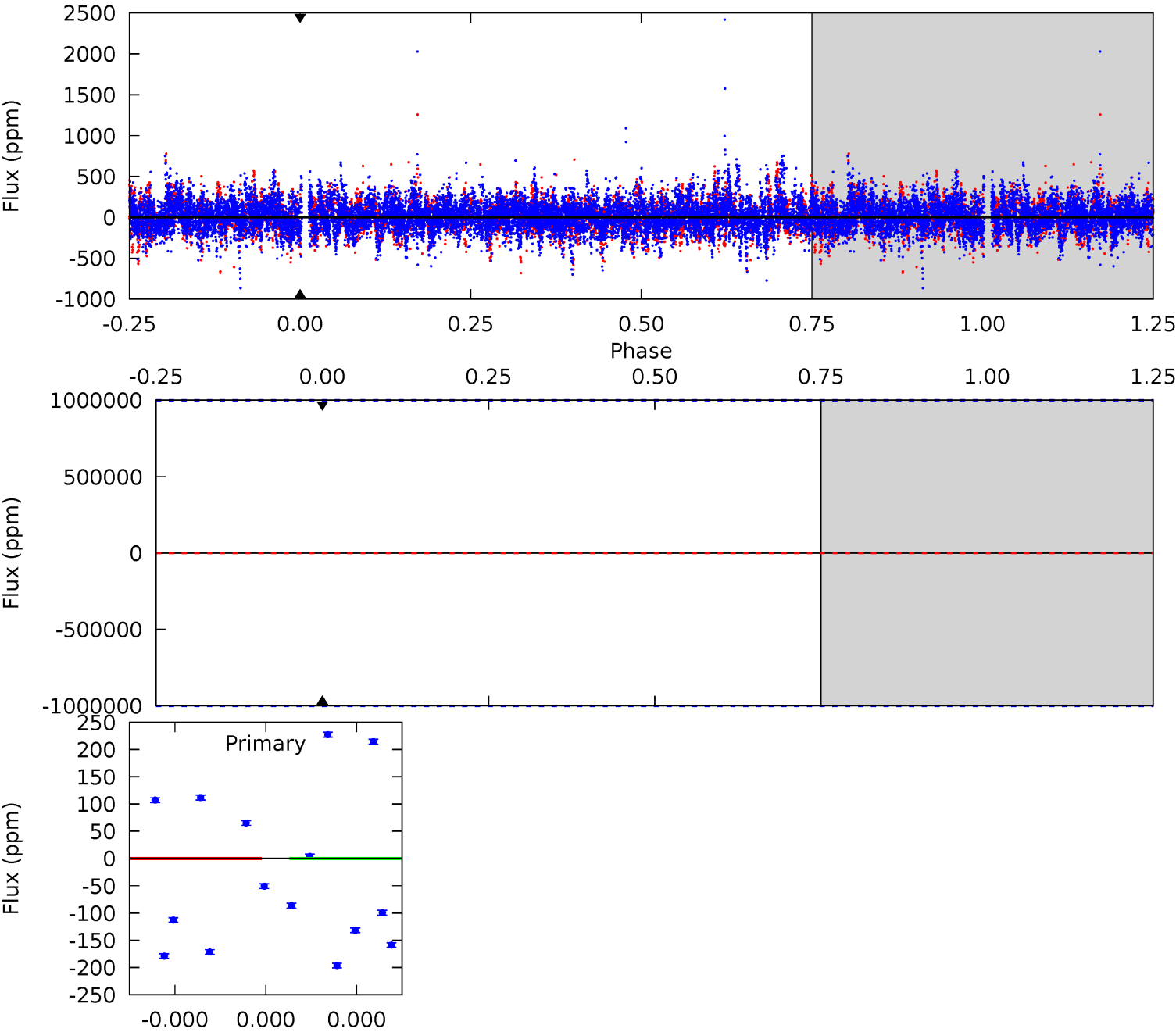
TCE 009714572-07 $P = 90.738517$ Days $T_0 = 194.947854$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-07, P = 90.738517 Days, E = 103.738492 Days

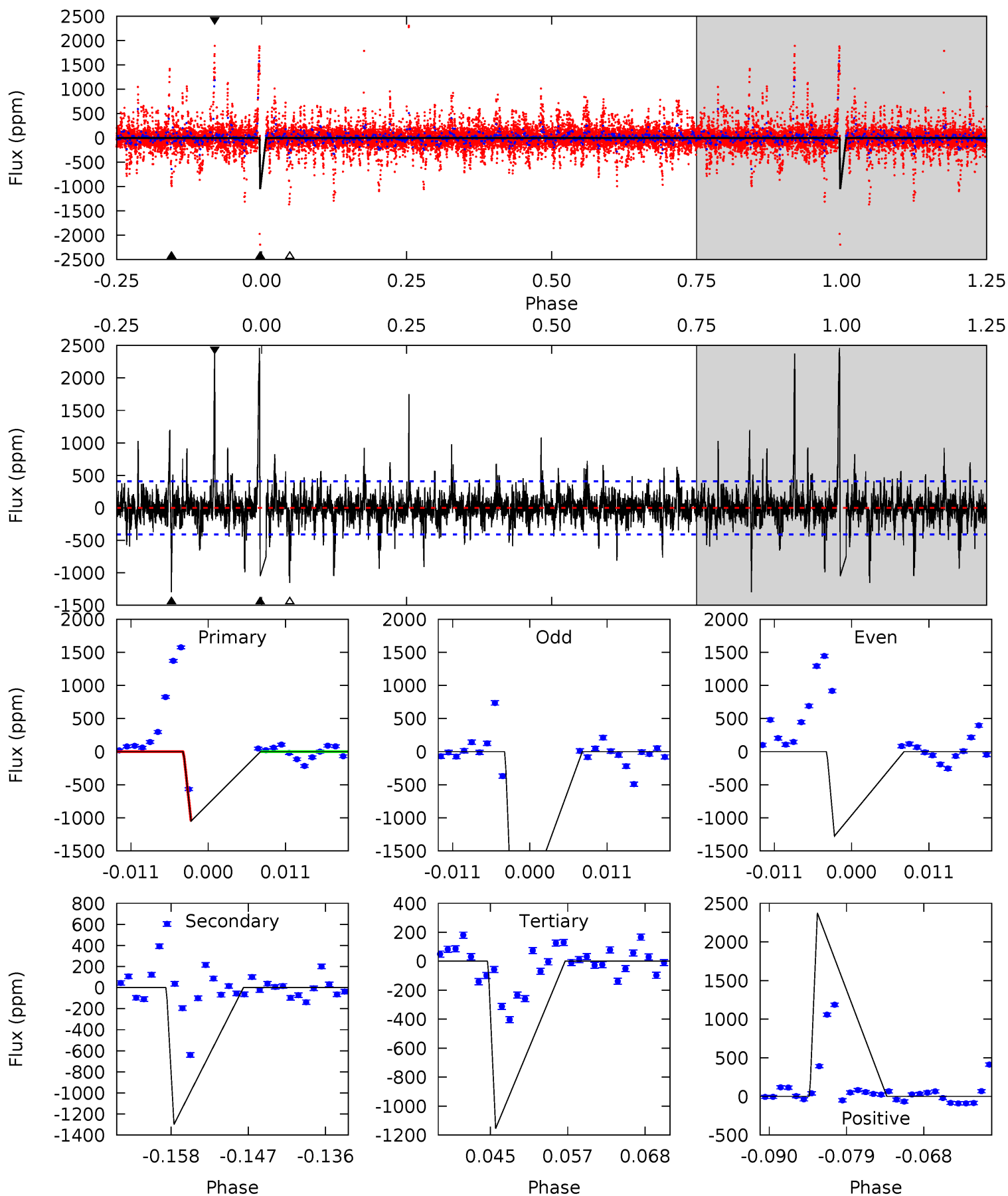
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009714572-07, P = 90.738517 Days, E = 104.209337 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	15.9	14.1	29.0	5.00	2.53	2.15	-1.29	-16.2	1.75	-13.2	10.3	0	0.65	0



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$14.15^{+14.69}_{-10.07}$	888^{+73}_{-76}	-6636^{+39361}_{-34120}	$-1994.755^{+89947.053}_{-117044.612}$
Alt.	-1299 ± 82	$17.12^{+16.49}_{-12.23}$	890^{+65}_{-81}	4640^{+4200}_{-972}	489^{+5207}_{-367}

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 $A_{obs} \gg 1.0$

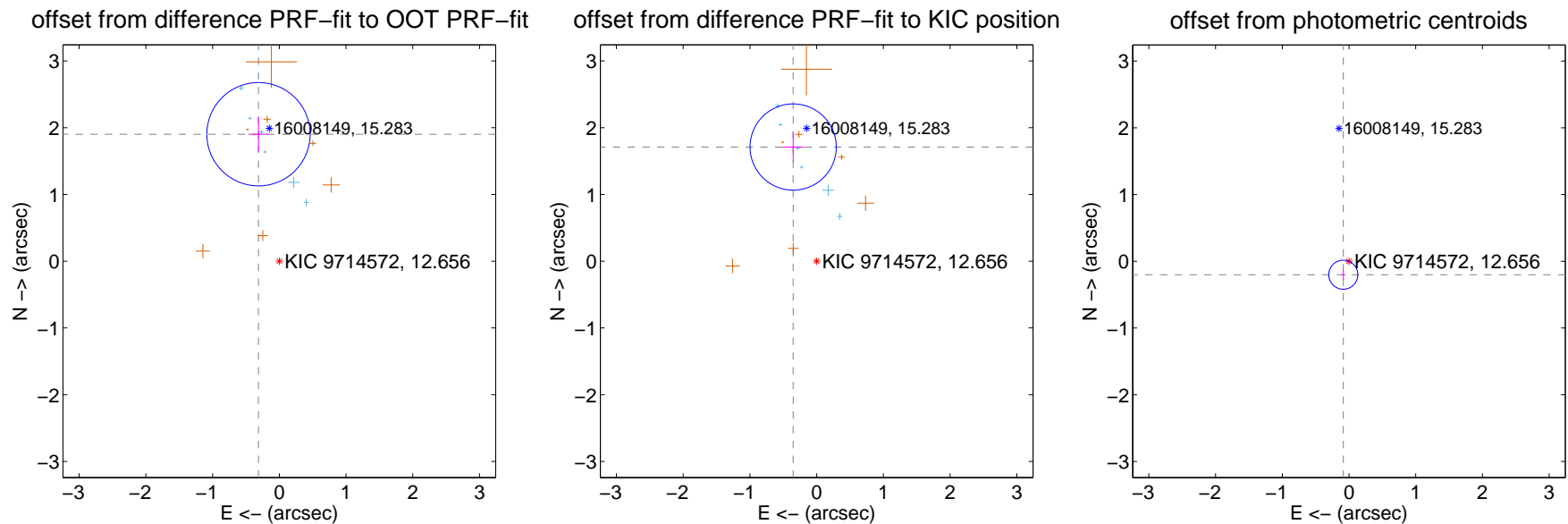
DV Centroid Data

Supplemental centroid analysis for 009714572-07. Kepler magnitude: 12.66. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

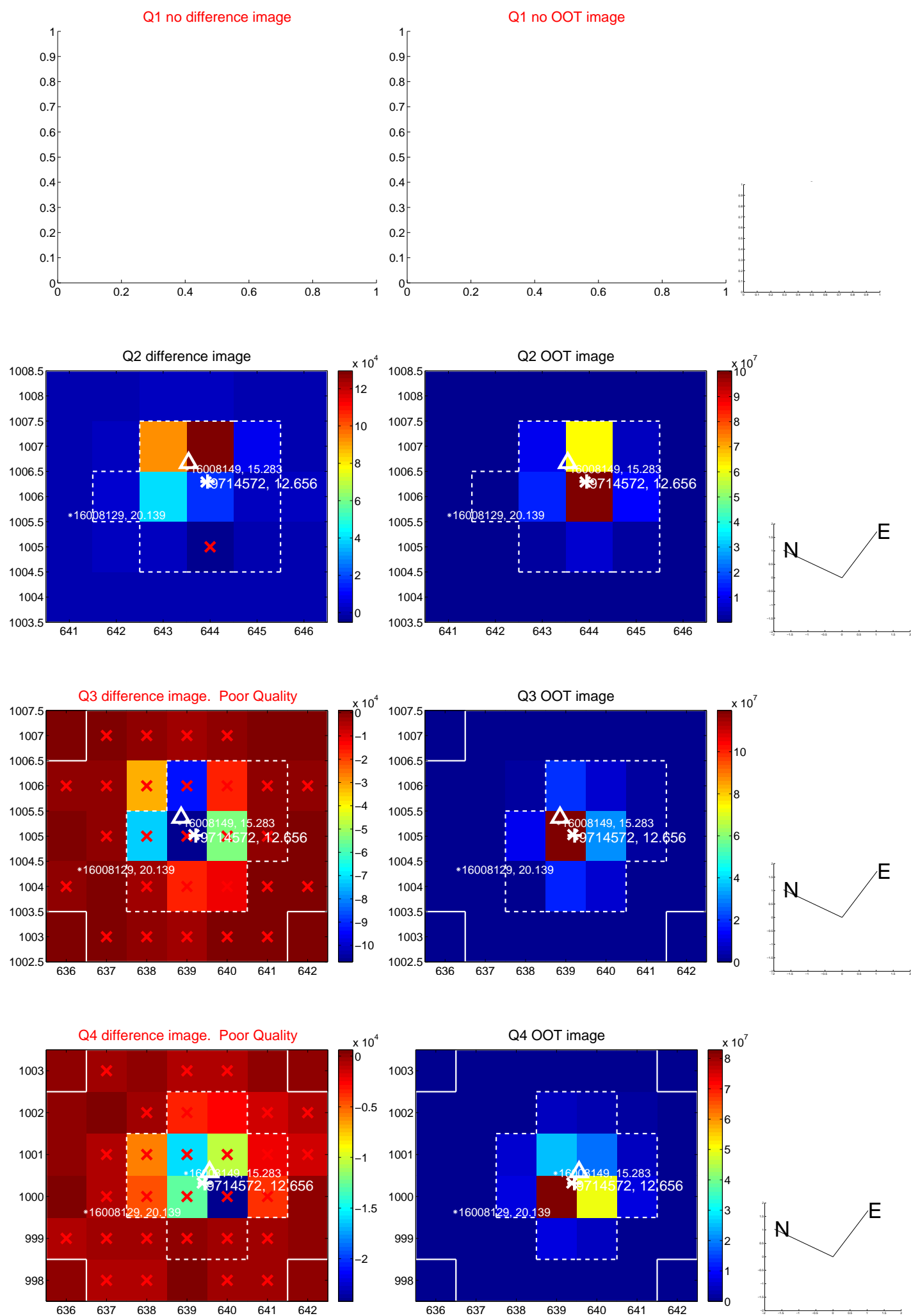
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.927 ± 0.258	7.47	0.312 ± 0.153	1.902 ± 0.258
PRF-fit source offset from KIC position	1.746 ± 0.215	8.11	0.352 ± 0.162	1.710 ± 0.221
photometric centroid source offset	0.22 ± 0.07	3.02	0.09 ± 0.03	-0.20 ± 0.08

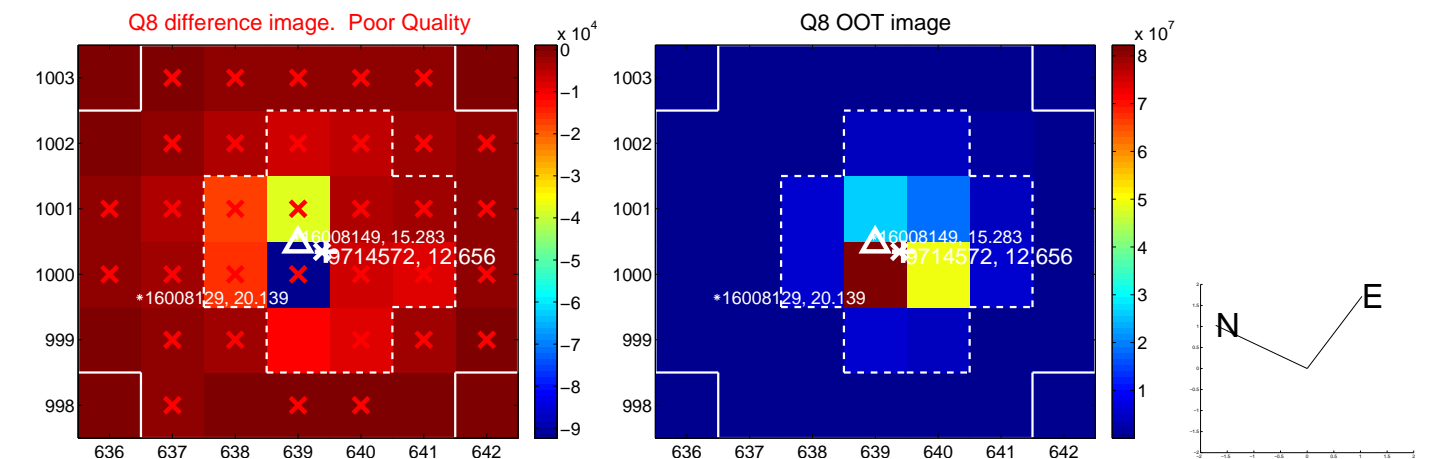
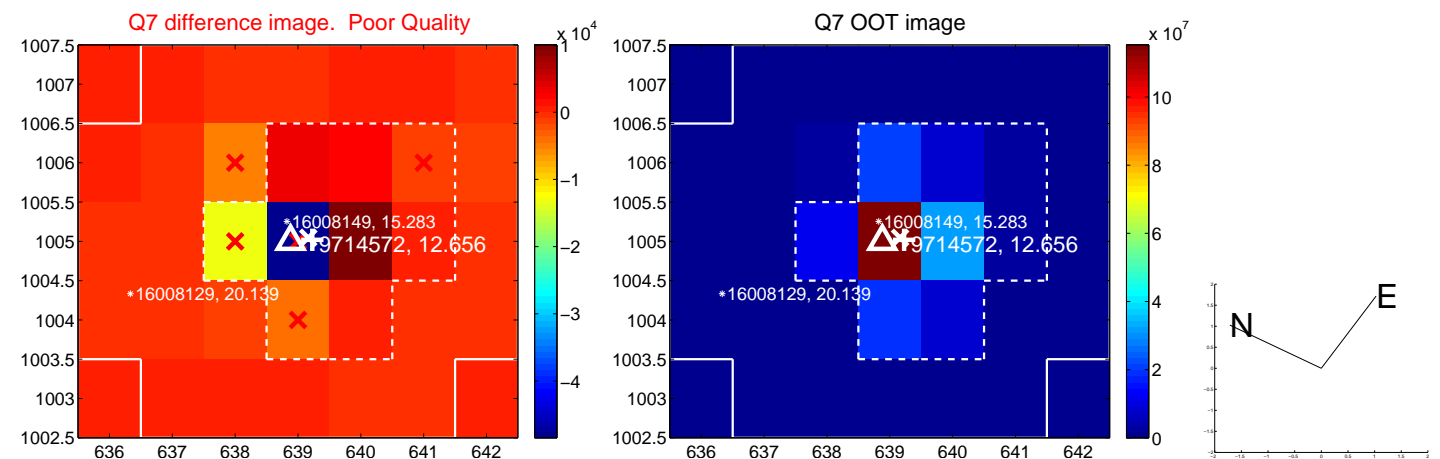
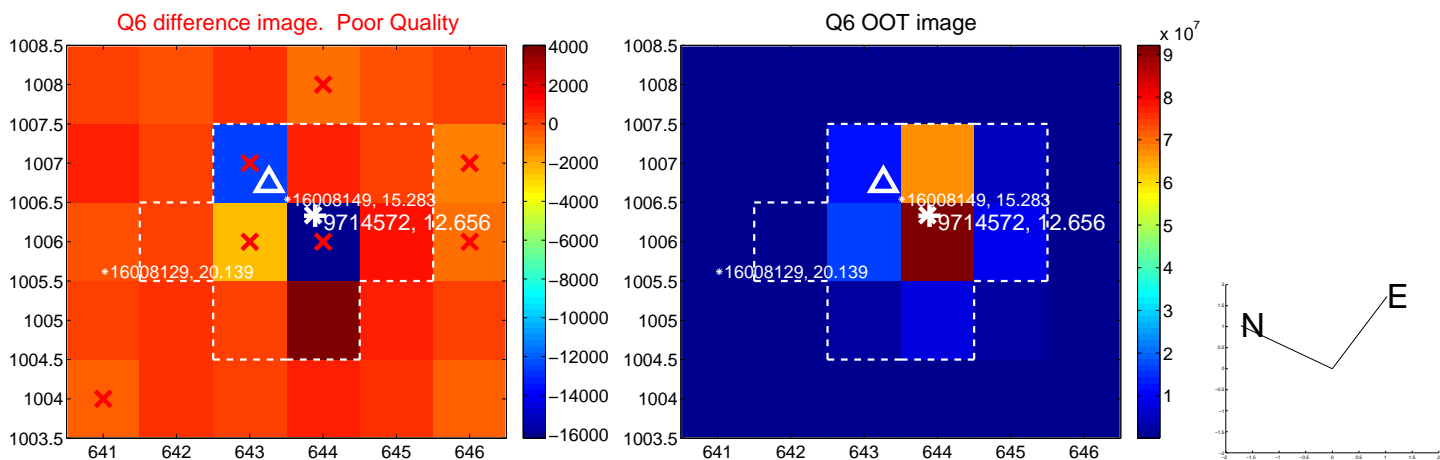
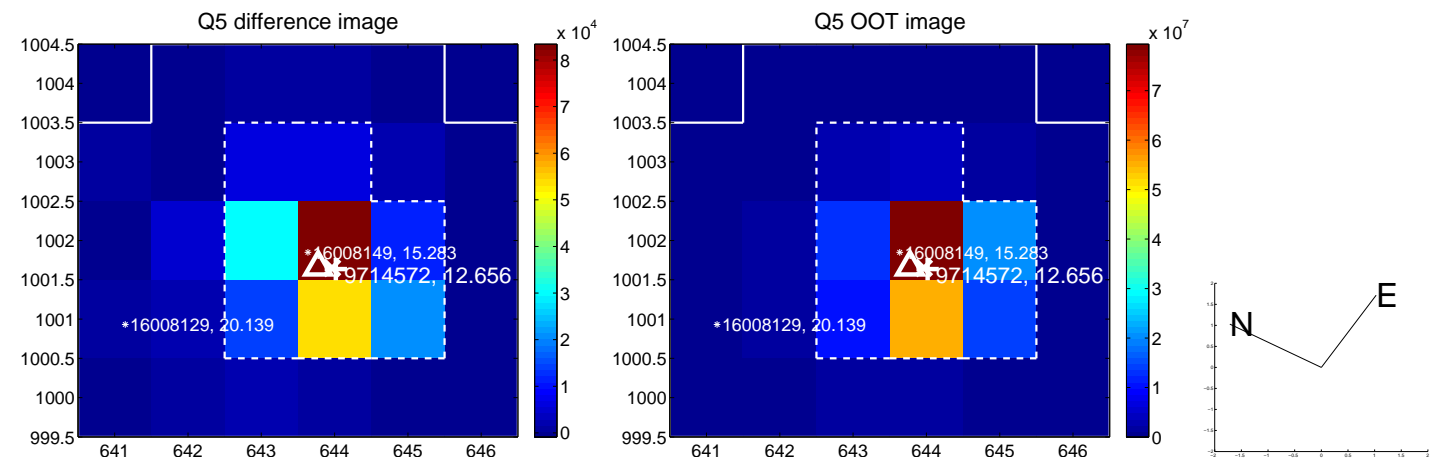


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

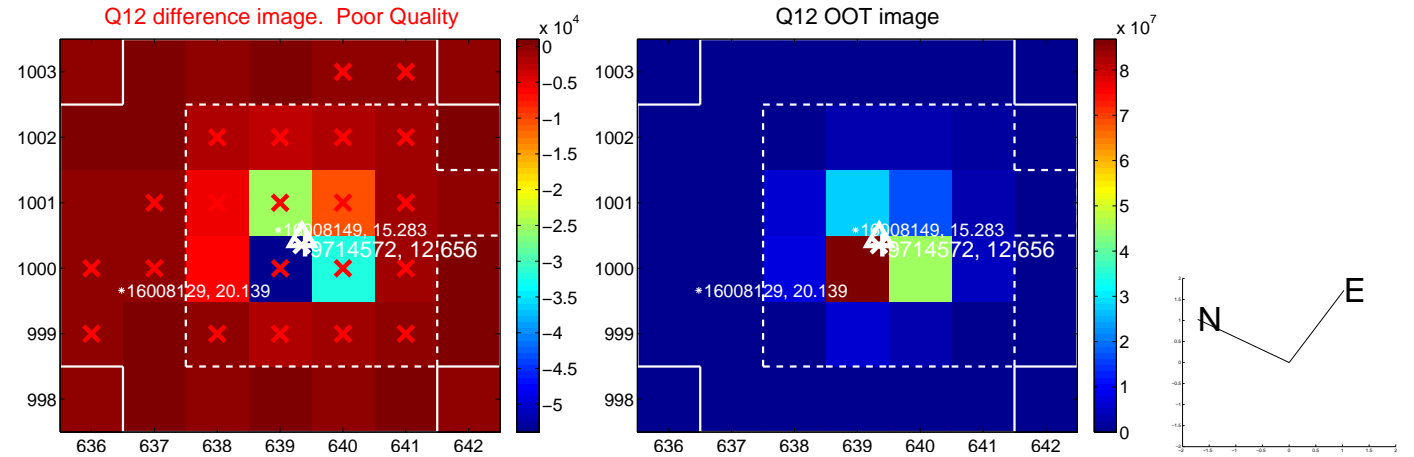
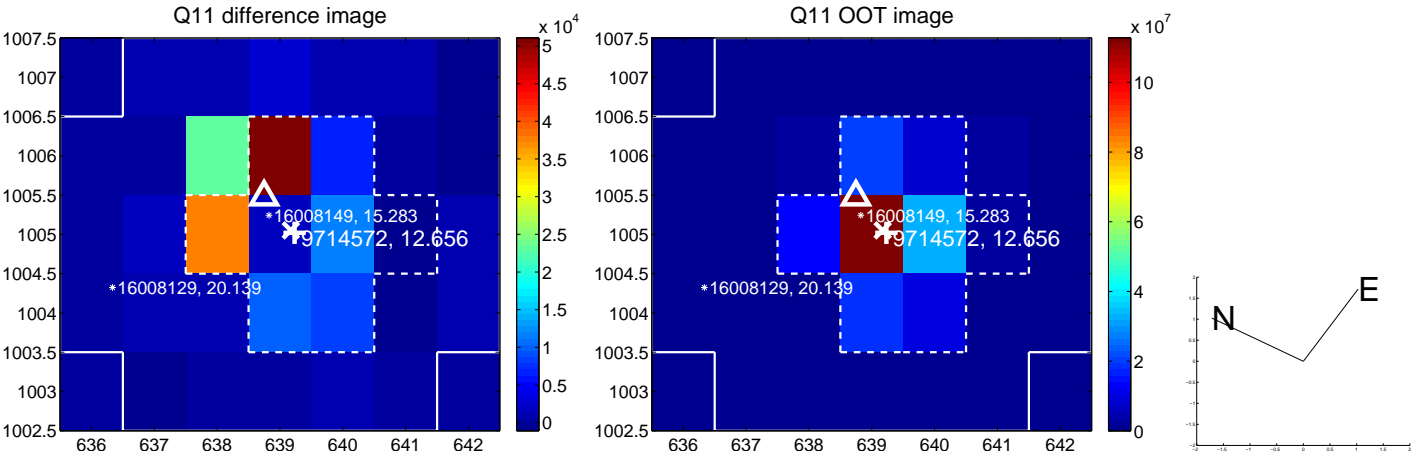
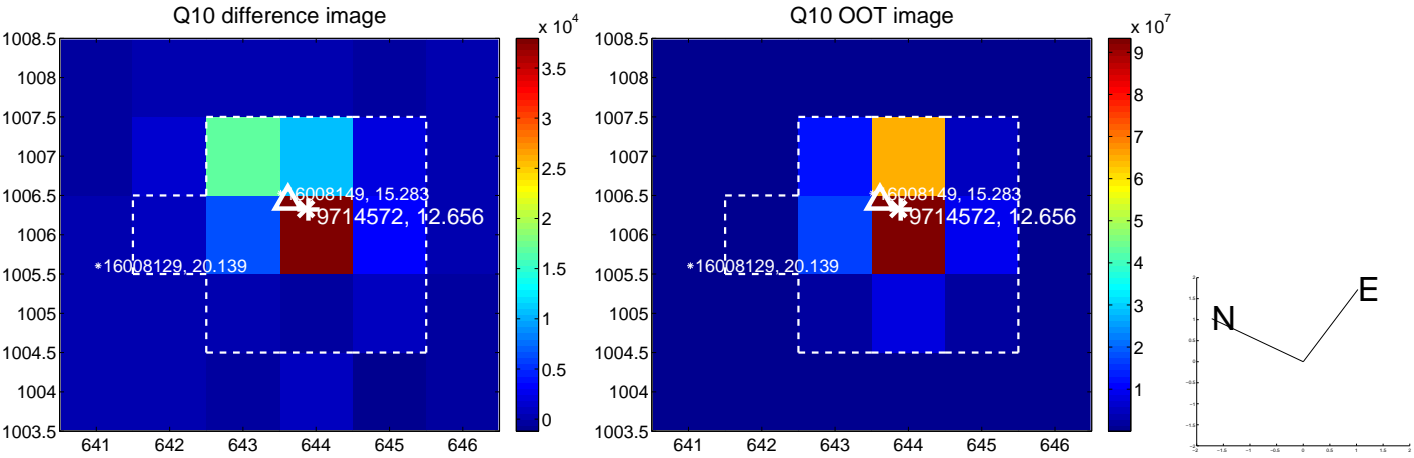
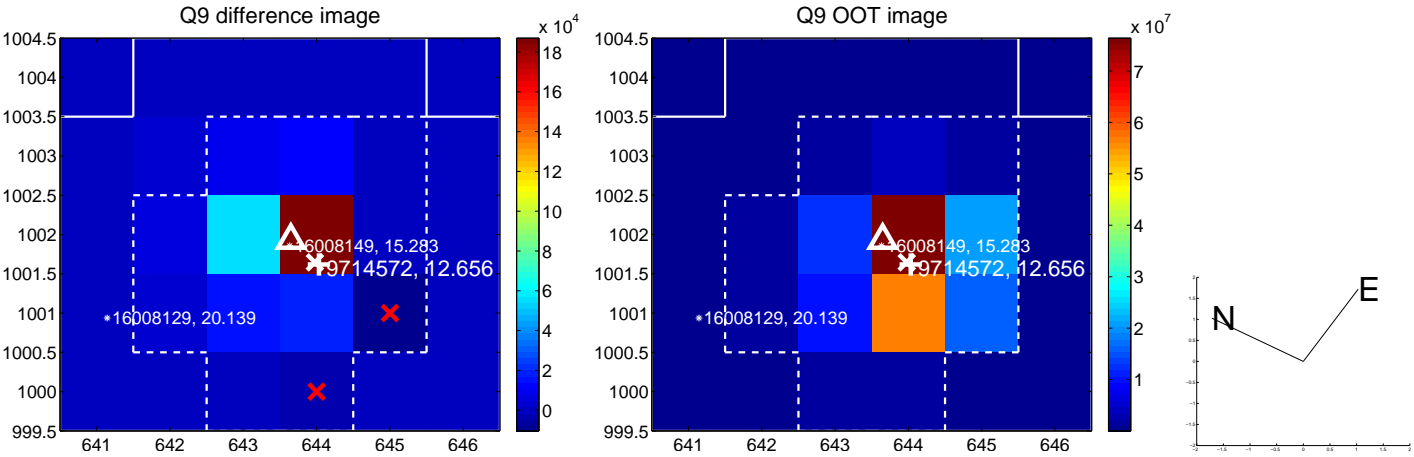
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



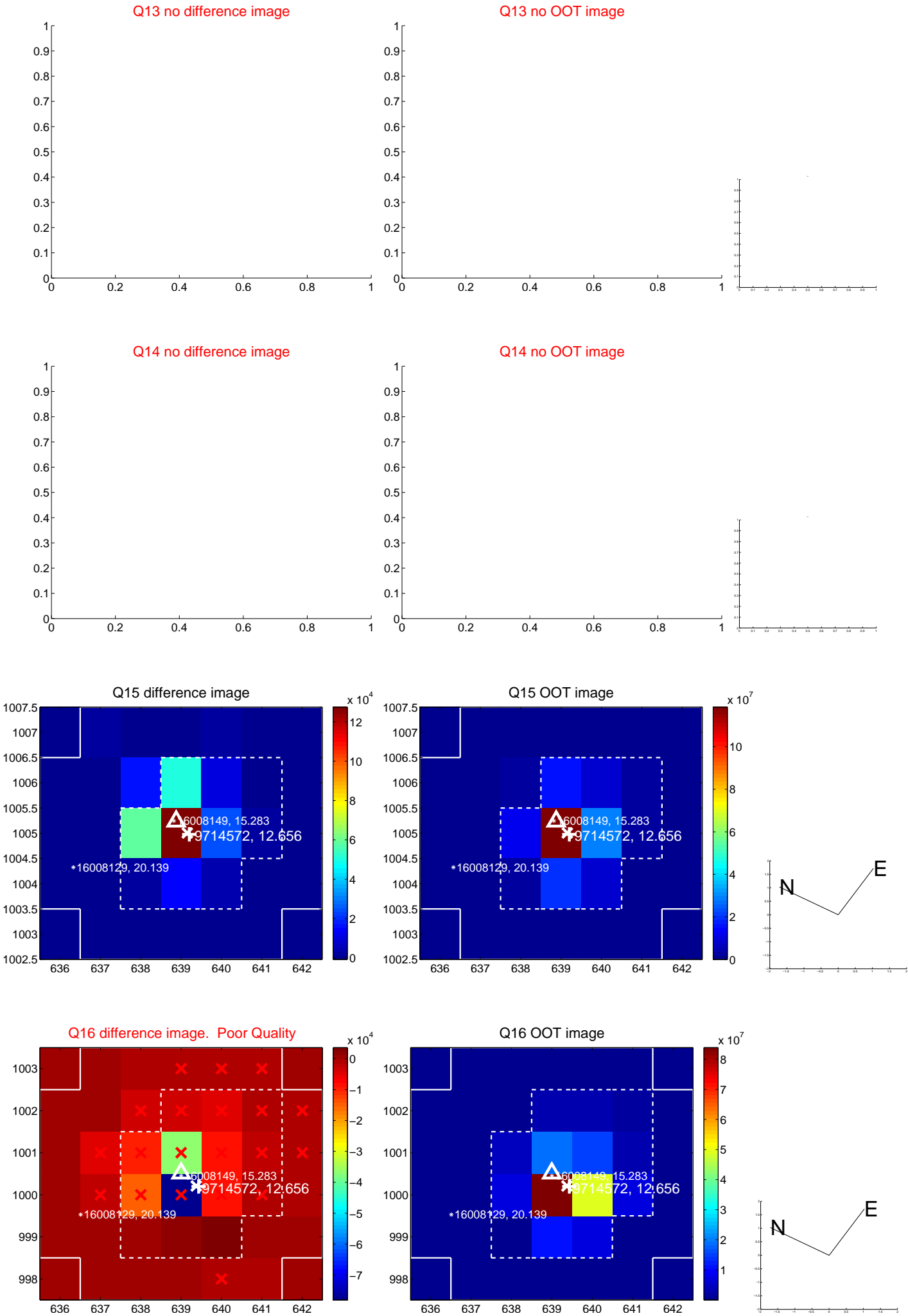
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



