

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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

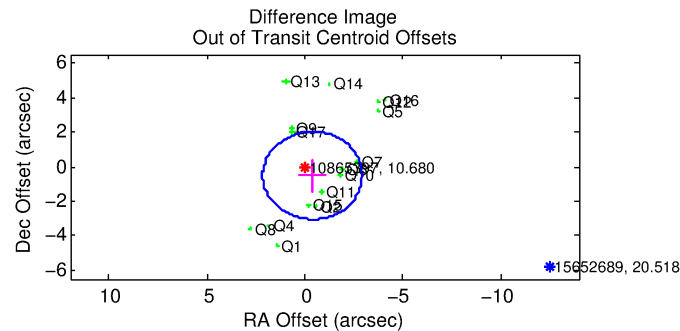
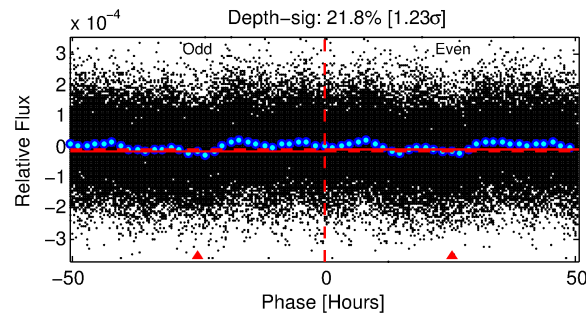
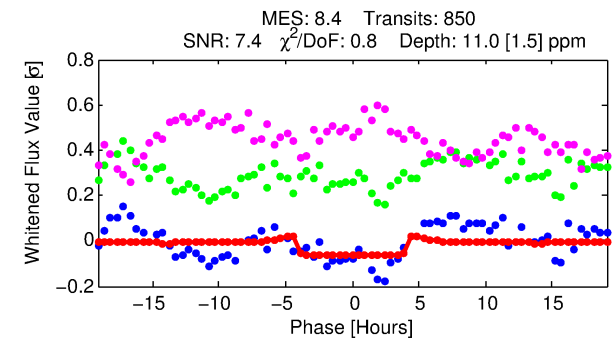
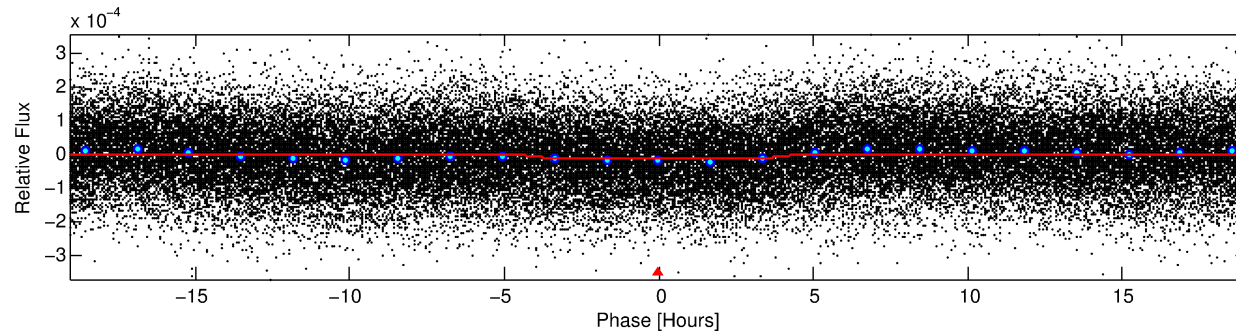
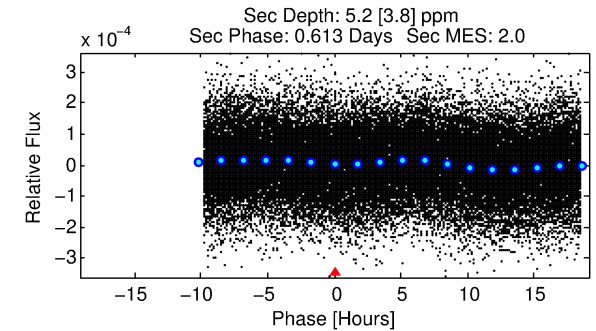
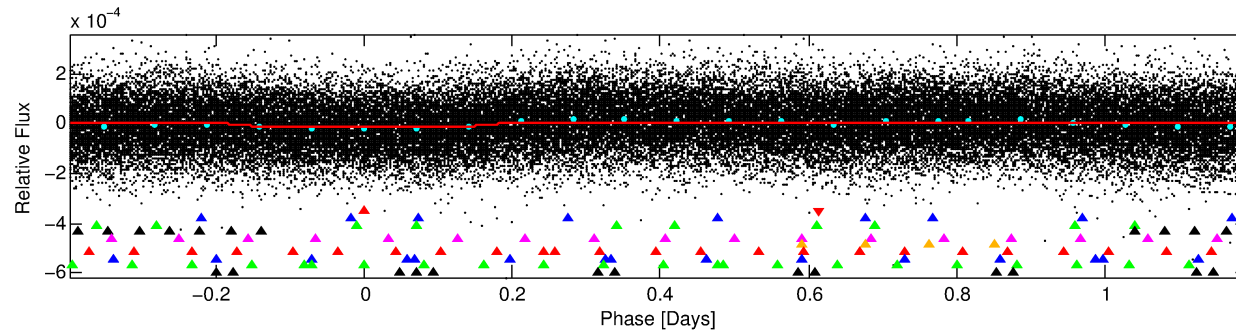
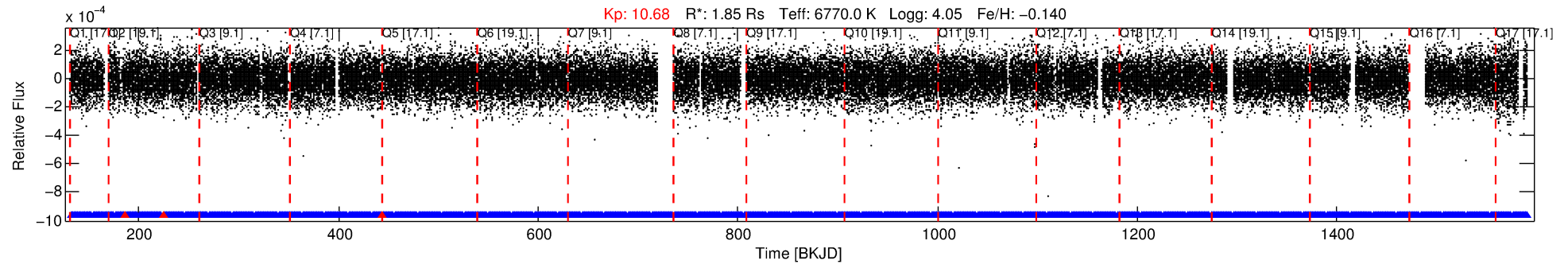
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-01

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 1 of 10 Period: 1.590 d



DV Fit Results:

Period = 1.59038 [0.00002] d
Epoch = 132.0999 [0.0056] BKJD
 $R_p/R^* = 0.0031$ [0.0009]
 $a/R^* = 1.47$ [1.29]
 $b = 0.46$ [2.87]
 $\text{Seff} = 7238.95$ [2039.89]
 $T_{\text{eq}} = 2352$ [166] K
 $R_p = 0.63$ [0.23] R_e
 $a = 0.0299$ [0.0053] AU
 $\text{Ag} = 6.33$ [6.27] [0.85σ]
 $T_{\text{eff}} = 5768$ [1372] K [2.47σ]

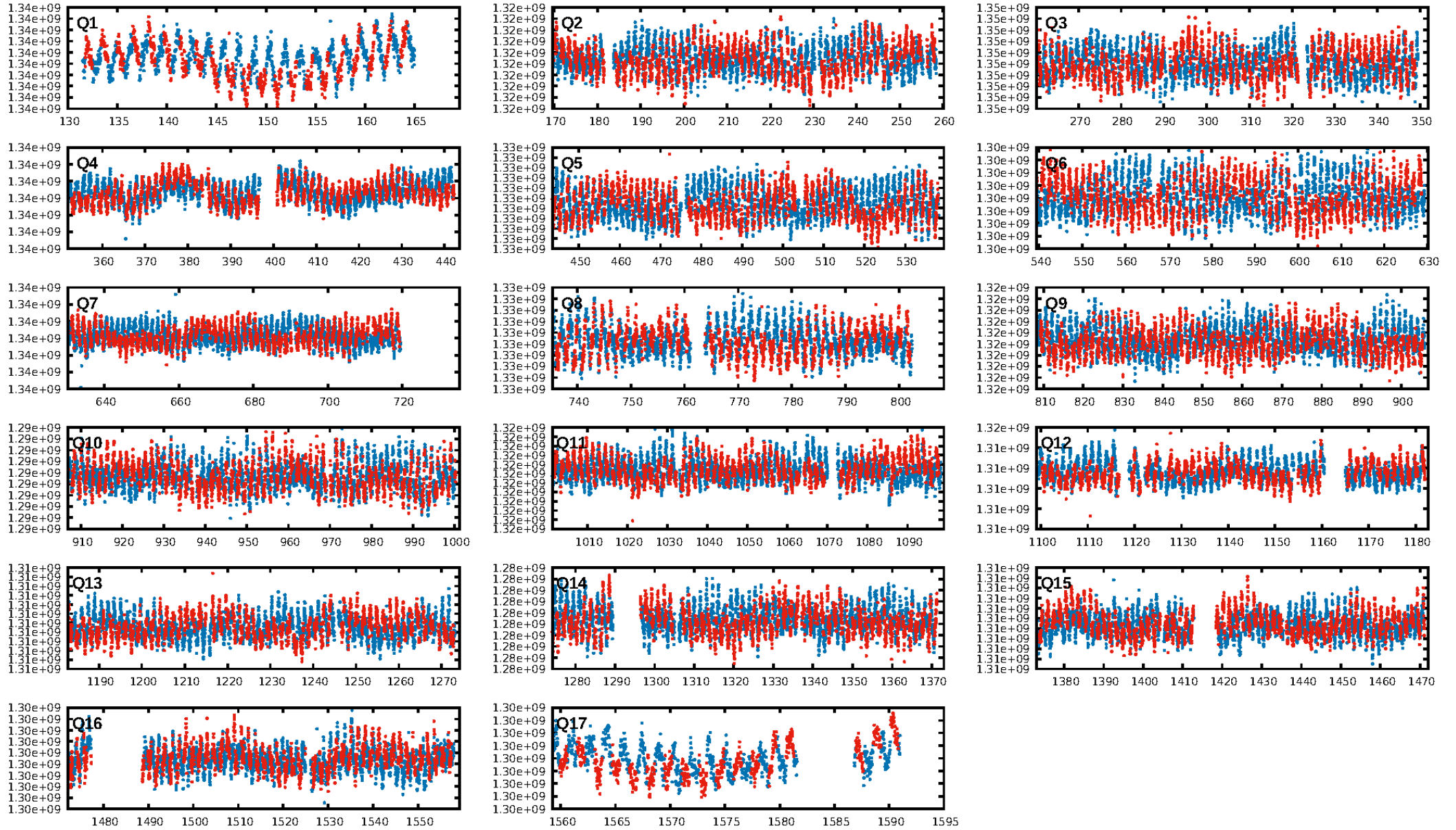
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [157.32σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.16e-13
RollingBand-fgt: 1.00 [809/812]
GhostDiagnostic-chr: 1.929
Centroid-sig: 1.6%
Centroid-so: 1.983 arcsec [2.31σ]
OotOffset-rm: 0.635 arcsec [0.75σ]
KicOffset-rm: 0.955 arcsec [1.13σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 1.00 [17/17]

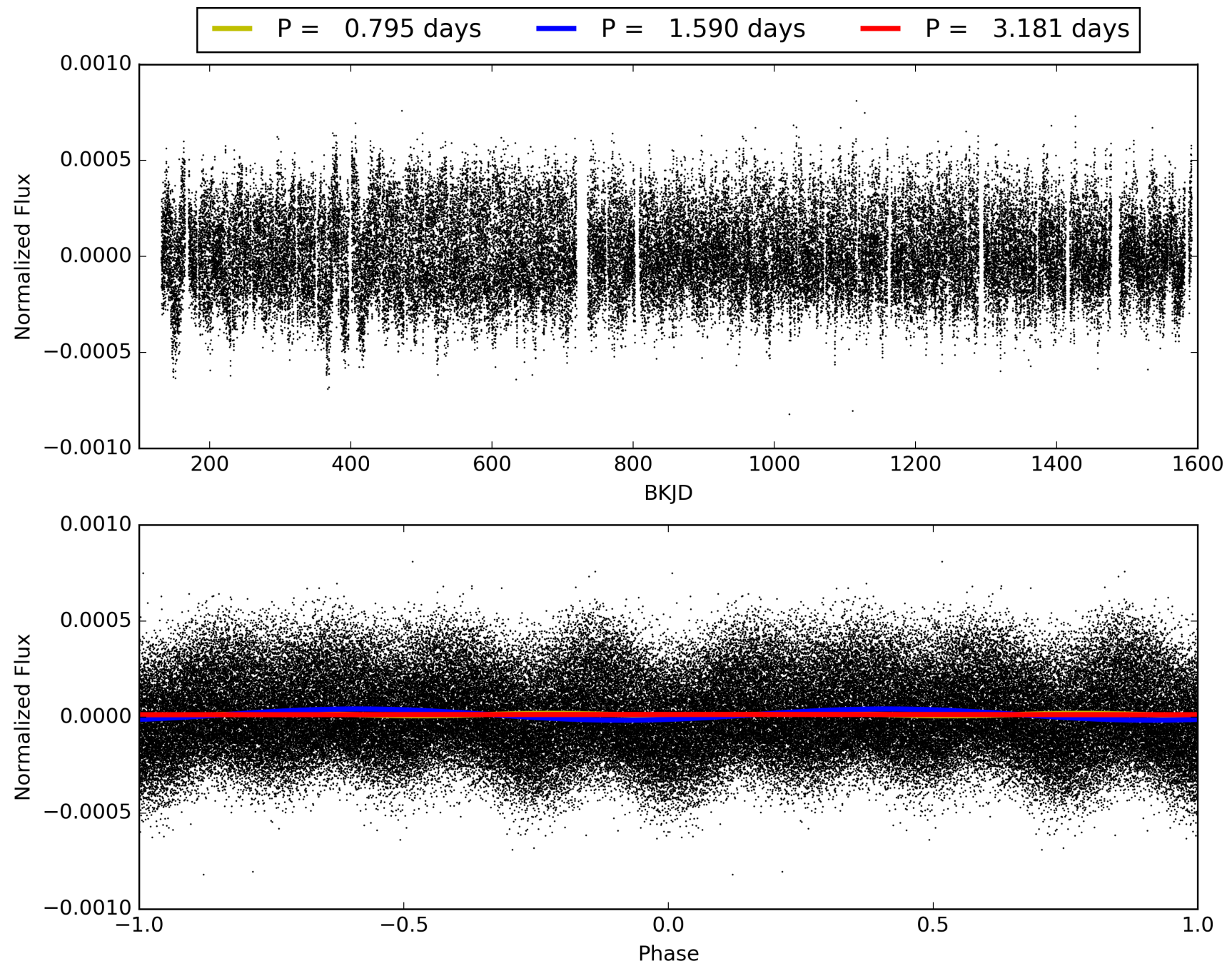
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:07:56 Z