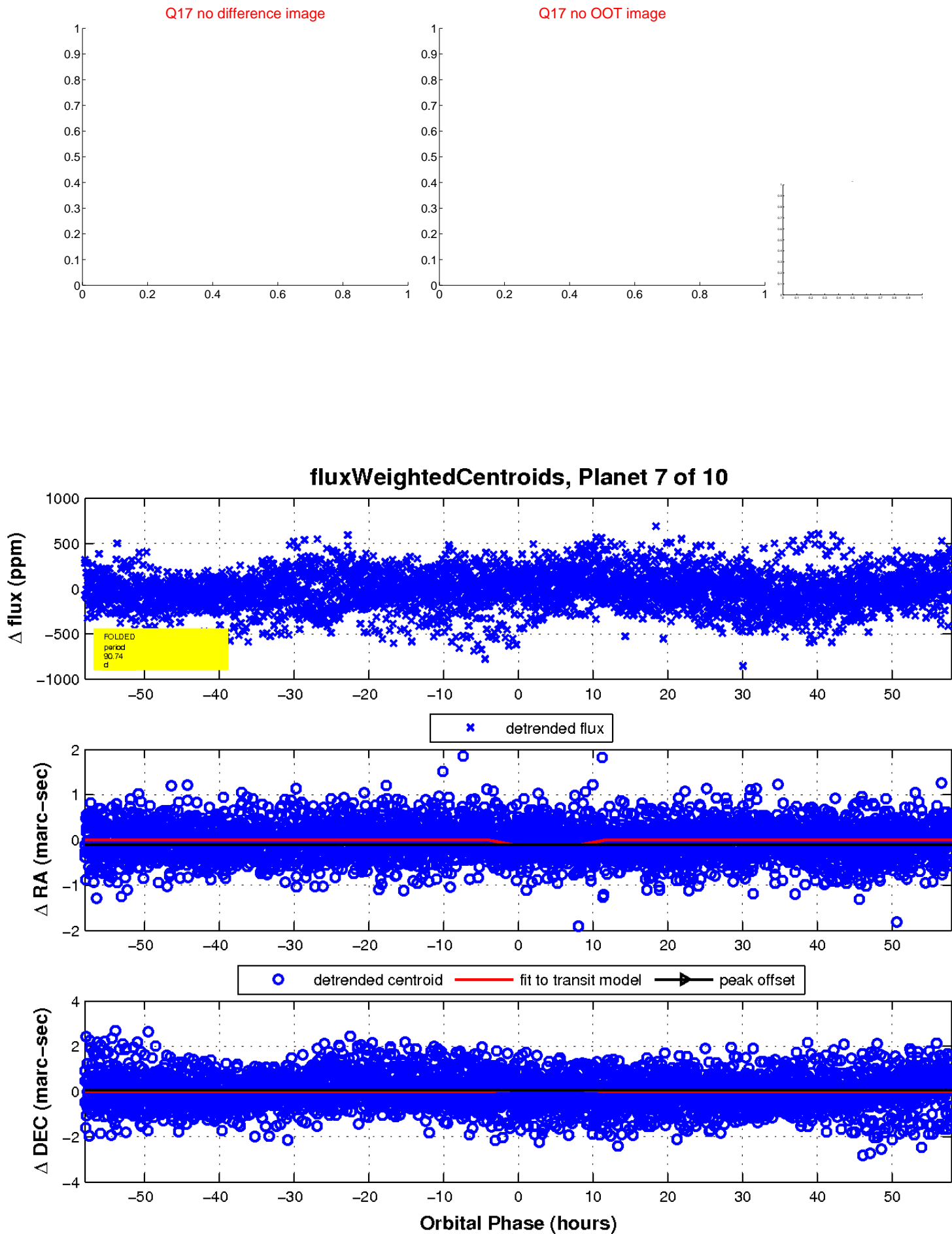
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

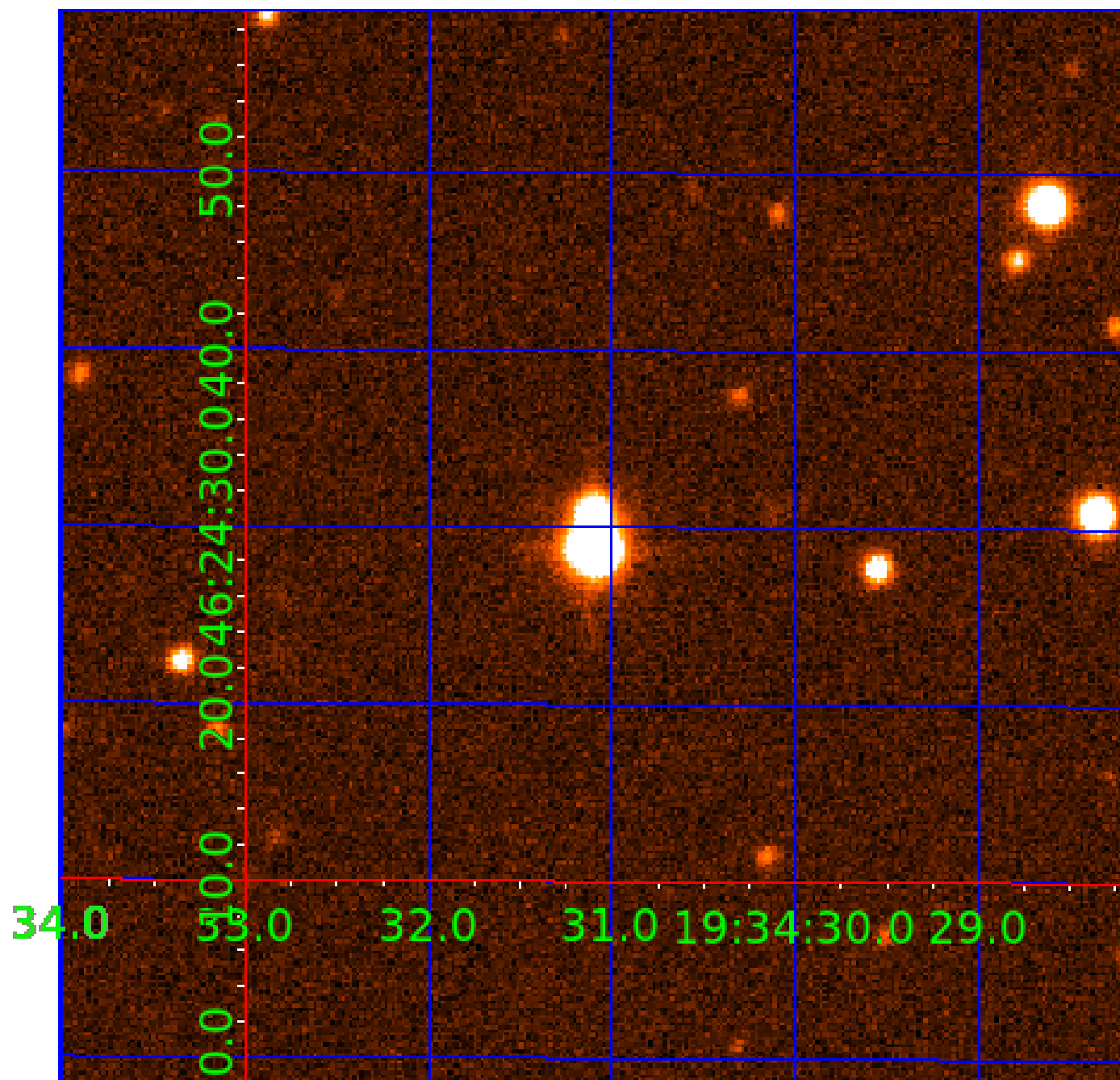


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

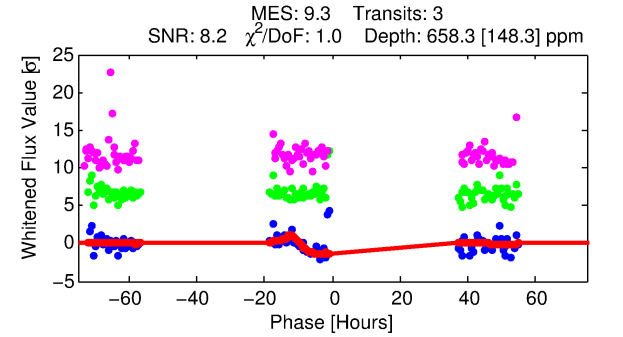
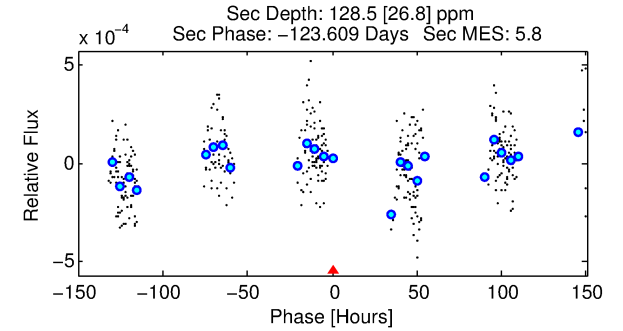
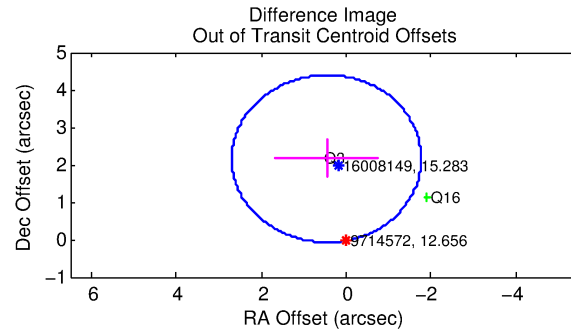
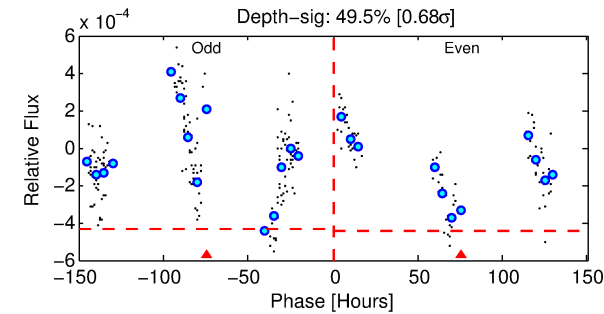
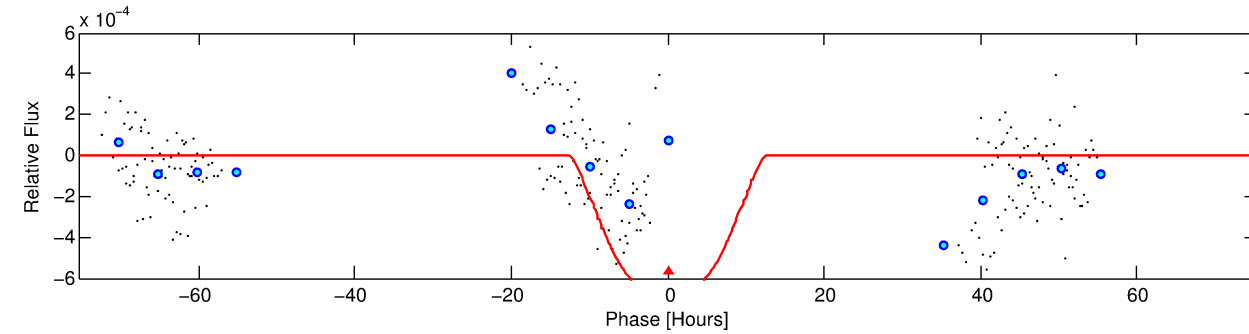
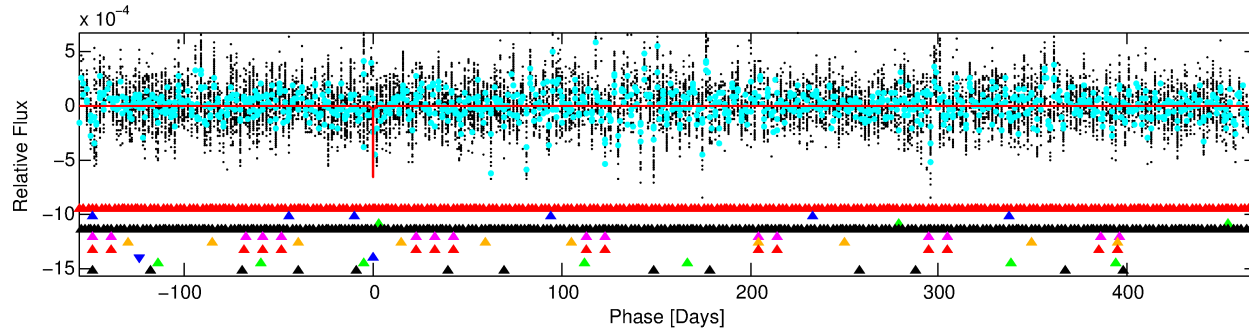
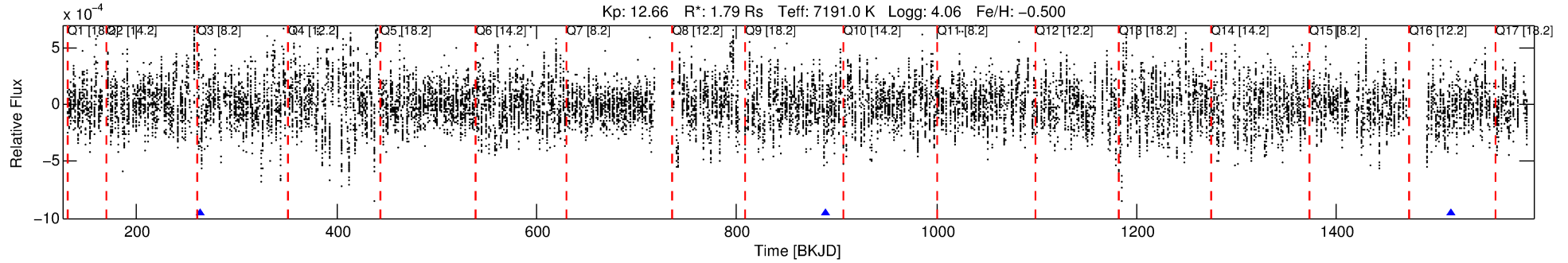
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-08

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 8 of 10 Period: 625.298 d



DV Fit Results:

Period = 625.29755 [0.02169] d
Epoch = 263.1264 [0.1604] BKJD
Rp/R* = 0.0296 [0.0031]
a/R* = 68.00 [15.56]
b = 0.97 [0.02]
Seff = 3.09 [1.49]
Teq = 338 [41] K
Rp = 5.80 [1.96] Re
a = 1.5799 [0.4628] AU
Ag = 5245.66 [2834.91] [1.85 σ]
Teffp = 4448 [378] K [10.82 σ]

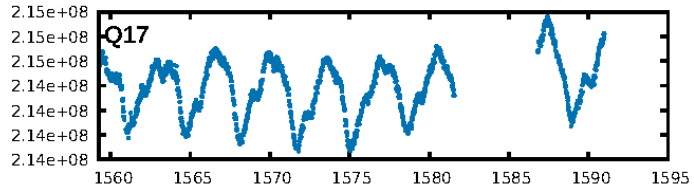
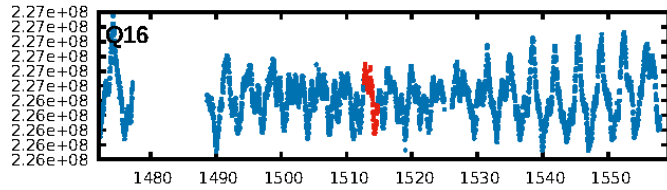
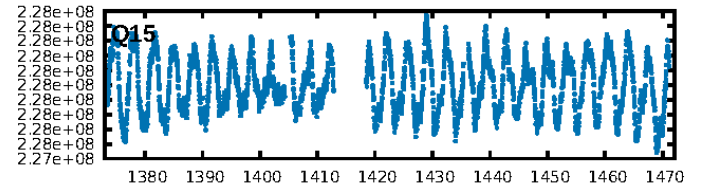
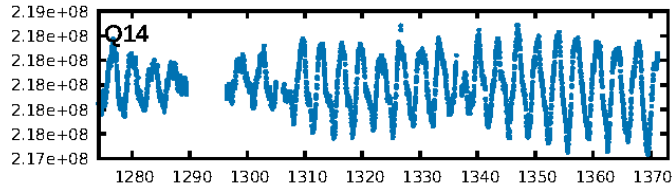
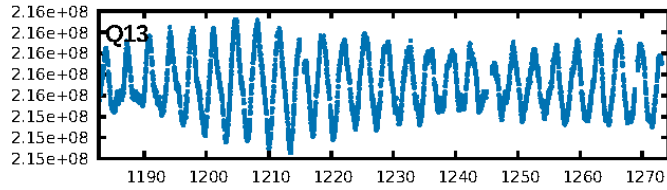
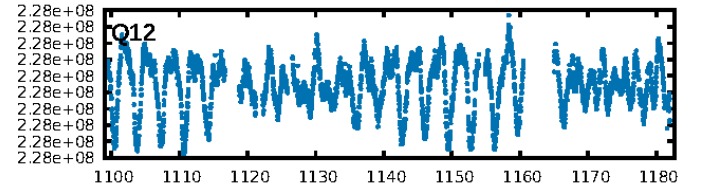
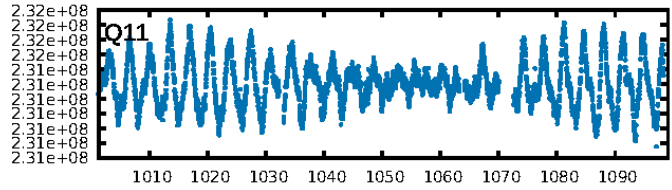
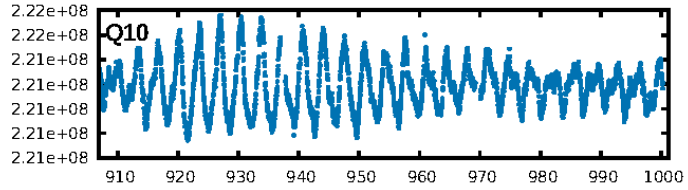
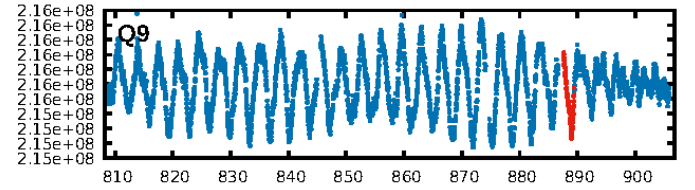
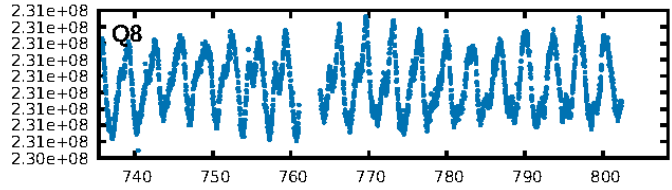
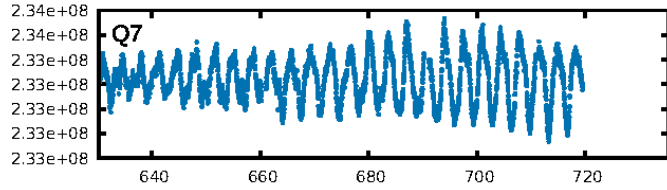
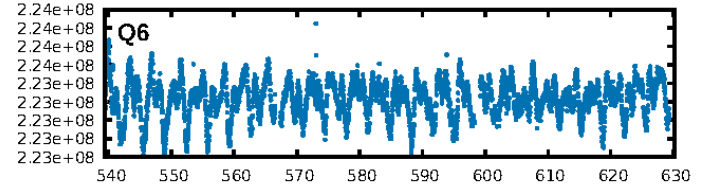
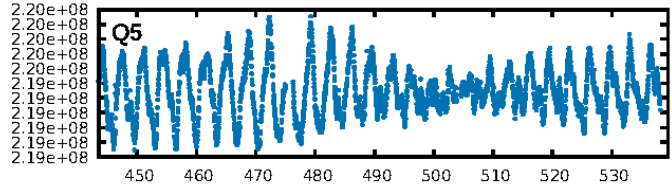
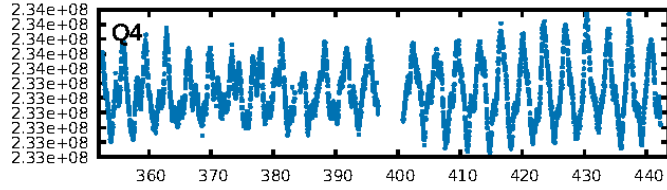
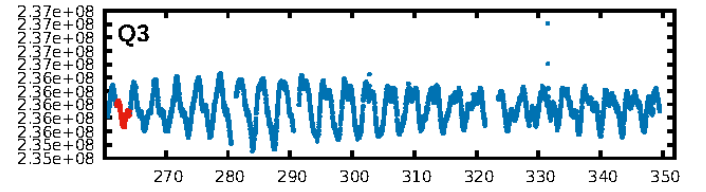
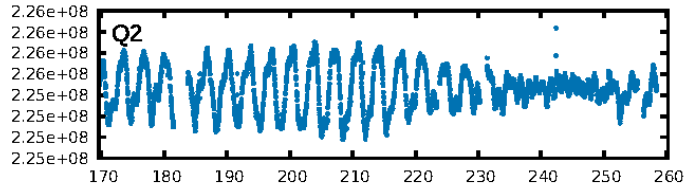
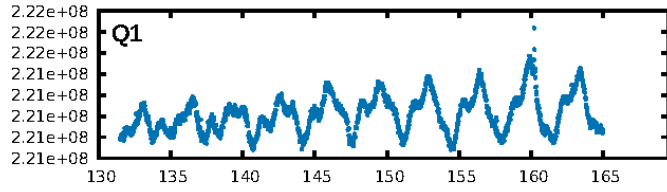
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [141.74 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 52.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -11.63
Centroid-sig: 19.4%
Centroid-so: 0.816 arcsec [0.92 σ]
OotOffset-rm: 2.206 arcsec [2.96 σ]
KicOffset-rm: 2.024 arcsec [4.98 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

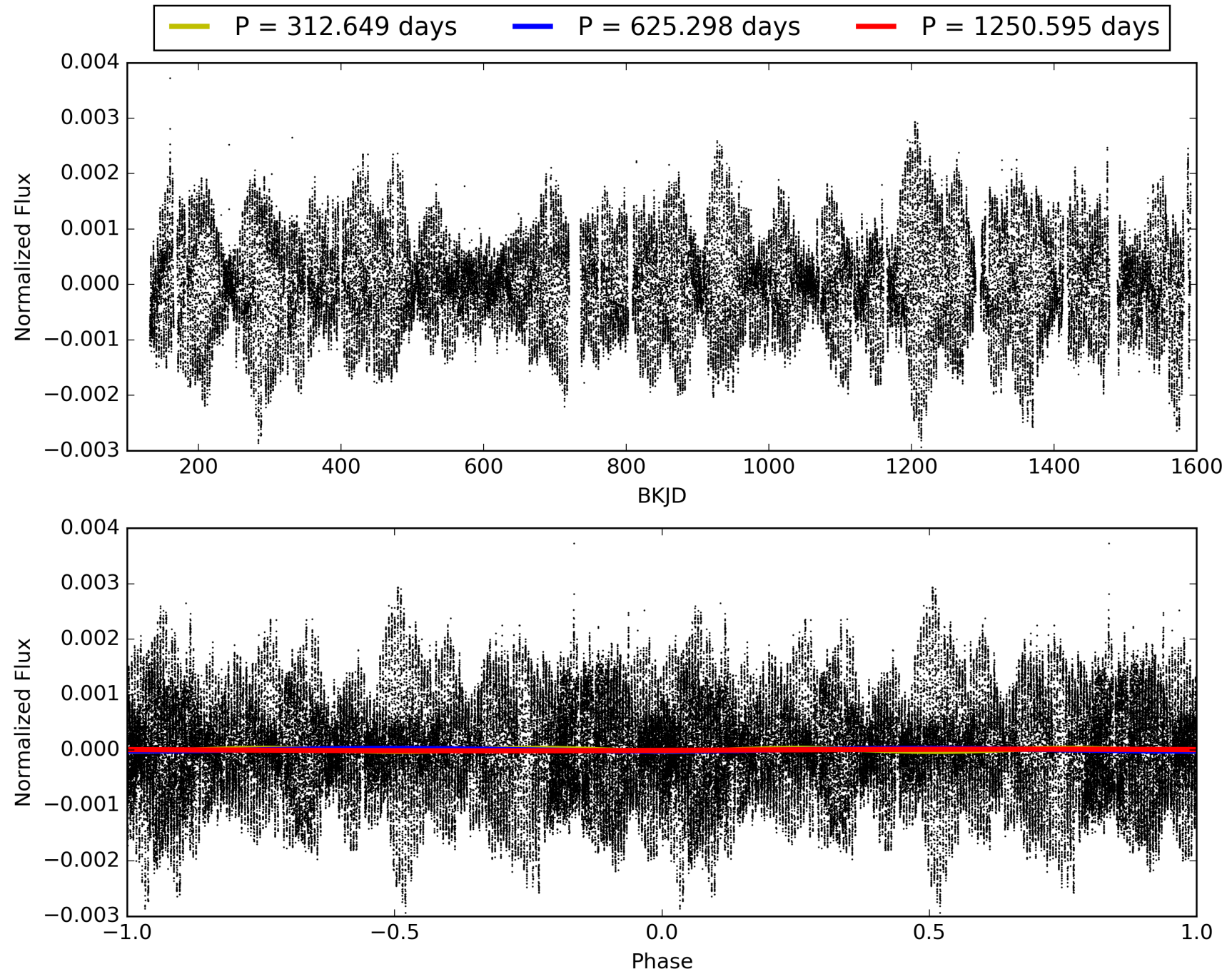
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:47 Z