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

TCE 010865397-01, PDC Light Curves

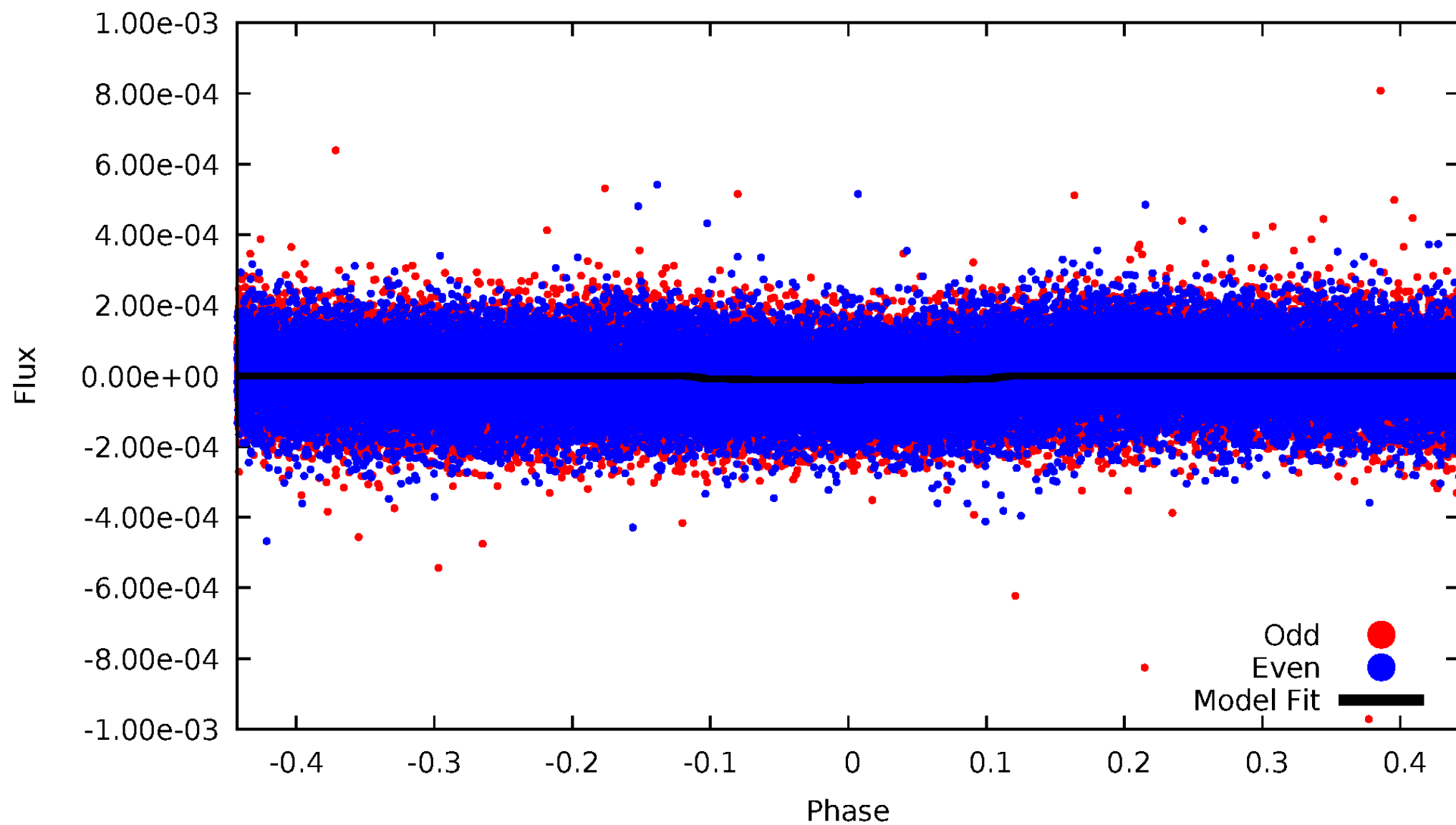


TCE 010865397-01



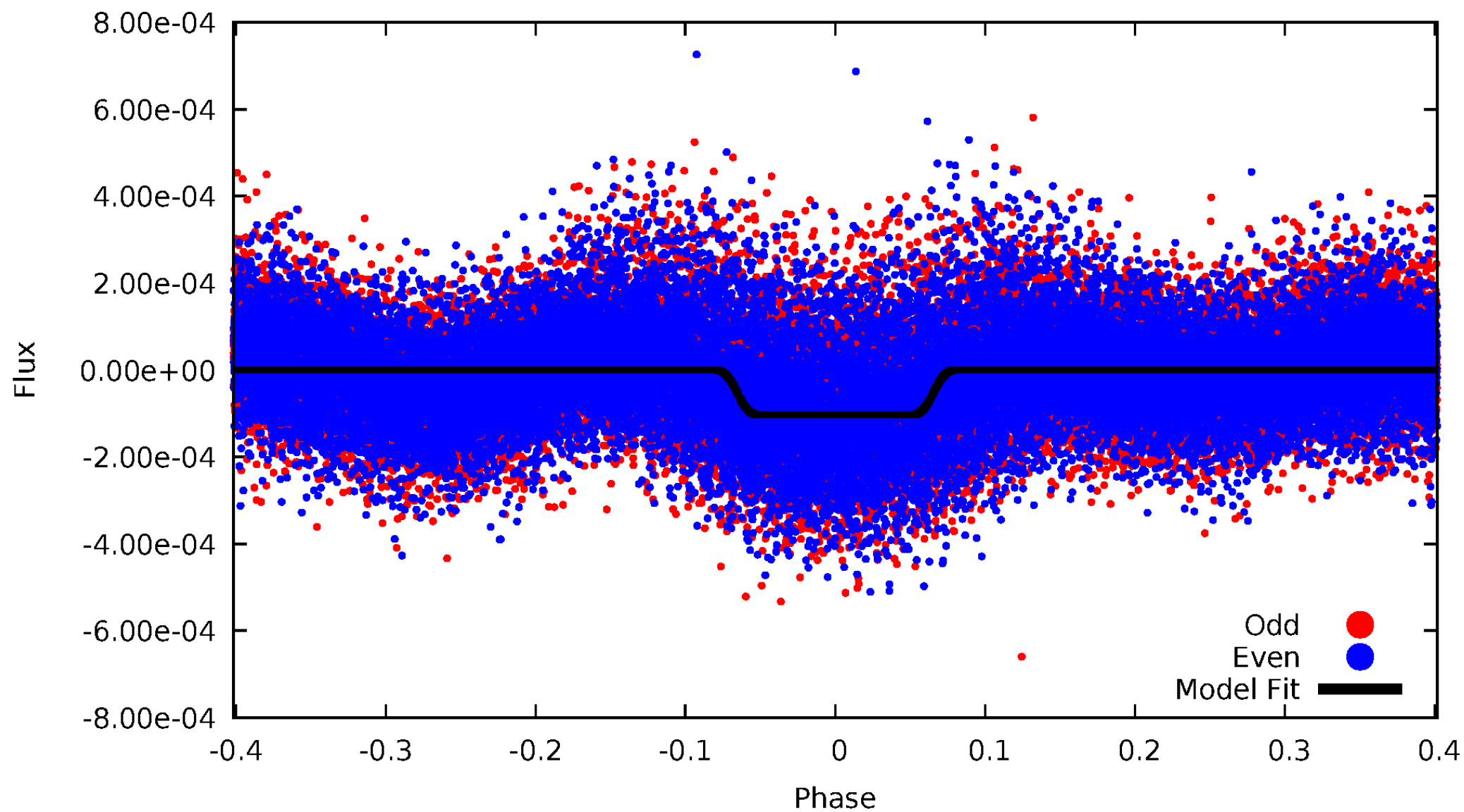
DV Odd/Even

TCE 010865397-01

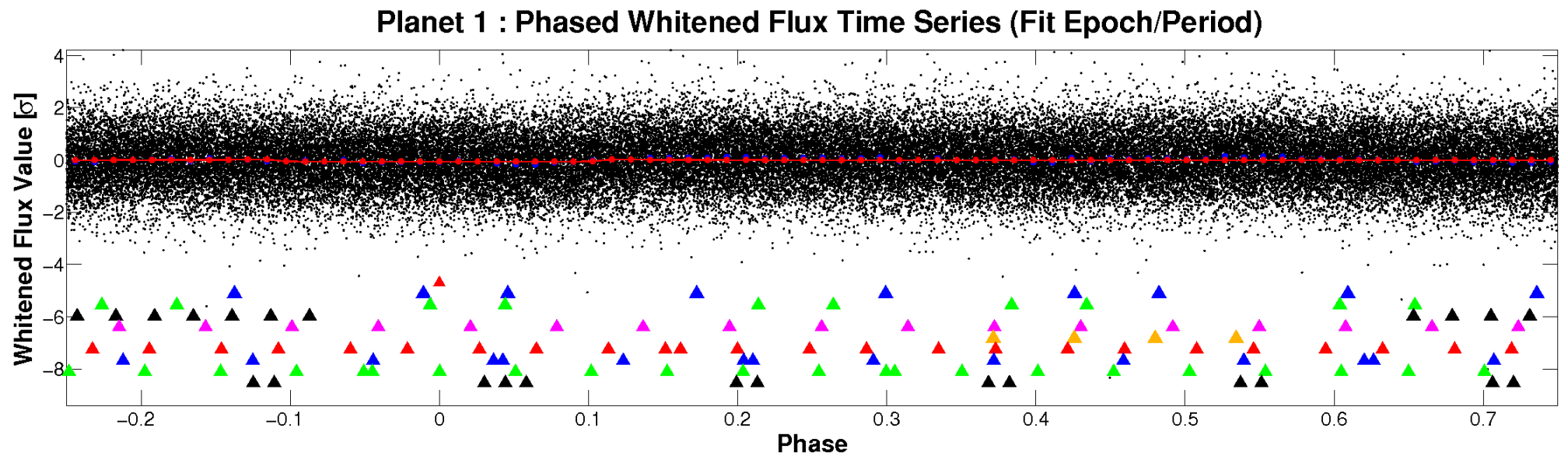
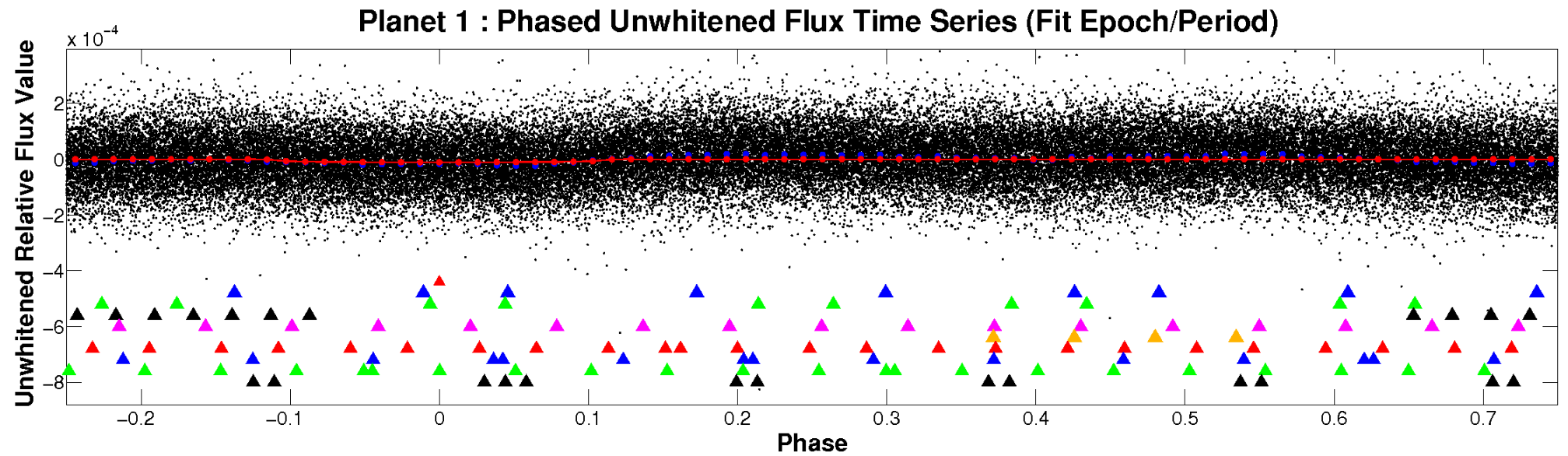


ALT Odd/Even

TCE 010865397-01

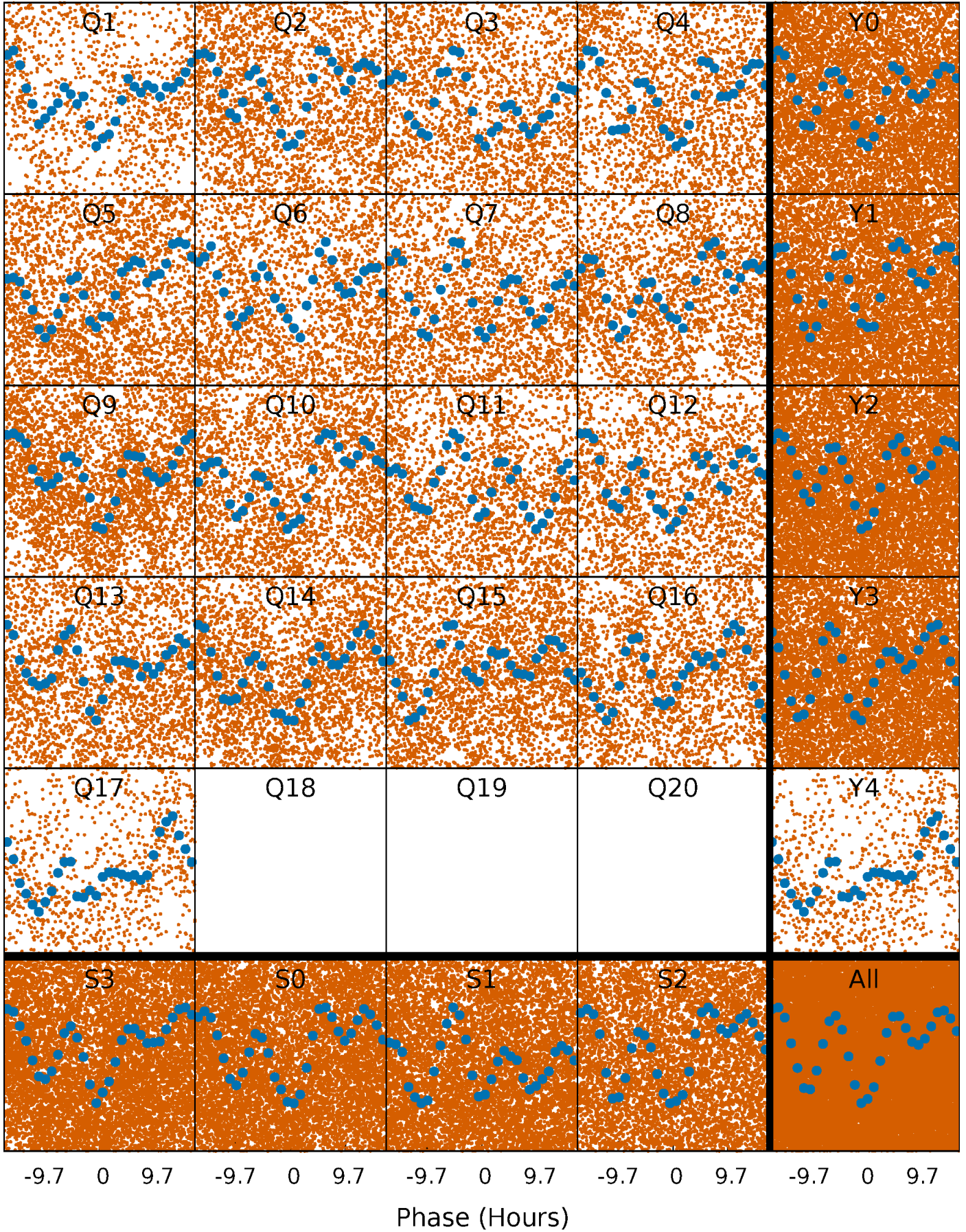


Non-Whitened Vs. Whitened Light Curve



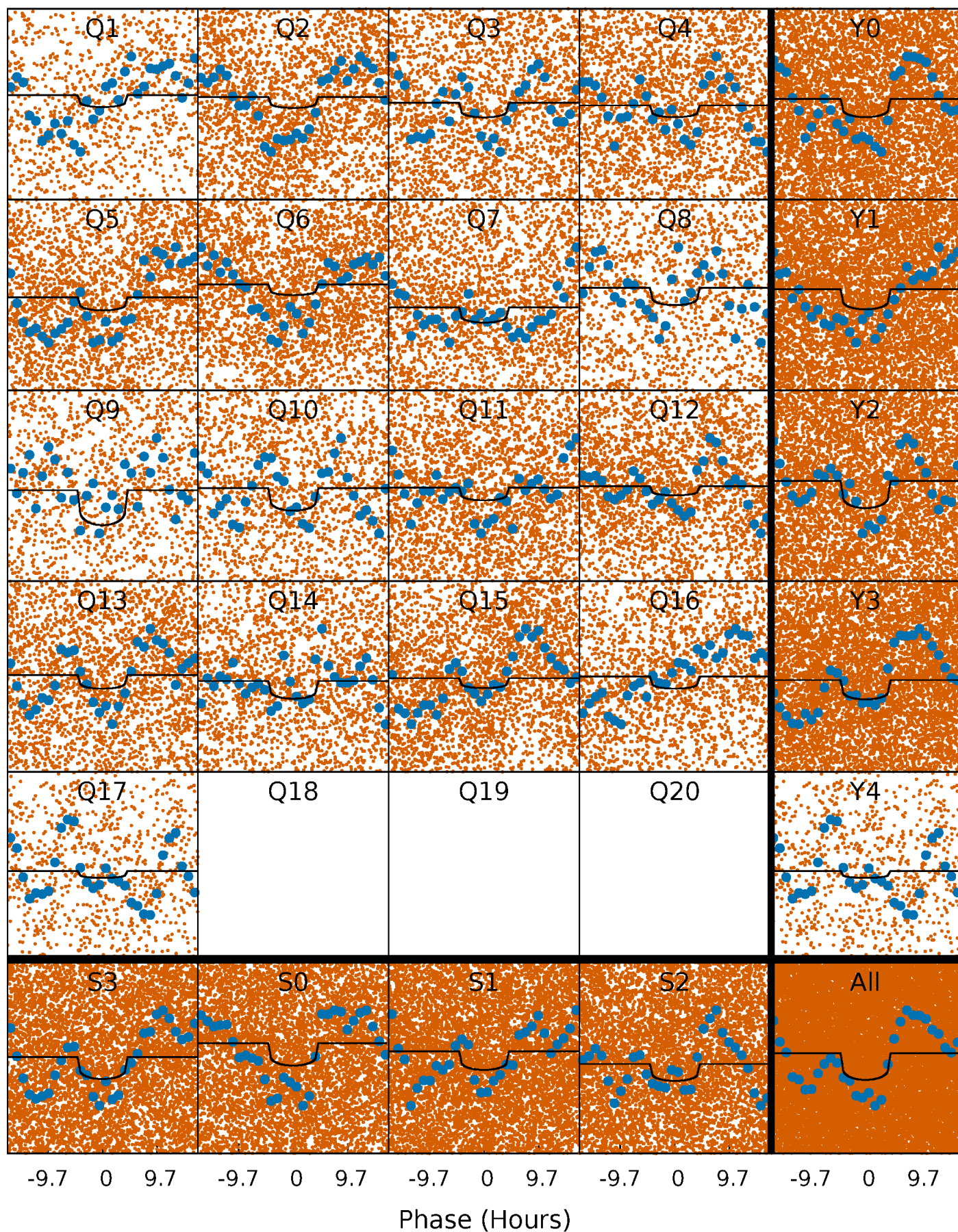
PDC Quarter-Phased Transit Curves

TCE 010865397-01 P= 1.590379 Days $T_0=132.099932$ (BKJD)



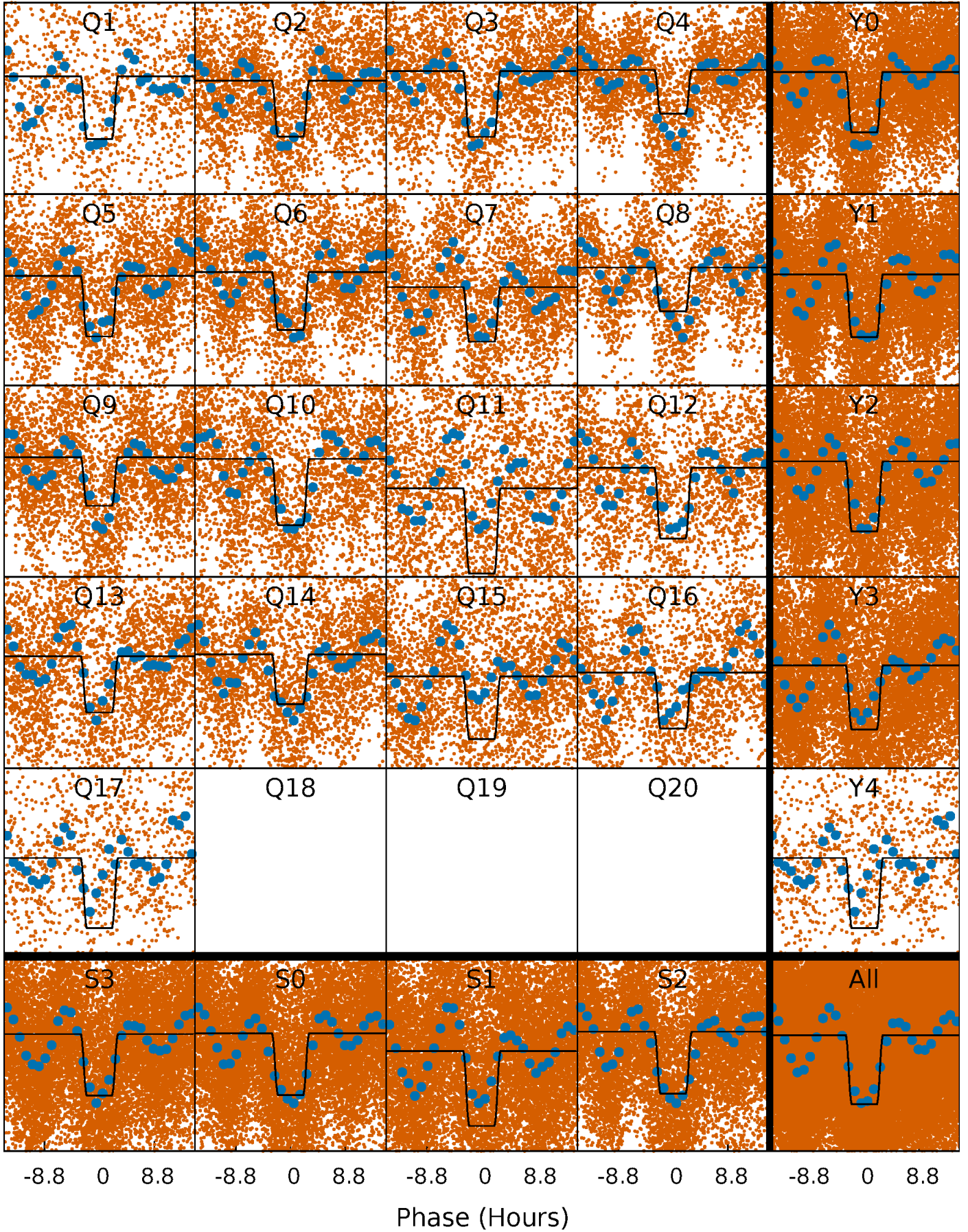
DV Quarter-Phased Transit Curves

TCE 010865397-01 P= 1.590379 Days $T_0=132.099932$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

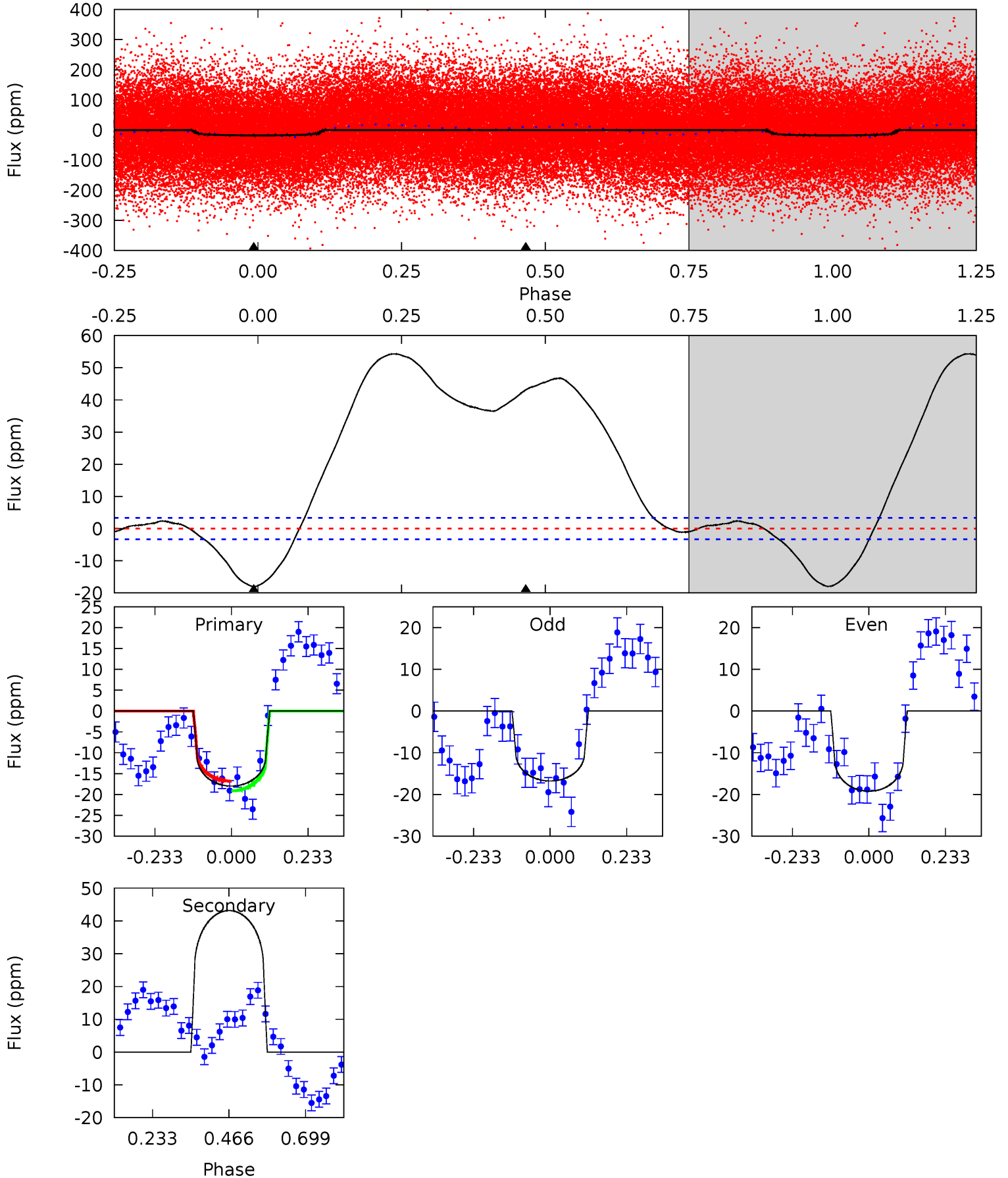
TCE 010865397-01 P= 1.590296 Days $T_0=132.141100$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-01, P = 1.590379 Days, E = 130.509553 Days

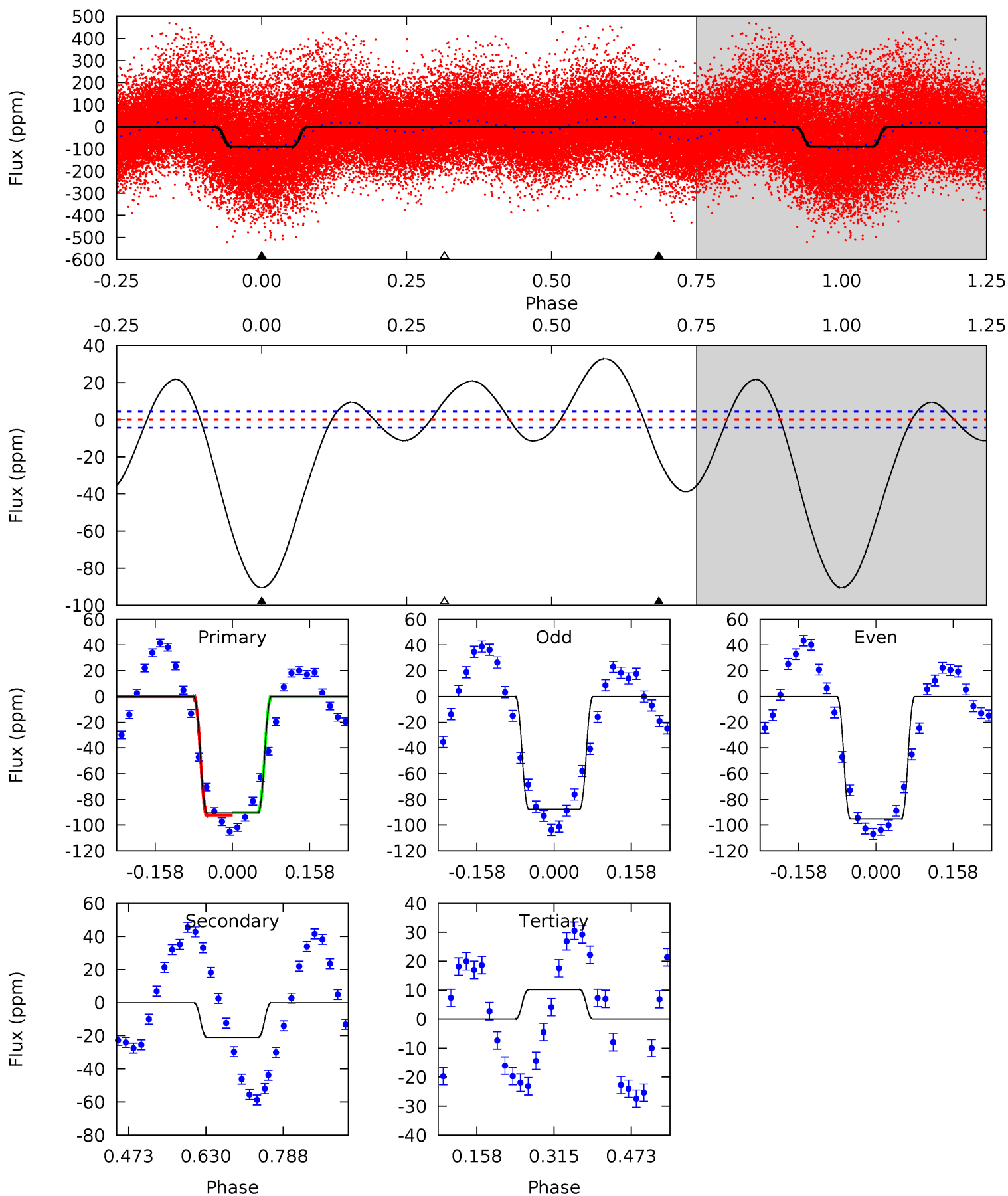
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.7	-56.9	0	0	4.38	1.19	30.2	23.7	23.7	-56.9	-56.9	1.61	1.07	0.75	1.55



Alt Model-Shift Uniqueness Test

010865397-01, P = 1.590296 Days, E = 130.550804 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
93.3	21.7	-10.5	0	4.47	1.41	10.9	103.8	93.3	32.2	21.7	4.01	0.90	0.27	1.14



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	43 ± 1	$0.63^{+0.20}_{-0.20}$	3284^{+152}_{-171}	-10857^{+1771}_{-3847}	$-53.747^{+23.073}_{-57.940}$
Alt.	-21 ± 1	$2.02^{+0.31}_{-0.26}$	3276^{+156}_{-167}	4569^{+195}_{-189}	$2.518^{+0.814}_{-0.615}$

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 $A_{obs} \gg 1.0$

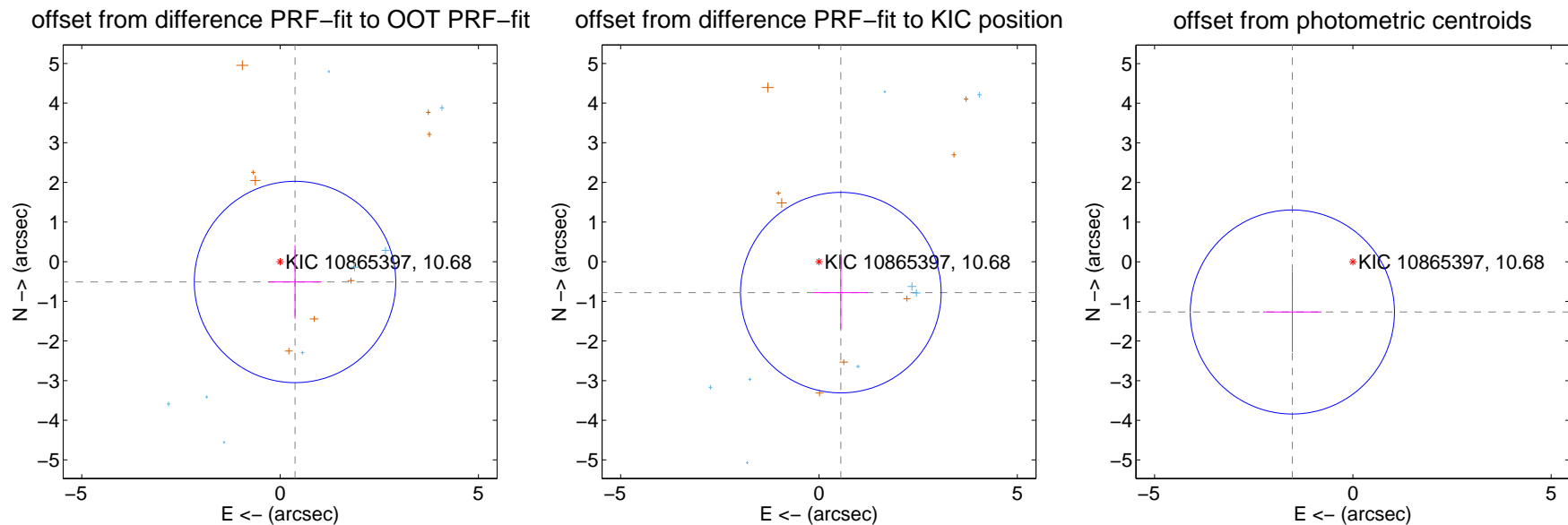
DV Centroid Data

Supplemental centroid analysis for 010865397-01. **Kepler magnitude: 10.68.** Transit SNR 7.45

There are 8 quarters with good PRF difference image offsets

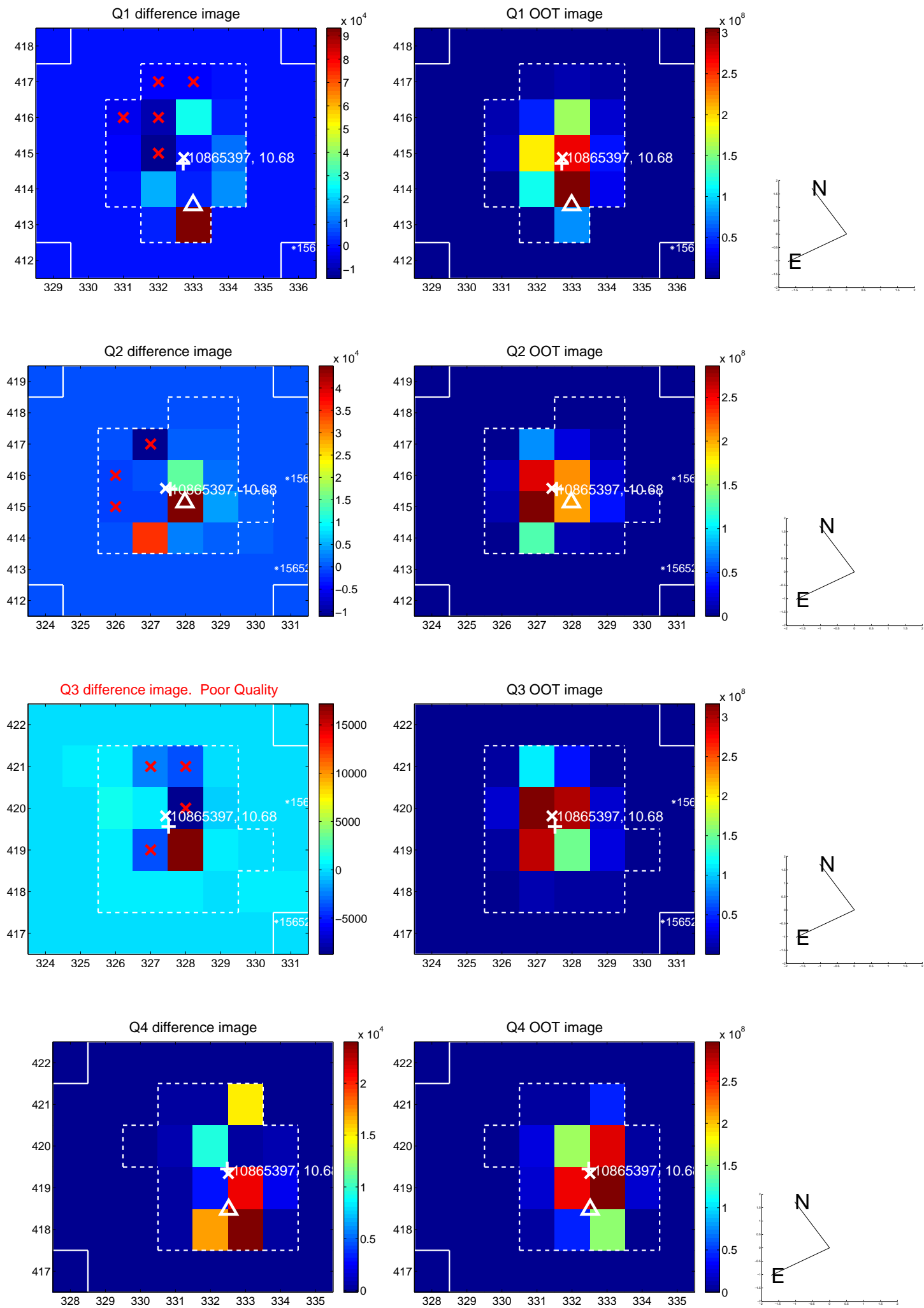
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.635 ± 0.846	0.75	-0.376 ± 0.672	-0.512 ± 0.927
PRF-fit source offset from KIC position	0.955 ± 0.843	1.13	-0.551 ± 0.679	-0.780 ± 0.914
photometric centroid source offset	1.98 ± 0.86	2.31	1.53 ± 0.74	-1.27 ± 1.01

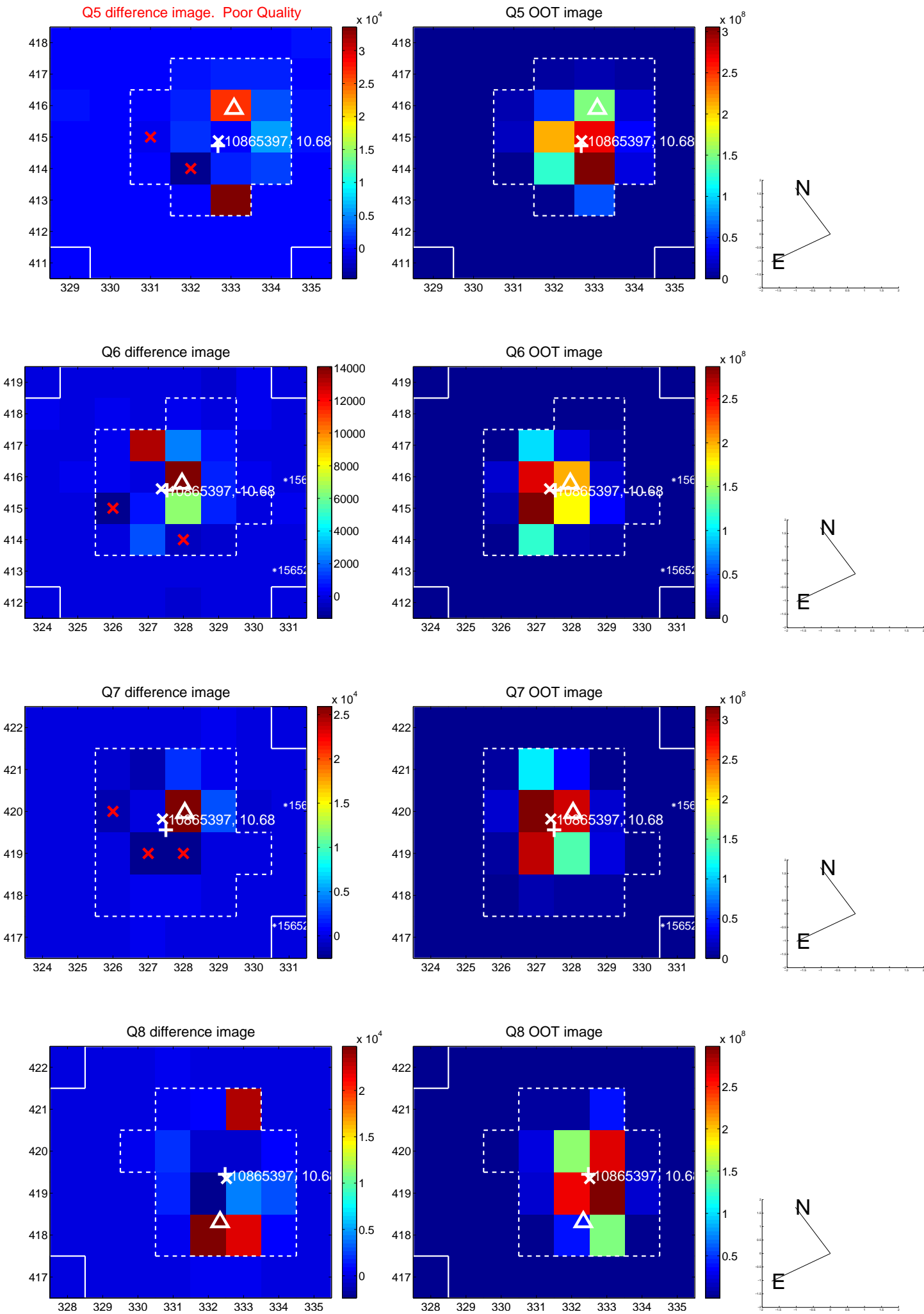


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

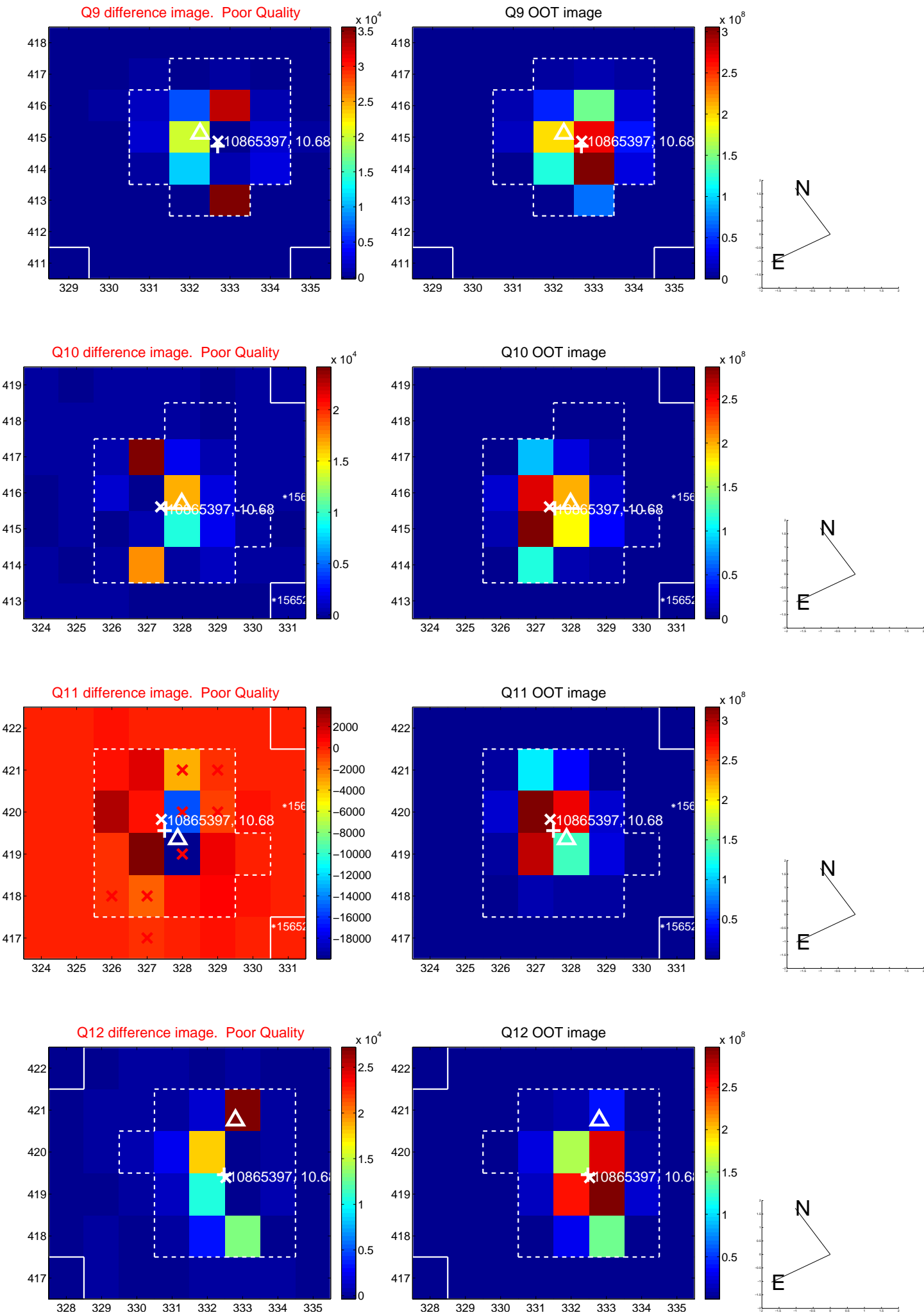
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