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

TCE 009714572-08, PDC Light Curves

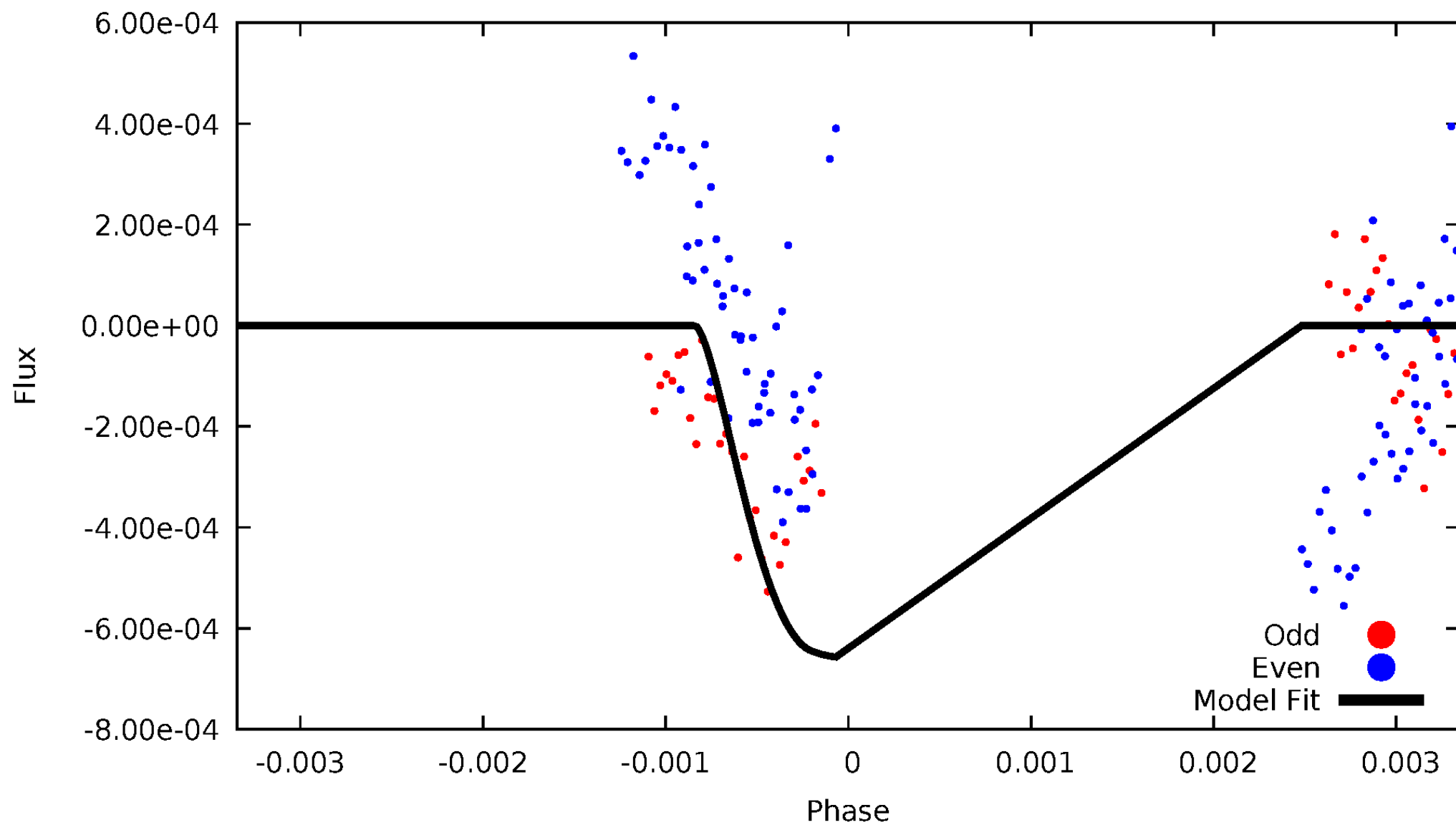


TCE 009714572-08



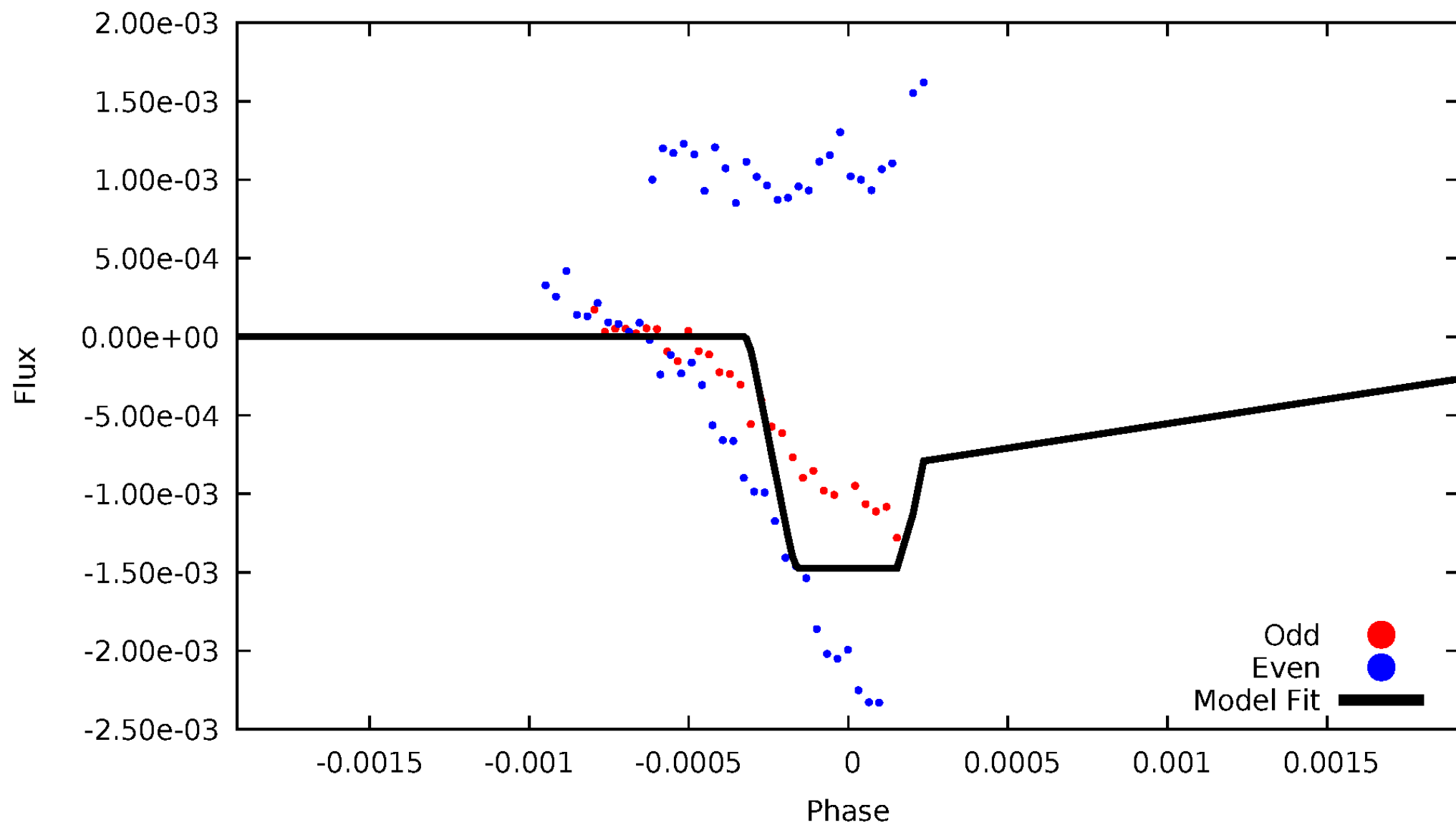
DV Odd/Even

TCE 009714572-08



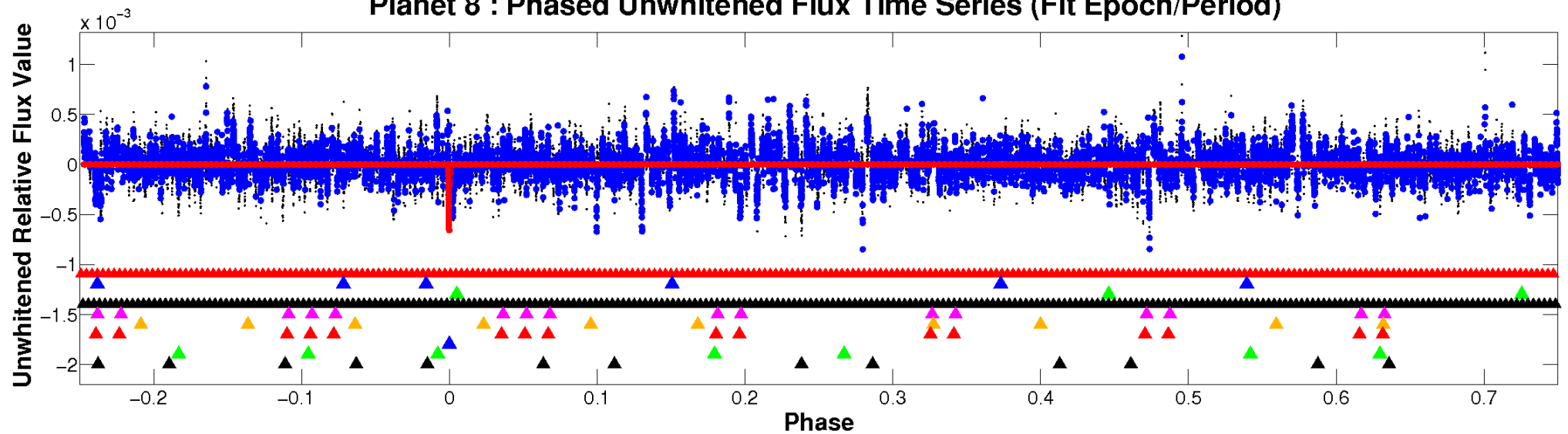
ALT Odd/Even

TCE 009714572-08

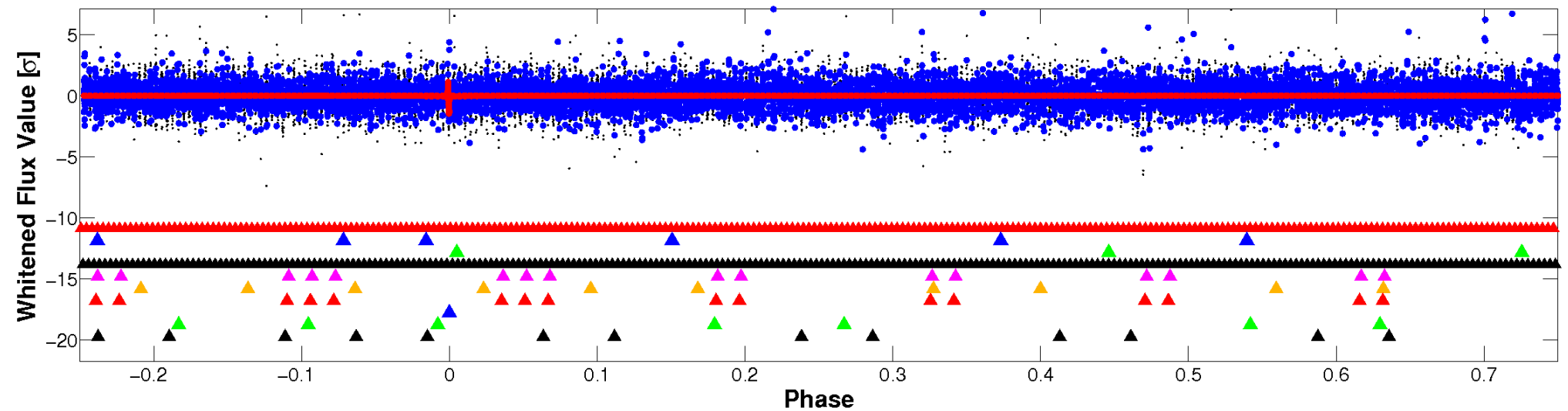


Non-Whitened Vs. Whitened Light Curve

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

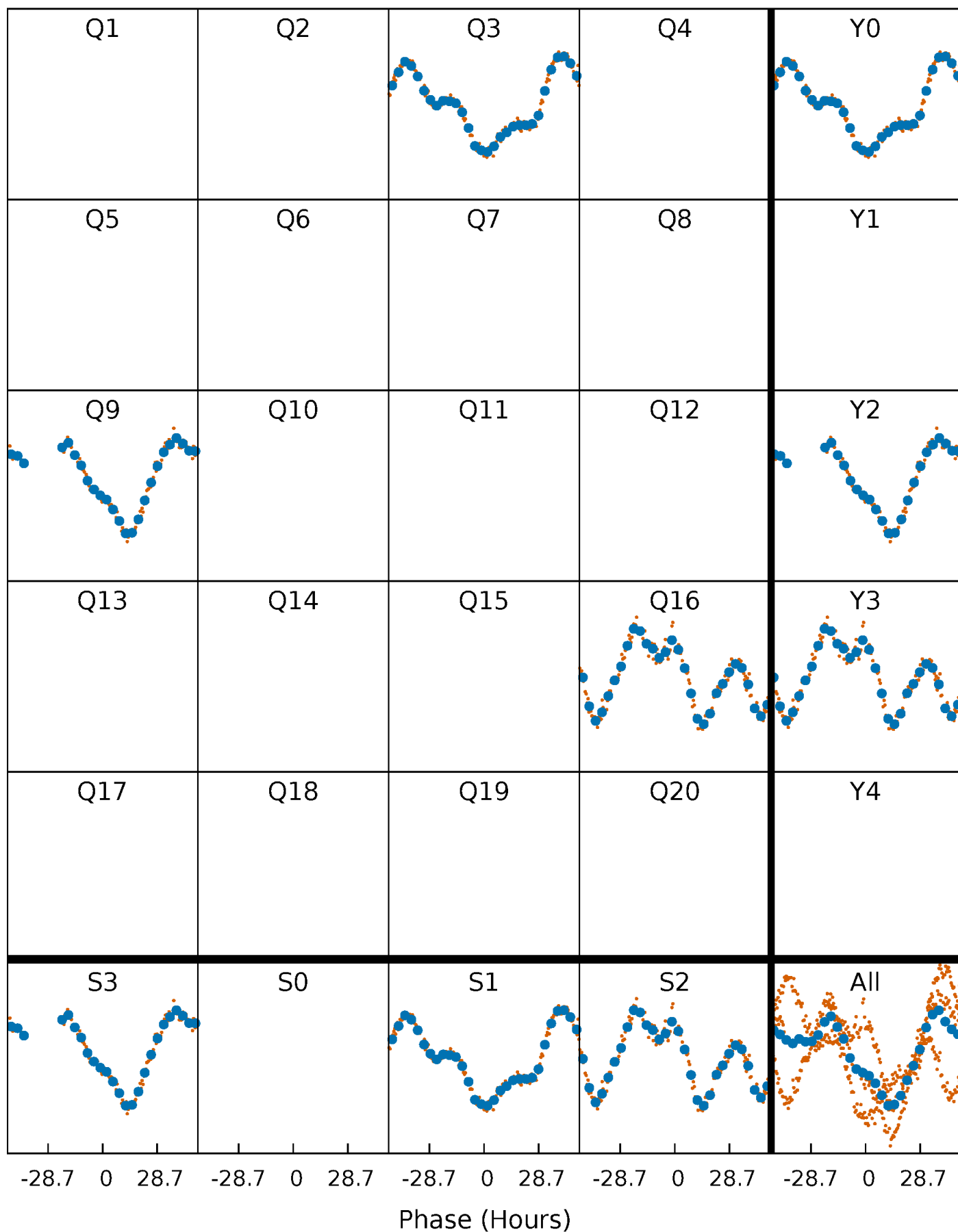


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



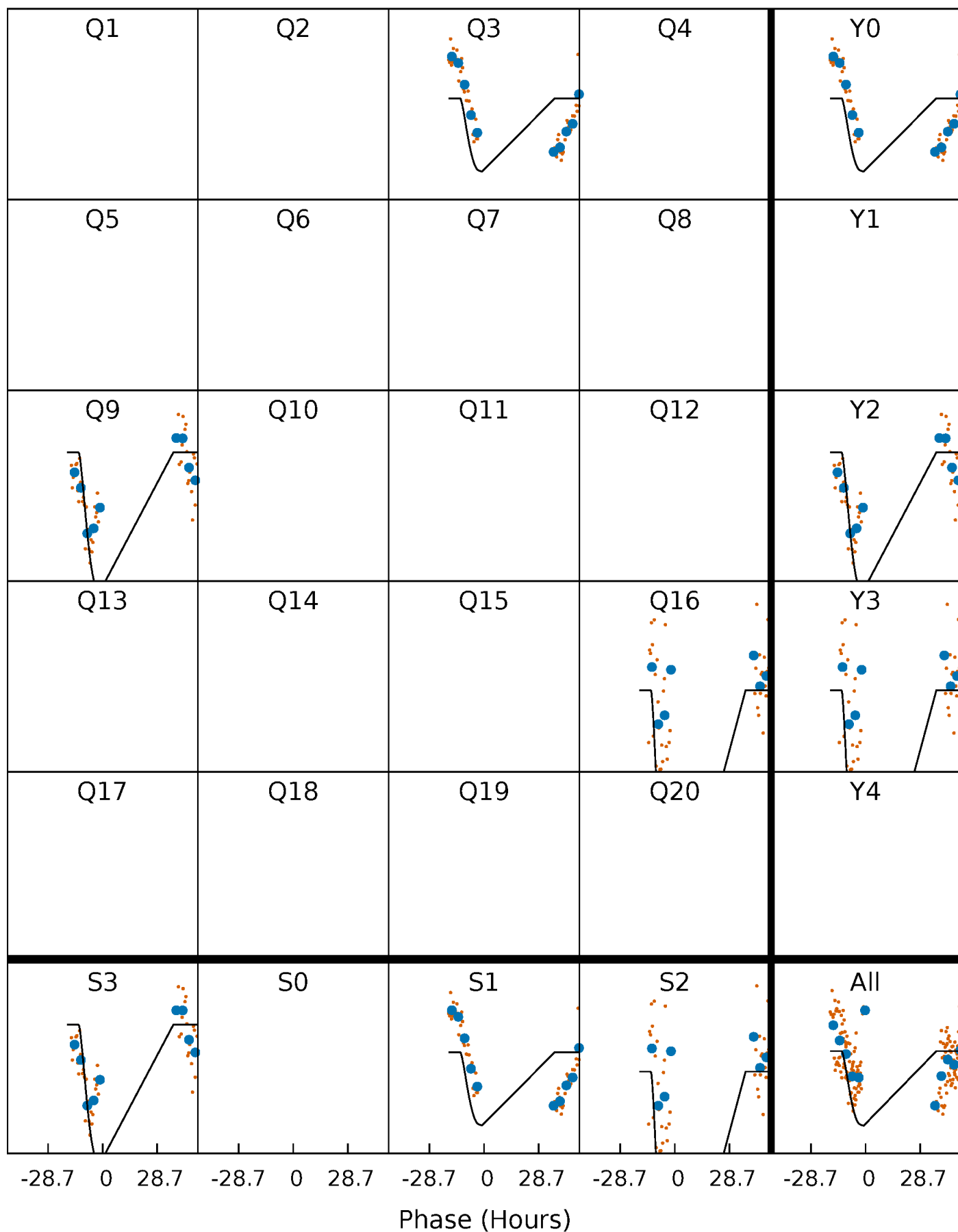
PDC Quarter-Phased Transit Curves

TCE 009714572-08 P=625.297546 Days $T_0=263.126353$ (BKJD)



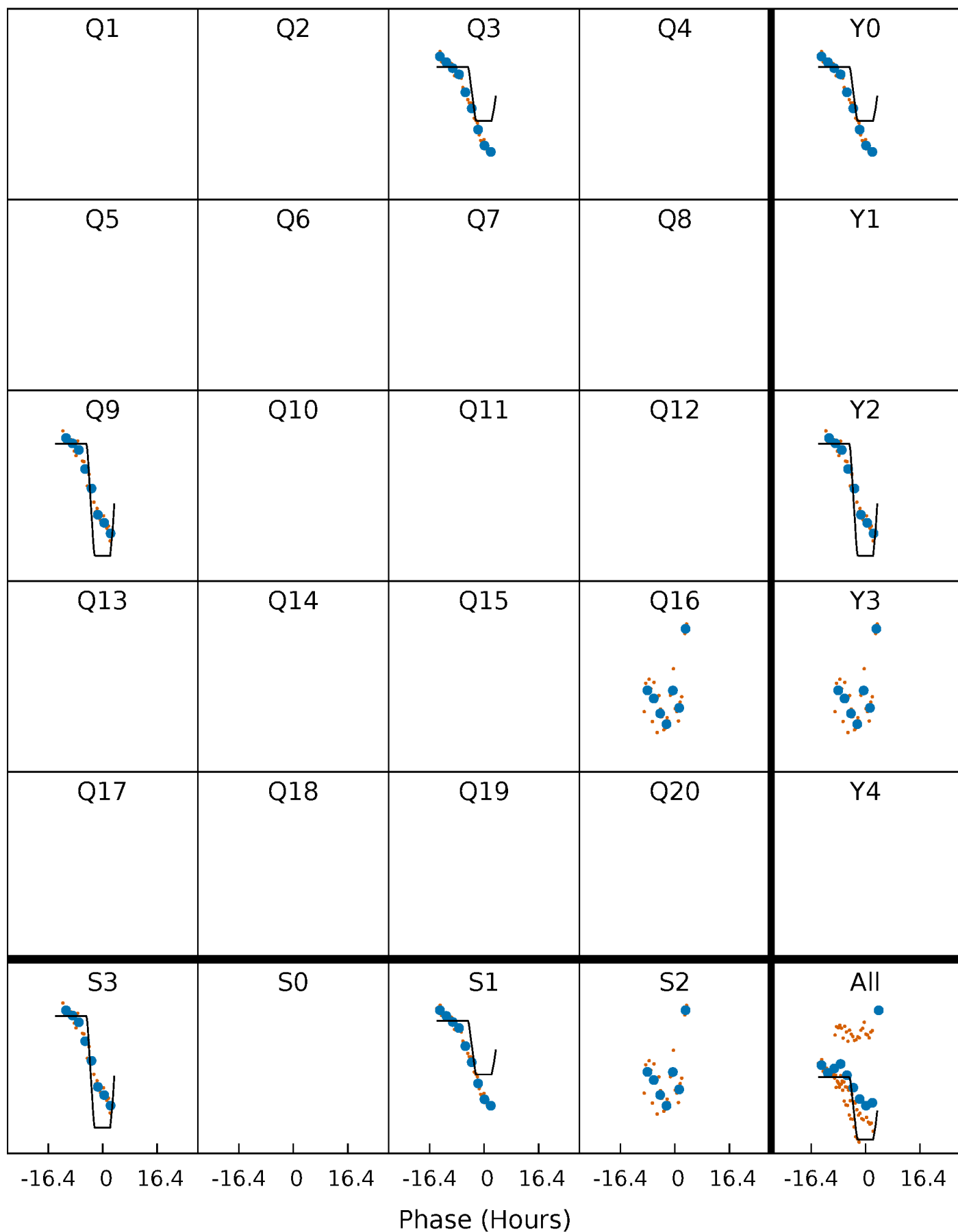
DV Quarter-Phased Transit Curves

TCE 009714572-08 $P=625.297546$ Days $T_0=263.126353$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

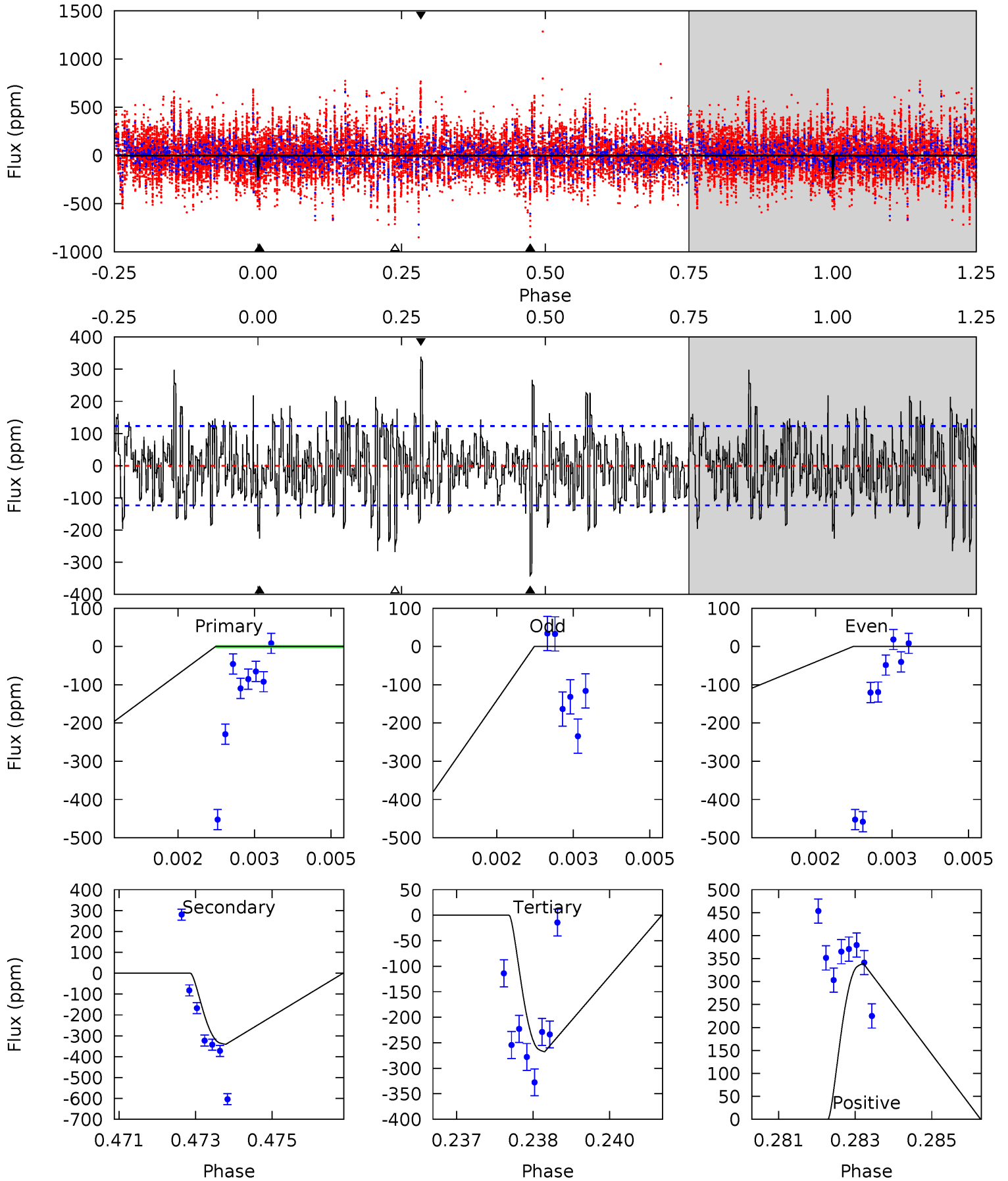
TCE 009714572-08 P=625.294181 Days $T_0=262.943066$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-08, P = 625.297546 Days, E = 263.126353 Days

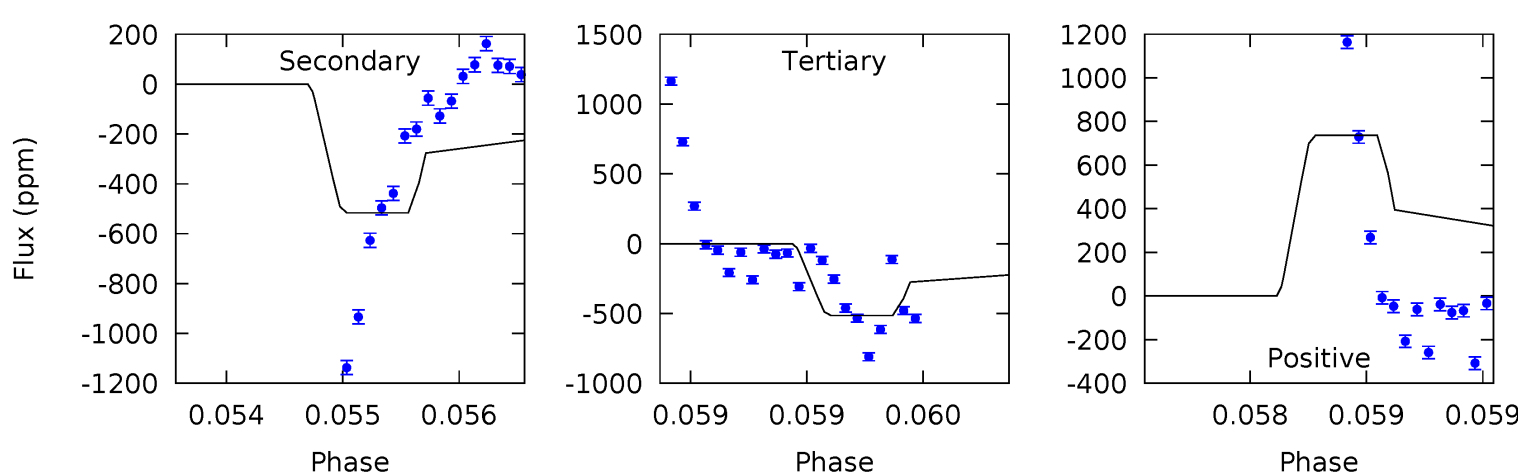
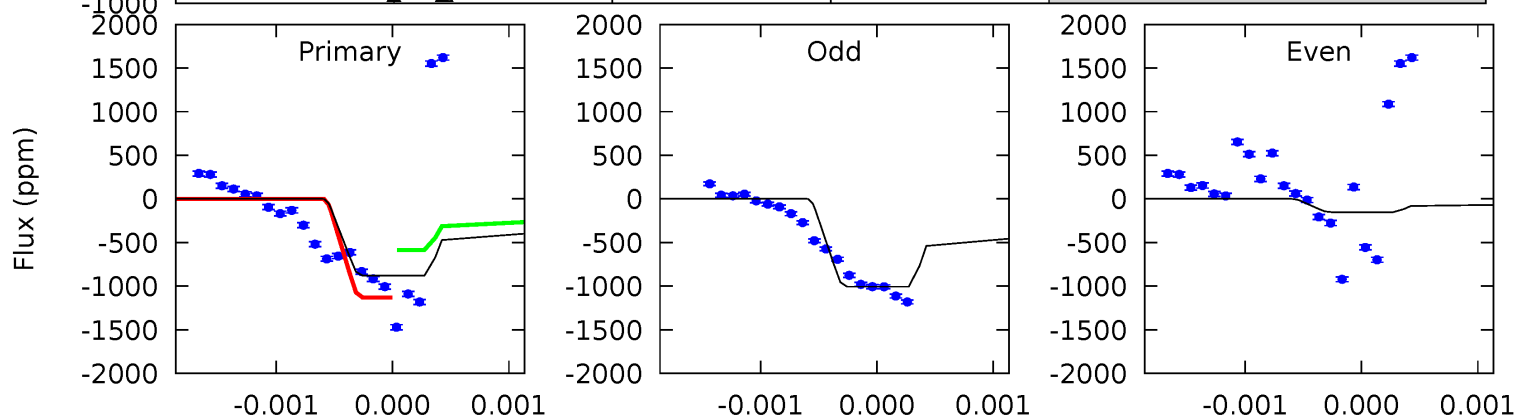
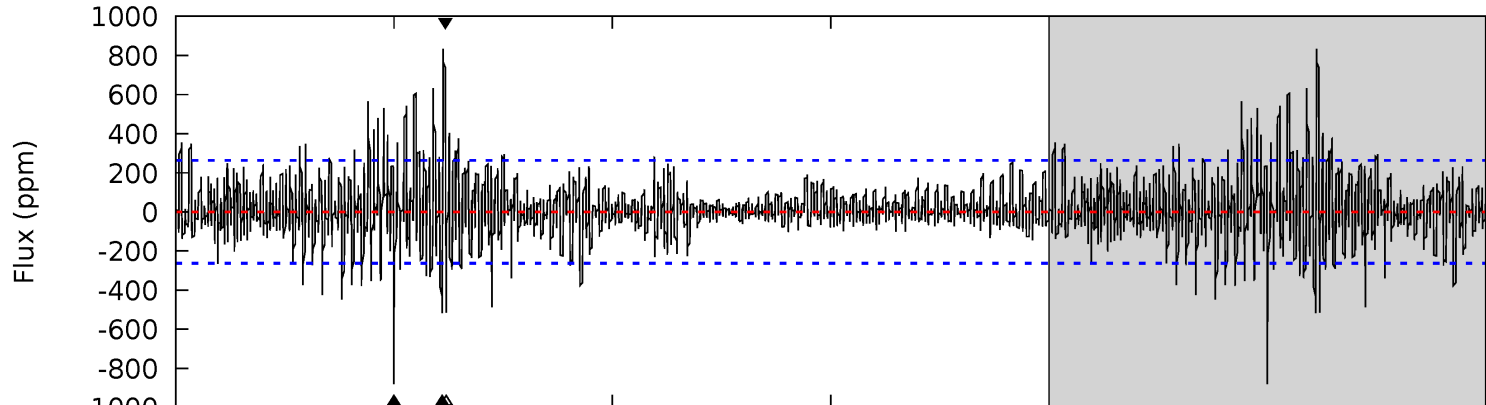
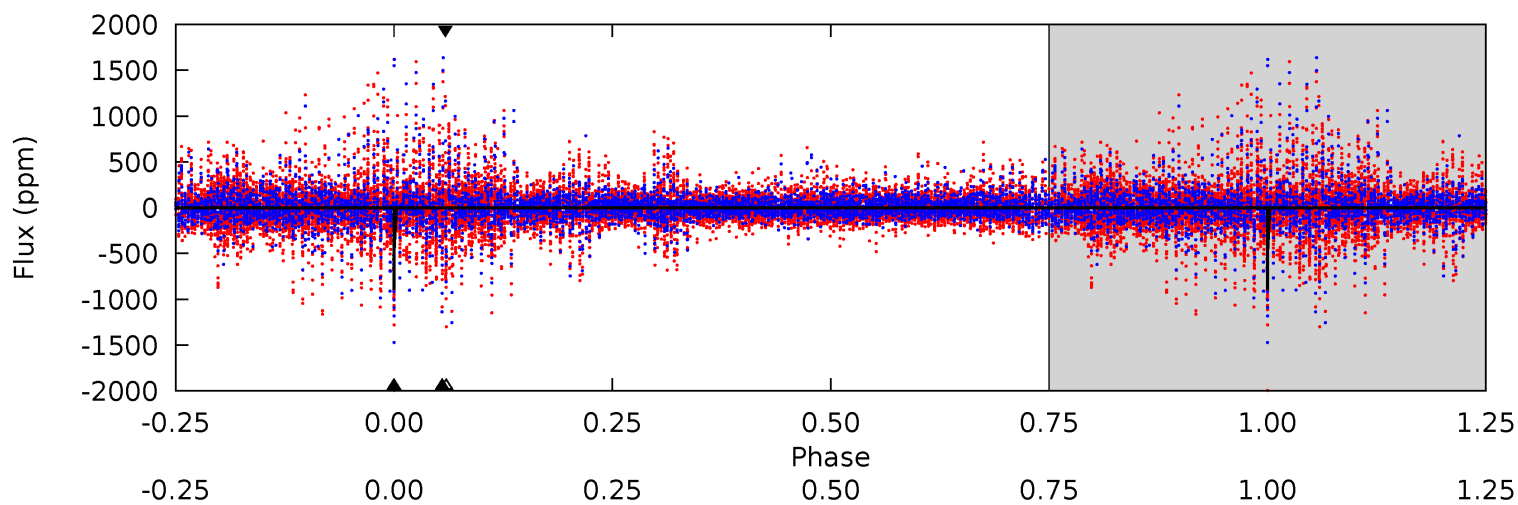
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.84	14.8	11.6	14.7	5.36	3.14	3.39	-1.78	-4.89	3.16	0.06	6.51	0	0.50	0



Alt Model-Shift Uniqueness Test

009714572-08, P = 625.294181 Days, E = 262.943066 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	10.9	10.9	15.5	5.55	3.45	2.16	7.71	3.03	0.04	-4.64	12.2	0.60	0.49	5.40



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-340 ± 23	$5.77^{+1.06}_{-1.08}$	469^{+38}_{-40}	5604^{+369}_{-275}	14107^{+6506}_{-4006}
Alt.	-517 ± 47	$7.30^{+1.35}_{-1.23}$	466^{+41}_{-41}	5496^{+293}_{-279}	13064^{+6066}_{-3837}

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

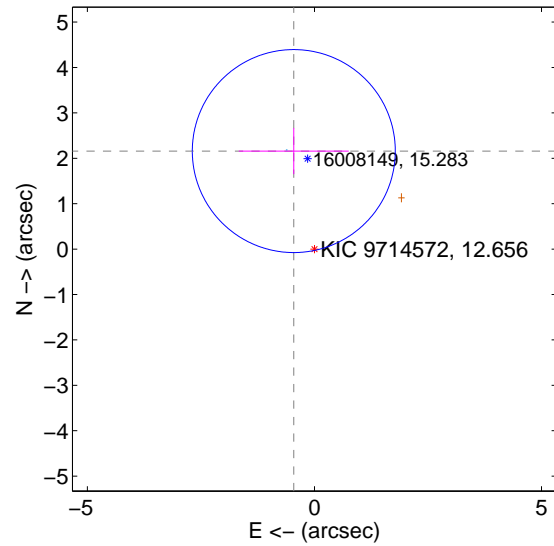
Supplemental centroid analysis for 009714572-08. Kepler magnitude: 12.66. Transit SNR 8.19

There are 1 quarters with good PRF difference image offsets

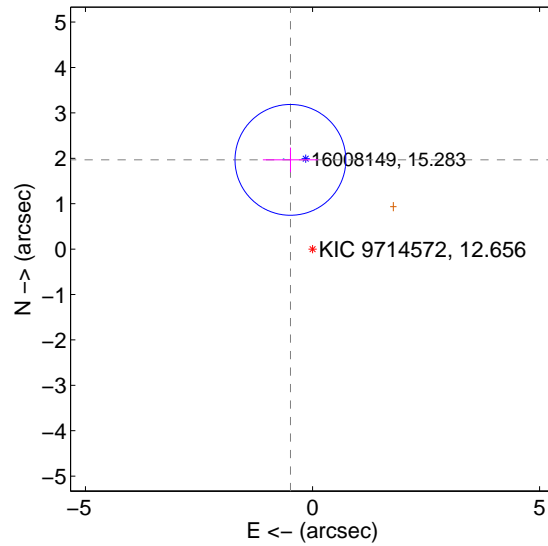
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.206 ± 0.745	2.96	0.455 ± 1.211	2.159 ± 0.508
PRF-fit source offset from KIC position	2.024 ± 0.407	4.98	0.487 ± 0.608	1.965 ± 0.272
photometric centroid source offset	0.82 ± 0.89	0.92	-0.24 ± 0.30	-0.78 ± 0.93

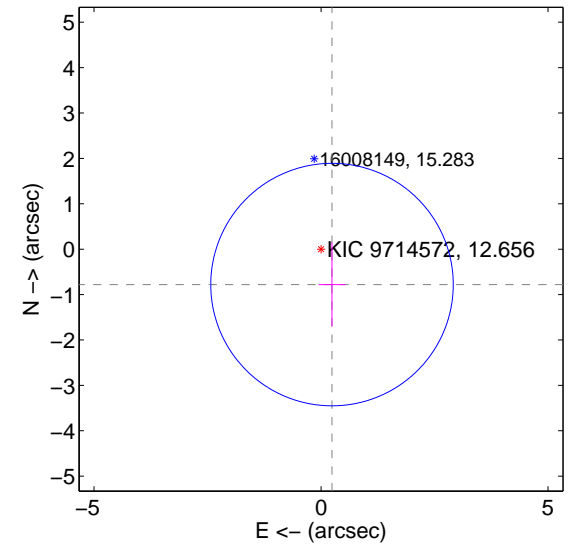
offset from difference PRF-fit to OOT PRF-fit



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



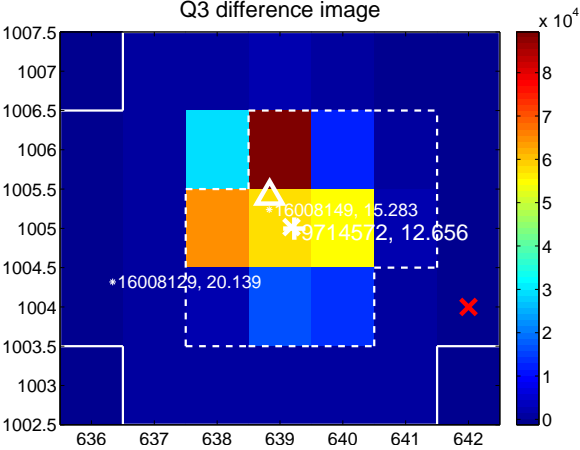
Q2 no difference image



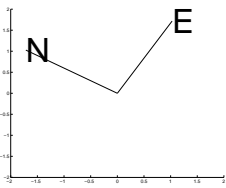
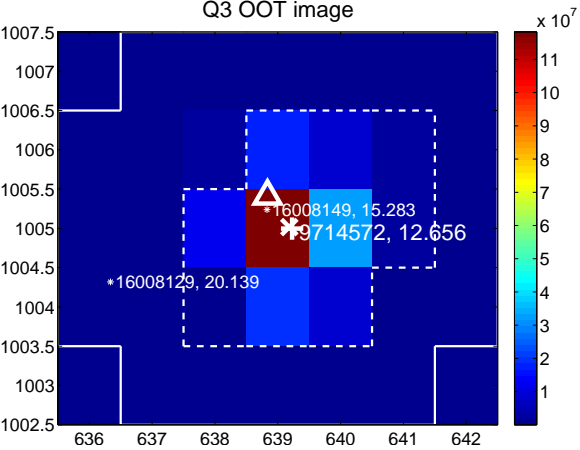
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image