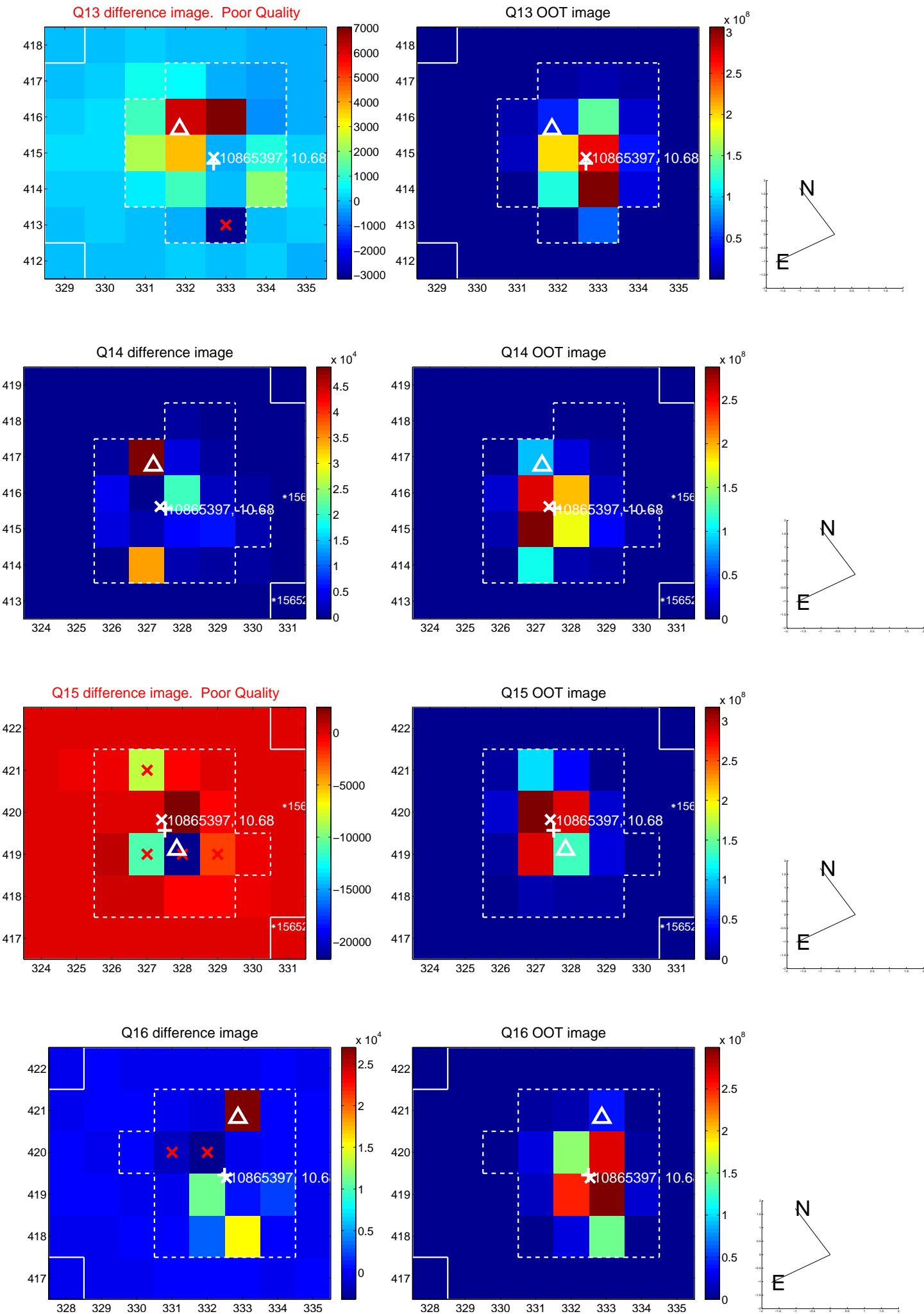
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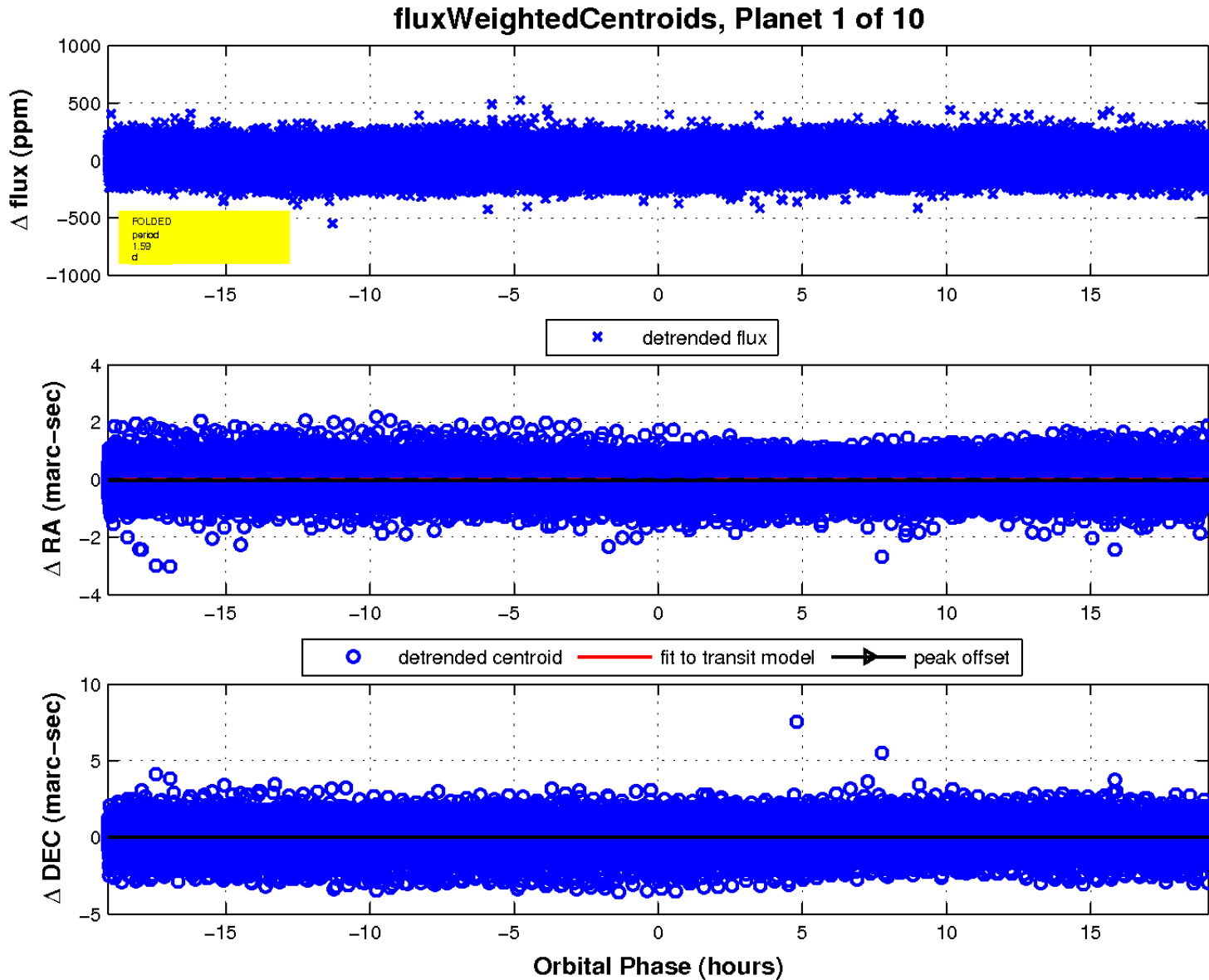
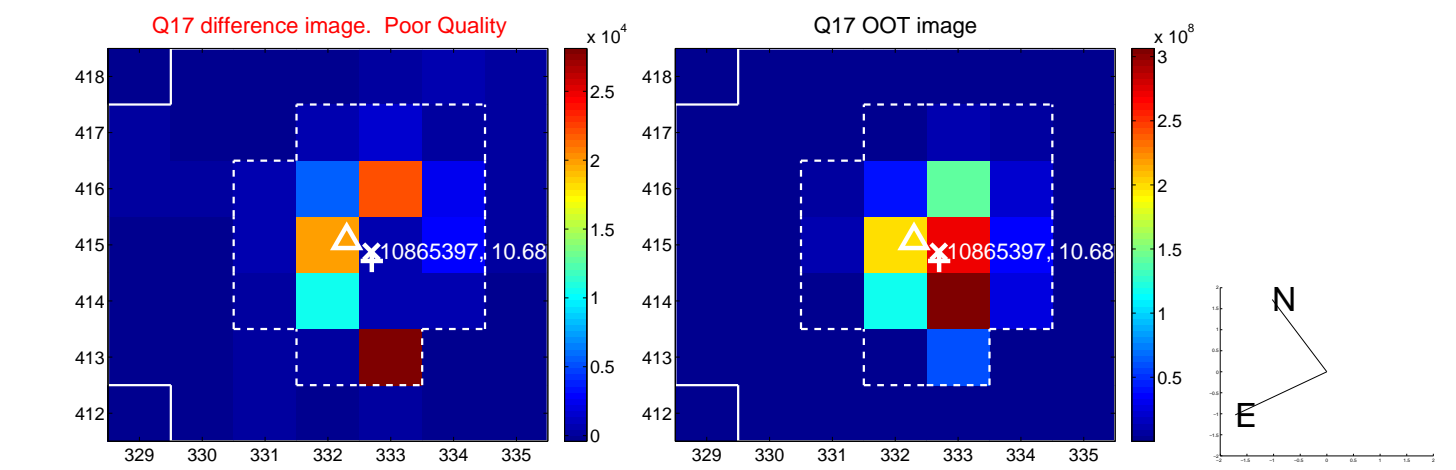
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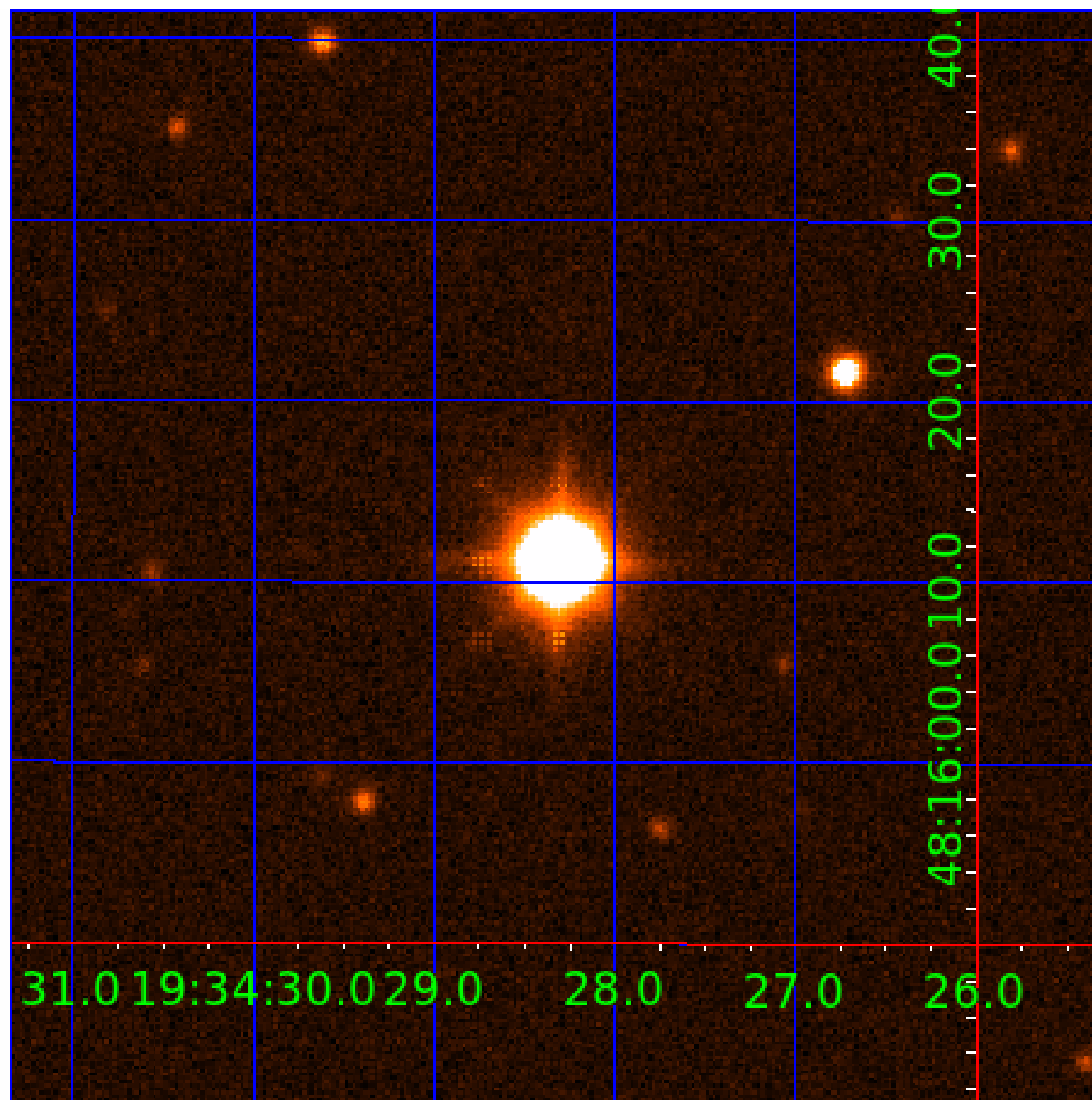


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

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010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

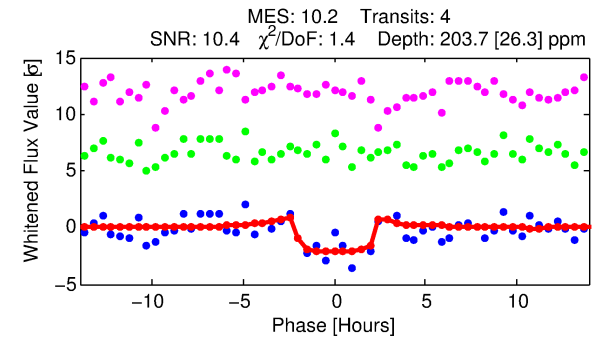
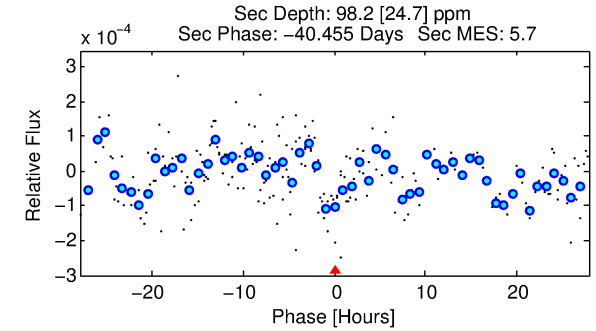
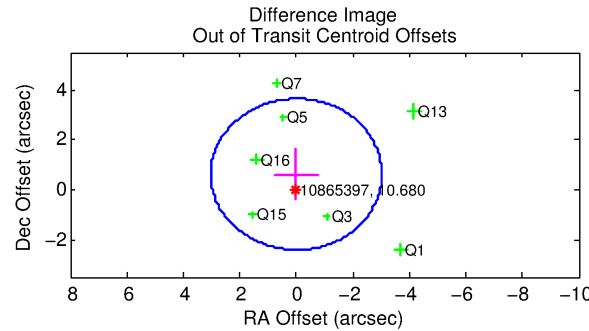
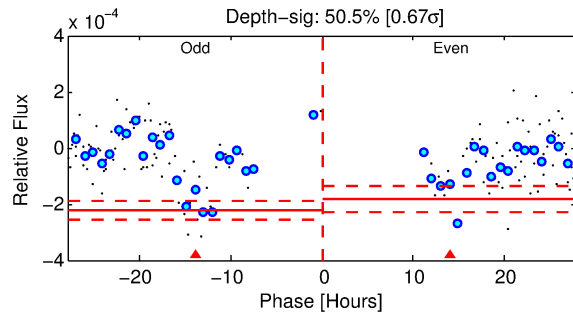
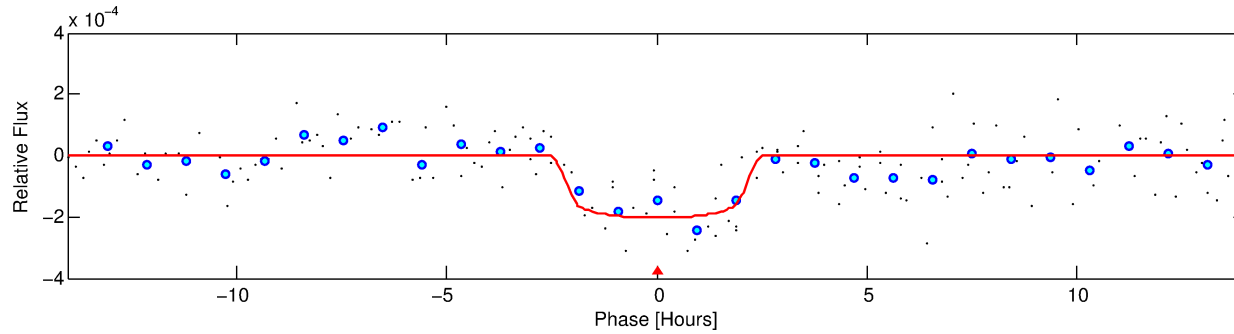
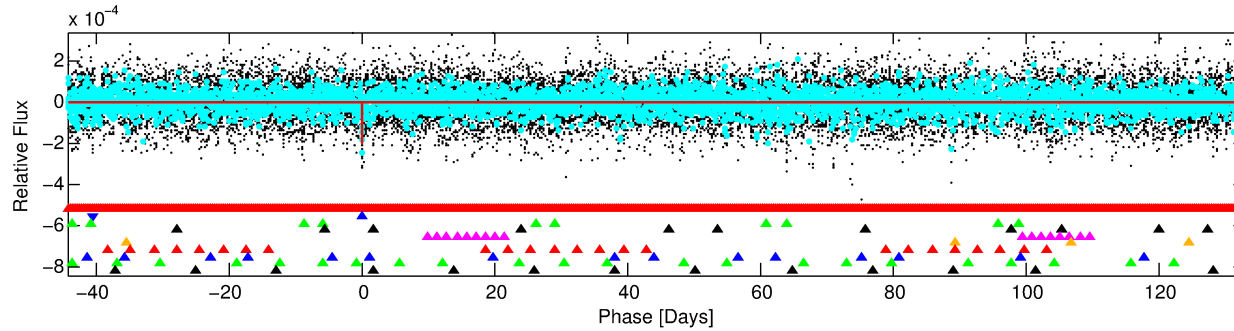
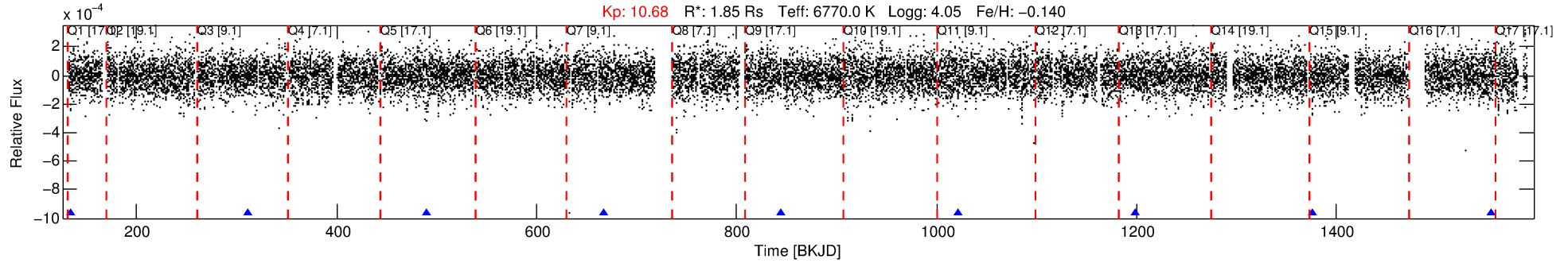
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-02

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 2 of 10 Period: 177.428 d



DV Fit Results:

Period = 177.42803 [0.00147] d
Epoch = 134.4577 [0.0067] BKJD
Rp/R* = 0.0149 [0.0046]
a/R* = 151.54 [261.85]
b = 0.87 [0.48]
Seff = 13.48 [3.80]
Teff = 489 [34] K
Rp = 3.02 [1.10] Re
a = 0.6921 [0.1236] AU
Ag = 2842.62 [2055.63] [1.38 σ]
Teffp = 5516 [923] K [5.44 σ]

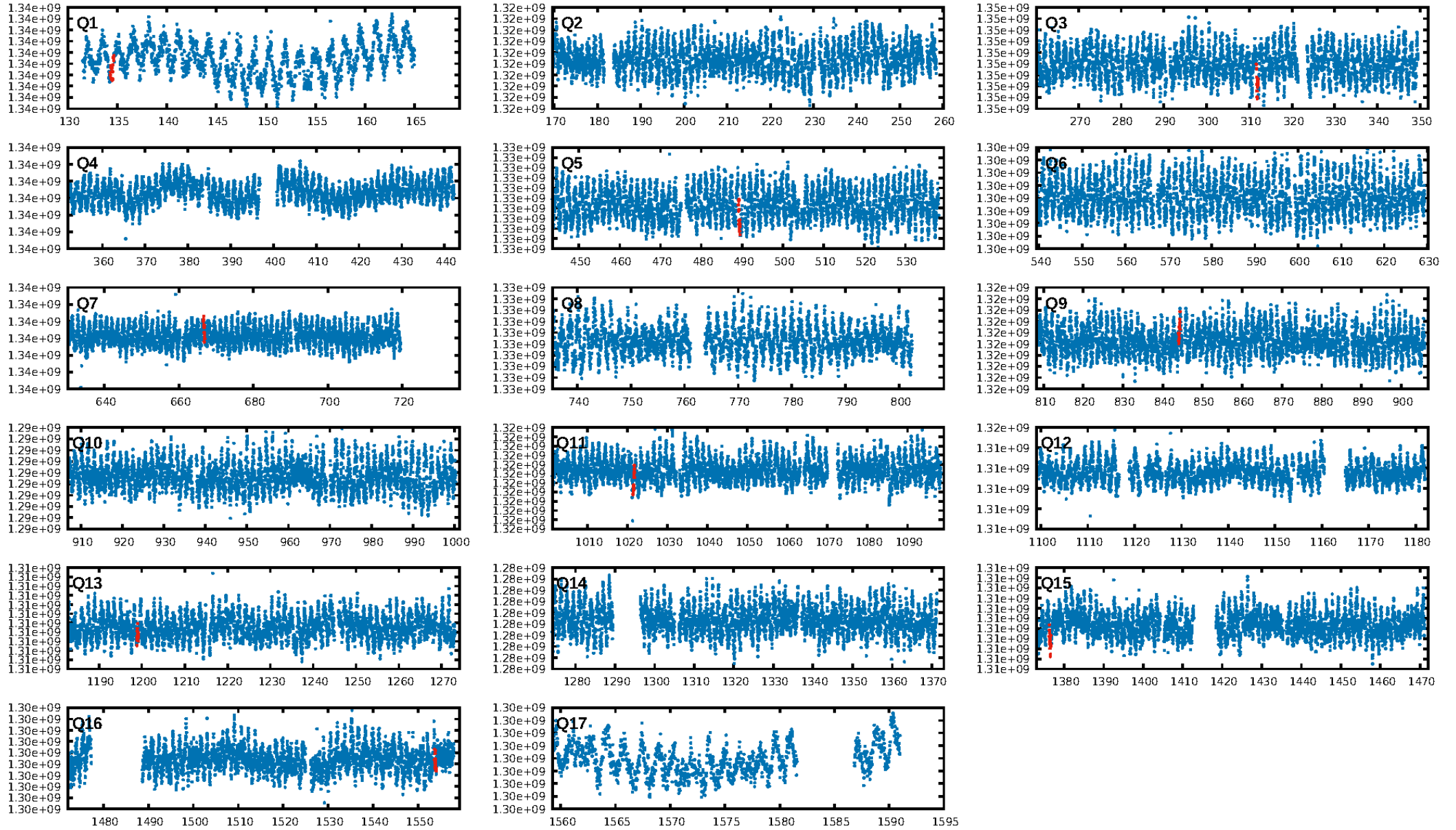
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [46.51 σ]
LongPeriod-sig: 100.0% [472.46 σ]
ModelChiSquare2-sig: 22.8%
ModelChiSquareGof-sig: 87.3%
Bootstrap-pfa: 2.72e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1093
Centroid-sig: 6.0%
Centroid-so: 1.073 arcsec [2.00 σ]
OotOffset-rm: 0.613 arcsec [0.61 σ]
KicOffset-rm: 0.279 arcsec [0.34 σ]
OotOffset-st: 0/3/1/3 [7]
KicOffset-st: 0/3/1/3 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.38 [3/8]

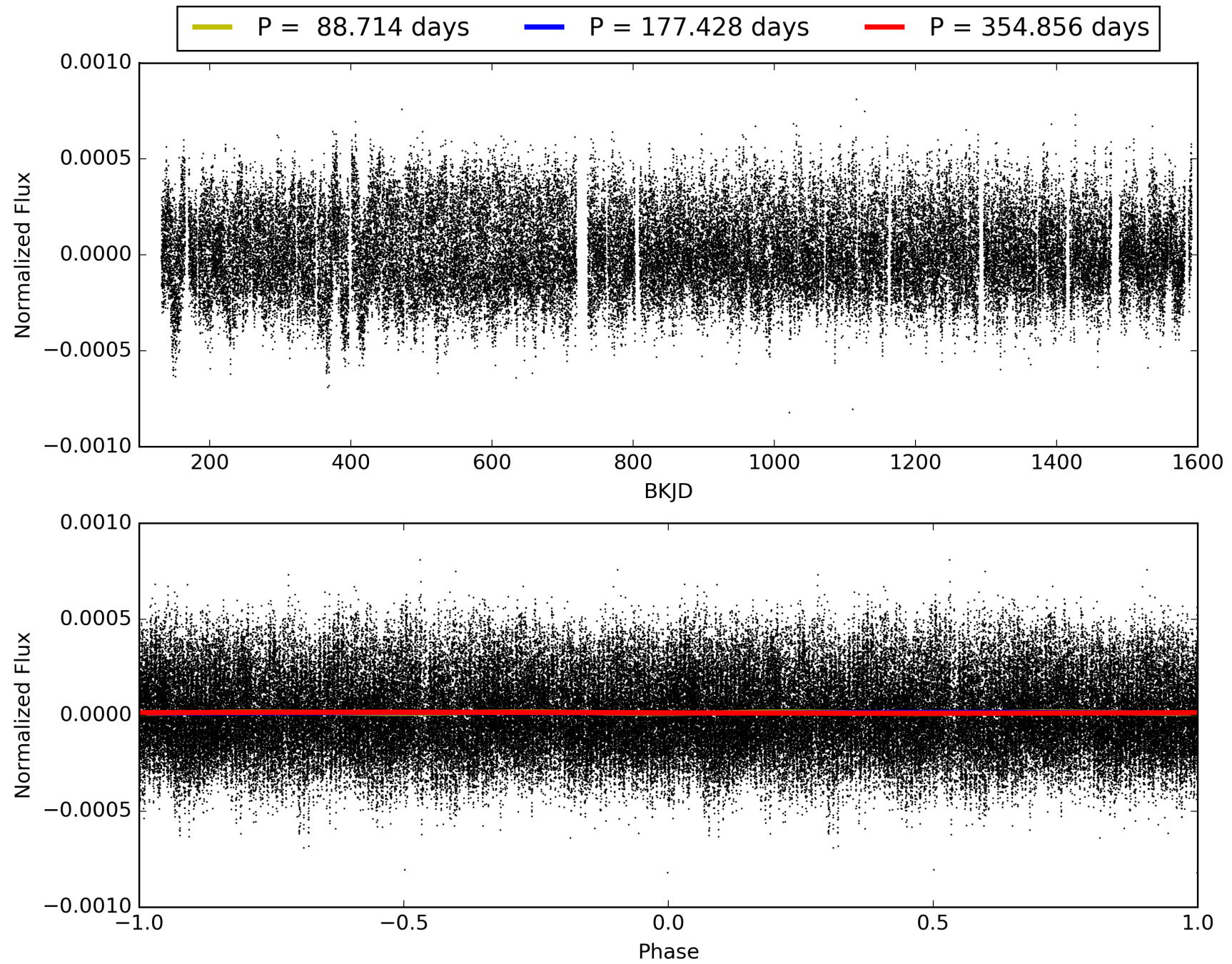
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:08 Z