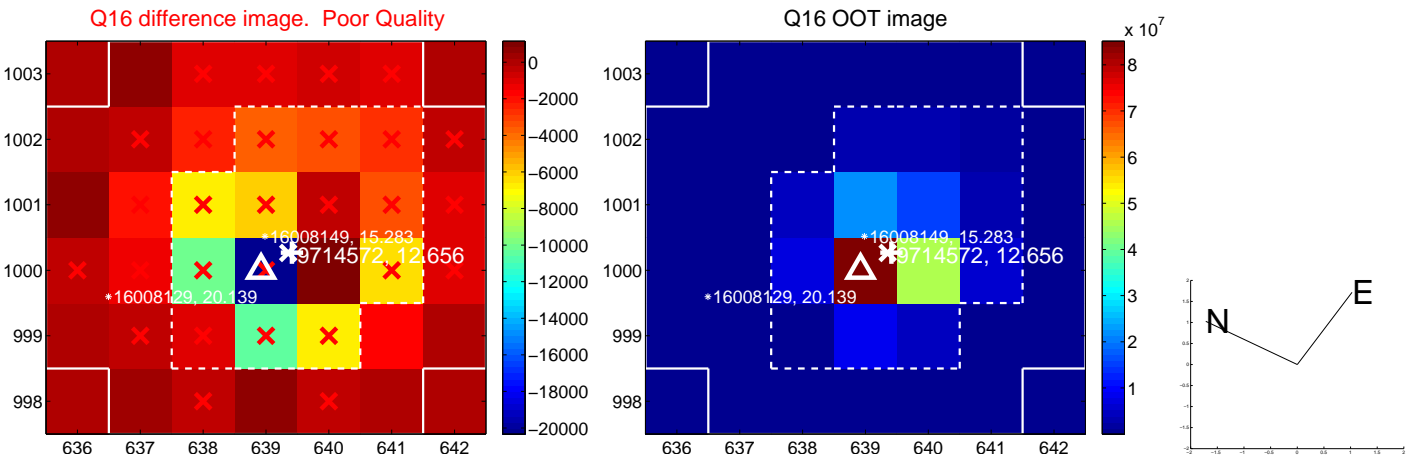
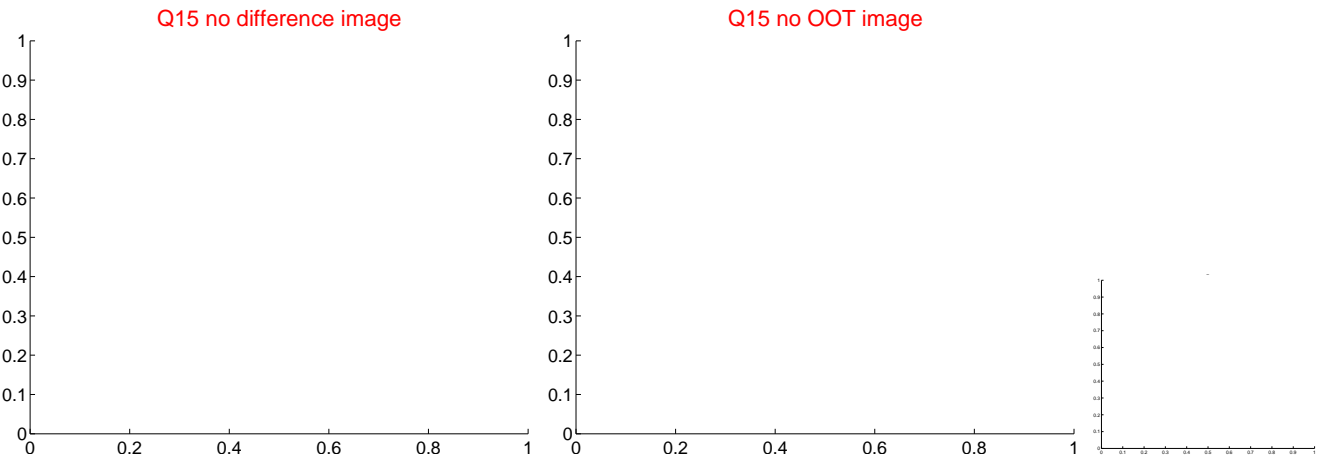
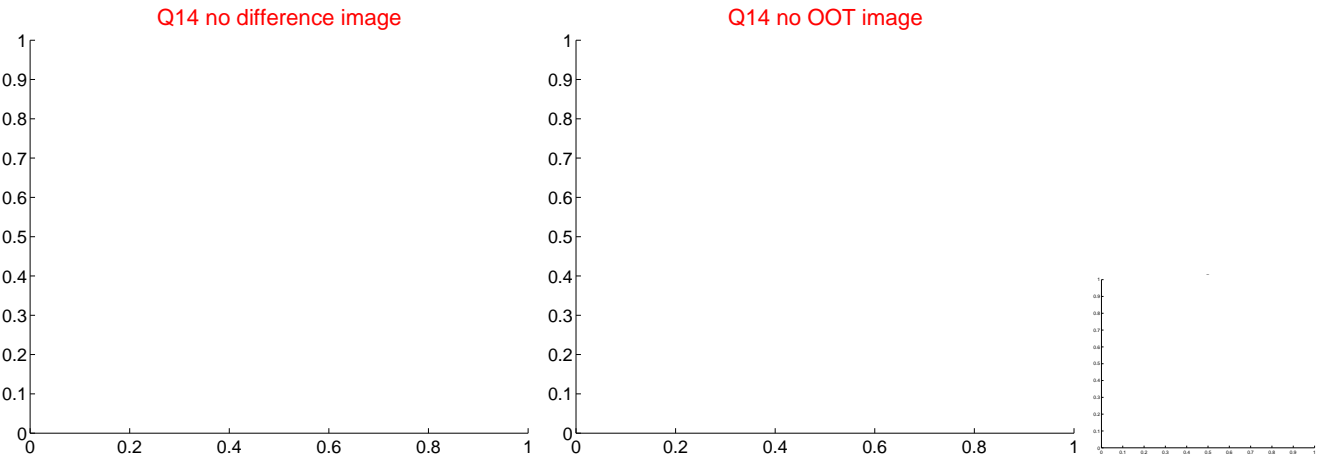
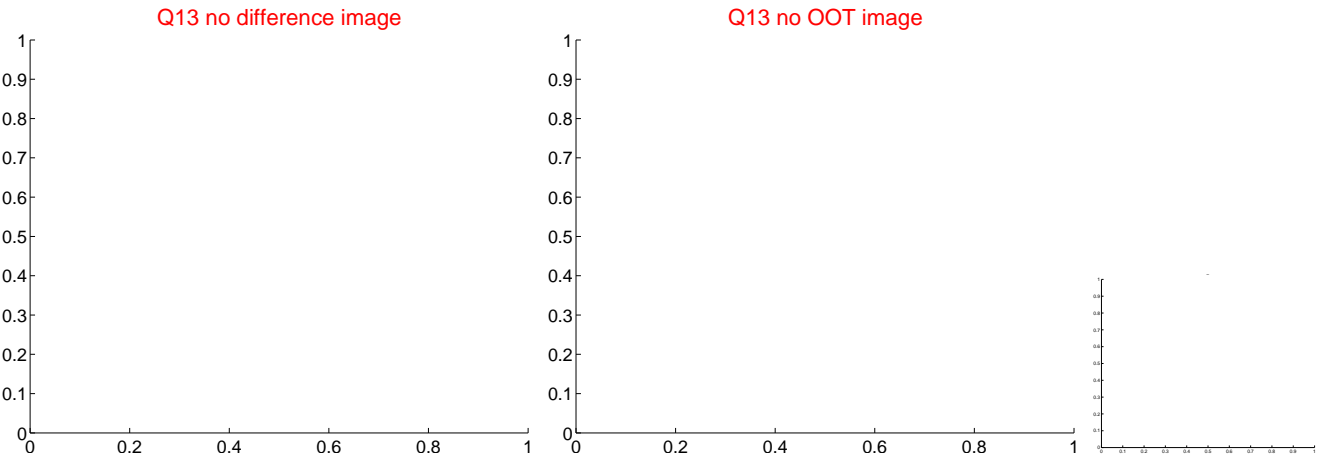
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



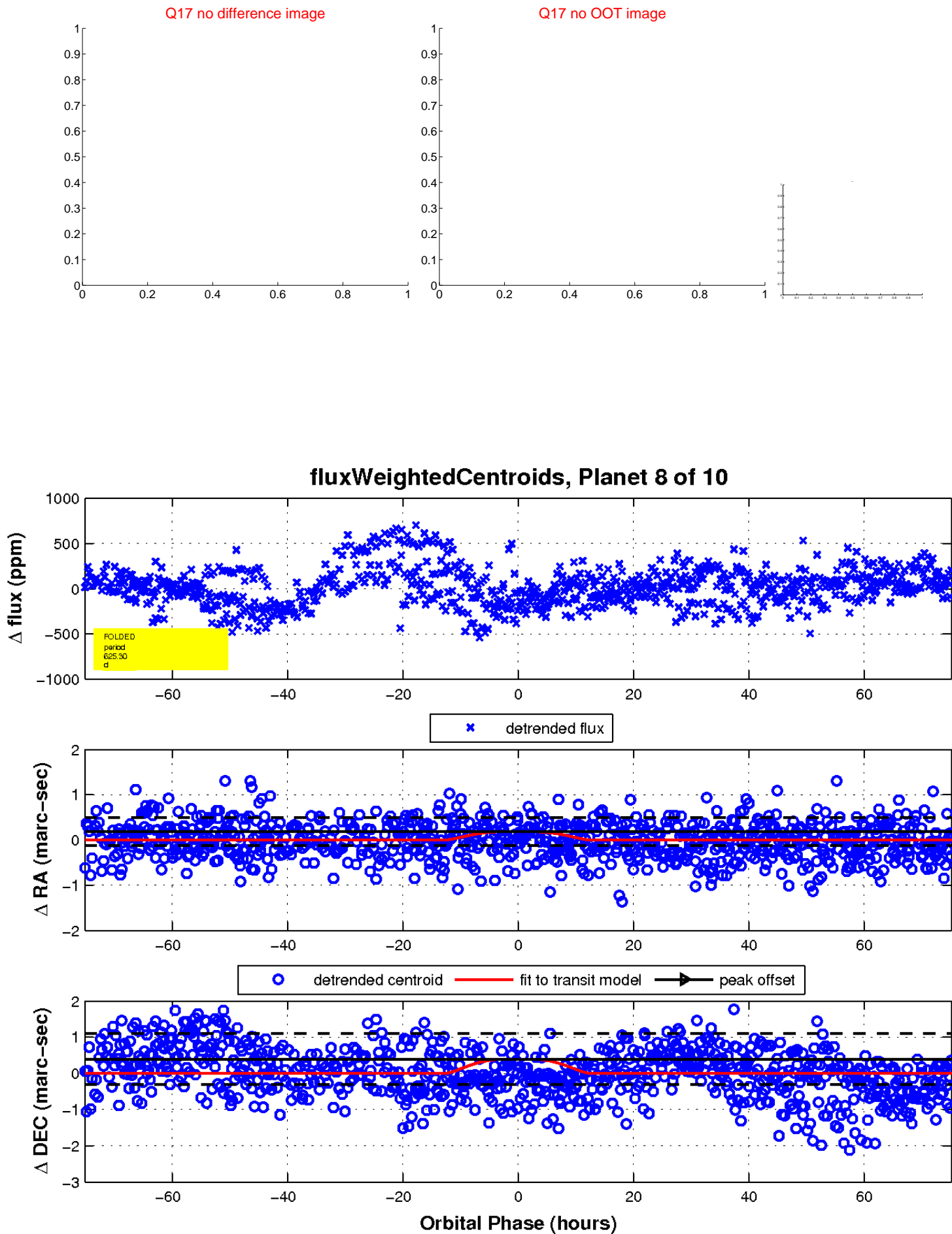
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

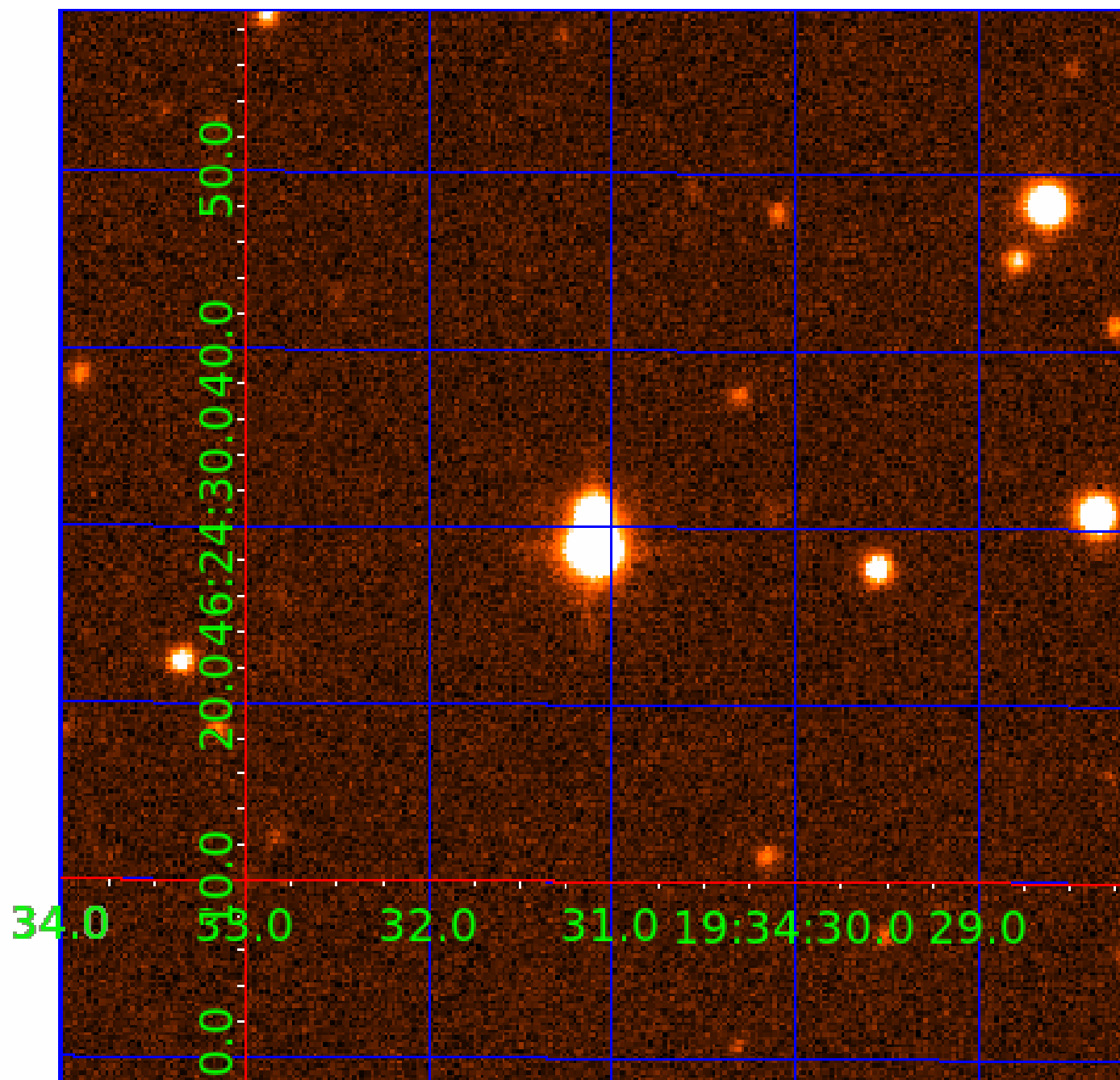


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD— CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

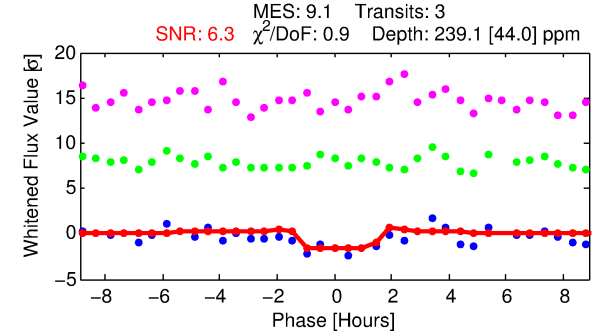
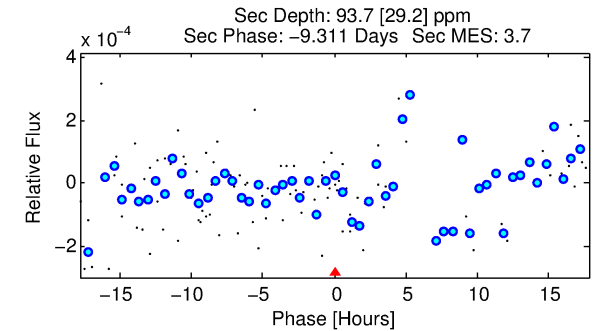
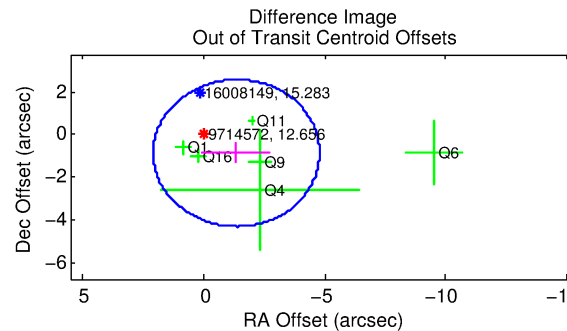
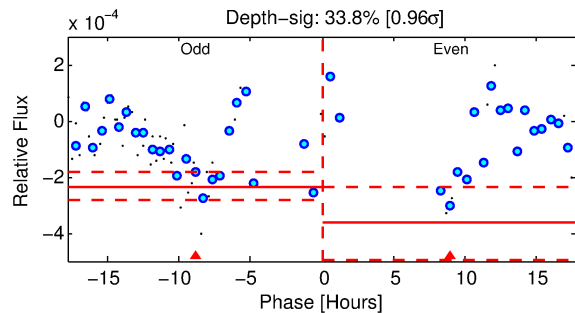
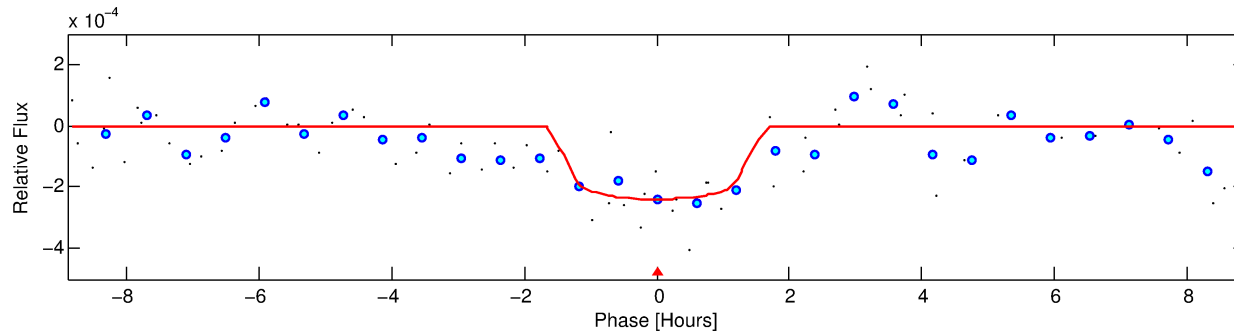
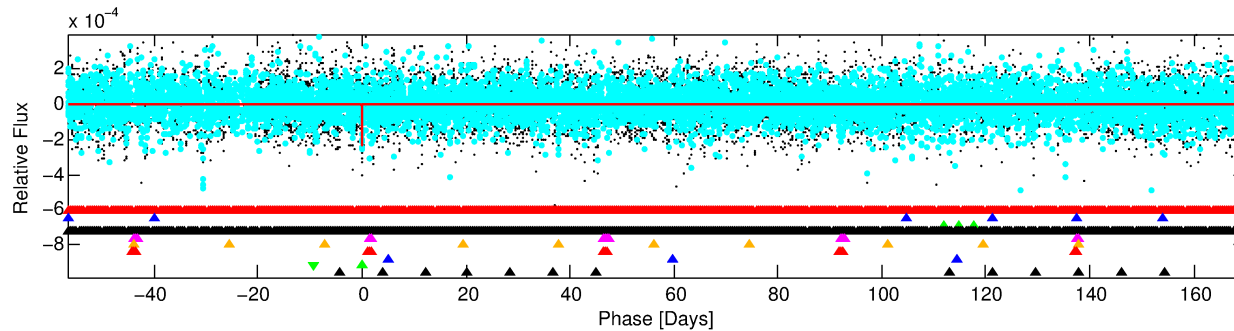
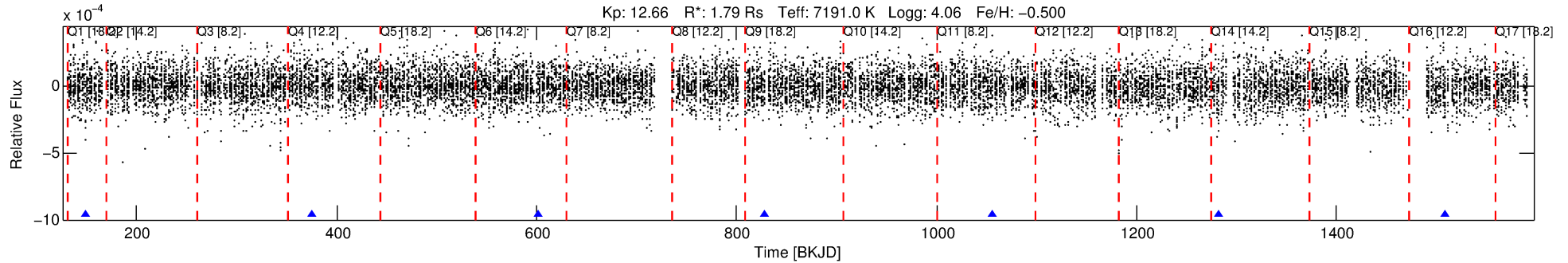
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-09

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 9 of 10 Period: 226.705 d



DV Fit Results:

Period = 226.70470 [0.00312] d
Epoch = 148.6159 [0.0130] BKJD
Rp/R* = 0.0156 [0.0209]
a/R* = 372.15 [3053.77]
b = 0.79 [3.92]
Seff = 11.95 [5.78]
Teq = 474 [57] K
Rp = 3.05 [4.21] Re
a = 0.8033 [0.2353] AU
Ag = 3577.04 [9802.34] [0.36 σ]
Teffp = 5669 [3838] K [1.35 σ]

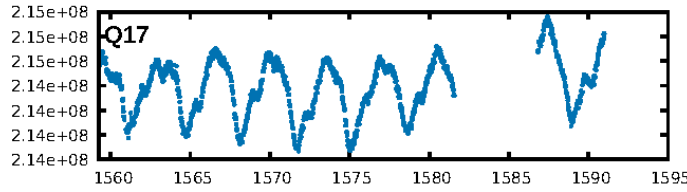
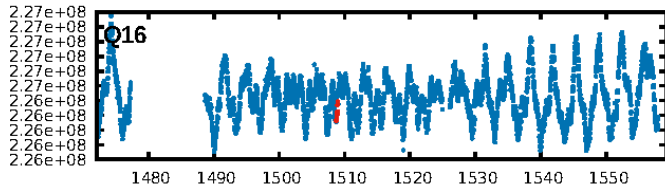
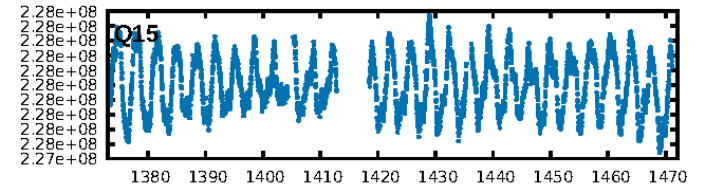
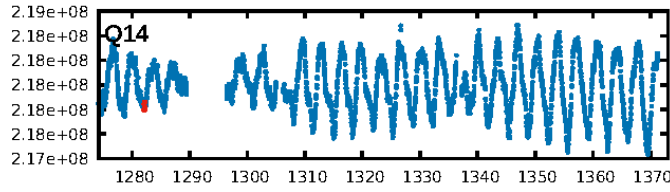
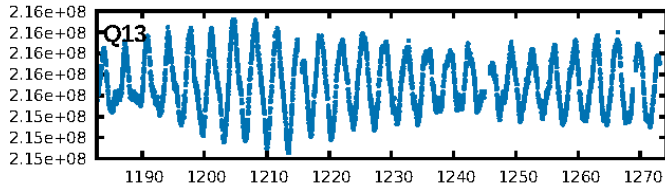
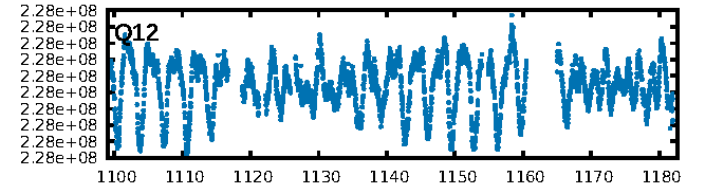
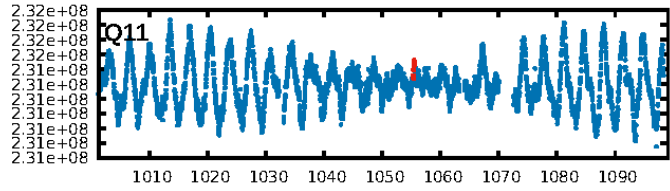
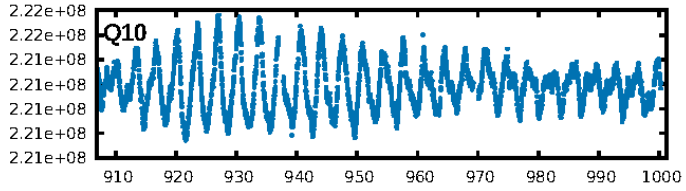
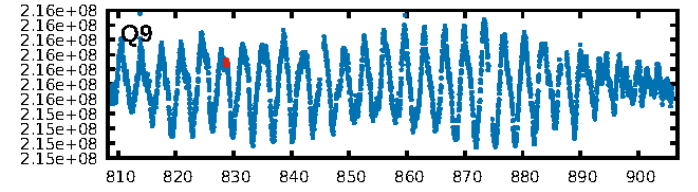
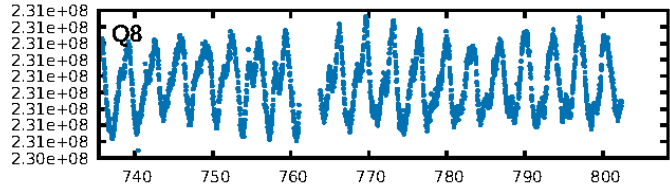
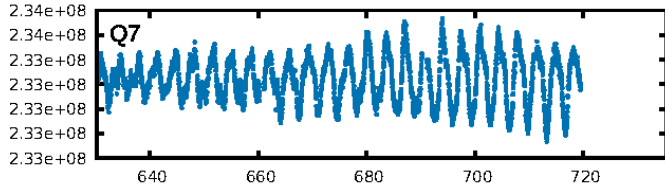
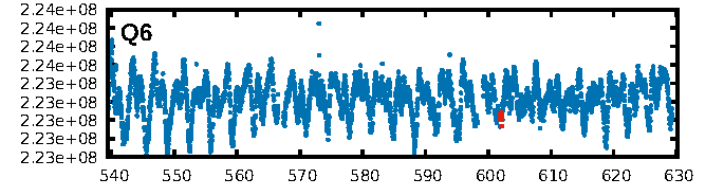
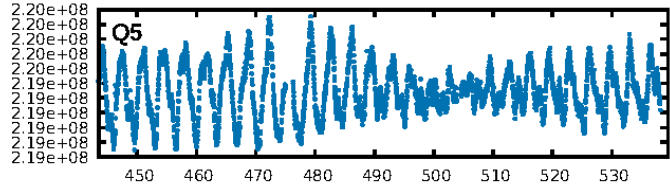
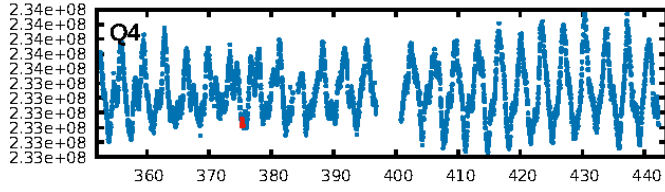
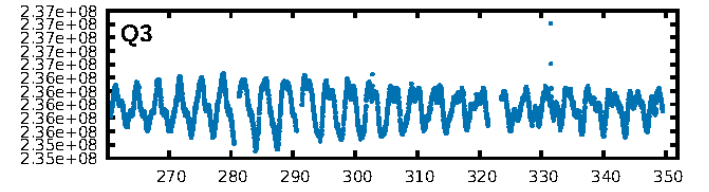
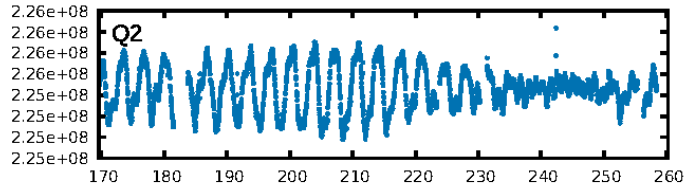
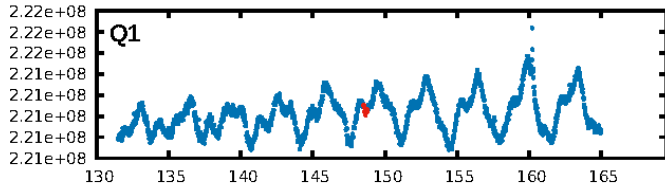
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [329.98 σ]
LongPeriod-sig: 100.0% [82.40 σ]
ModelChiSquare2-sig: 82.8%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 2.154
Centroid-sig: 28.3%
Centroid-so: 0.907 arcsec [1.02 σ]
OotOffset-rm: 1.612 arcsec [1.41 σ]
KicOffset-rm: 1.698 arcsec [1.61 σ]
OotOffset-st: 1/1/2/2 [6]
KicOffset-st: 1/1/2/2 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.33 [2/6]

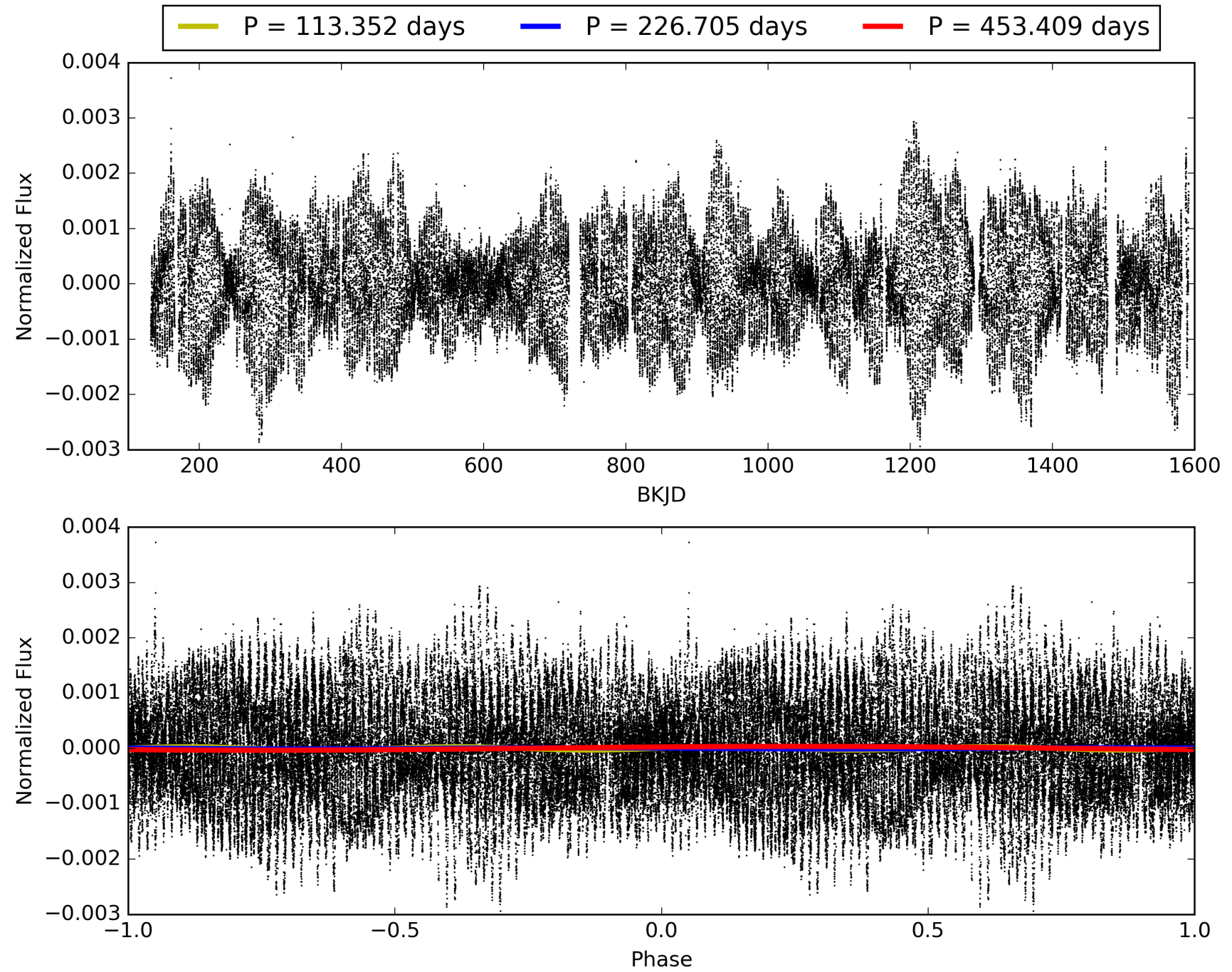
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:52 Z

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

TCE 009714572-09, PDC Light Curves

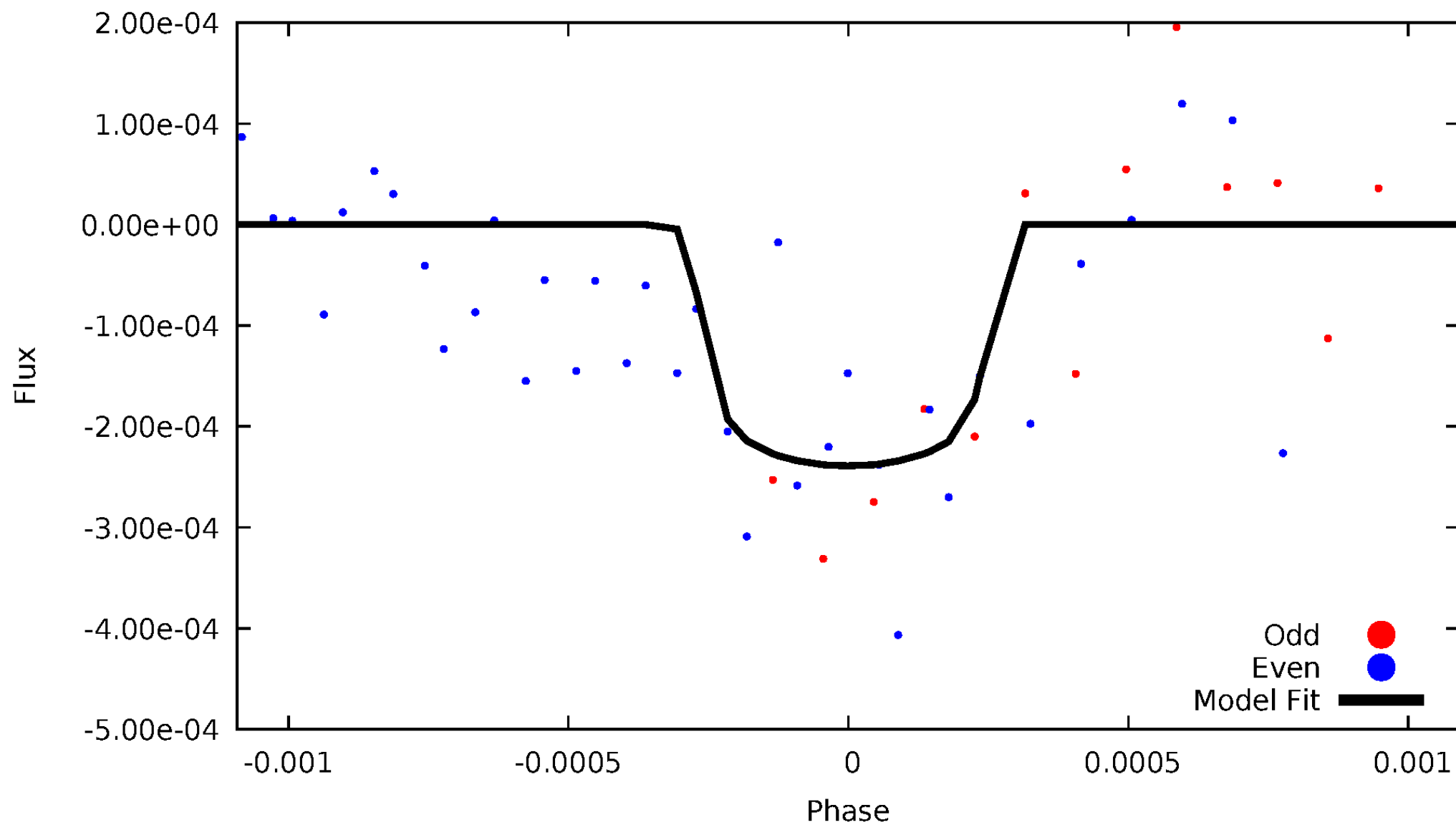


TCE 009714572-09



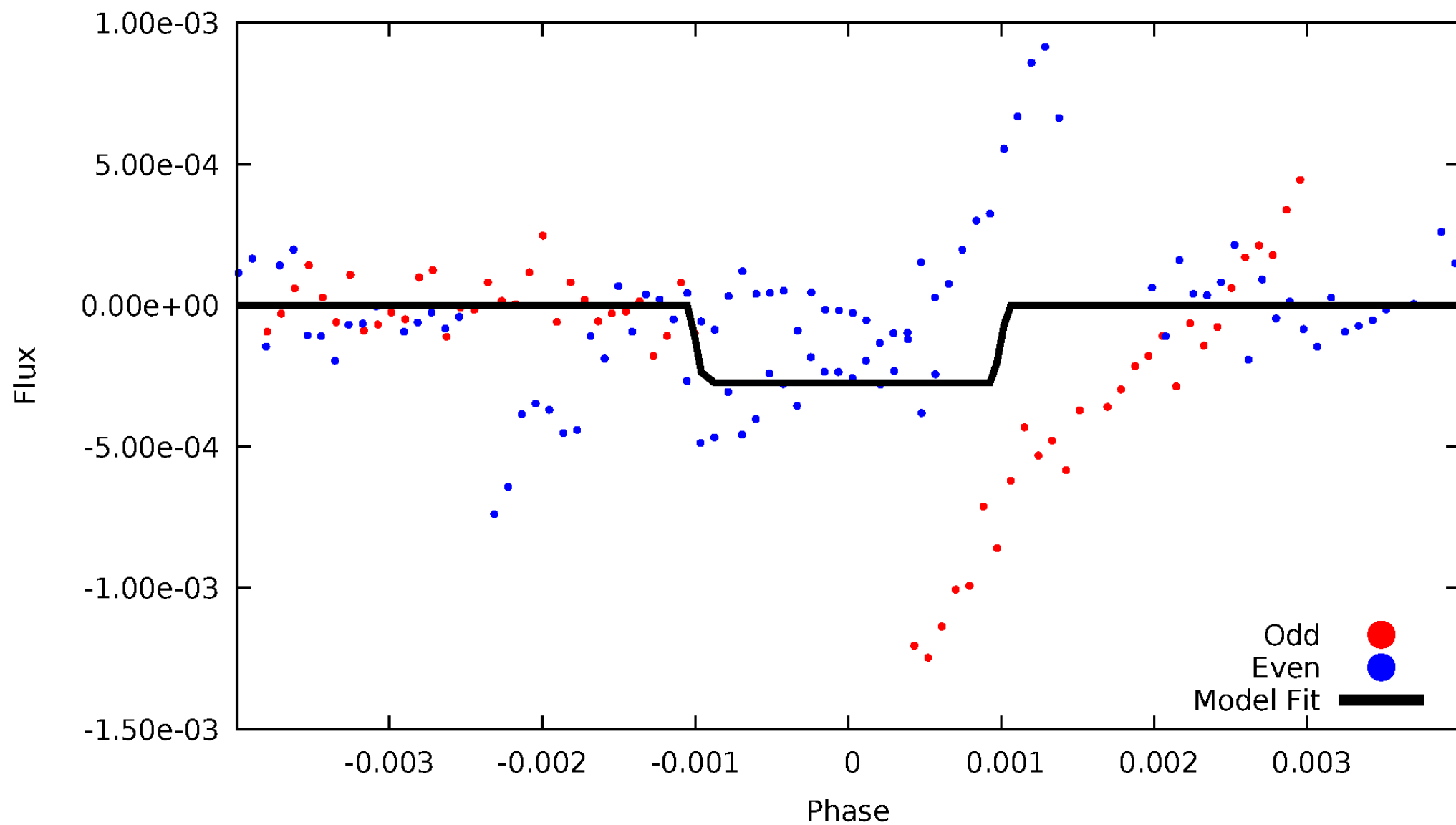
DV Odd/Even

TCE 009714572-09



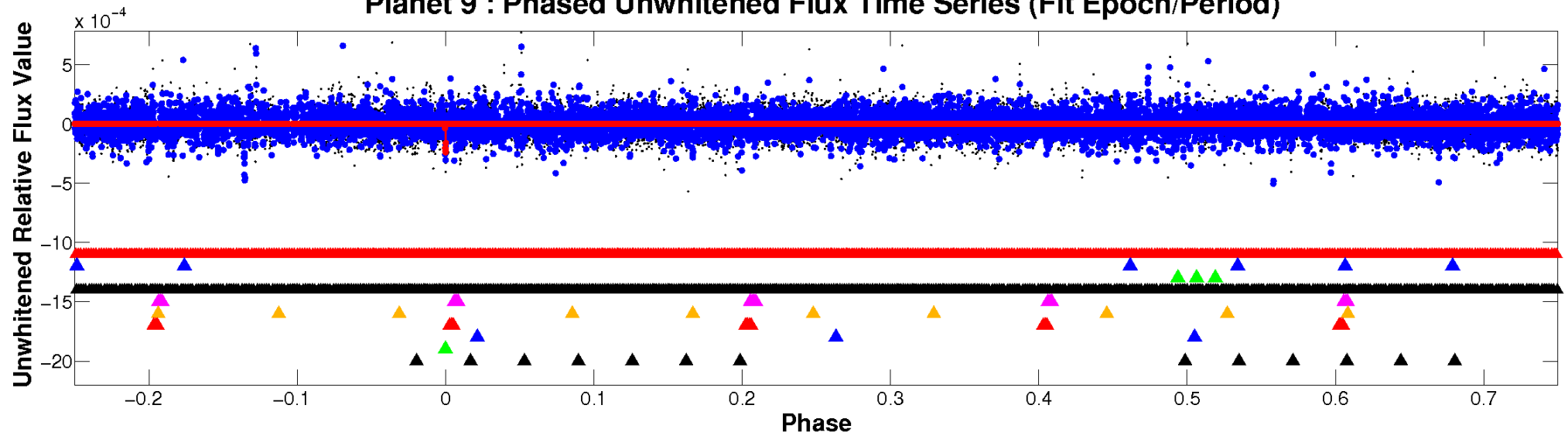
ALT Odd/Even

TCE 009714572-09

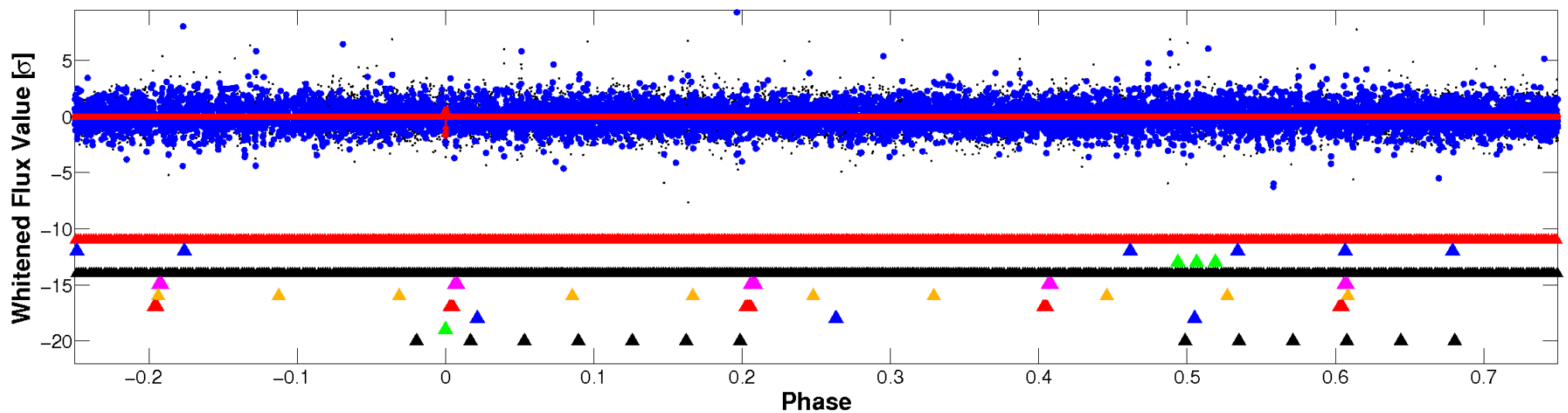


Non-Whitened Vs. Whitened Light Curve

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

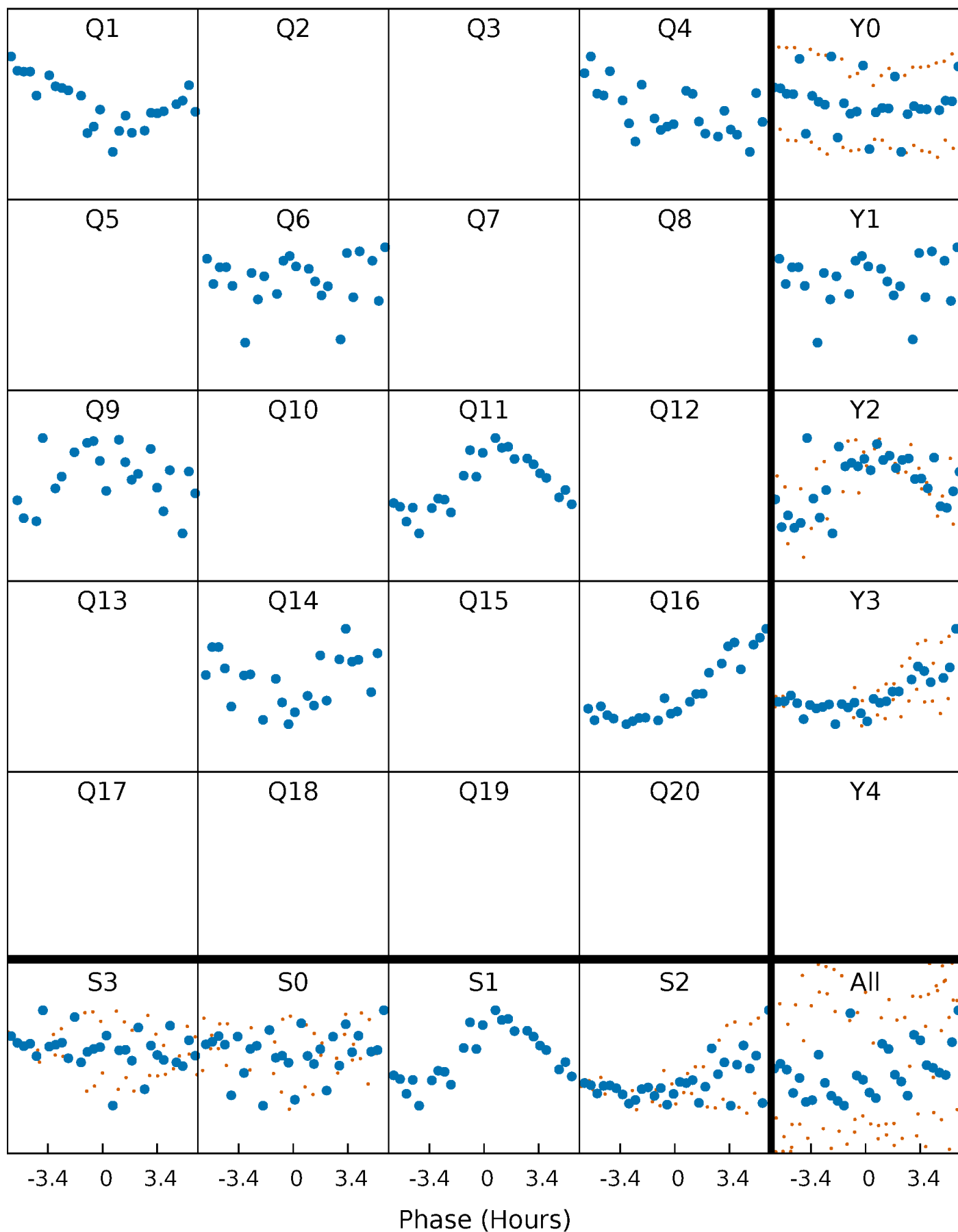


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



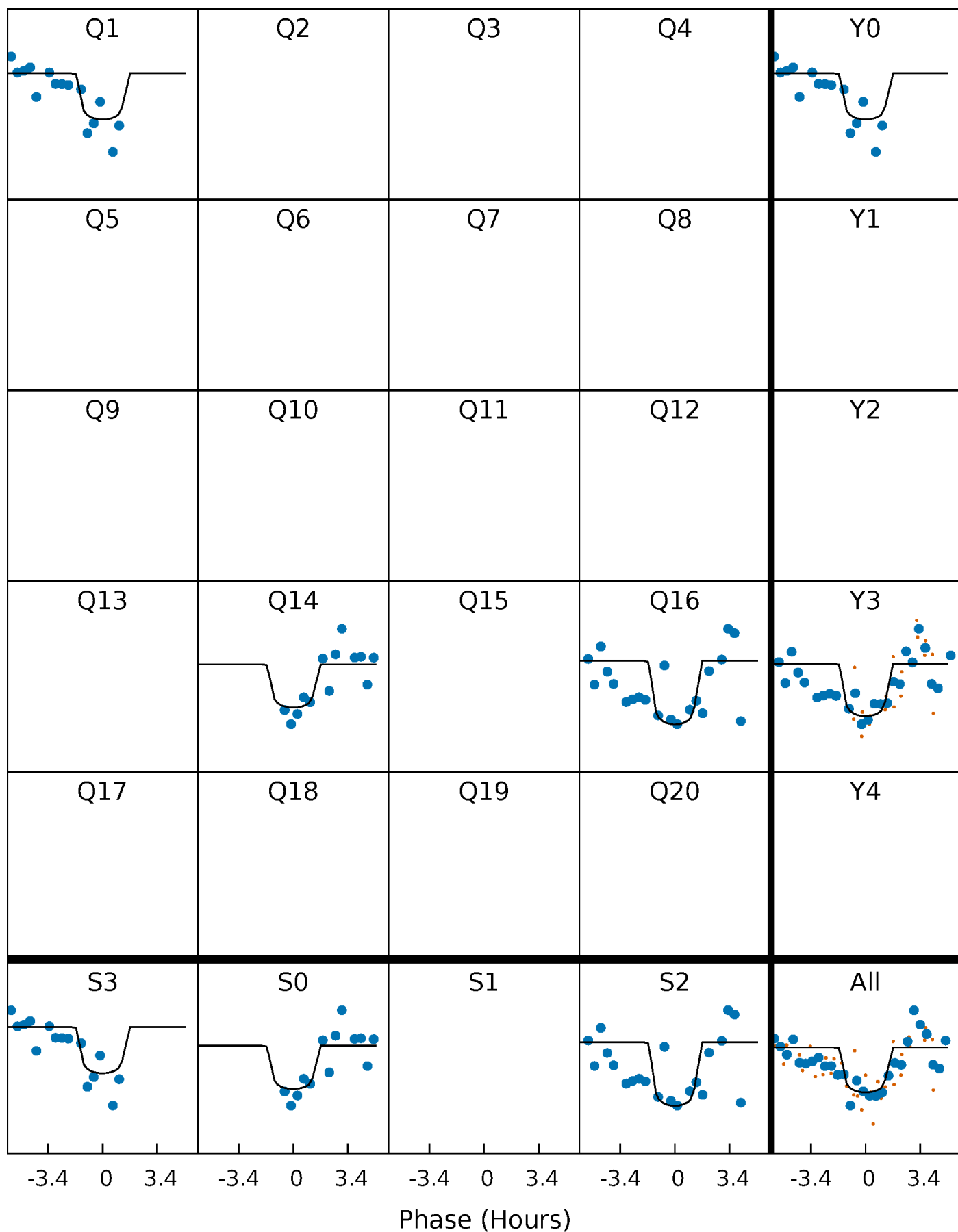
PDC Quarter-Phased Transit Curves

TCE 009714572-09 $P=226.704703$ Days $T_0=148.615902$ (BKJD)



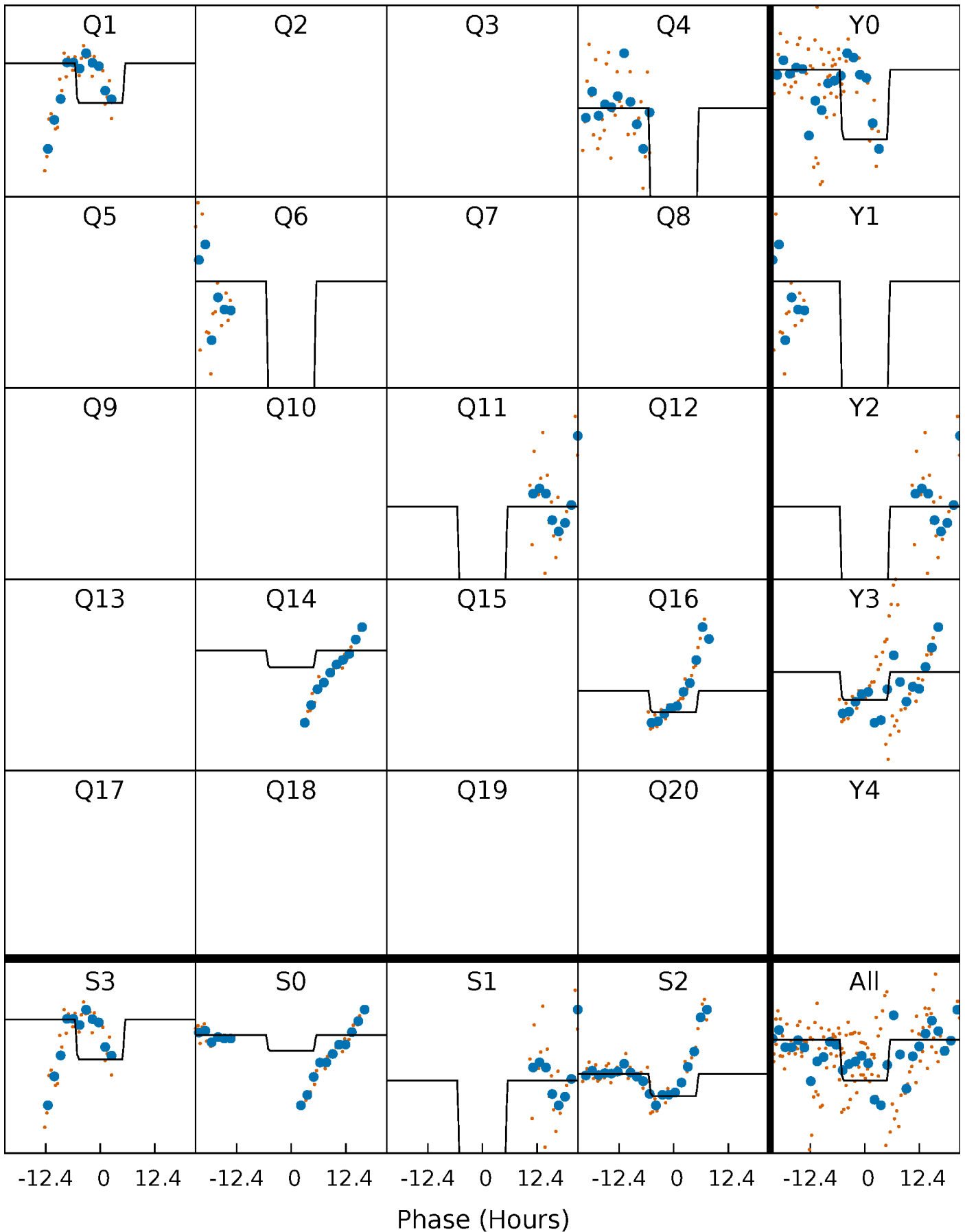
DV Quarter-Phased Transit Curves

TCE 009714572-09 P=226.704703 Days $T_0=148.615902$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

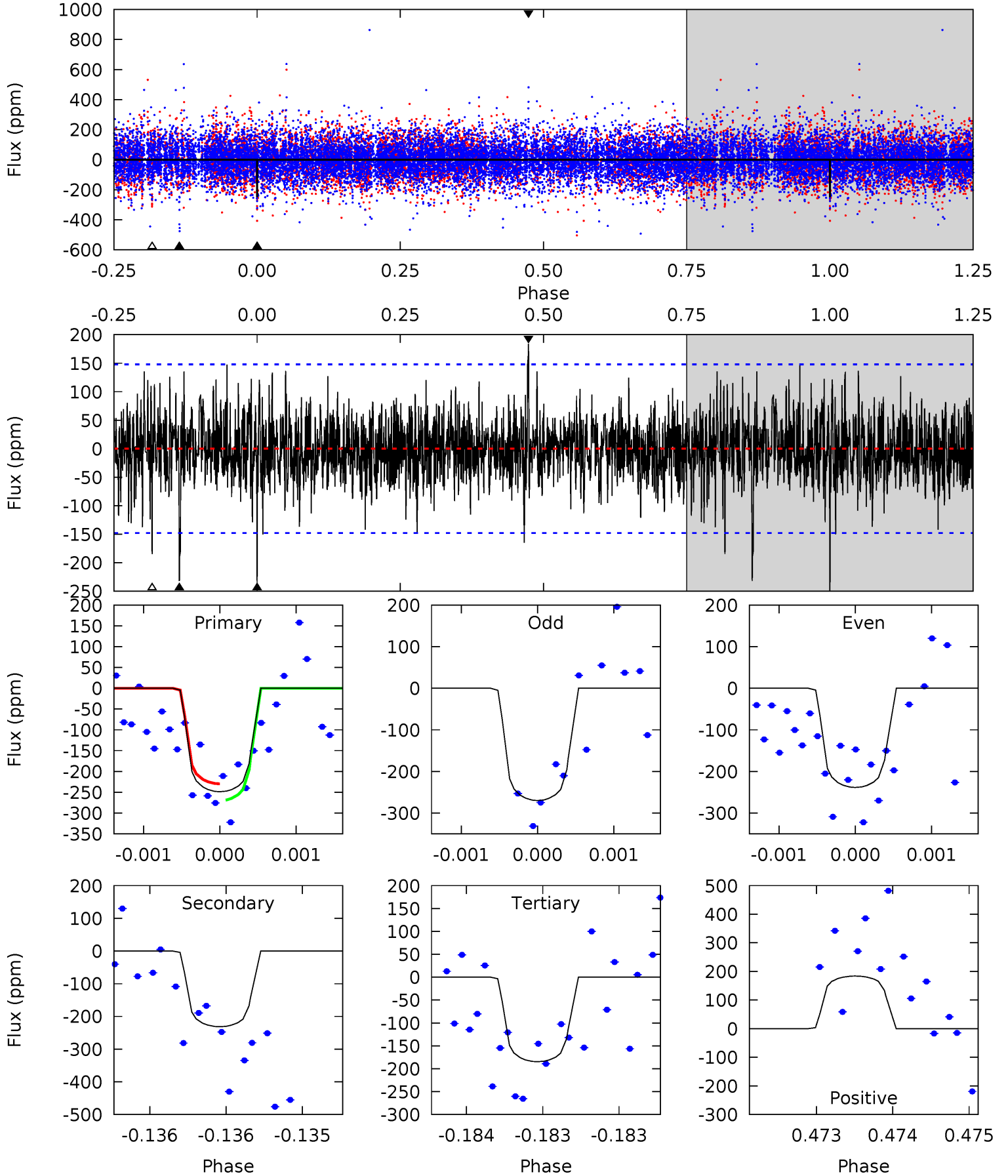
TCE 009714572-09 P=226.696726 Days $T_0=148.527394$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-09, P = 226.704703 Days, E = 148.615902 Days

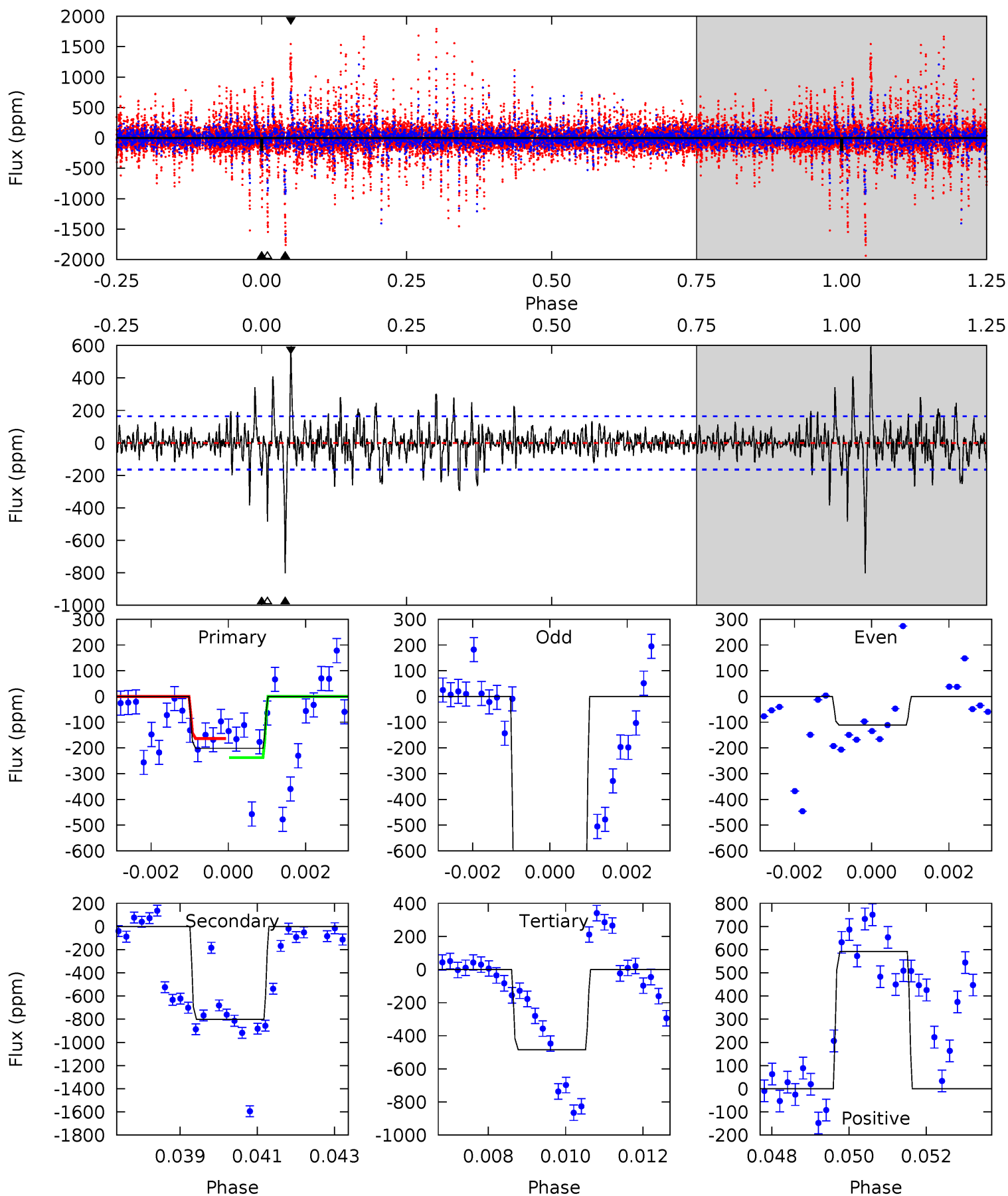
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.33	8.68	6.93	6.90	5.55	3.44	1.56	2.40	2.43	1.76	1.79	0.54	0.92	0.43	0.73



Alt Model-Shift Uniqueness Test

009714572-09, P = 226.696726 Days, E = 148.527394 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.54	26.1	15.7	19.2	5.32	3.08	2.69	-9.17	-12.7	10.3	6.83	10.1	2.96	0.42	1.24



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-232 ± 27	$3.87^{+3.78}_{-2.51}$	657^{+50}_{-57}	6113^{+5692}_{-1524}	5361^{+36054}_{-3942}
Alt.	-802 ± 31	$4.09^{+3.79}_{-2.59}$	652^{+57}_{-57}	8298^{+10894}_{-2325}	$17358^{+107959}_{-12749}$

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 $A_{obs} \gg 1.0$

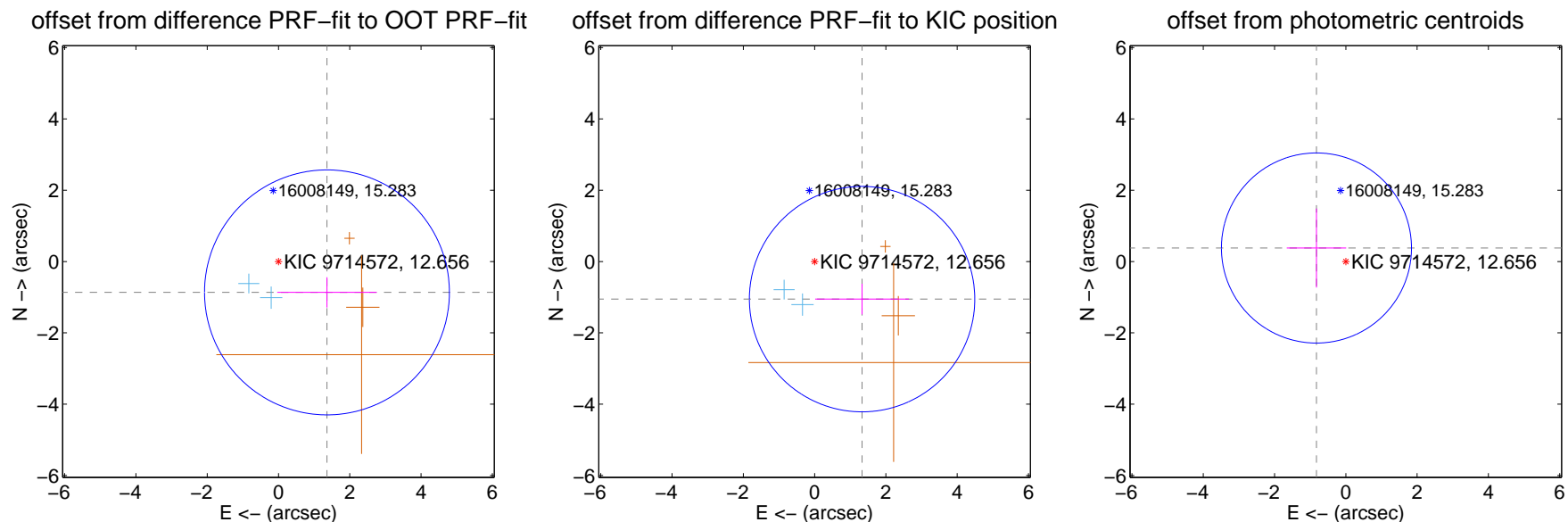
DV Centroid Data

Supplemental centroid analysis for 009714572-09. Kepler magnitude: 12.66. Transit SNR 6.28

There are 2 quarters with good PRF difference image offsets

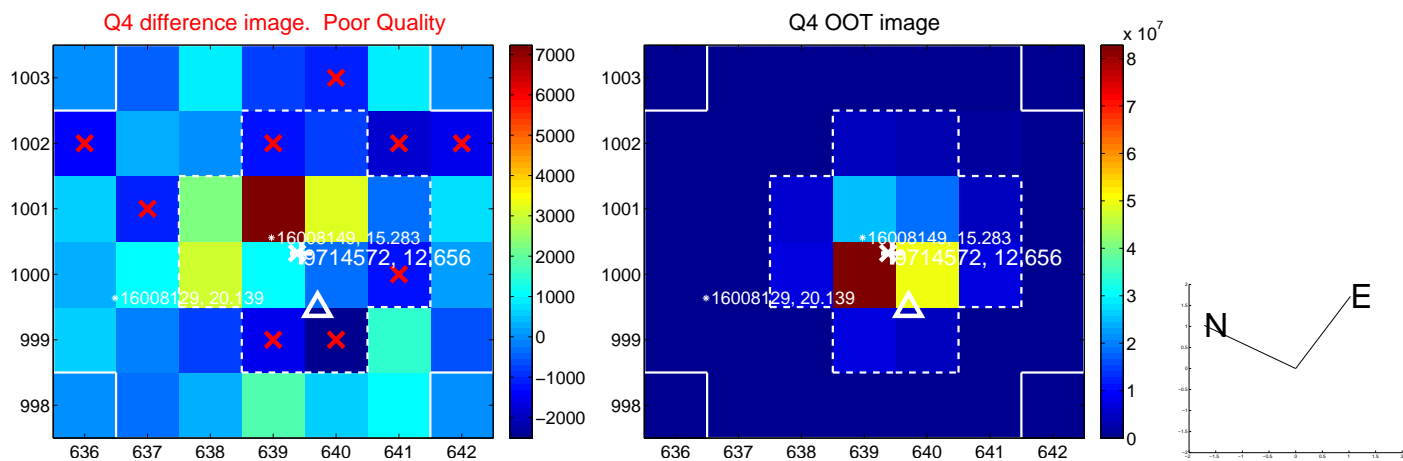
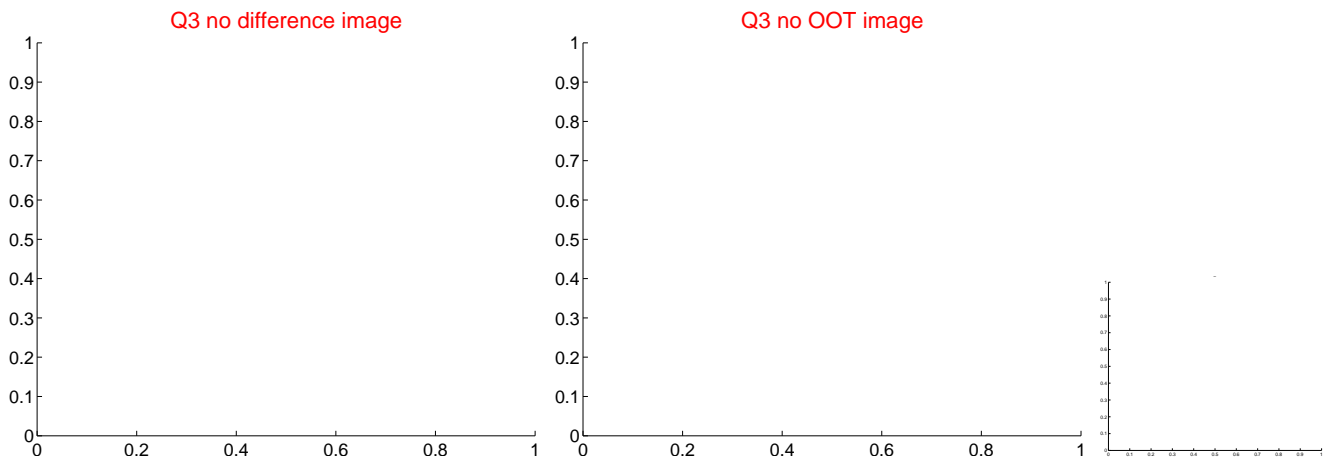
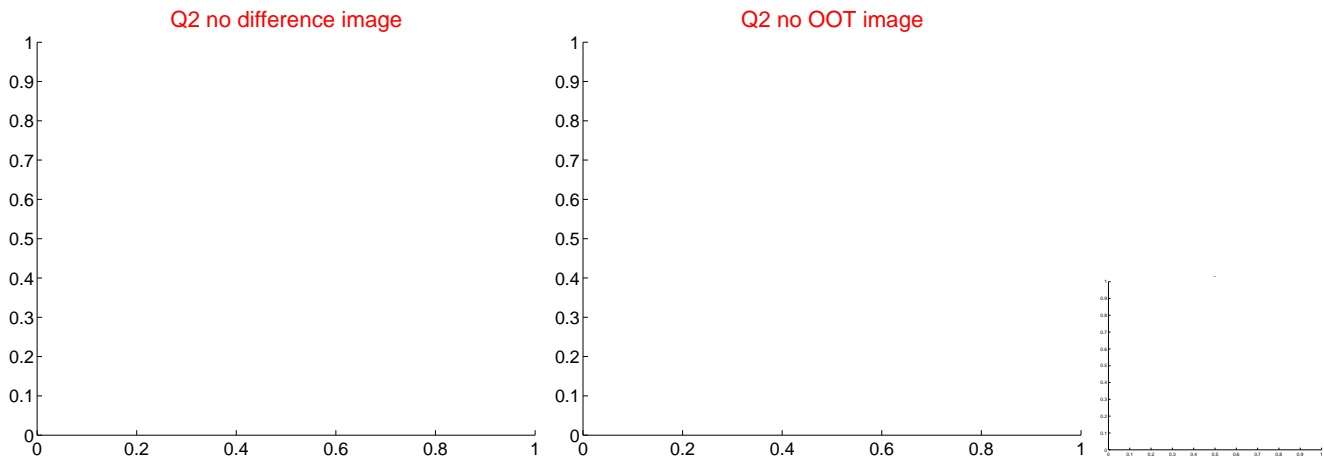
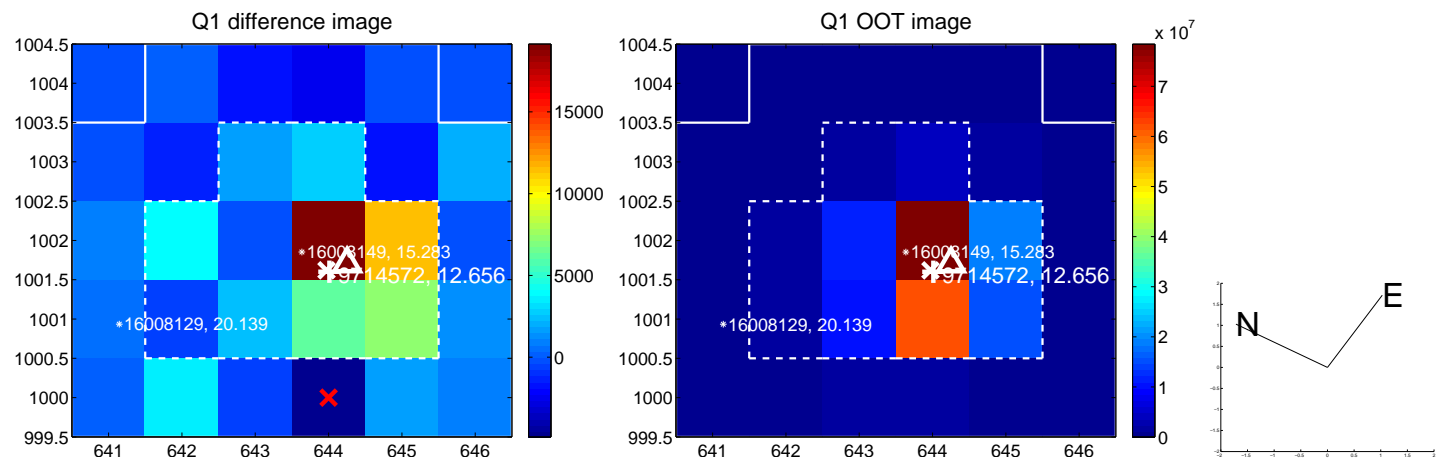
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.612 ± 1.145	1.41	-1.360 ± 1.397	-0.865 ± 0.426
PRF-fit source offset from KIC position	1.698 ± 1.054	1.61	-1.331 ± 1.316	-1.054 ± 0.429
photometric centroid source offset	0.91 ± 0.89	1.02	0.82 ± 0.83	0.38 ± 1.11