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

TCE 010865397-02, PDC Light Curves

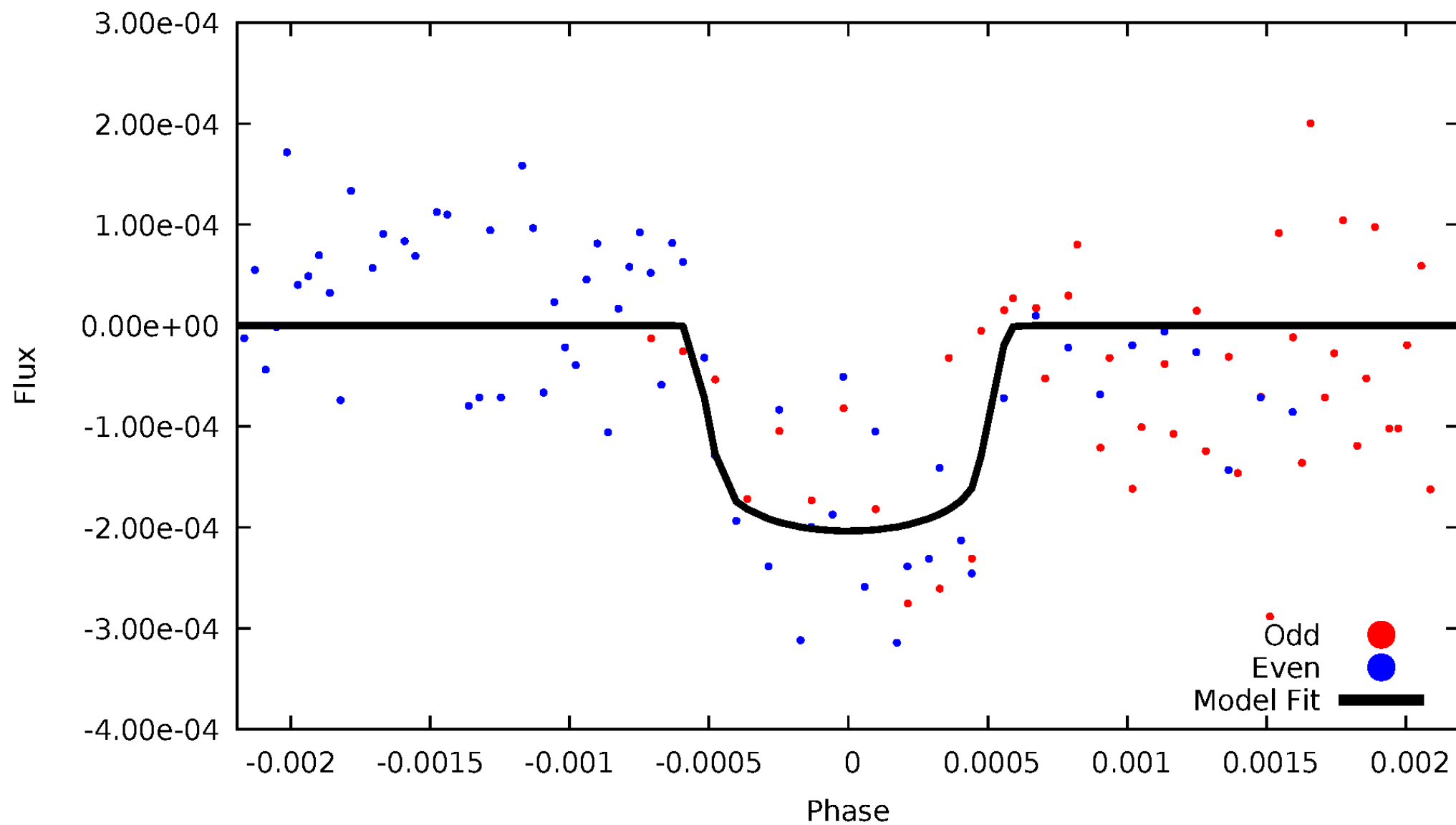


TCE 010865397-02



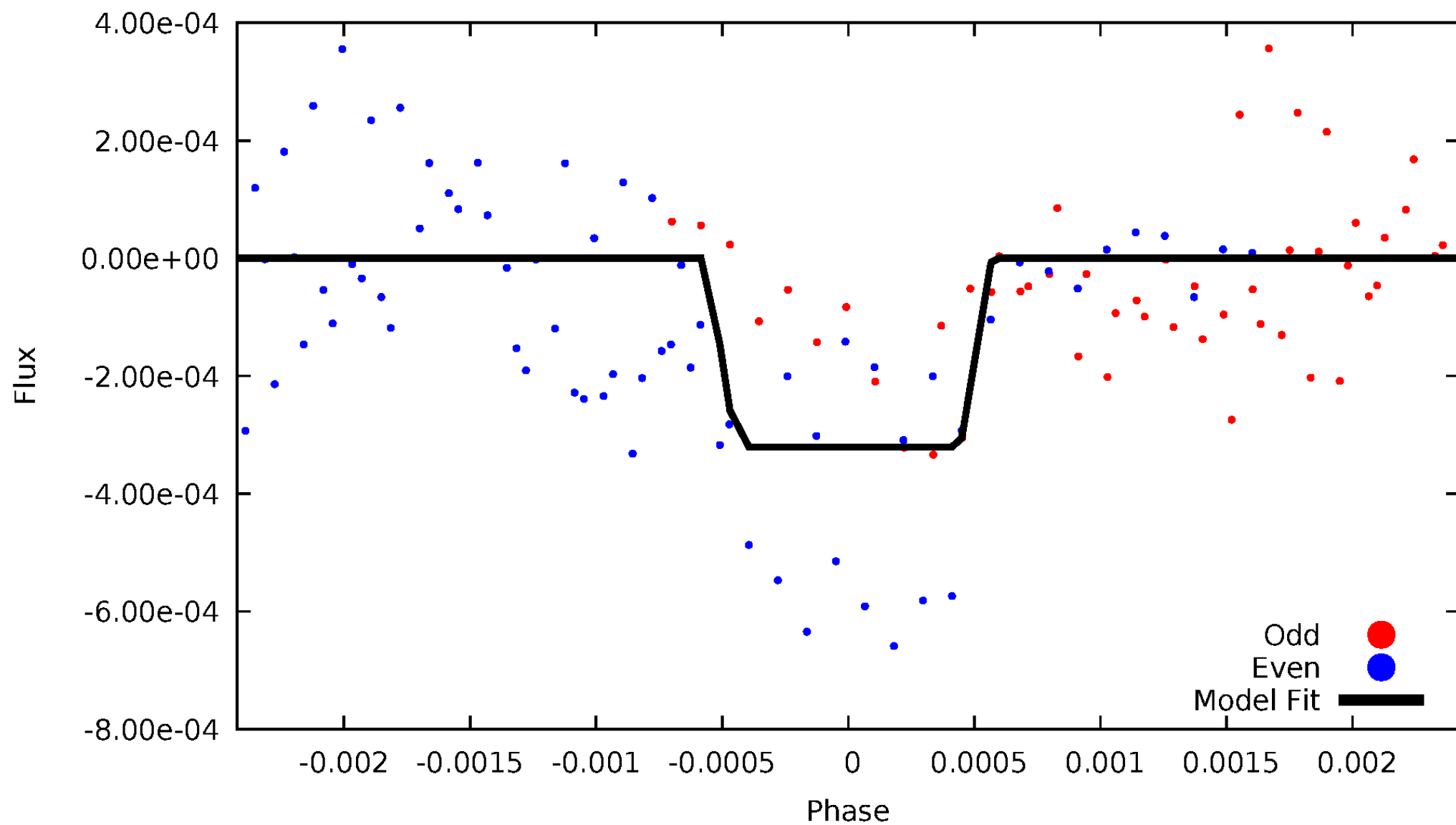
DV Odd/Even

TCE 010865397-02



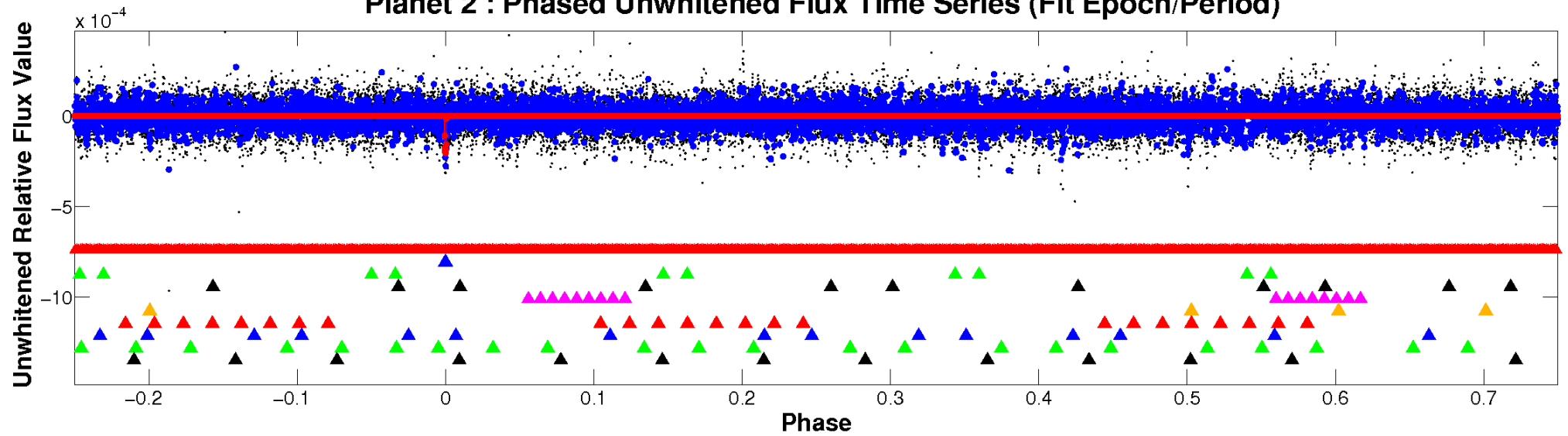
ALT Odd/Even

TCE 010865397-02

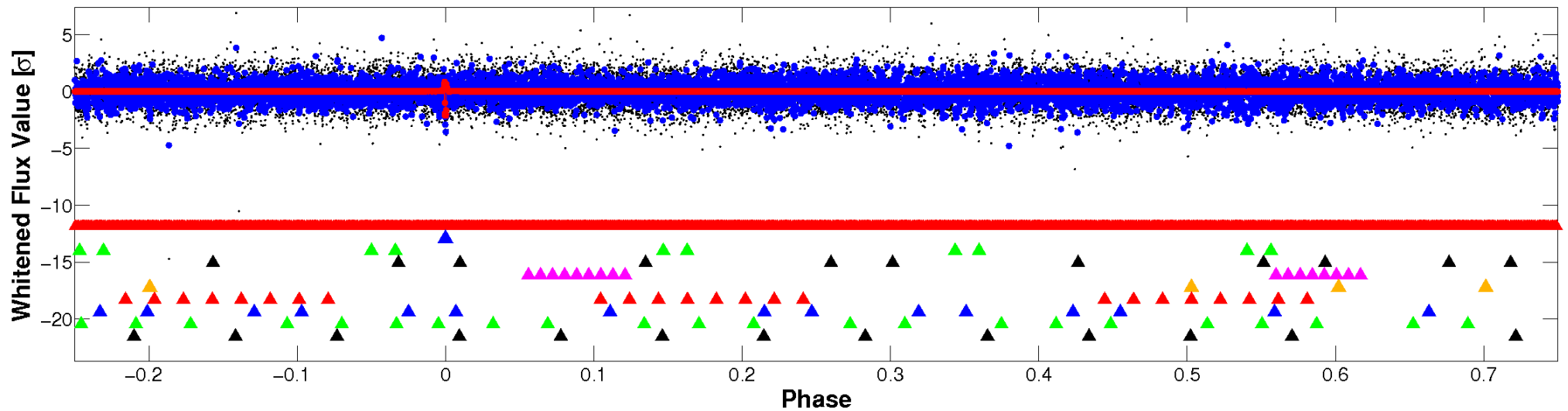


Non-Whitened Vs. Whitened Light Curve

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

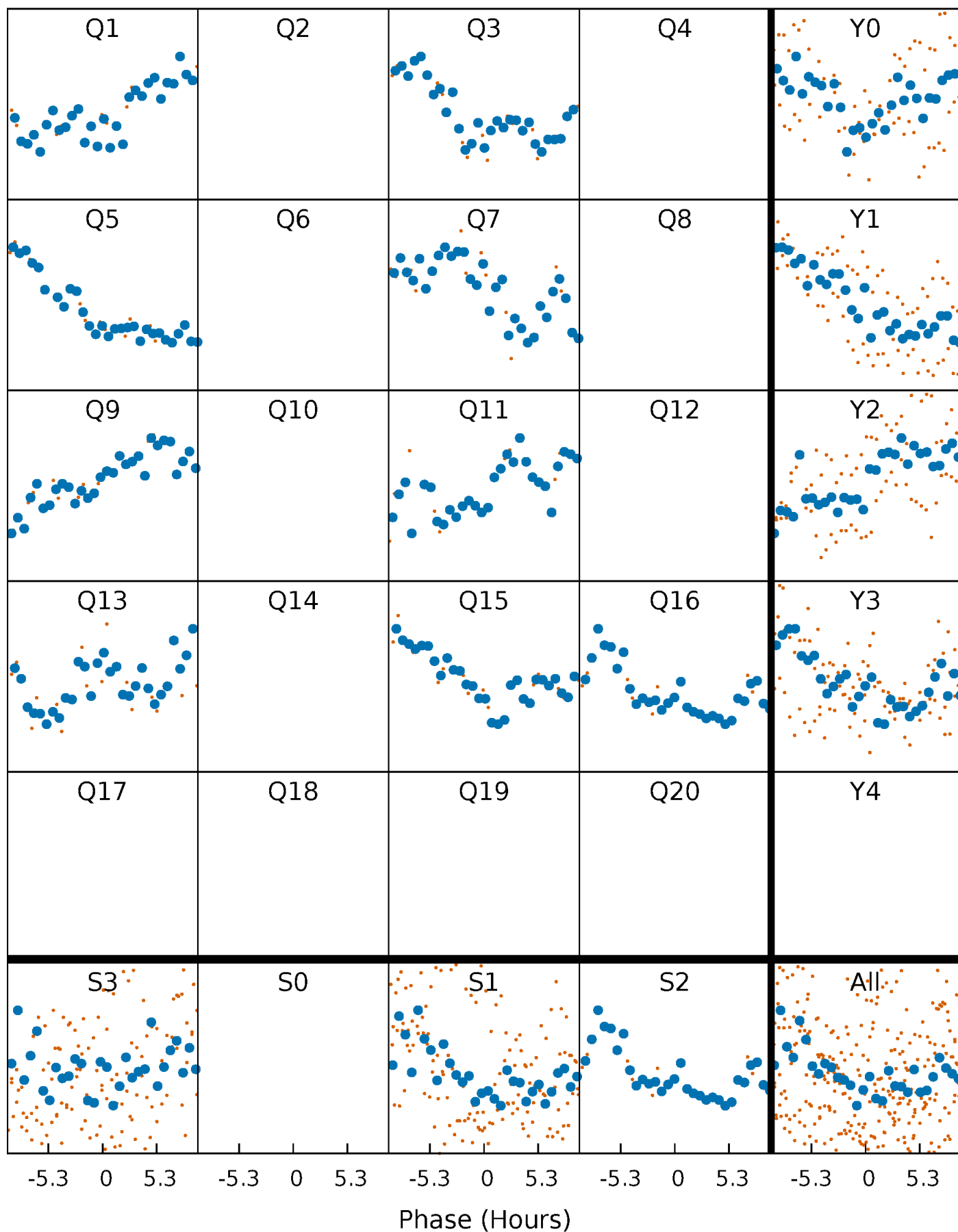


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



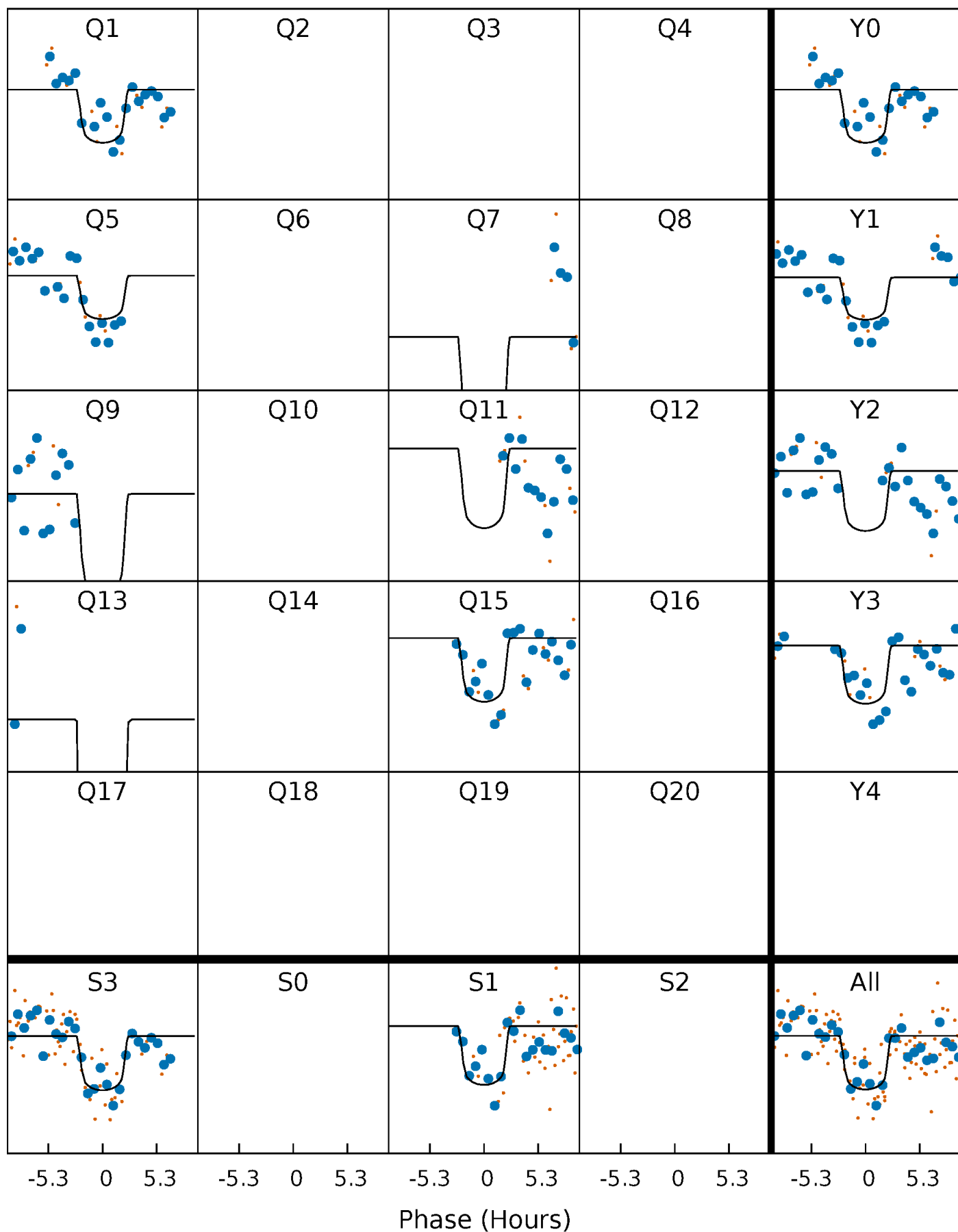
PDC Quarter-Phased Transit Curves

TCE 010865397-02 $P=177.428032$ Days $T_0=134.457722$ (BKJD)



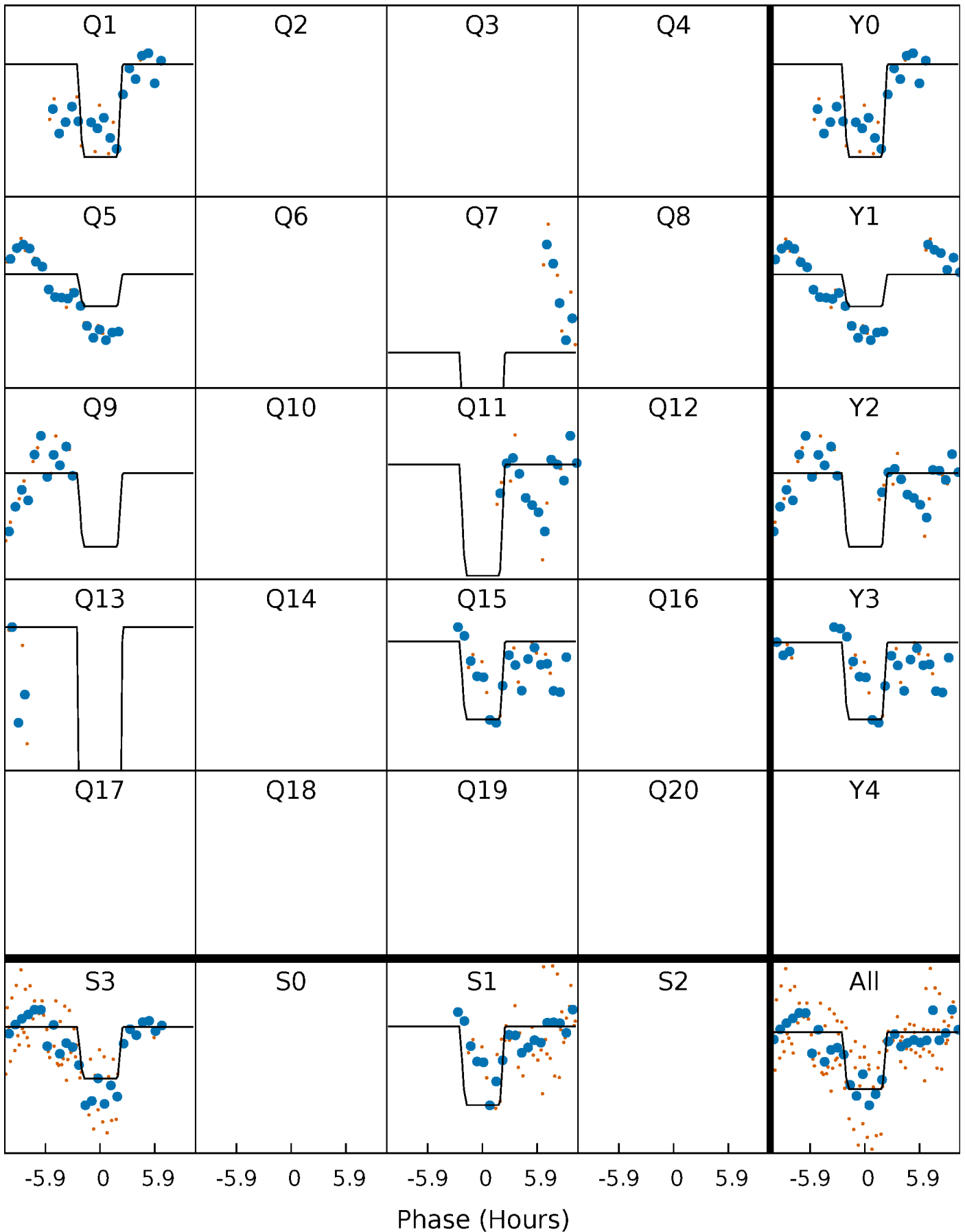
DV Quarter-Phased Transit Curves

TCE 010865397-02 $P=177.428032$ Days $T_0=134.457722$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

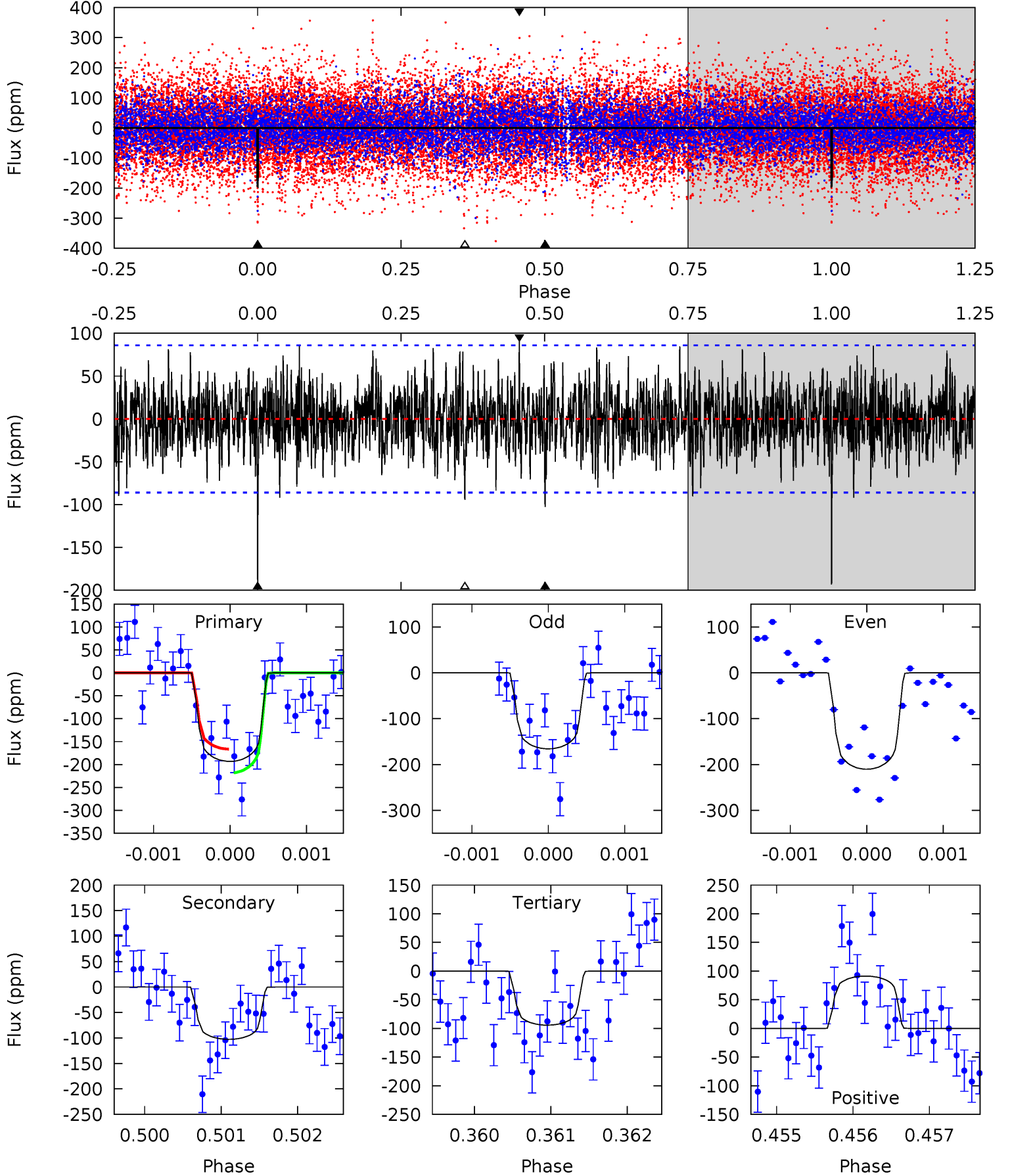
TCE 010865397-02 $P=177.427992$ Days $T_0=134.456545$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-02, $P = 177.428032$ Days, $E = 134.457722$ Days

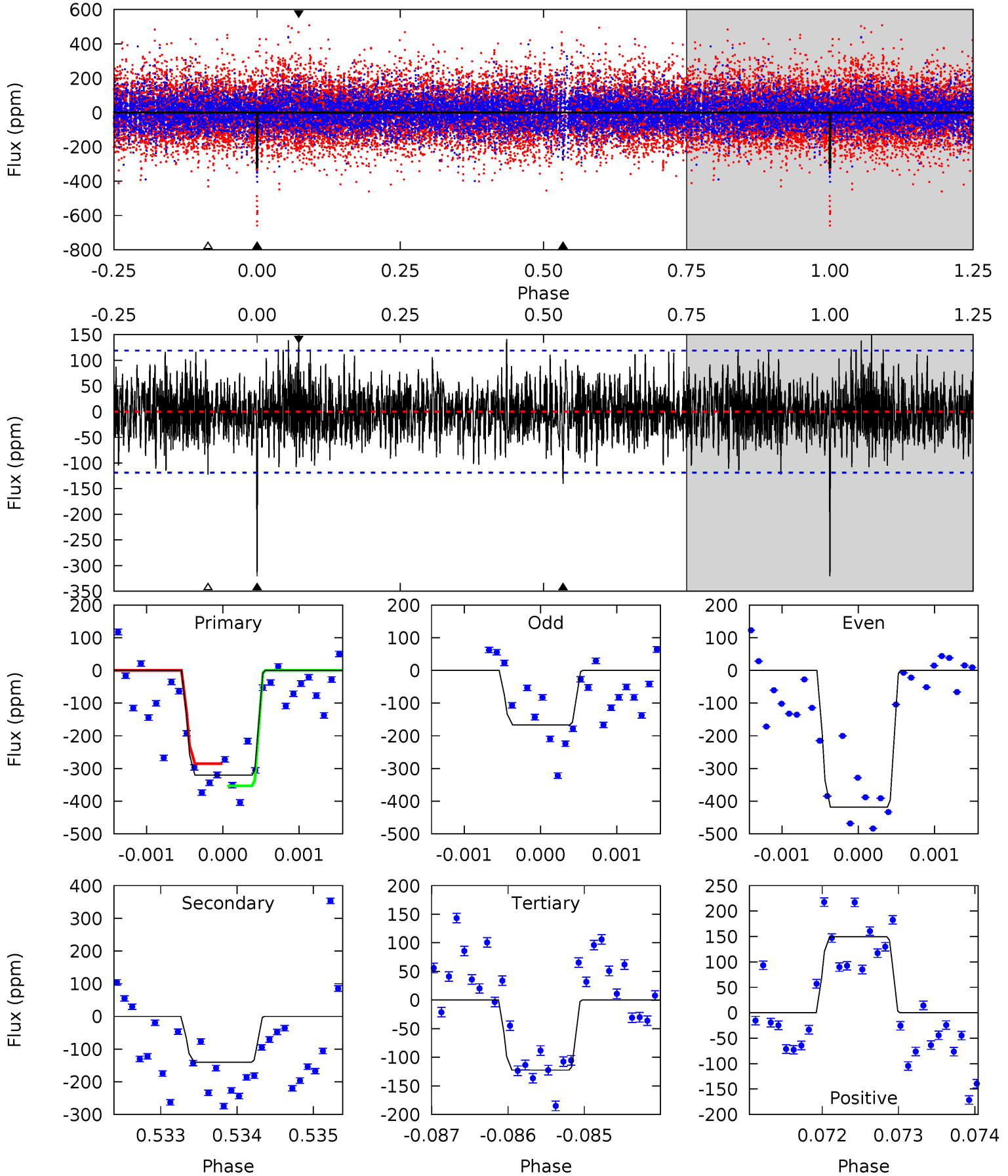
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	6.48	5.95	5.76	5.42	3.24	1.73	6.24	6.43	0.53	0.72	1.38	0.90	0.32	1.63



Alt Model-Shift Uniqueness Test

010865397-02, P = 177.427992 Days, E = 134.456545 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	6.42	5.60	6.84	5.44	3.27	1.81	9.07	7.82	0.82	-0.43	5.58	1.30	0.32	1.55



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-103 ± 16	$3.00^{+1.03}_{-0.95}$	680^{+35}_{-36}	5556^{+1118}_{-650}	3041^{+3315}_{-1380}
Alt.	-140 ± 22	$3.58^{+1.02}_{-0.98}$	681^{+34}_{-35}	5516^{+824}_{-539}	2926^{+2351}_{-1223}

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

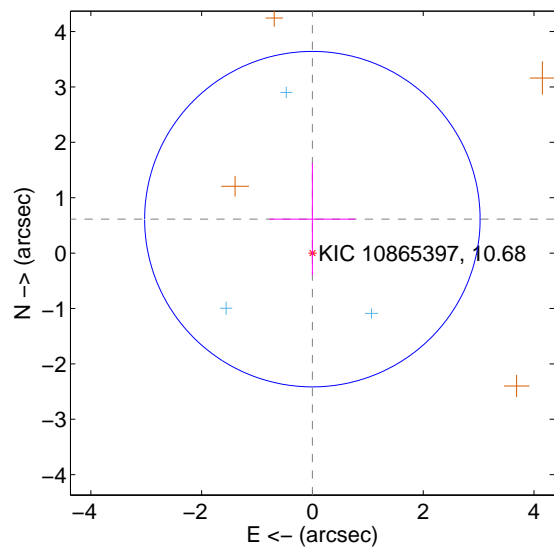
Supplemental centroid analysis for 010865397-02. **Kepler magnitude: 10.68.** Transit SNR 10.35

There are 3 quarters with good PRF difference image offsets

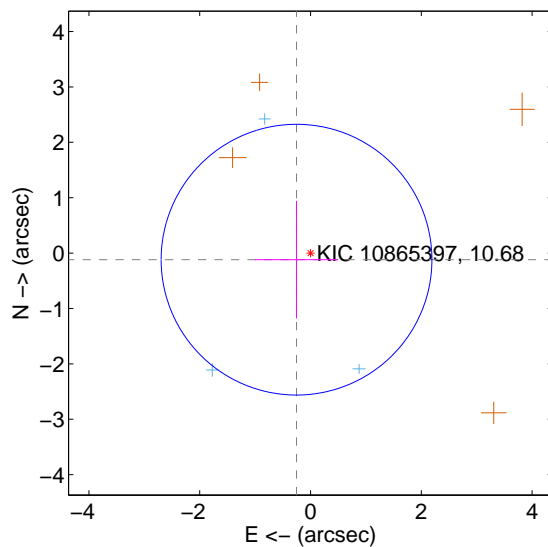
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.613 ± 1.009	0.61	0.001 ± 0.773	0.613 ± 1.009
PRF-fit source offset from KIC position	0.279 ± 0.815	0.34	0.253 ± 0.749	-0.119 ± 1.062
photometric centroid source offset	1.07 ± 0.54	2.00	-0.07 ± 0.37	-1.07 ± 0.54

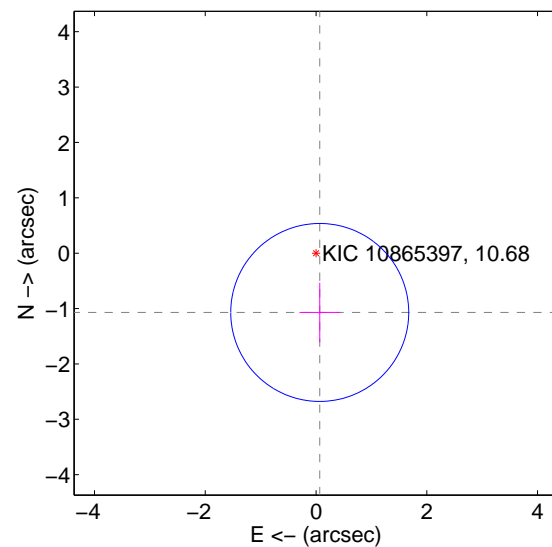
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

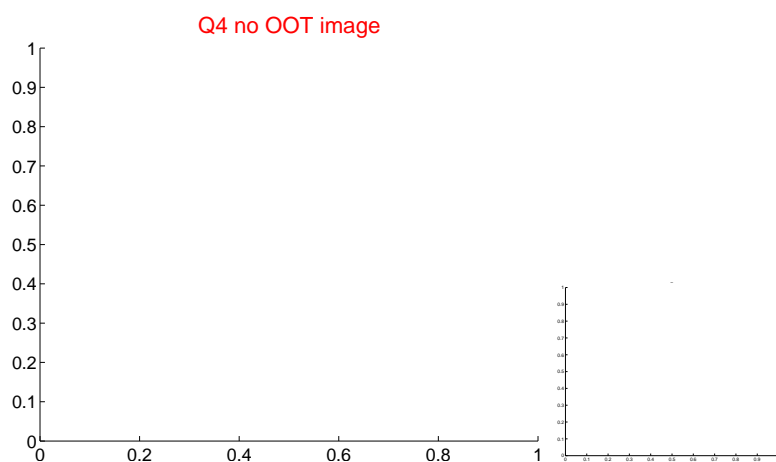
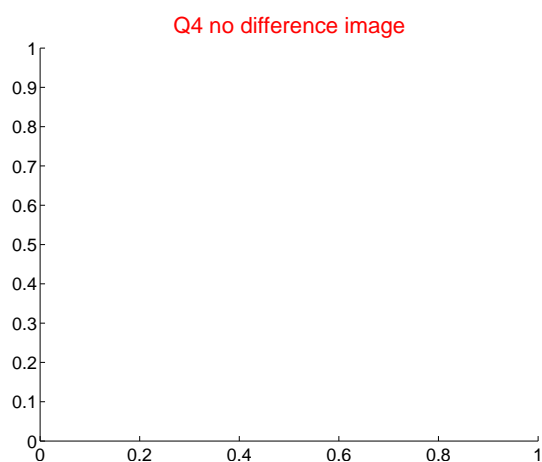
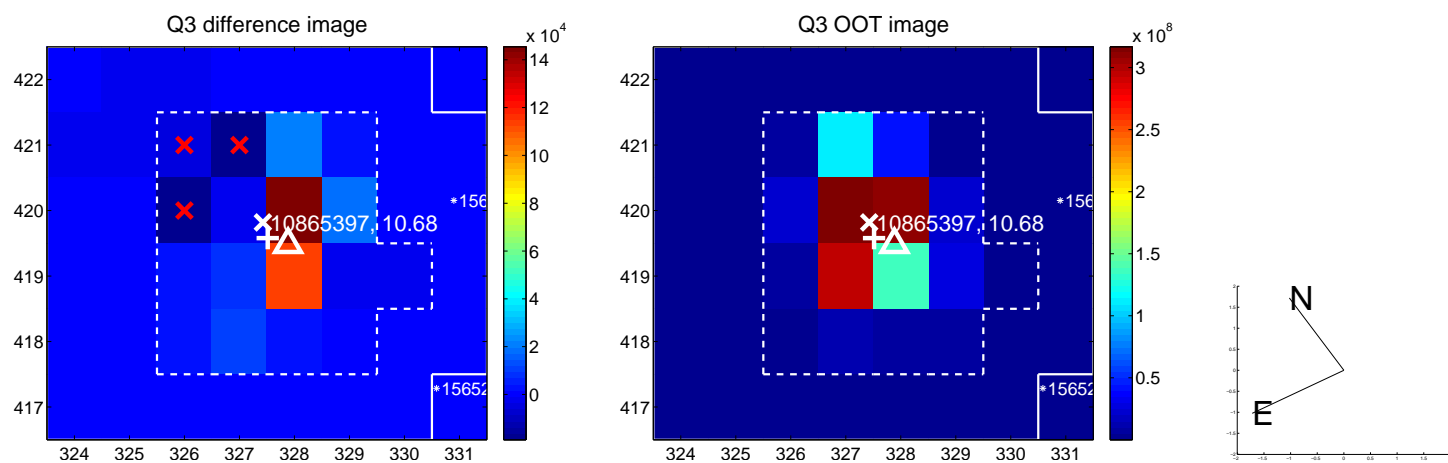
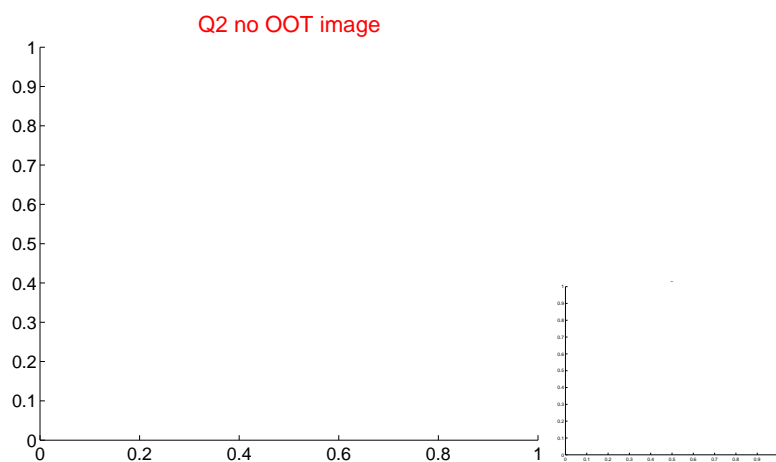
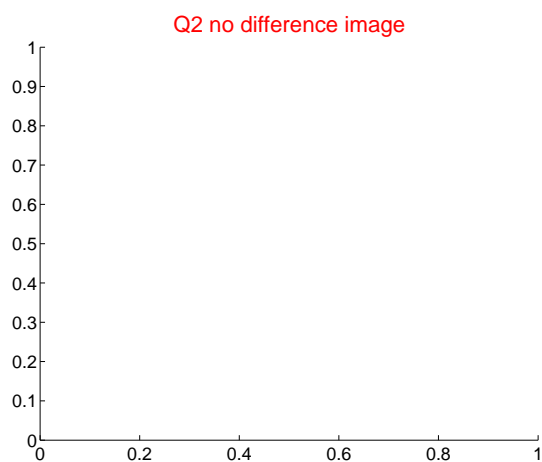
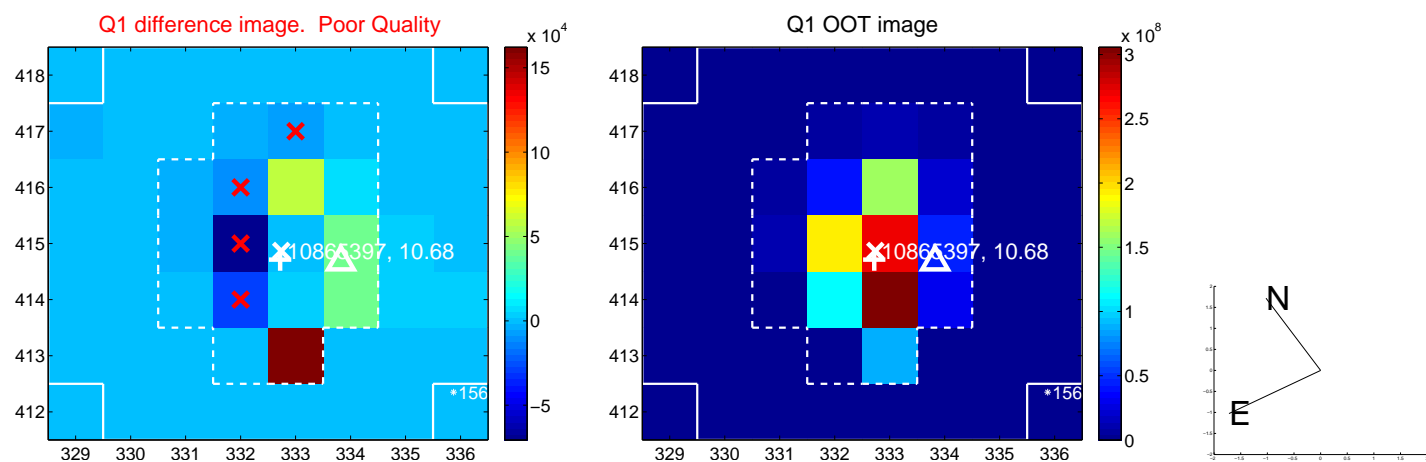


offset from photometric centroids

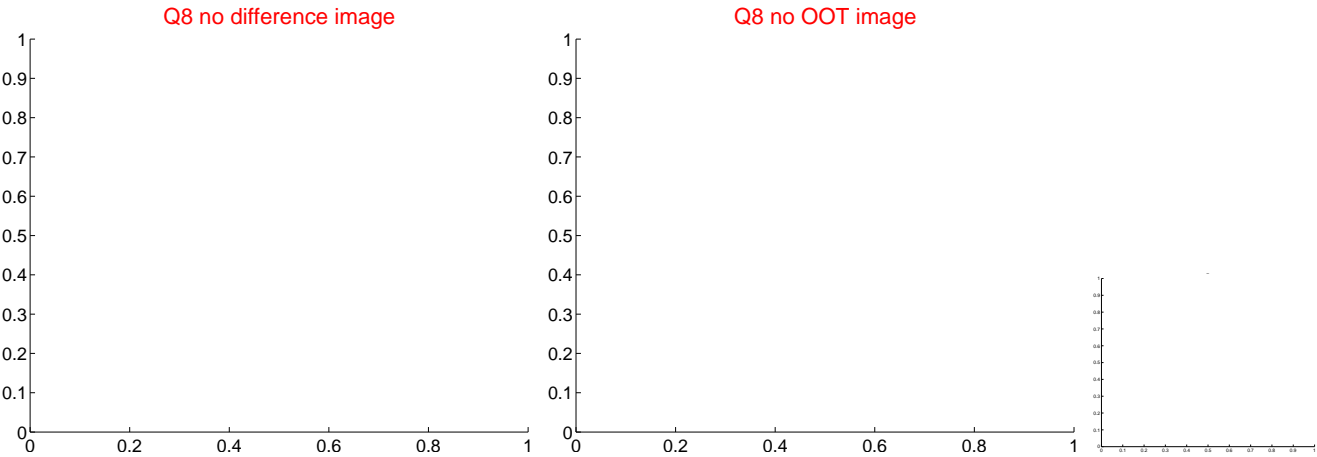
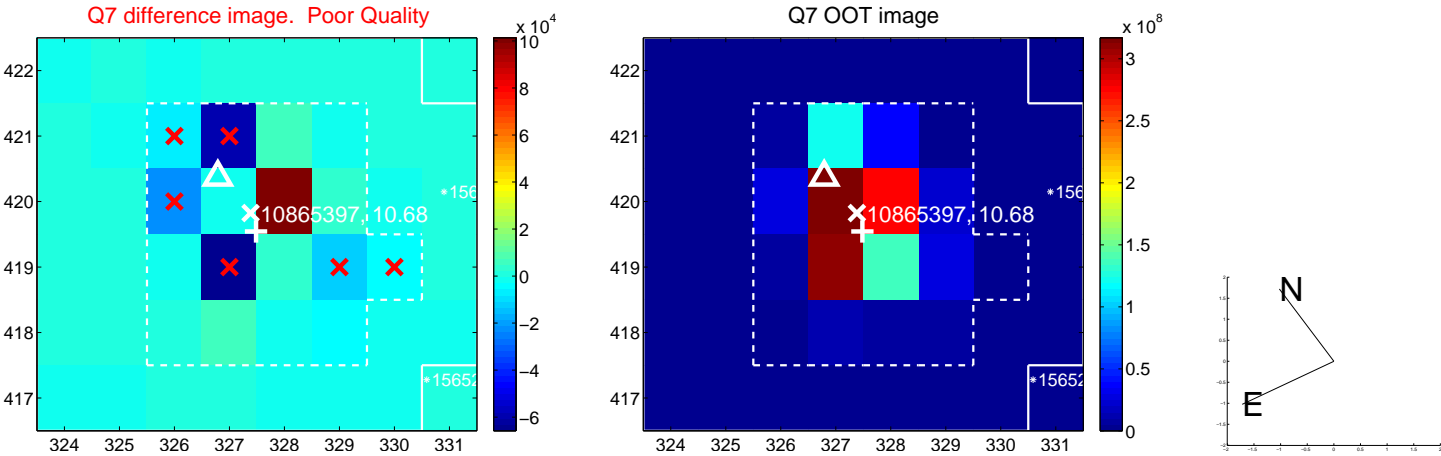
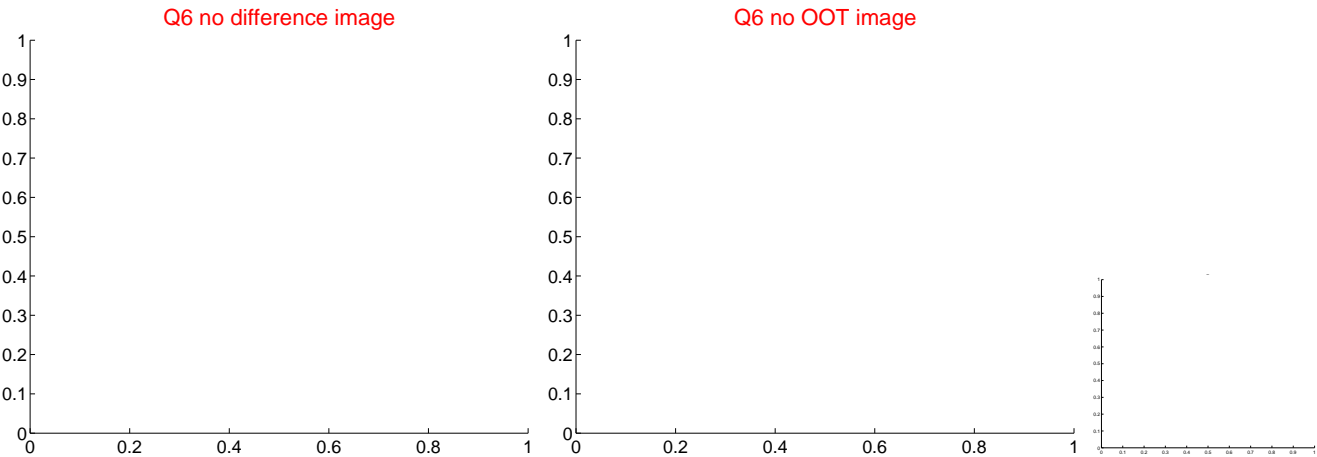
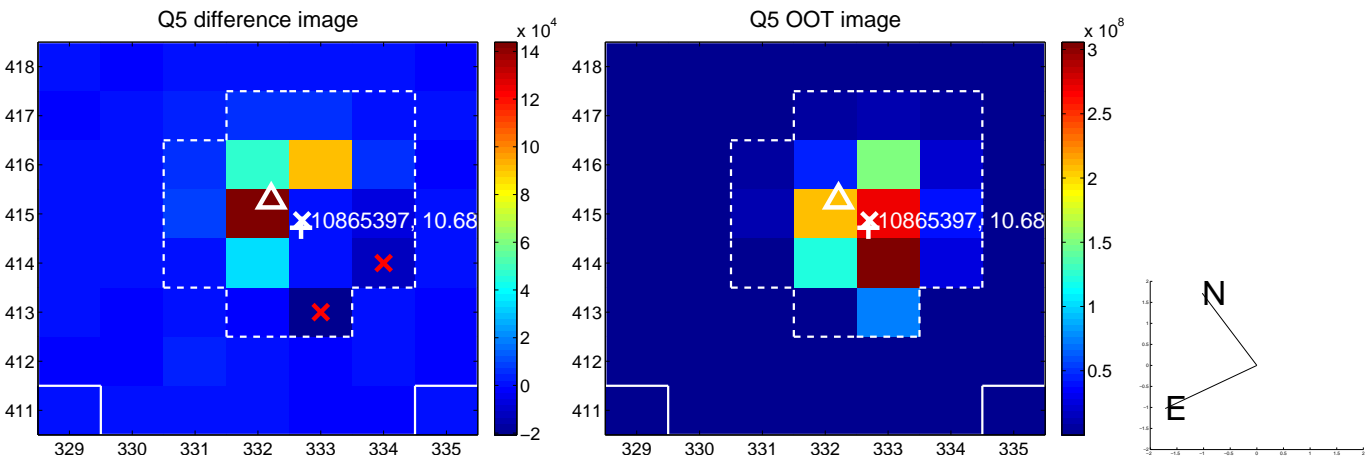


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

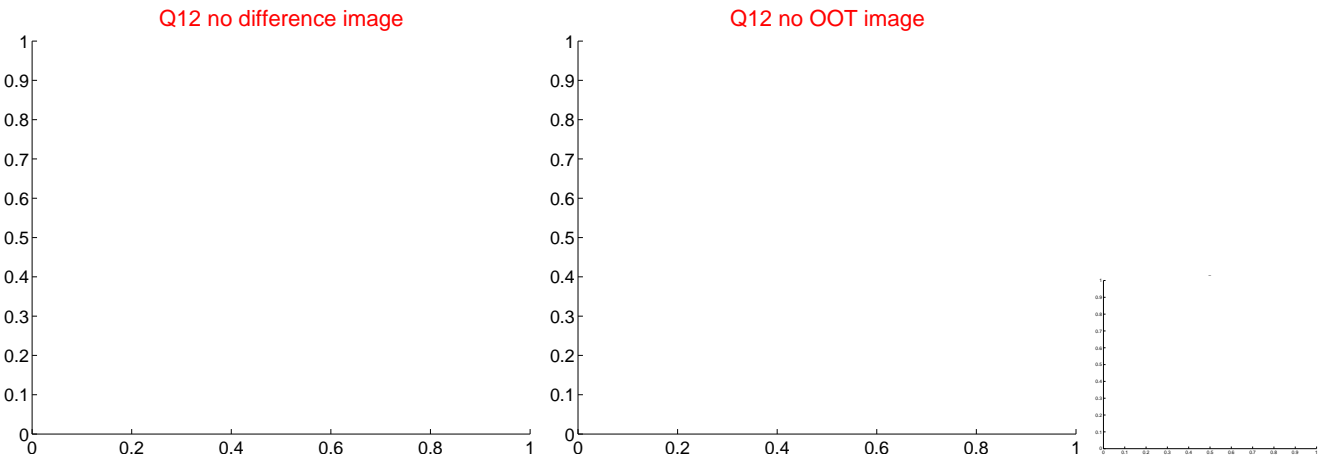
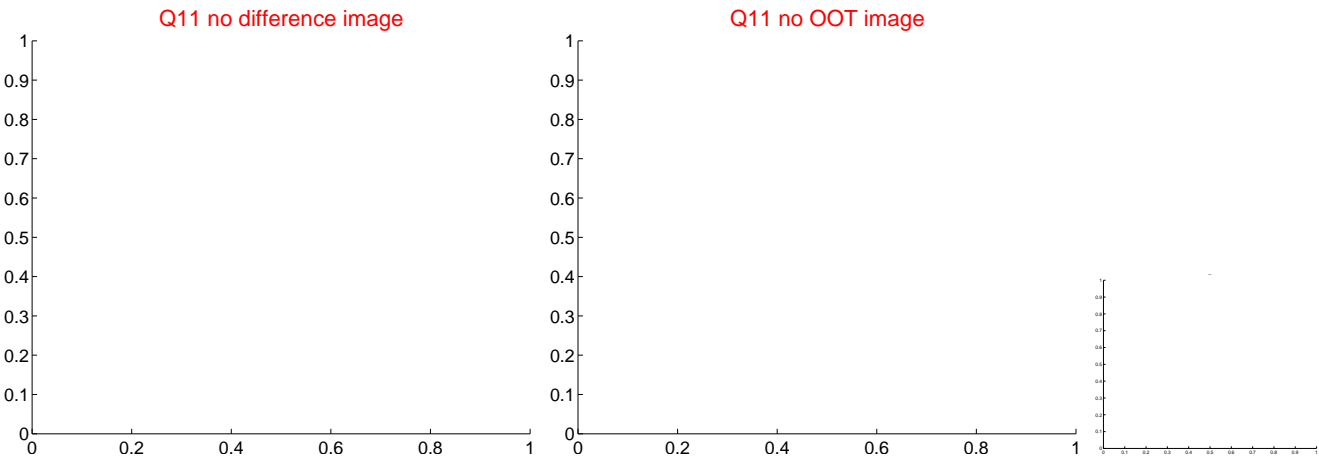
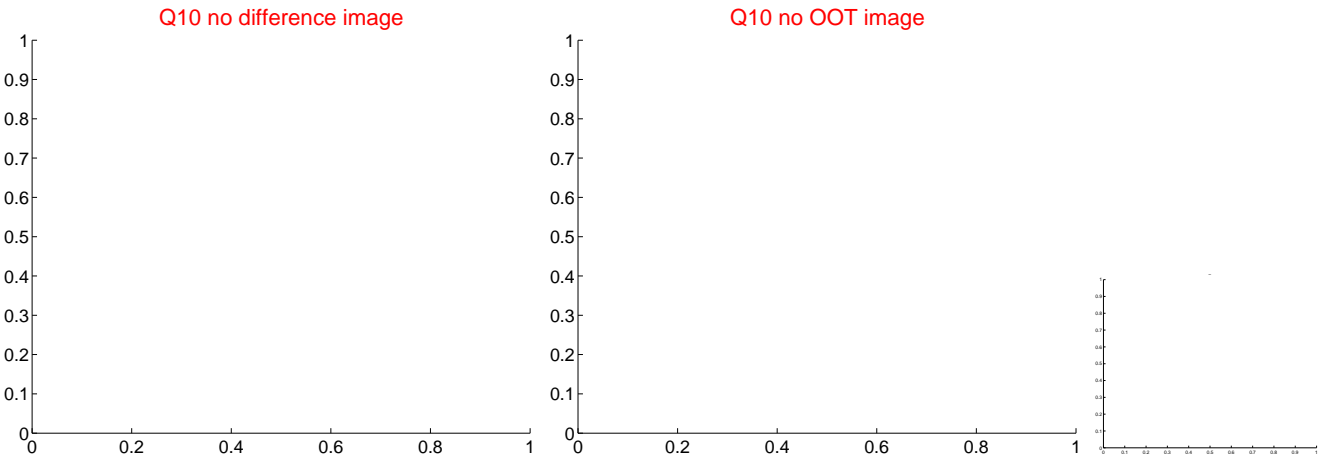
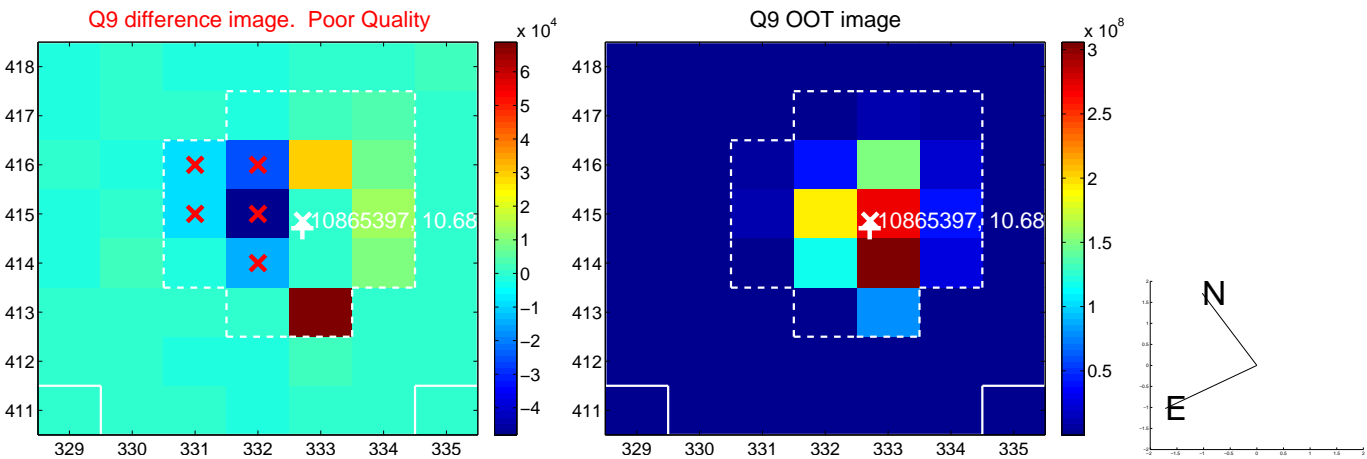
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