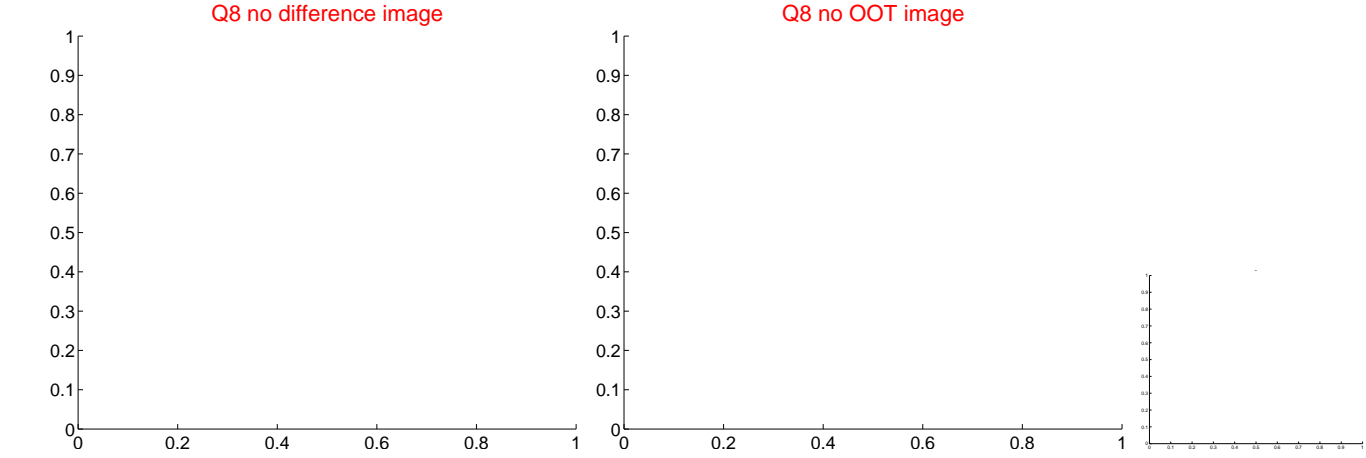
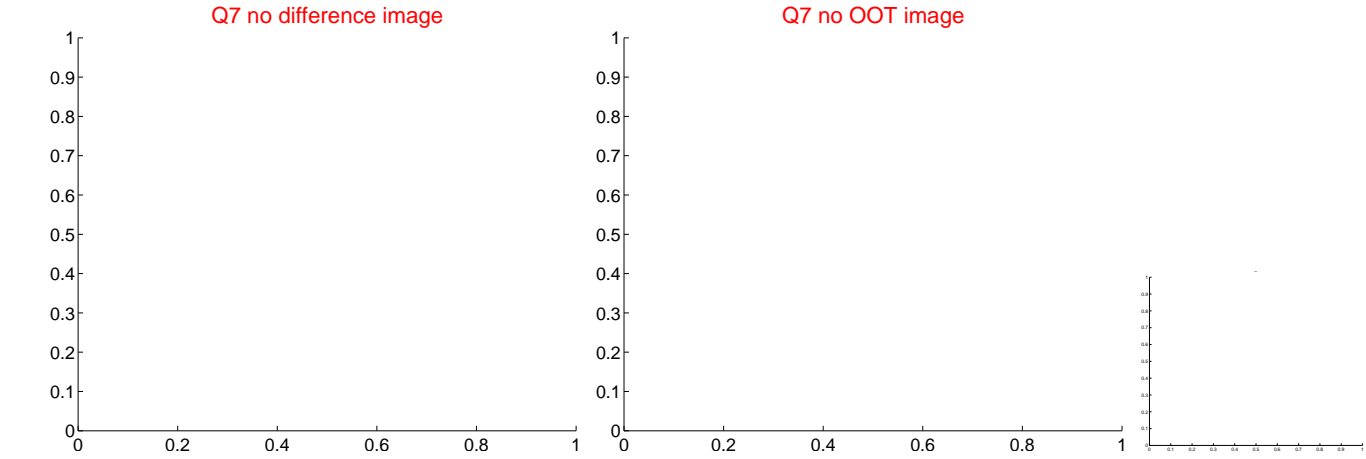
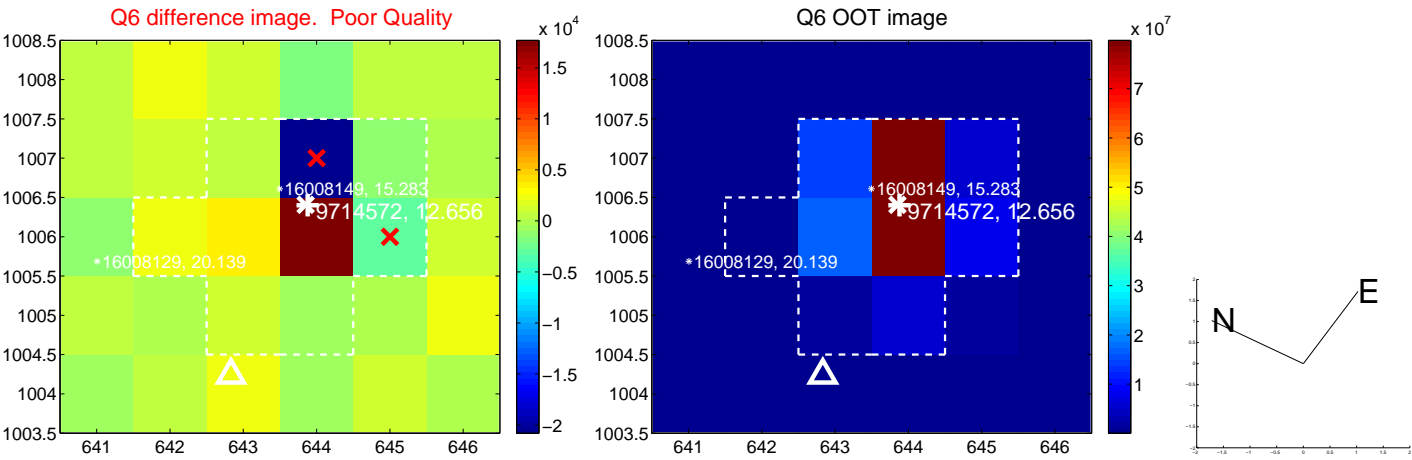
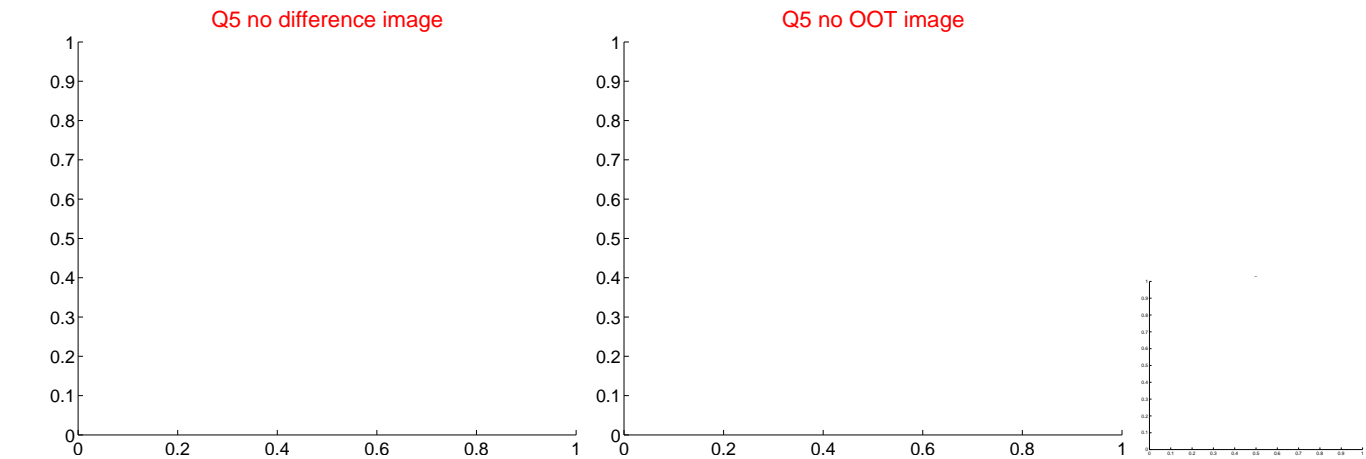


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

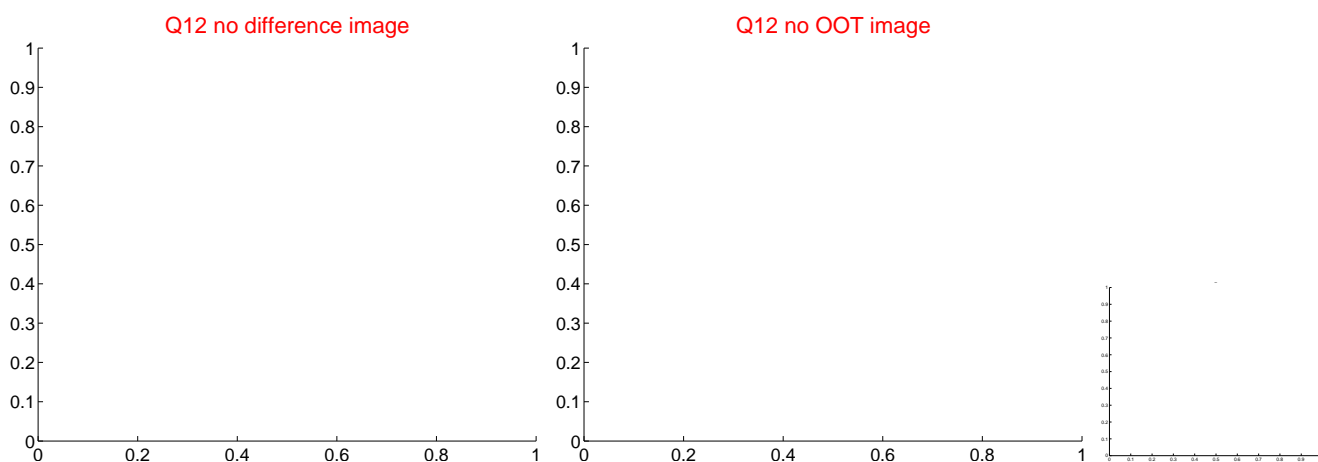
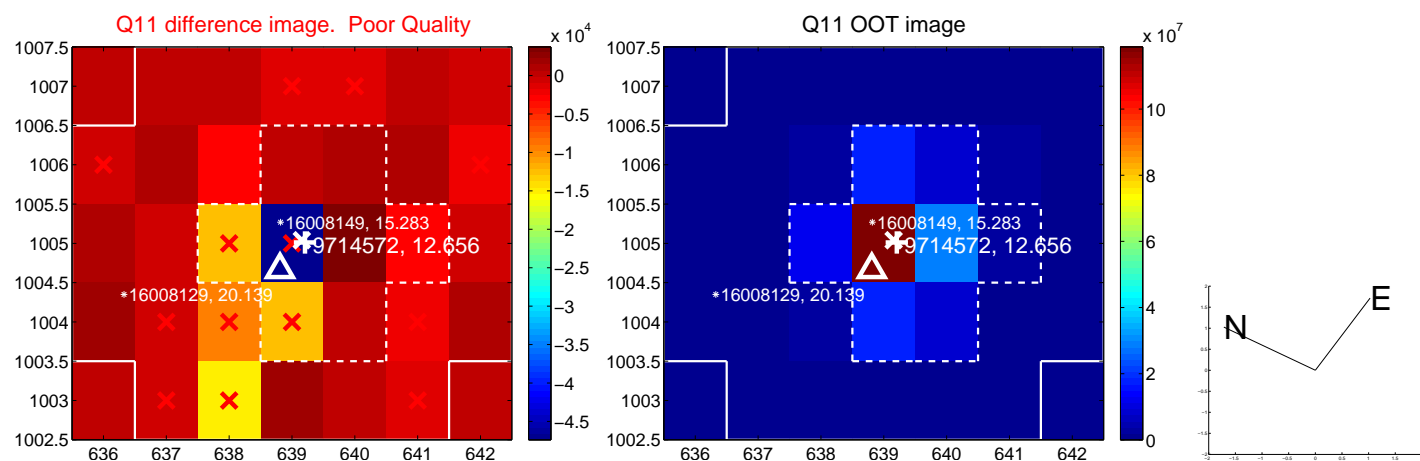
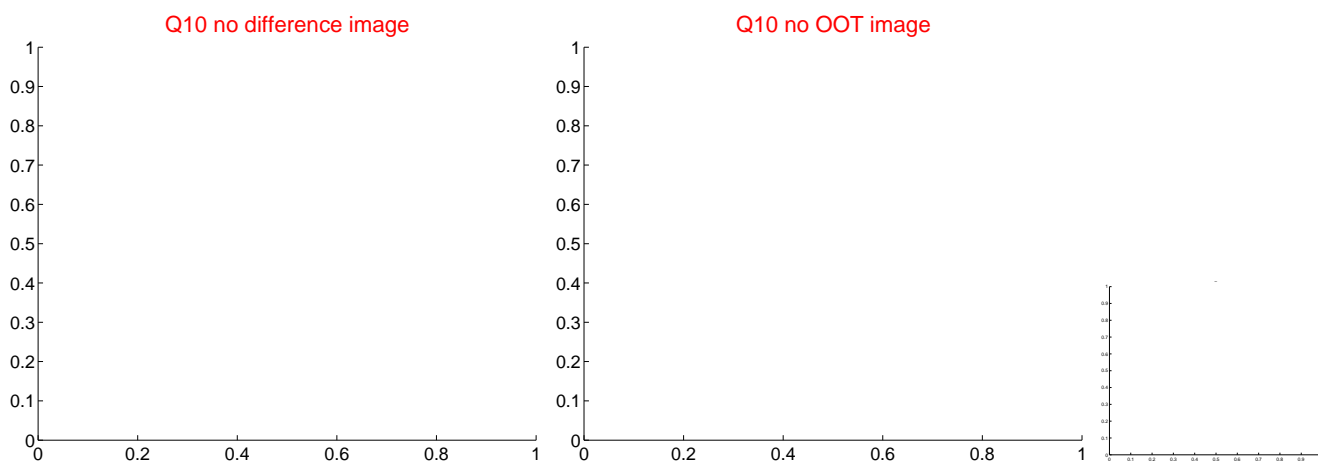
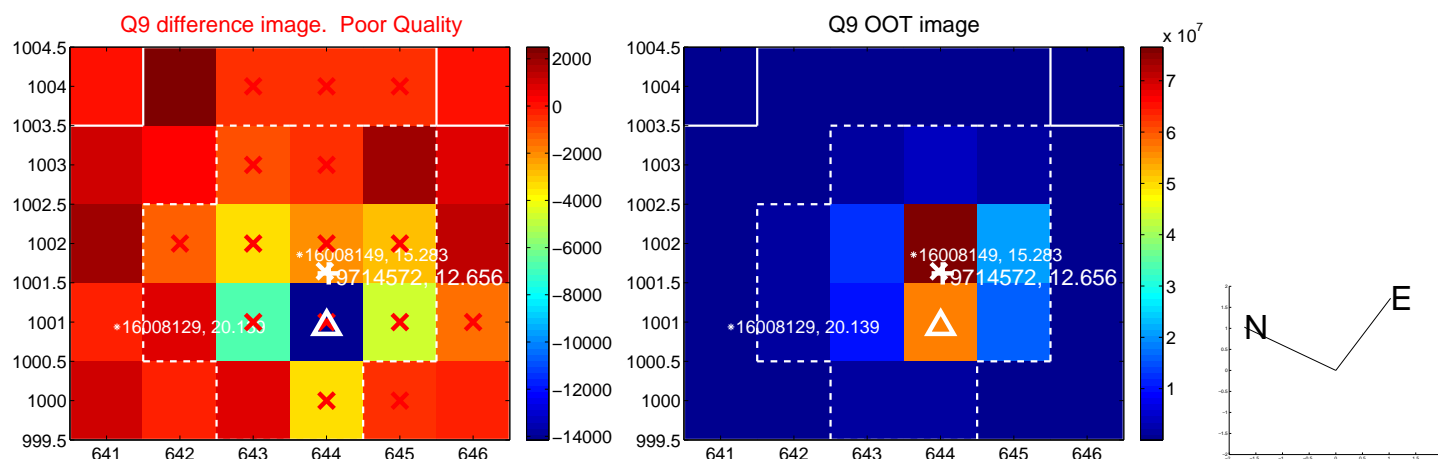
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



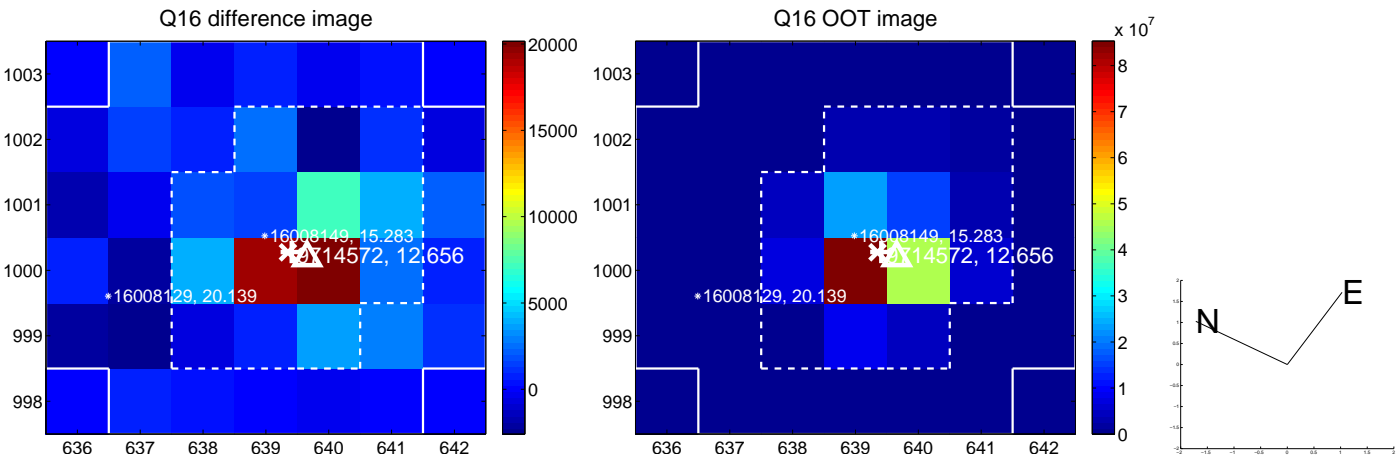
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



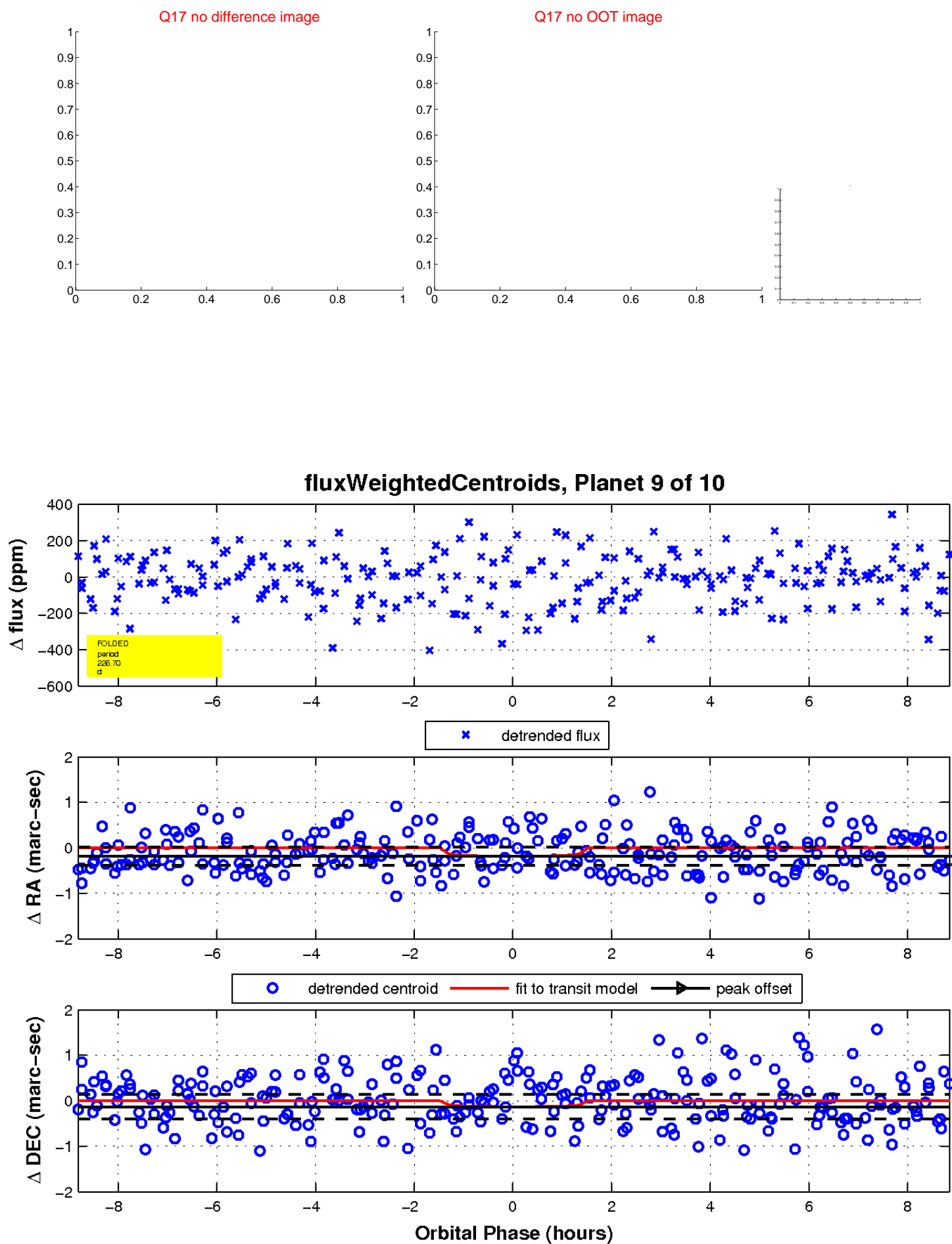
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

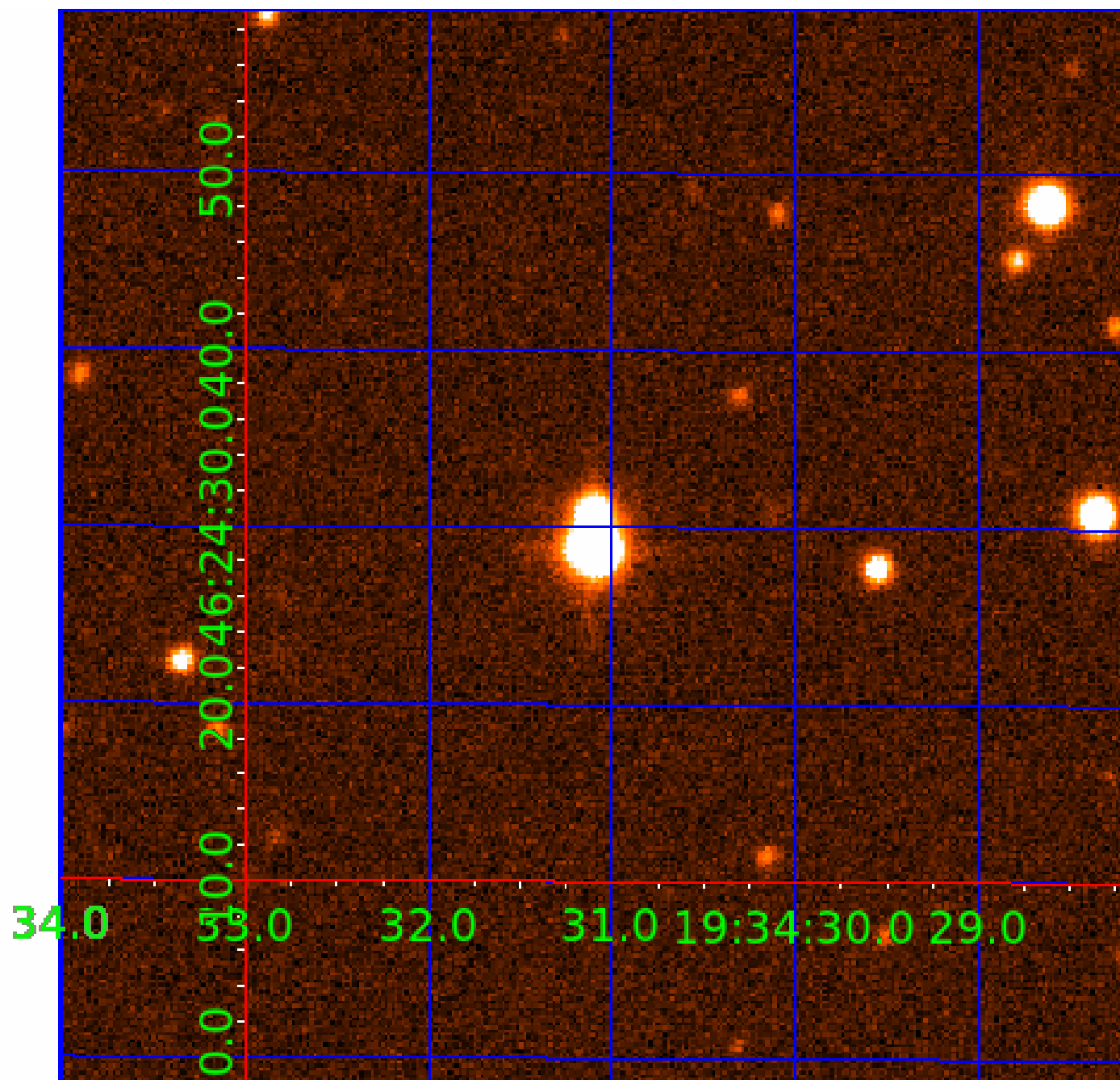


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value



UKIRT Image

Declination



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})
009714572-01	OBS	No	2.333366	132.870551	41.4	8.332	9.8	11.4	1.79	7191	2.31	5336.90
009714572-02	OBS	No	243.129671	253.283211	101.1	3.752	10.9	3.0	1.79	7191	1.93	10.88
009714572-03	OBS	No	450.553342	266.283433	369.2	15.659	9.1	8.4	1.79	7191	3.78	4.78
009714572-04	OBS	No	2.333568	133.625316	22.3	5.715	9.0	9.2	1.79	7191	1.00	5336.29
009714572-05	OBS	No	90.741543	195.168891	99.1	7.260	14.4	4.2	1.79	7191	2.04	40.51
009714572-06	OBS	No	144.996638	223.254785	268.5	5.149	10.6	8.8	1.79	7191	3.39	21.68
009714572-07	OBS	No	90.738517	194.477009	198.9	9.000	9.7	-1.0	1.79	7191	2.56	40.51
009714572-08	OBS	No	625.297546	263.126353	658.3	25.105	9.3	8.2	1.79	7191	5.80	3.09
009714572-09	OBS	No	226.704703	148.615902	239.1	2.968	9.1	6.3	1.79	7191	3.05	11.95
009714572-10	OBS	No	109.230974	193.655700	182.8	17.193	9.0	6.5	1.79	7191	2.84	31.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714572-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009714572-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009714572-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009714572-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009714572-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009714572-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_MEAS
009714572-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD— CENT_NOFITS
009714572-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
009714572-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS
009714572-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST

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

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

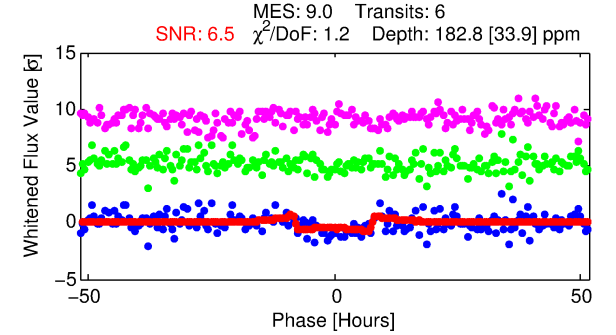
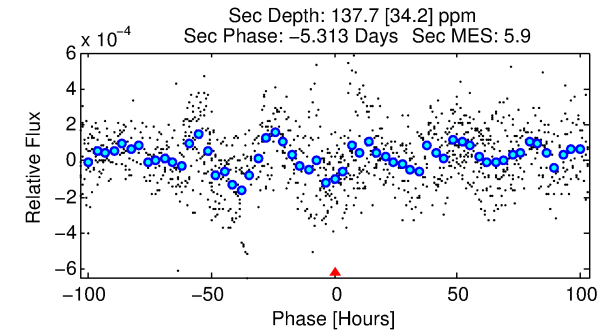
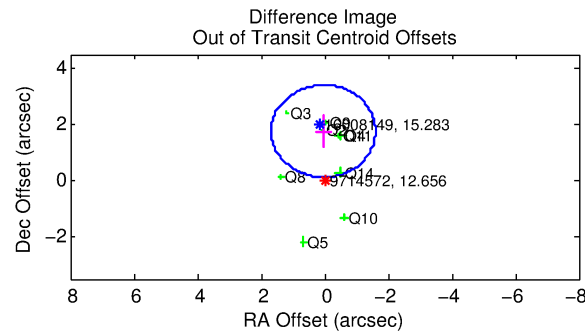
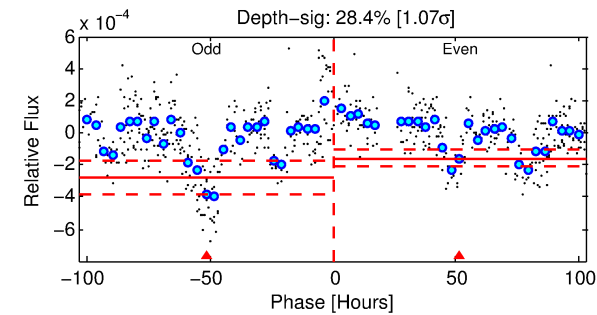
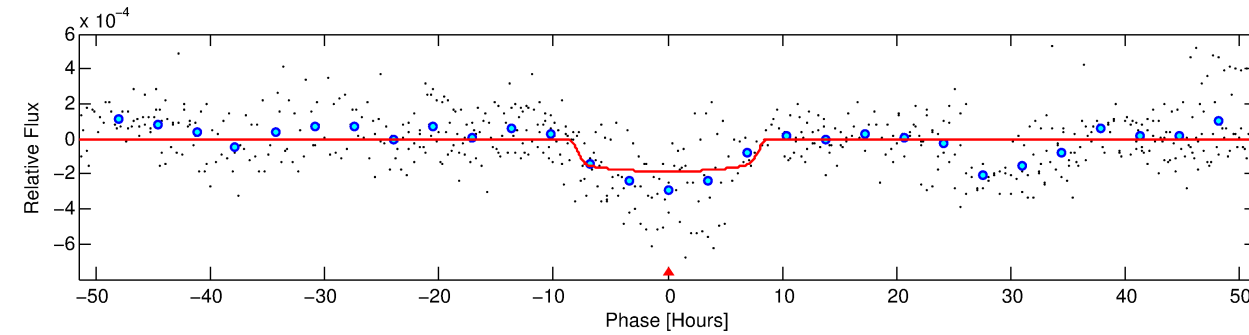
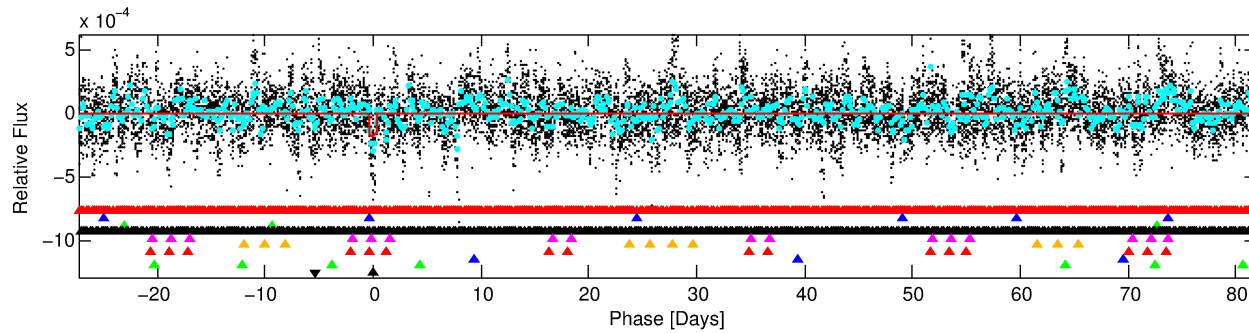
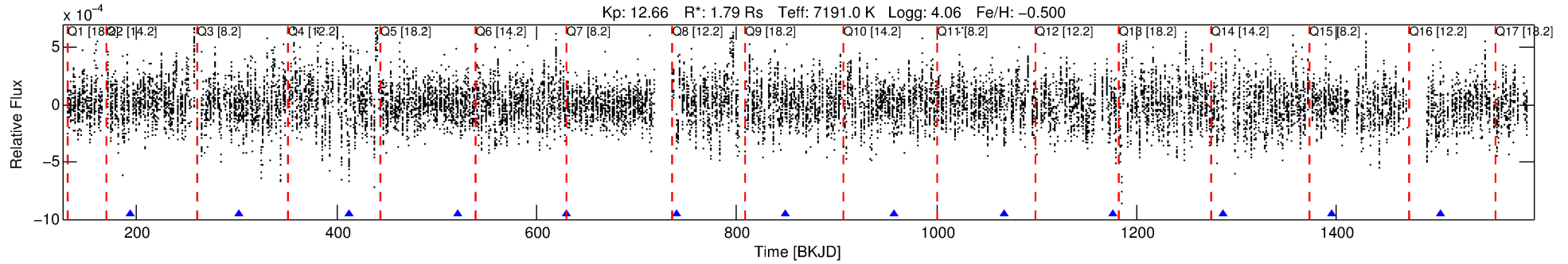
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009714572-10

No Significant Match Found

DV One-Page Summary

KIC: 9714572 Candidate: 10 of 10 Period: 109.231 d



DV Fit Results:

Period = 109.23097 [0.00326] d
Epoch = 193.6557 [0.0225] BKJD
Rp/R* = 0.0145 [0.0018]
a/R* = 21.60 [8.98]
b = 0.91 [0.08]
Seff = 31.63 [15.30]
Teq = 605 [73] K
Rp = 2.84 [0.98] Re
a = 0.4937 [0.1446] AU
Ag = 2292.17 [1309.42] [1.75 σ]
Teffp = 6469 [626] K [9.31 σ]

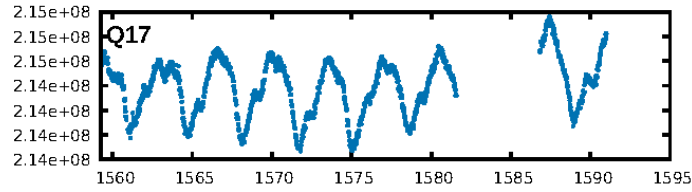
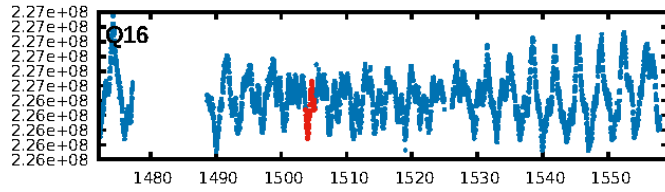
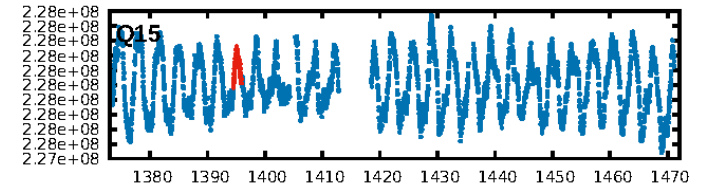
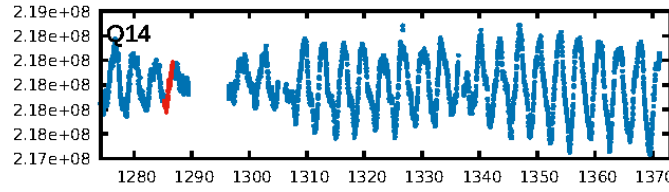
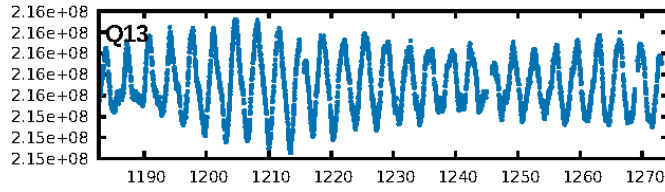
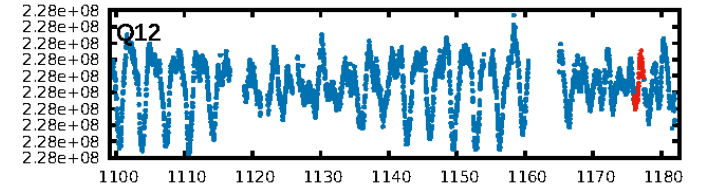
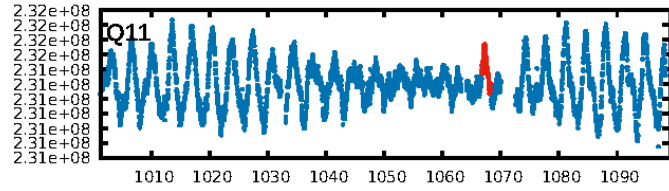
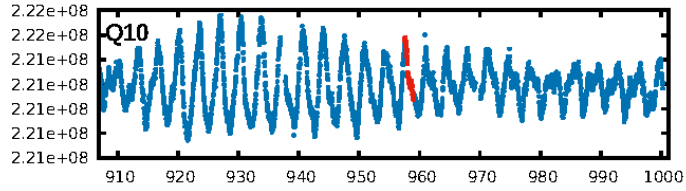
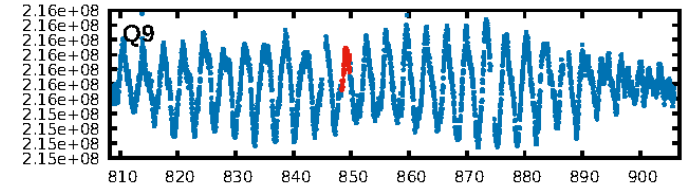
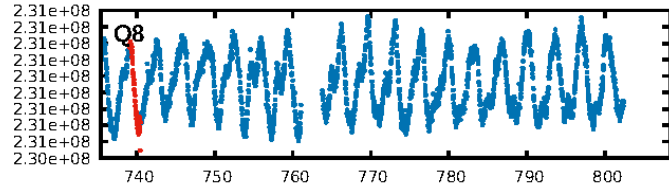
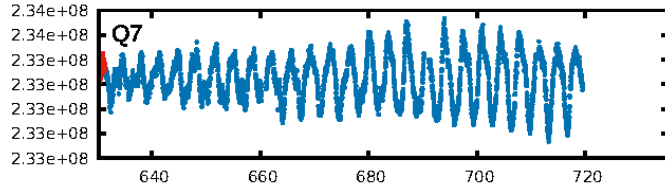
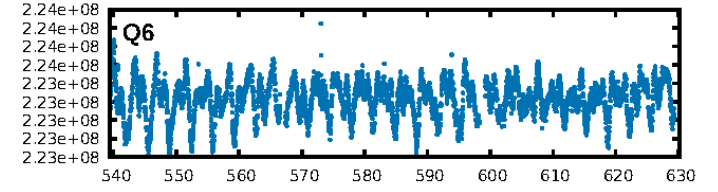
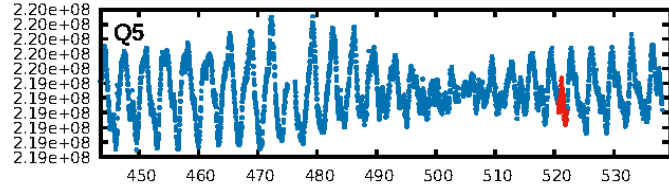
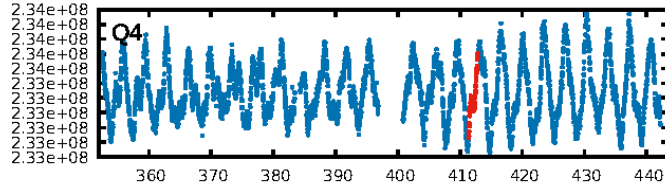
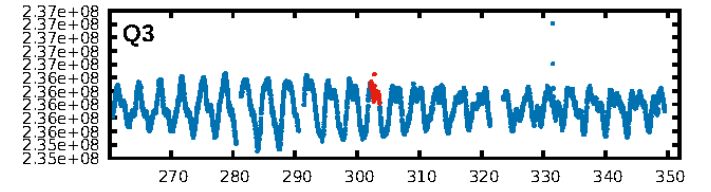
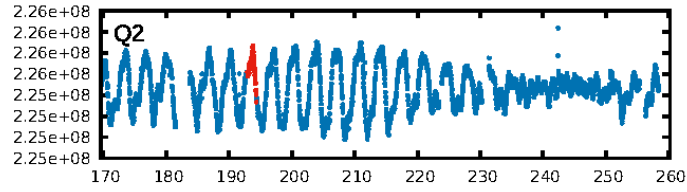
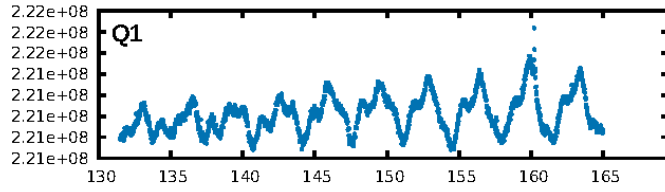
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.78 σ]
LongPeriod-sig: 100.0% [47.83 σ]
ModelChiSquare2-sig: 2.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.03856
Centroid-sig: 18.5%
Centroid-so: 0.756 arcsec [0.76 σ]
OotOffset-rm: 1.764 arcsec [3.22 σ]
KicOffset-rm: 1.622 arcsec [3.03 σ]
OotOffset-st: 3/2/2/2 [9]
KicOffset-st: 3/2/2/2 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.00 [0/9]

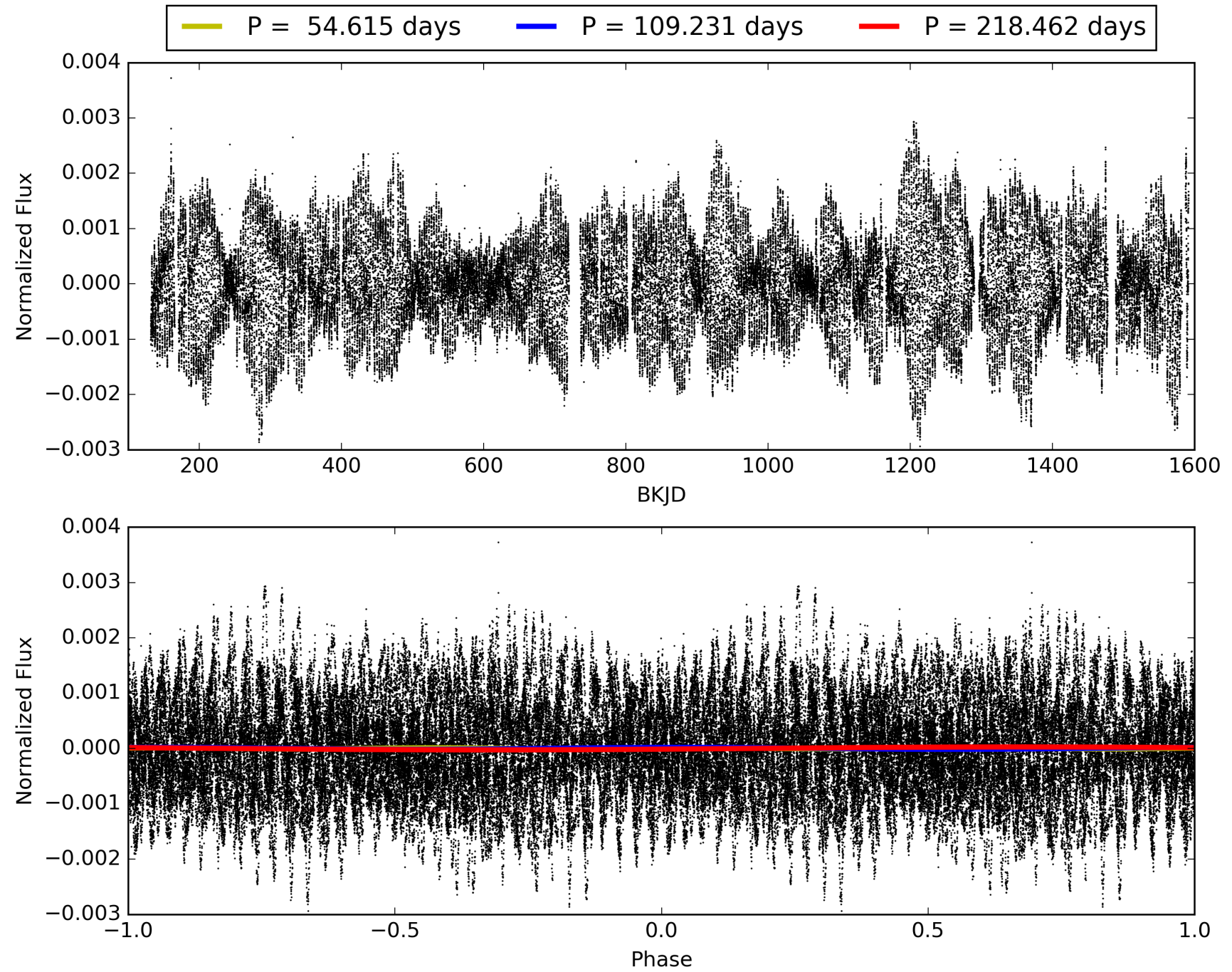
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:35:57 Z

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

TCE 009714572-10, PDC Light Curves

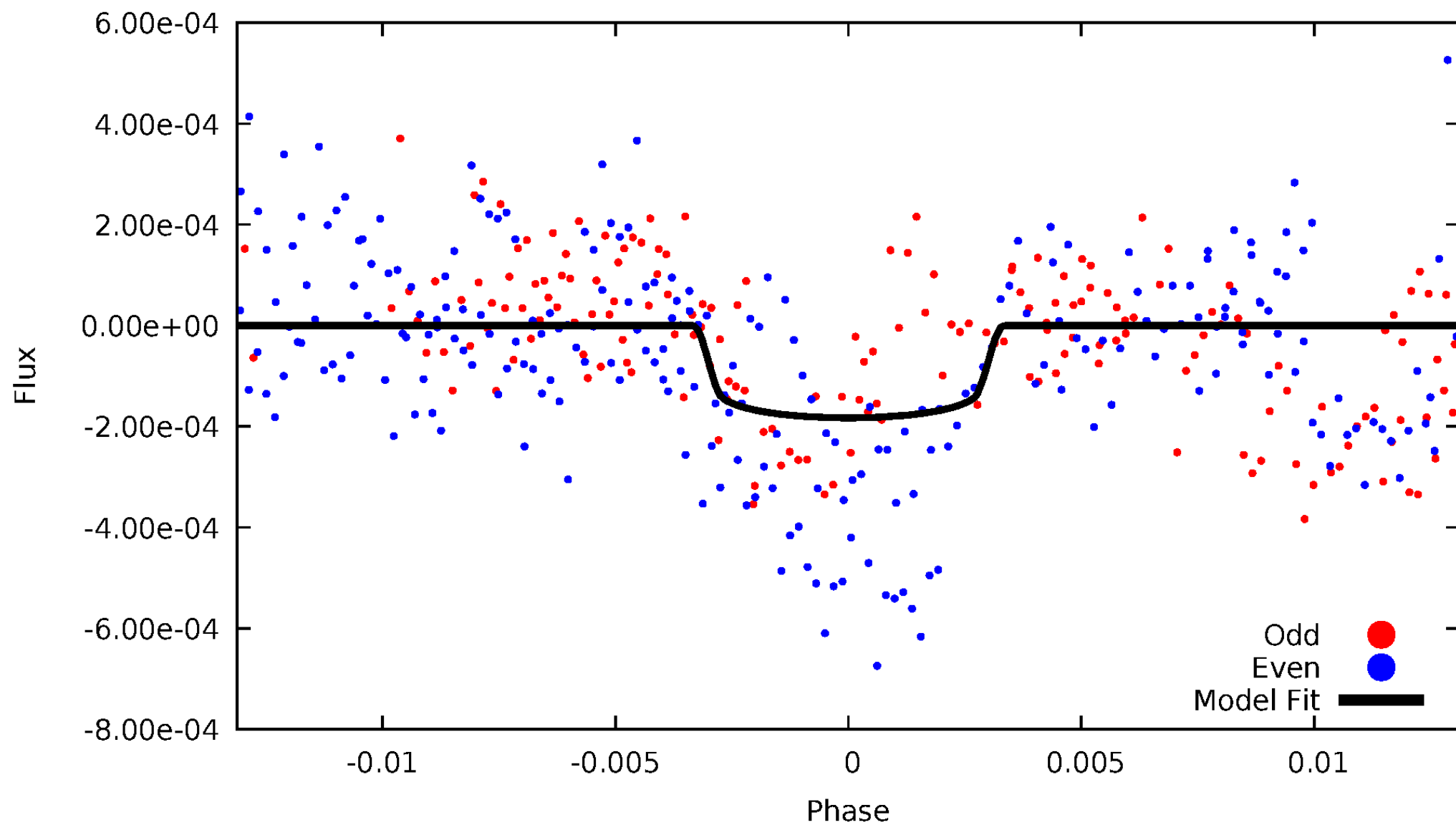


TCE 009714572-10



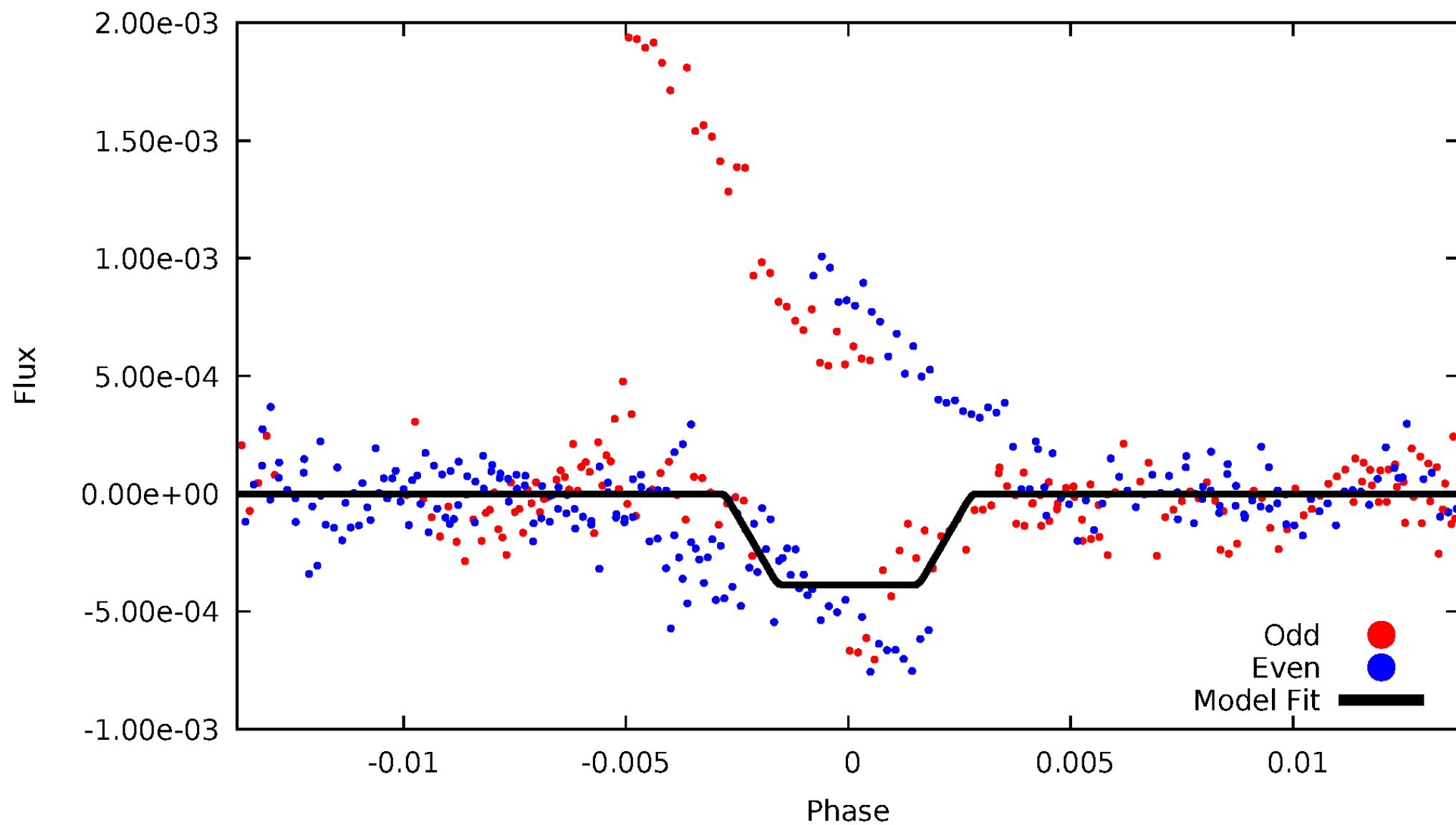
DV Odd/Even

TCE 009714572-10



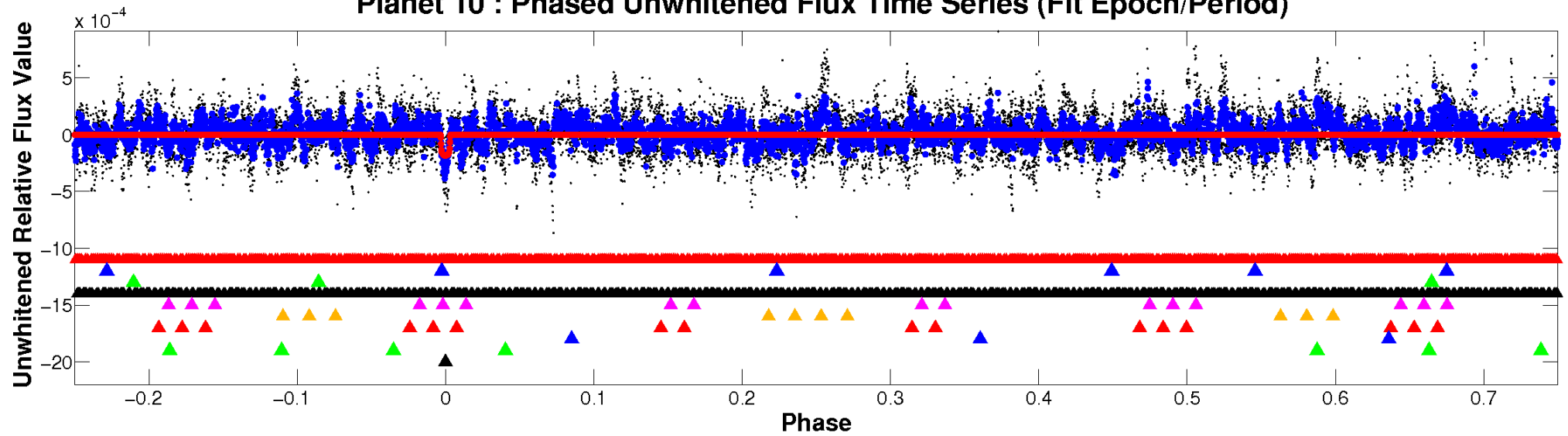
ALT Odd/Even

TCE 009714572-10

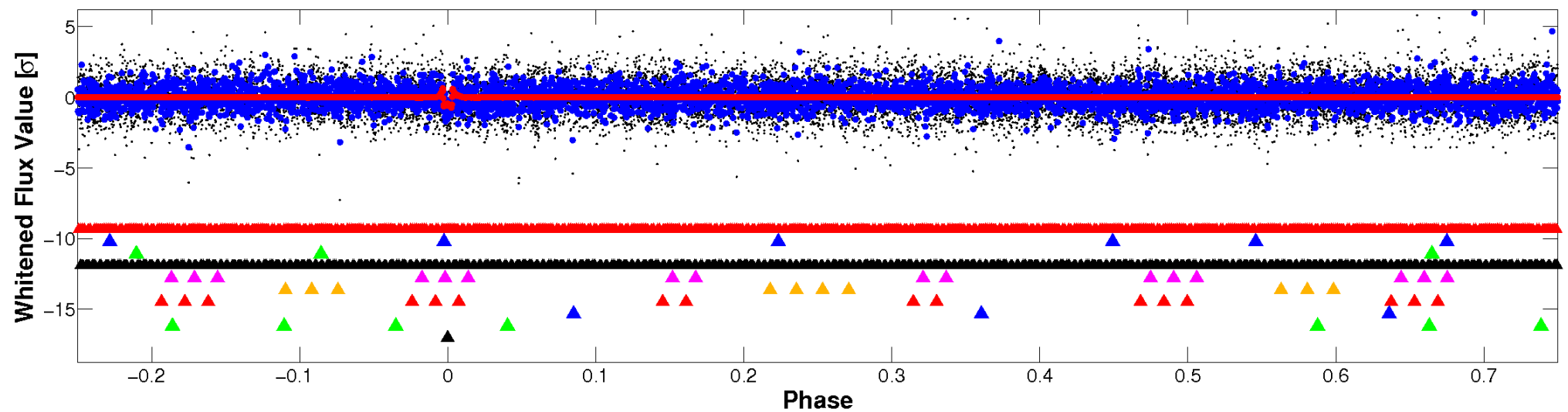


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

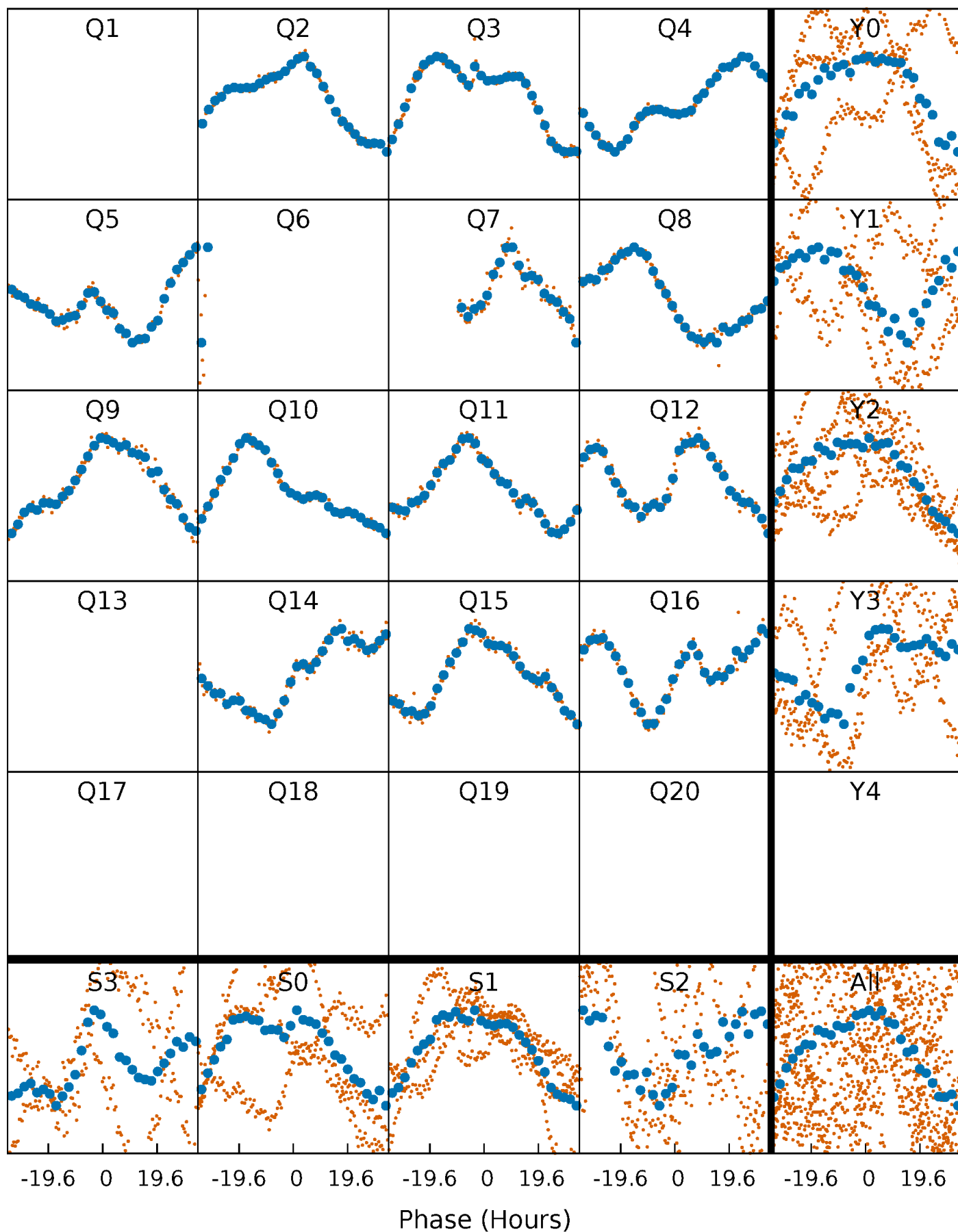


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



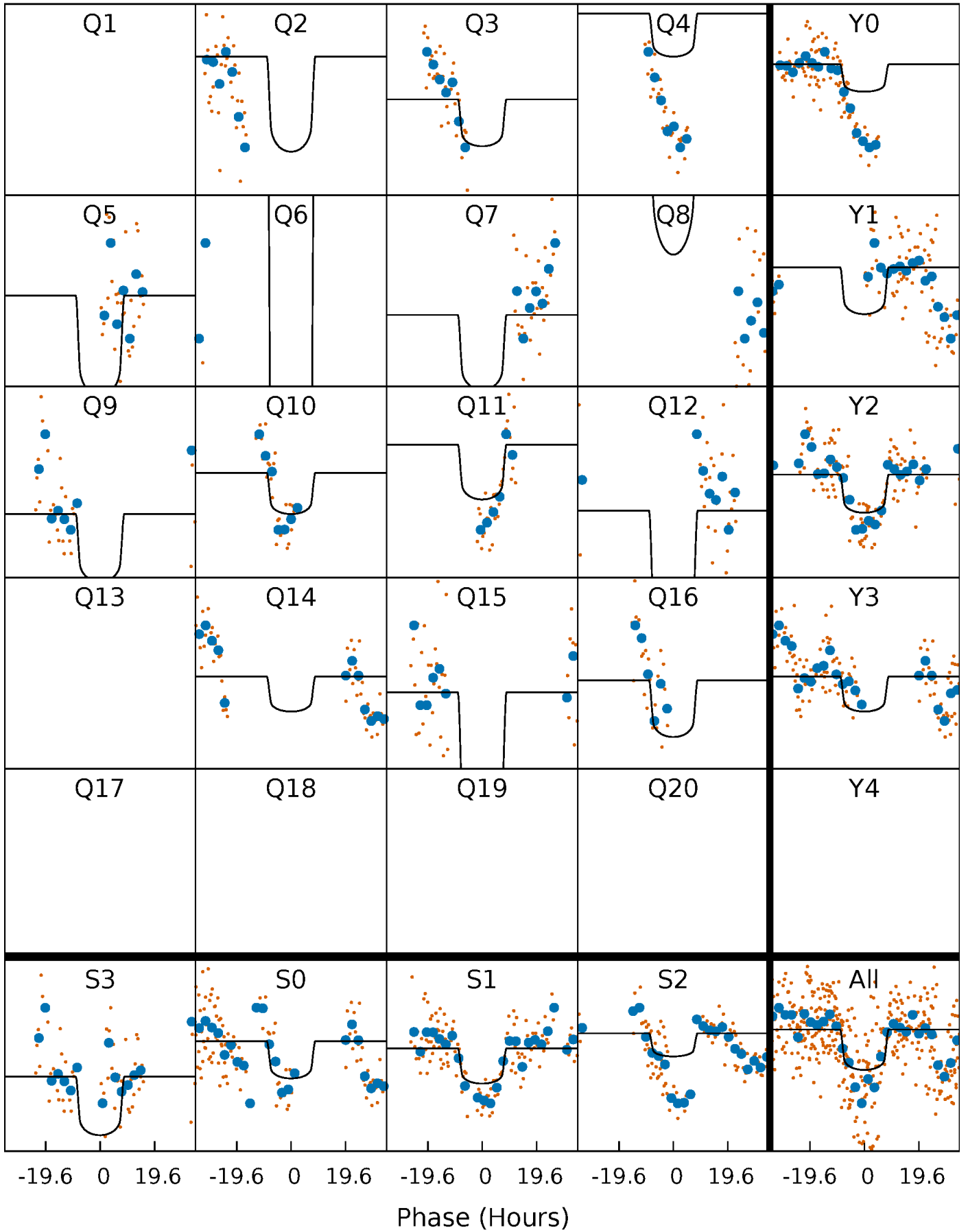
PDC Quarter-Phased Transit Curves

TCE 009714572-10 P=109.230975 Days $T_0=193.655700$ (BKJD)



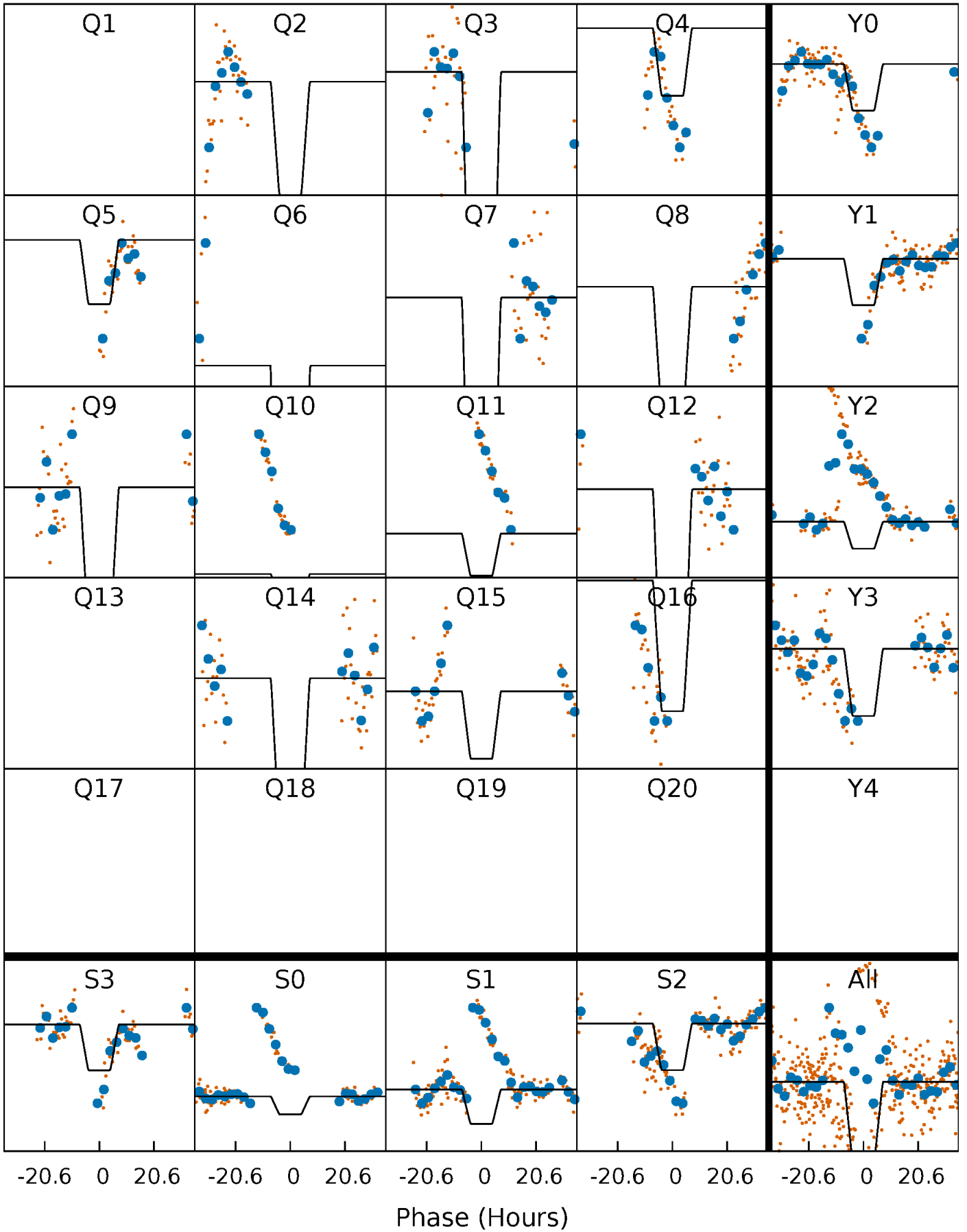
DV Quarter-Phased Transit Curves

TCE 009714572-10 P=109.230975 Days $T_0=193.655700$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

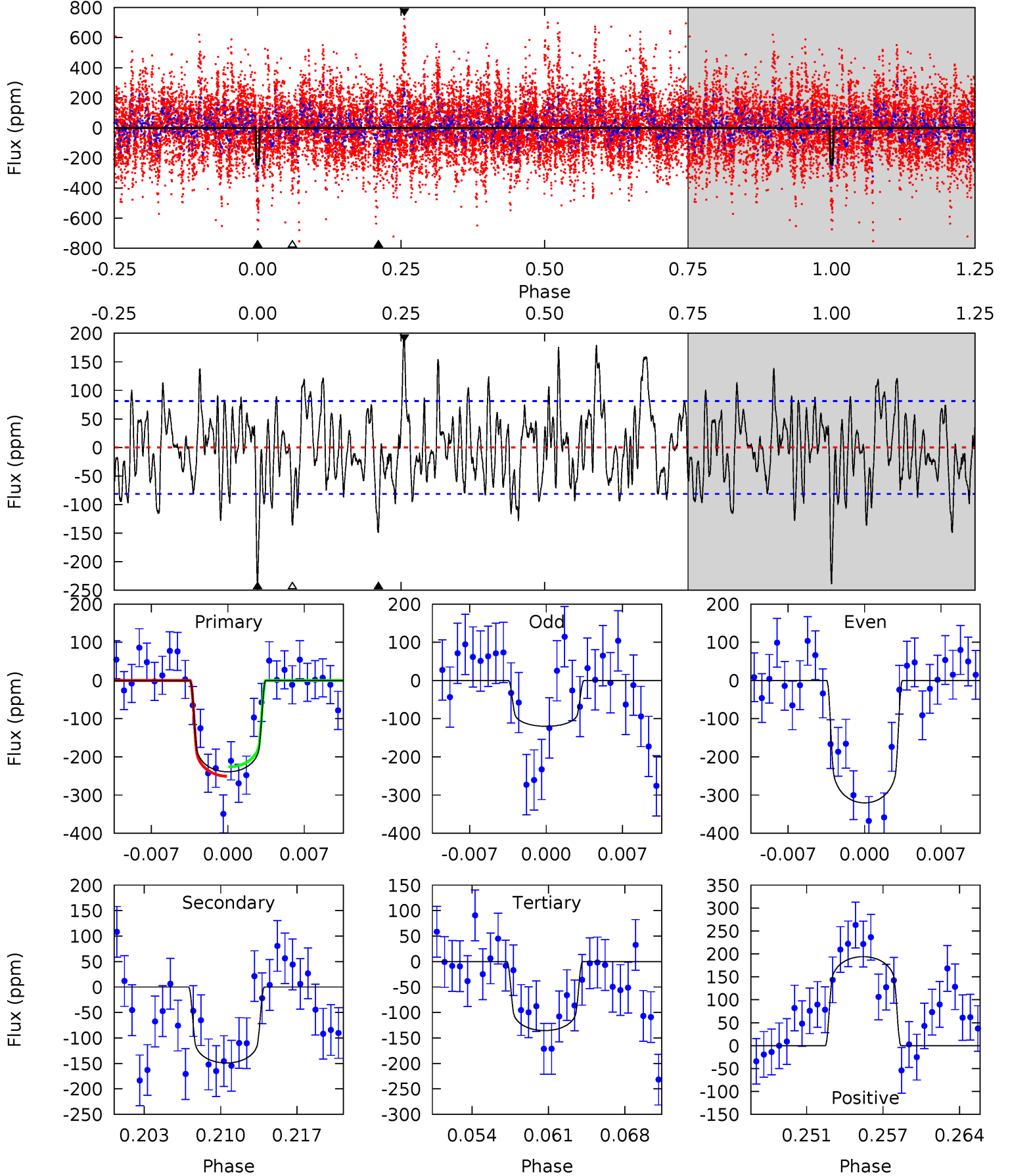
TCE 009714572-10 P=109.231001 Days $T_0=193.669143$ (BKJD)



DV Model-Shift Uniqueness Test

009714572-10, P = 109.230975 Days, E = 84.424725 Days

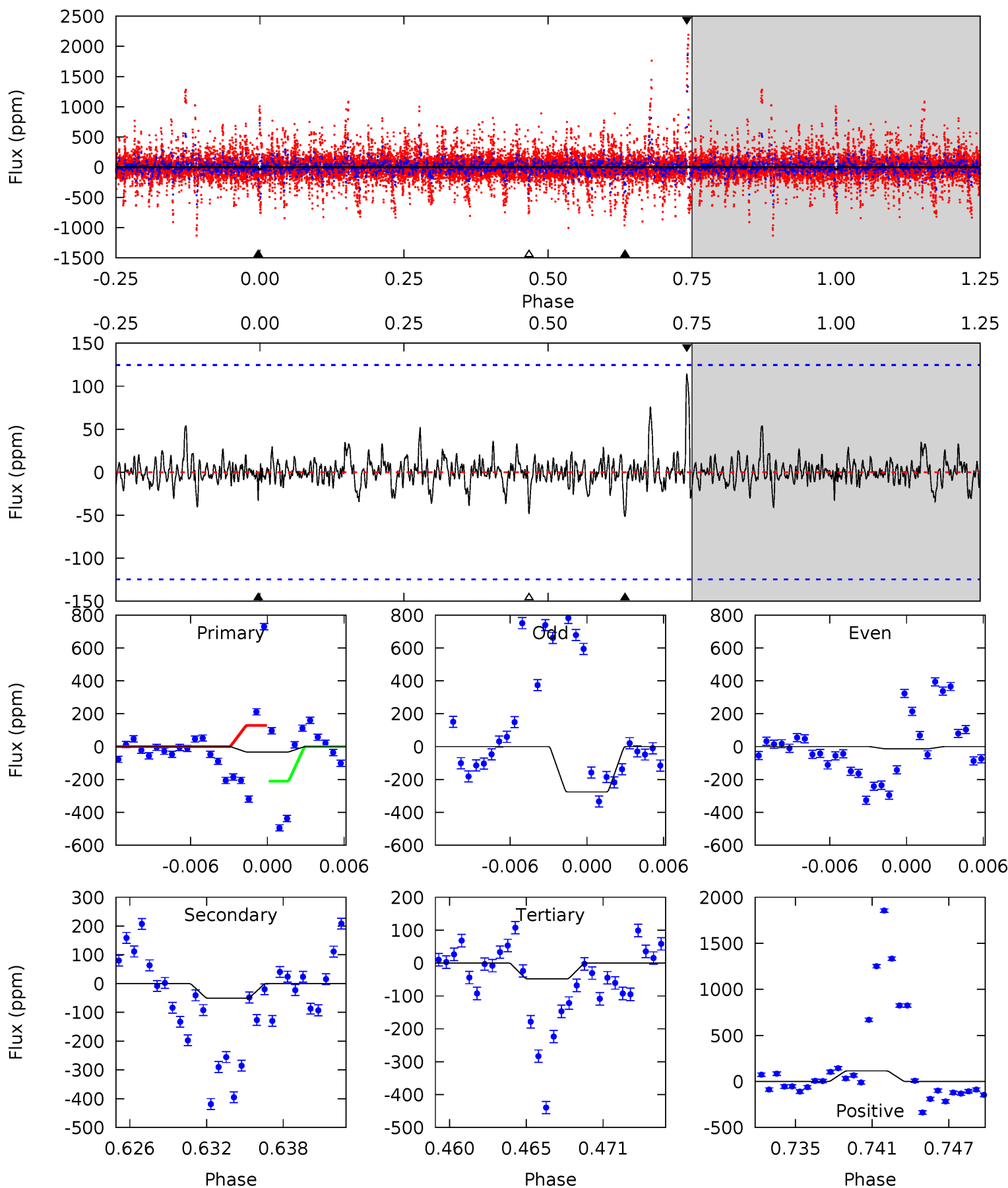
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	9.34	8.49	12.2	5.10	2.71	3.65	6.49	2.83	0.85	-2.82	6.19	0.97	0.45	0.77



Alt Model-Shift Uniqueness Test

009714572-10, P = 109.231001 Days, E = 84.438142 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.36	2.11	1.98	4.71	5.13	2.76	0.59	-0.62	-3.35	0.13	-2.60	4.58	0.06	0.69	1.75



Stellar Parameters For KIC 009714572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7191^{+228}_{-304}	$4.059^{+0.260}_{-0.160}$	$-0.500^{+0.250}_{-0.300}$	$1.794^{+0.472}_{-0.577}$	$1.343^{+0.181}_{-0.226}$	$0.328^{+0.501}_{-0.137}$
	+3%/-4%	+6%/-4%	+50%/-60%	+26%/-32%	+13%/-17%	+153%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009714572-10 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-149 ± 16	$2.79^{+0.57}_{-0.57}$	838^{+69}_{-71}	6574^{+535}_{-494}	2554^{+1523}_{-774}
Alt.	-51 ± 24	$3.80^{+0.66}_{-0.69}$	841^{+67}_{-75}	4485^{+444}_{-511}	470^{+353}_{-247}

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 $A_{obs} \gg 1.0$

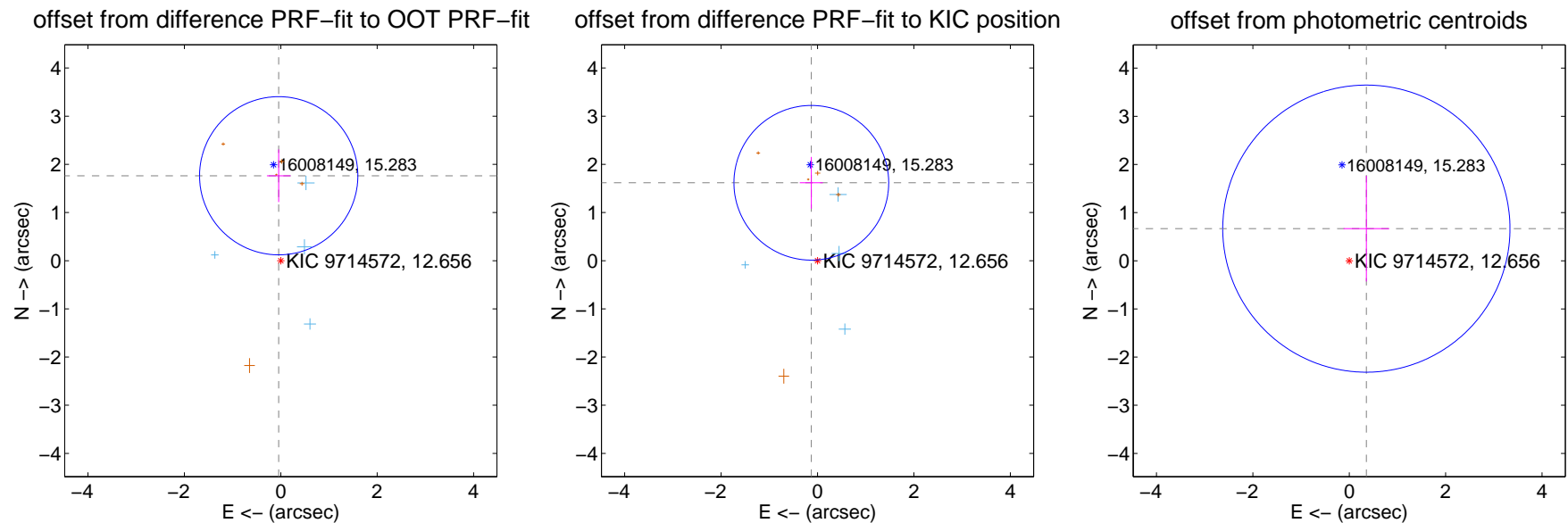
DV Centroid Data

Supplemental centroid analysis for 009714572-10. Kepler magnitude: 12.66. Transit SNR 6.47

There are 4 quarters with good PRF difference image offsets

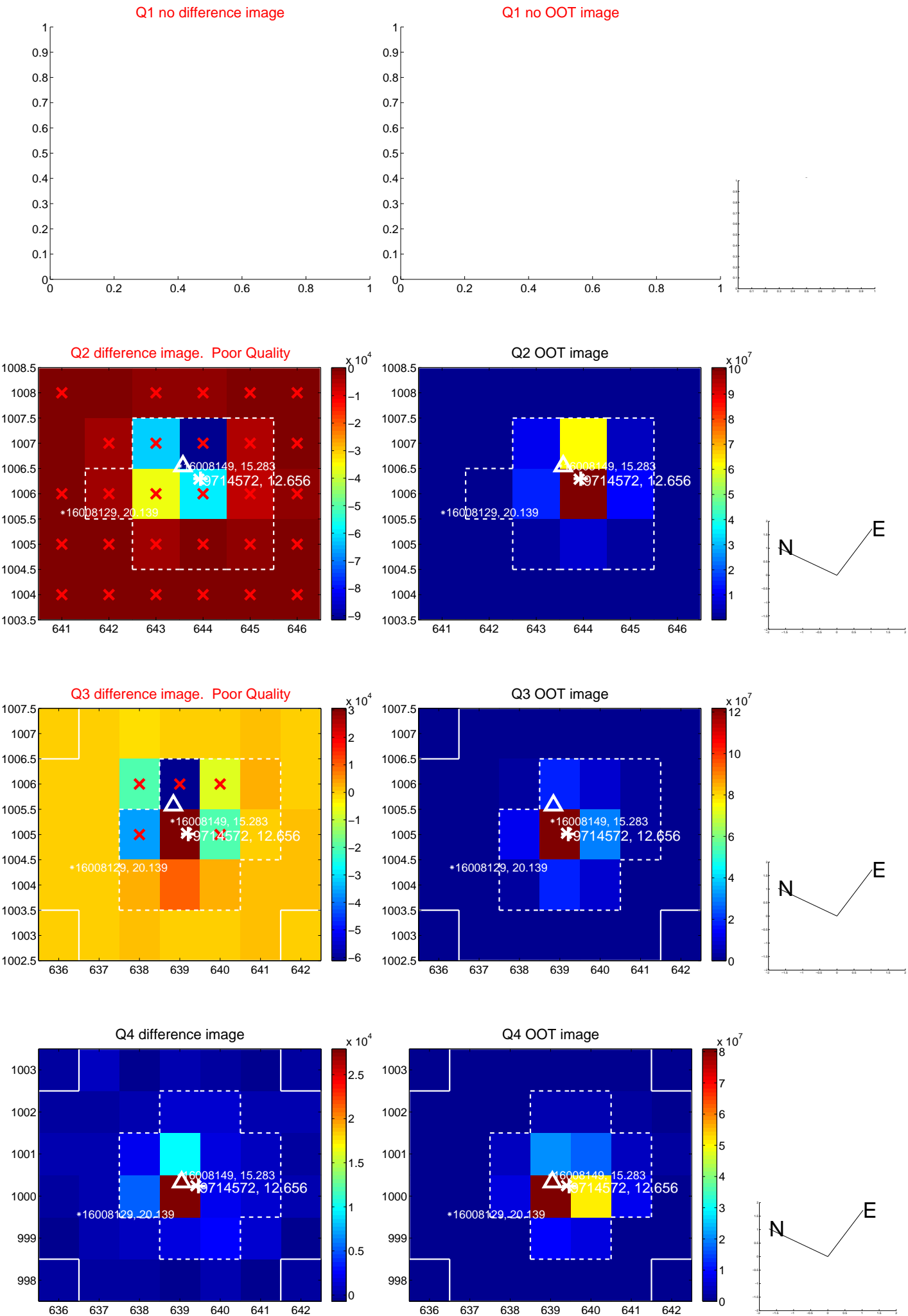
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.764 ± 0.547	3.22	0.043 ± 0.245	1.763 ± 0.547
PRF-fit source offset from KIC position	1.622 ± 0.535	3.03	0.128 ± 0.240	1.617 ± 0.537
photometric centroid source offset	0.76 ± 0.99	0.76	-0.35 ± 0.47	0.67 ± 1.10

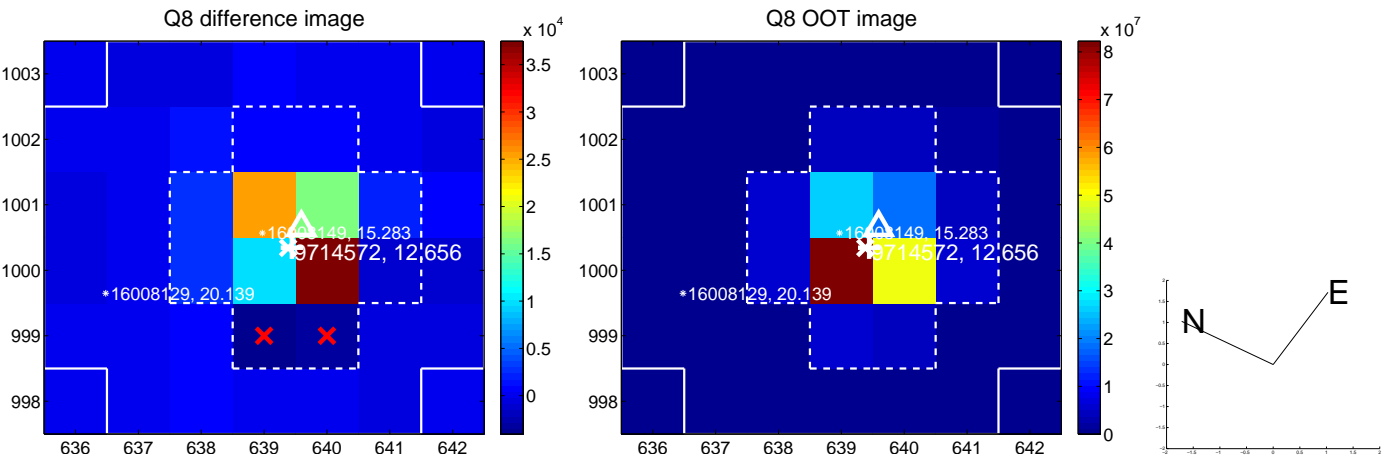
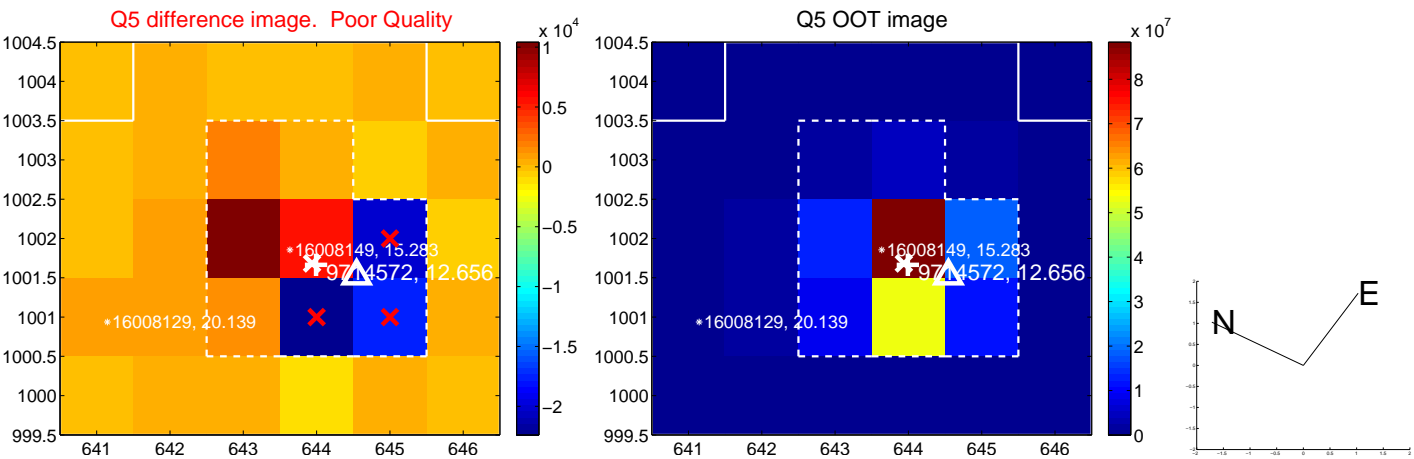


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

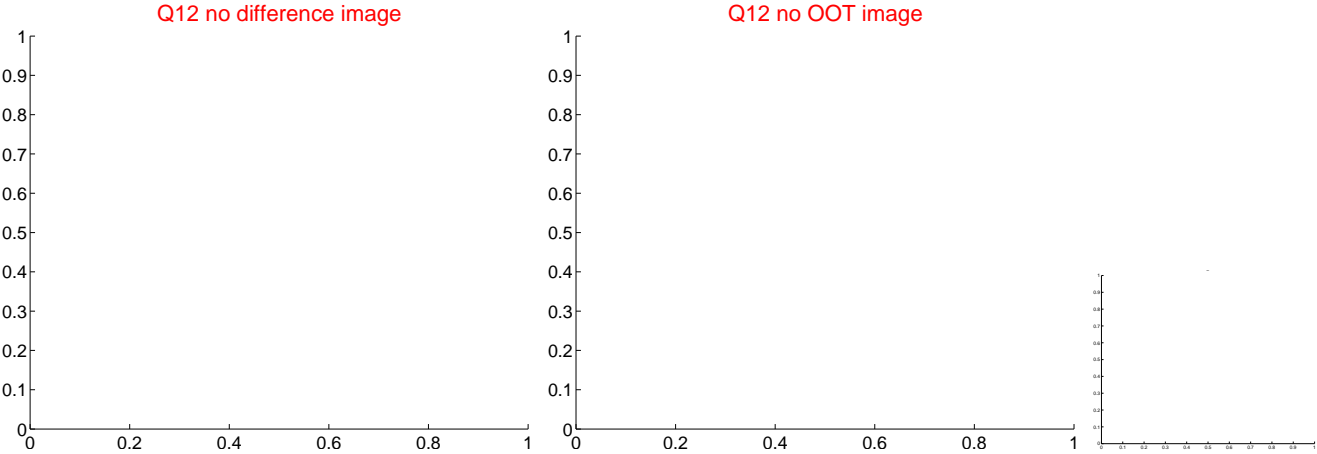
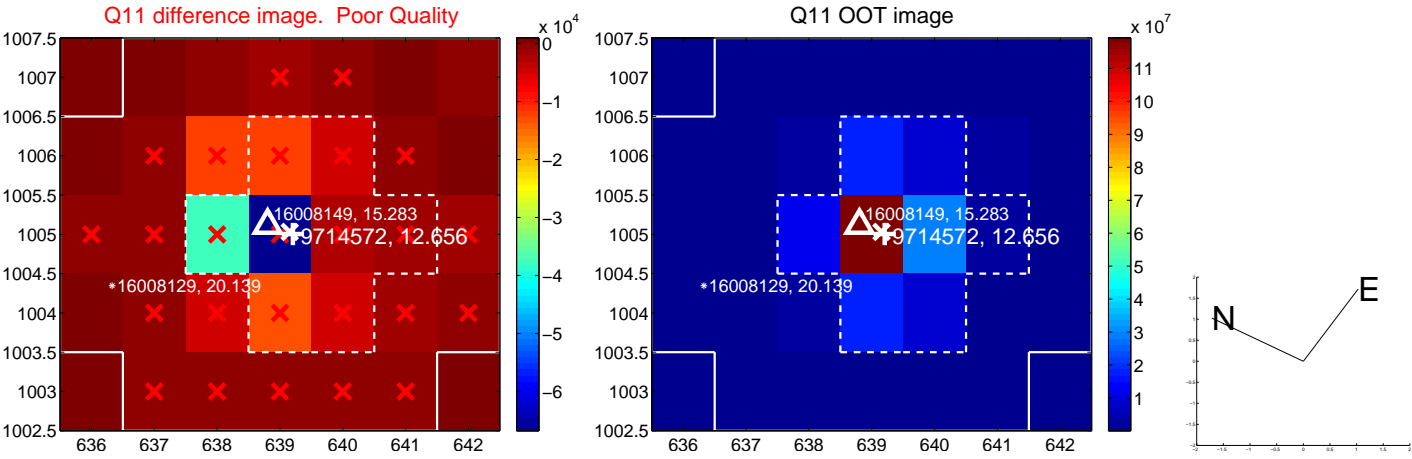
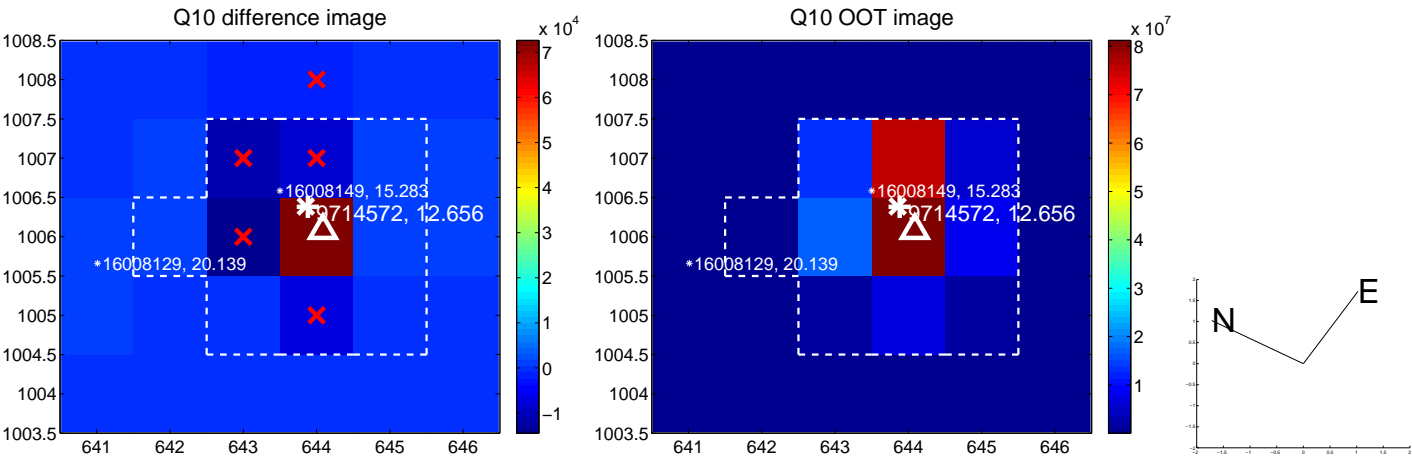
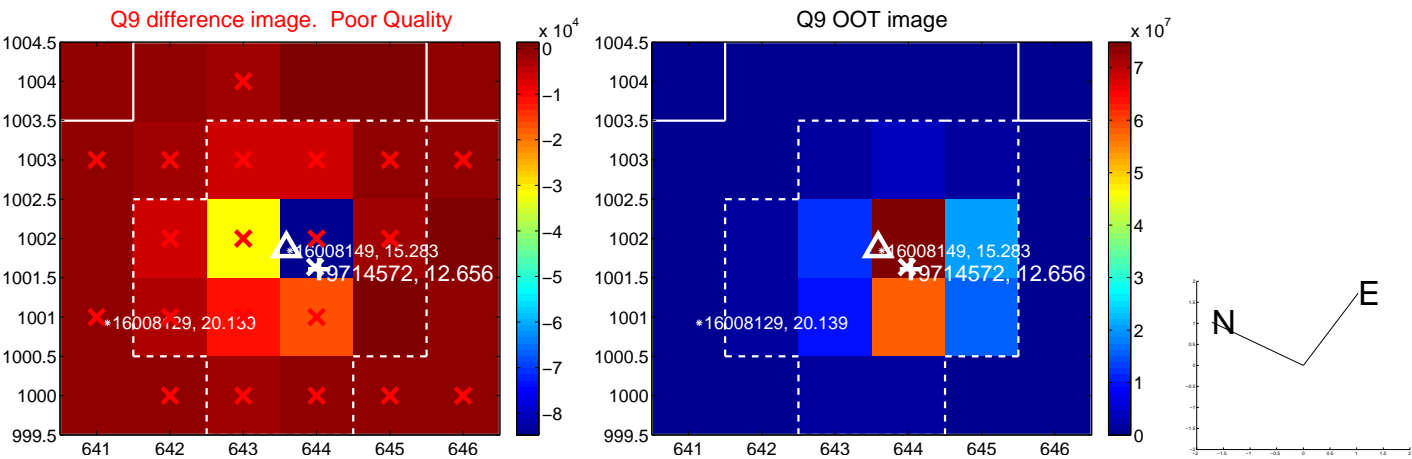
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



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

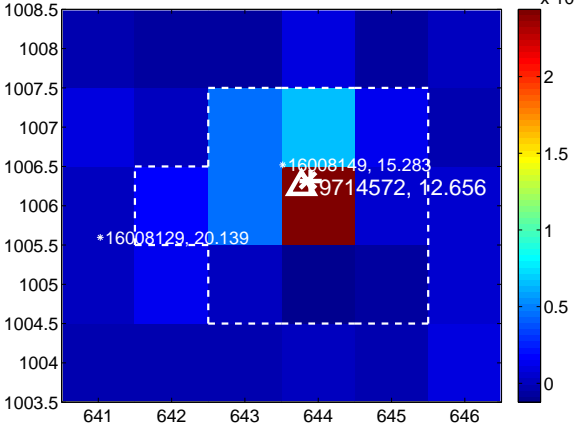
Q13 no difference image



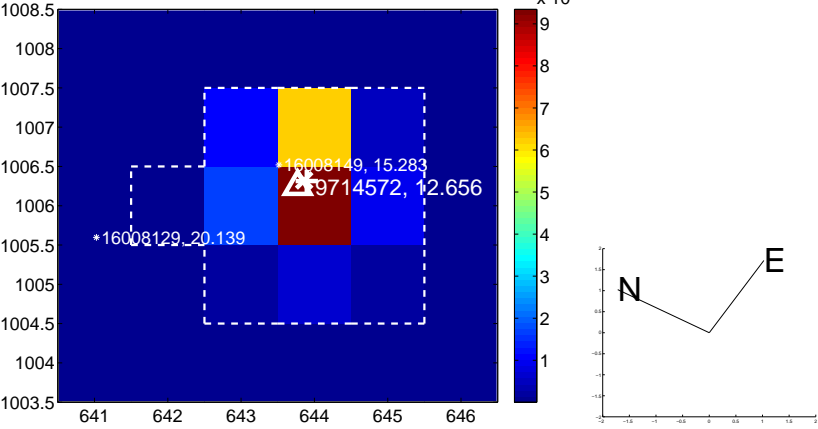
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



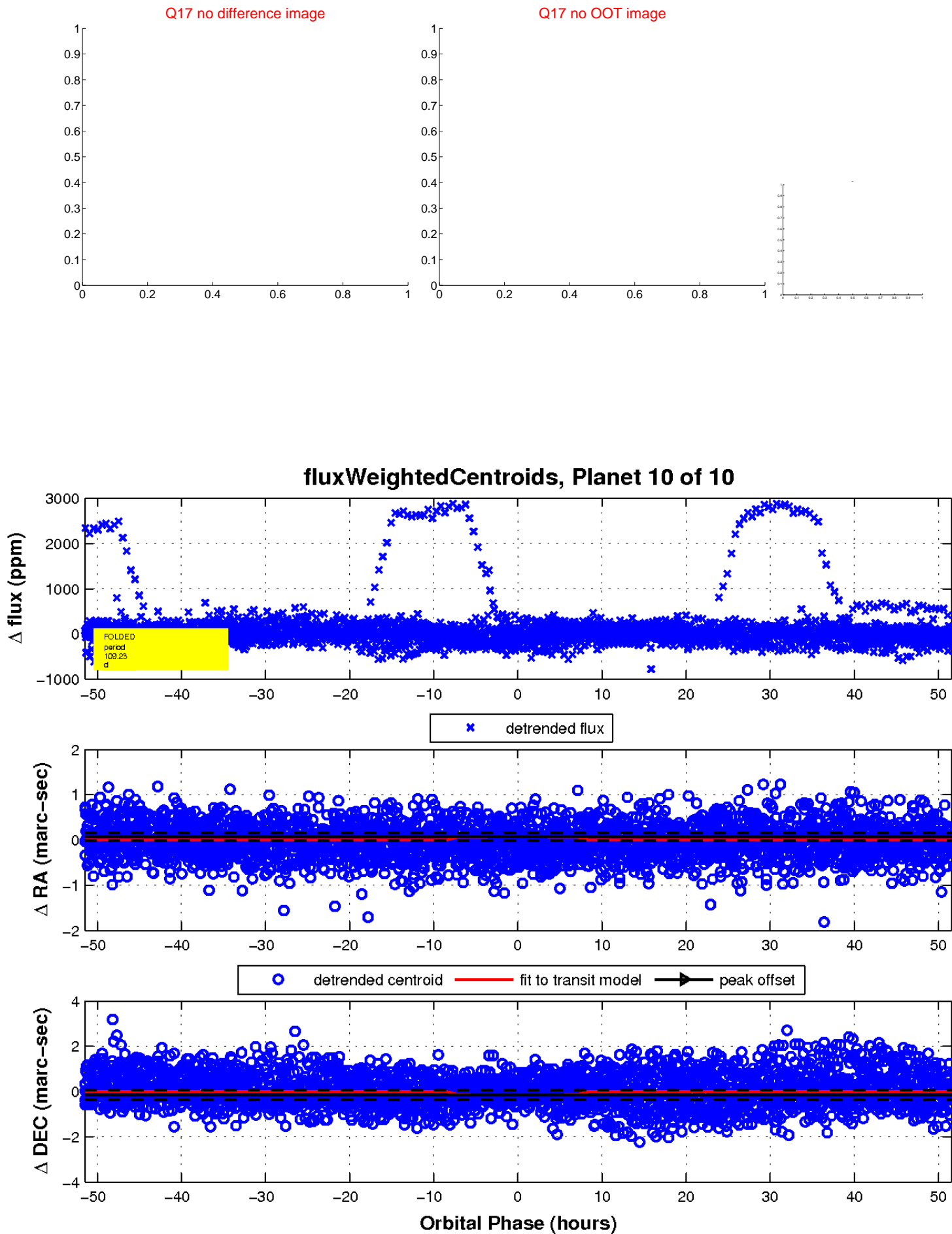
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