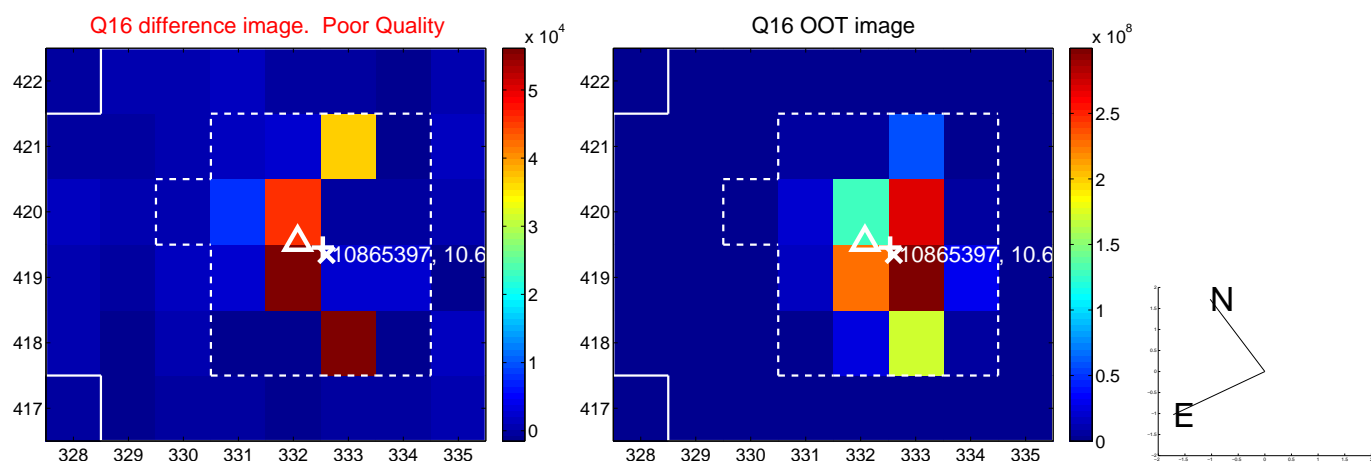
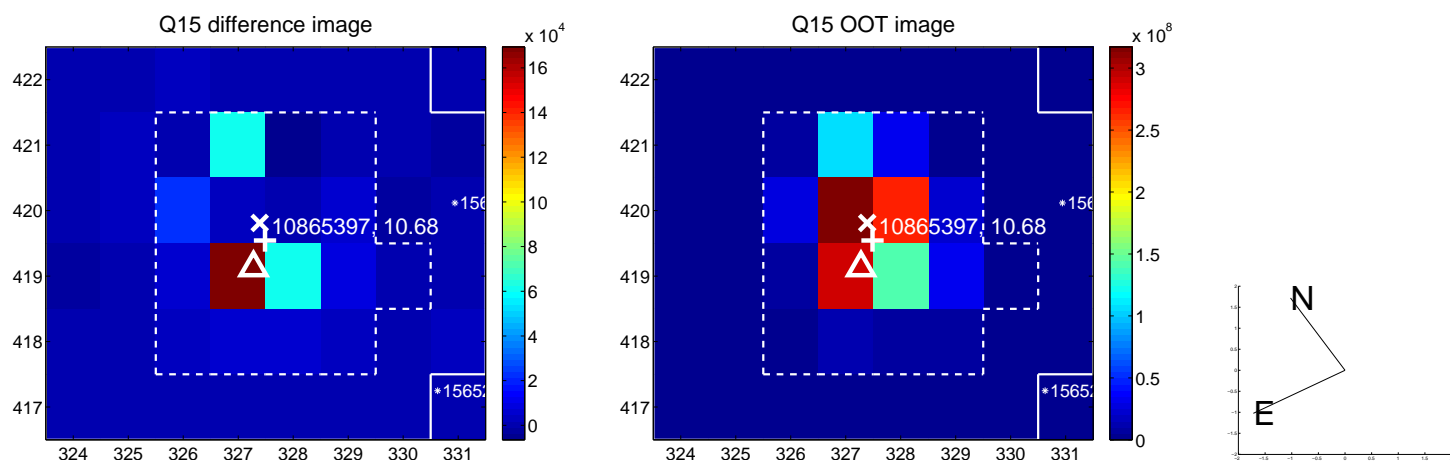
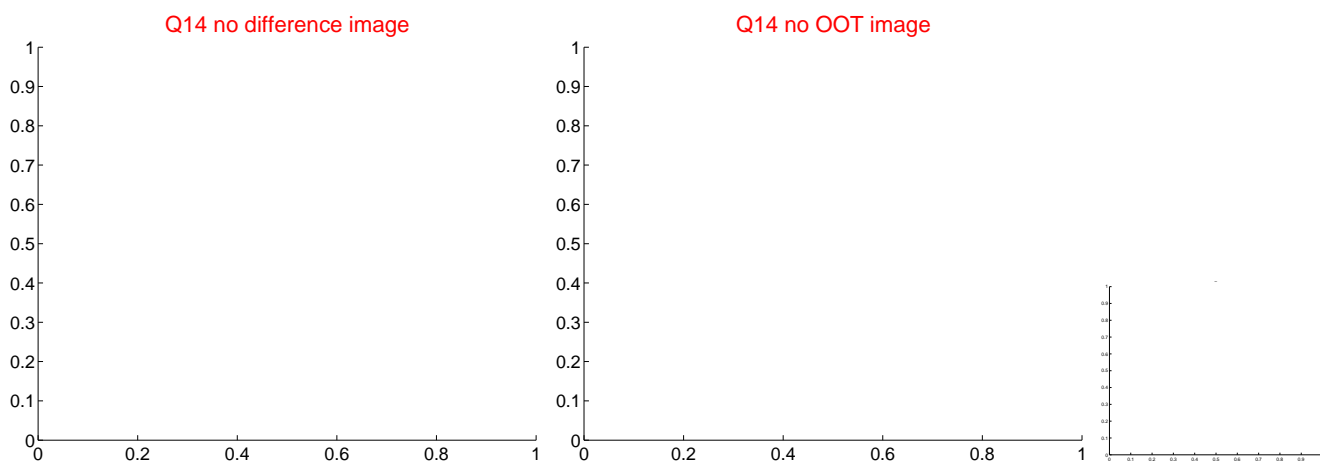
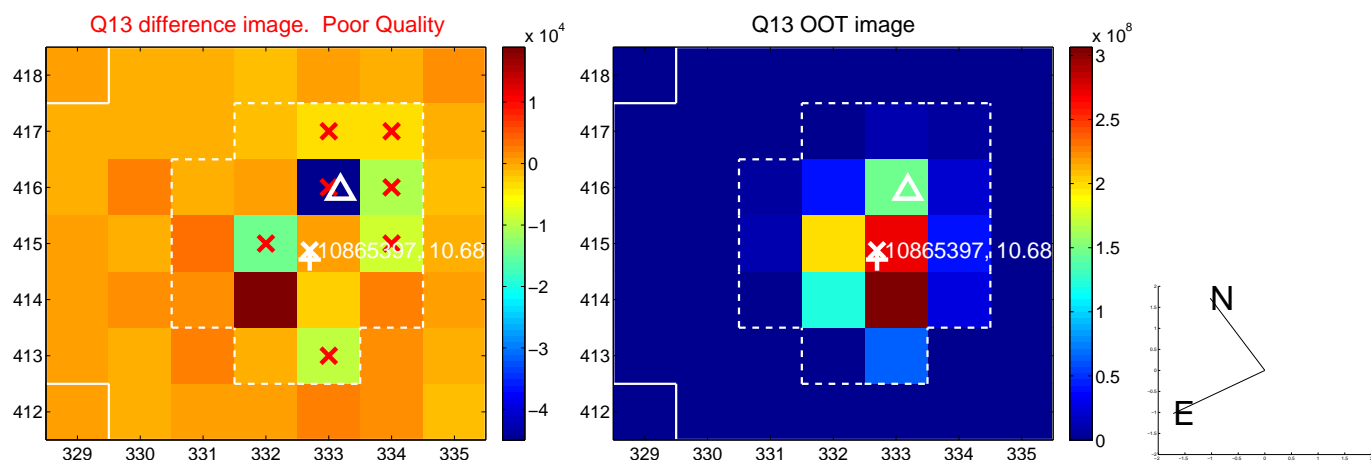
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



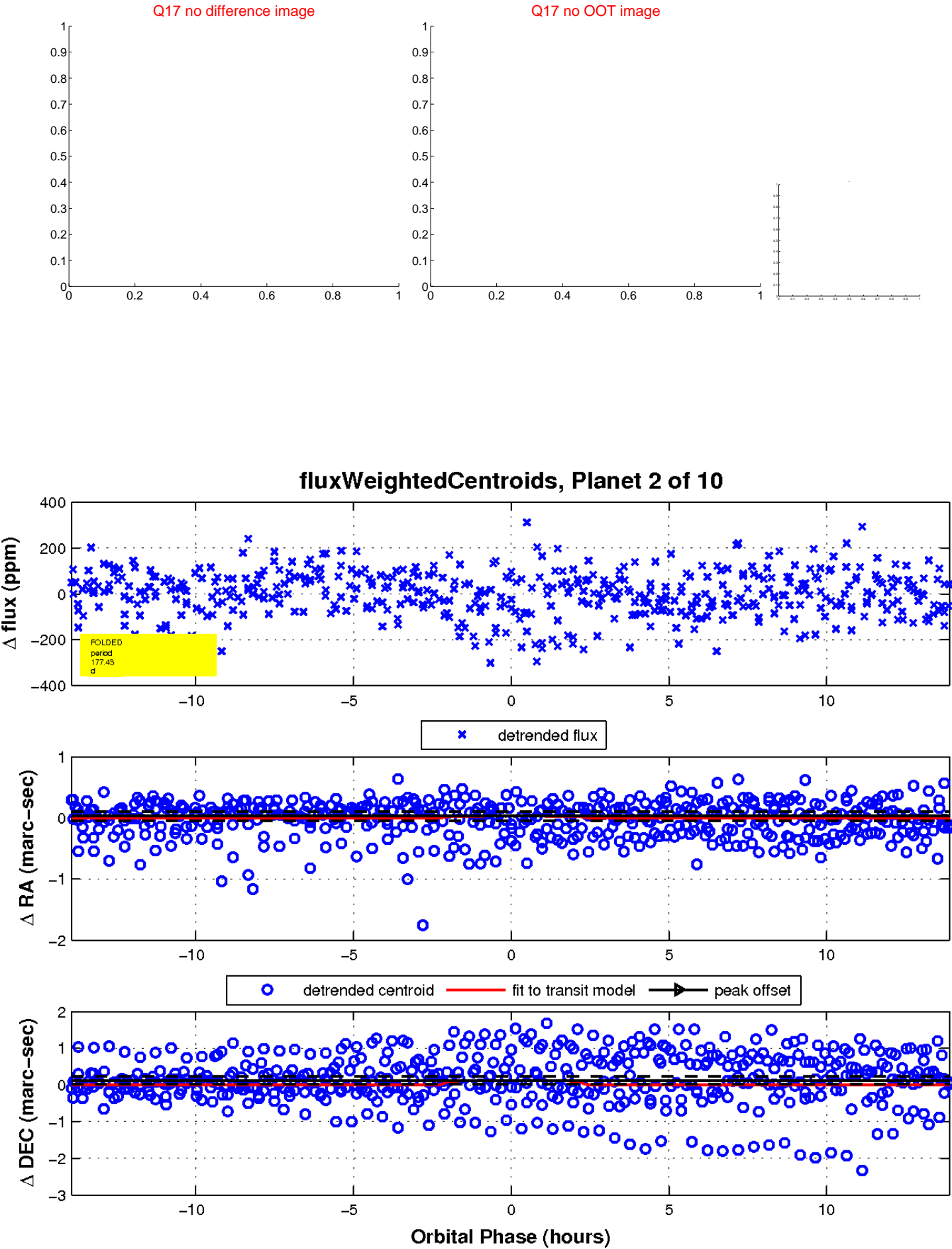
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

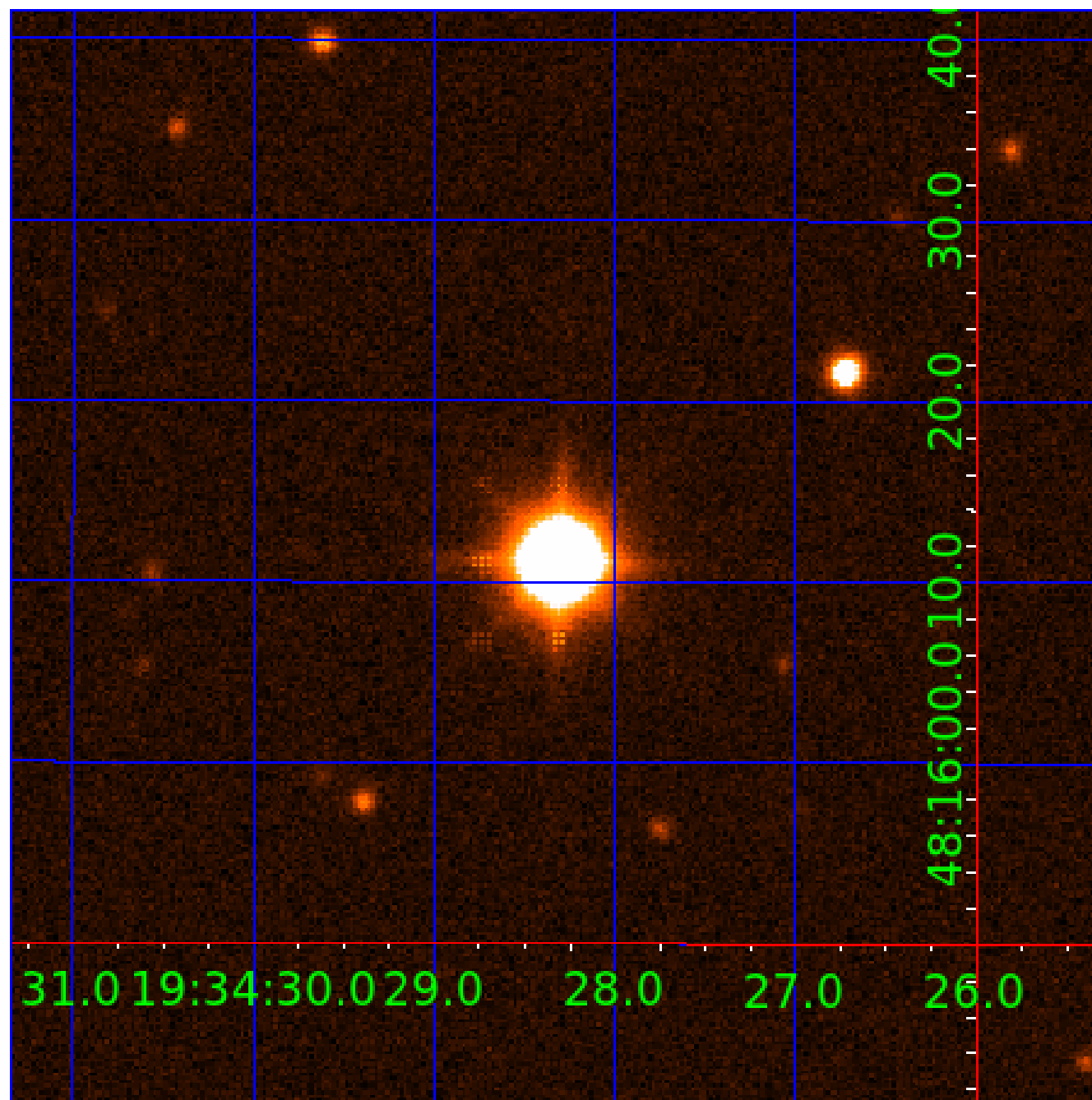


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

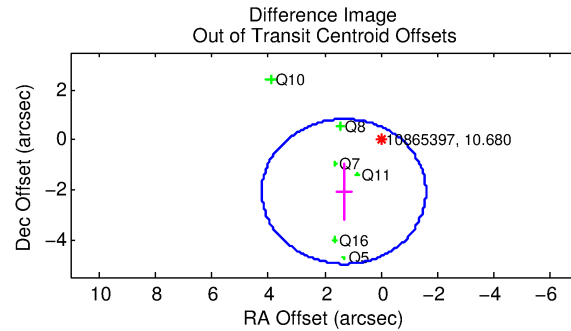
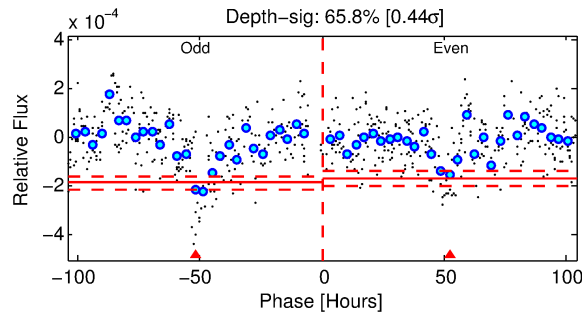
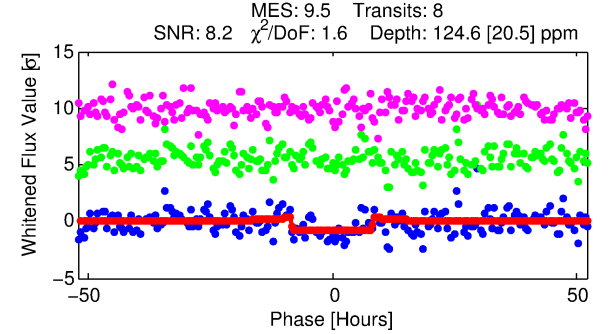
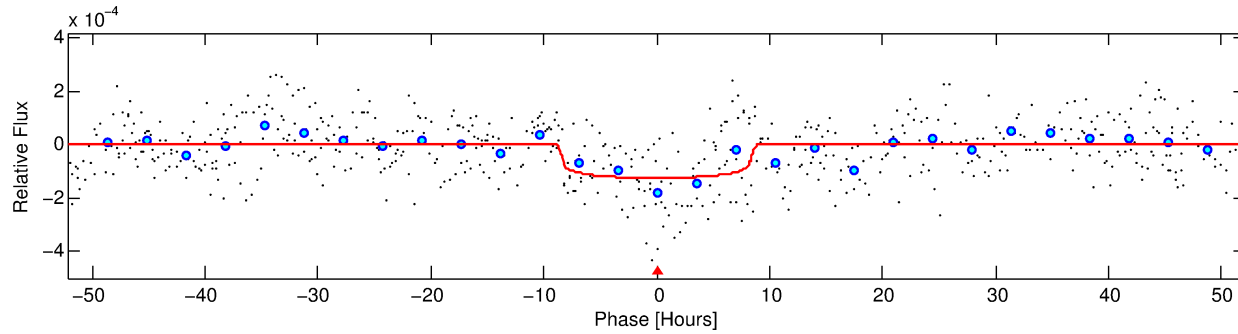
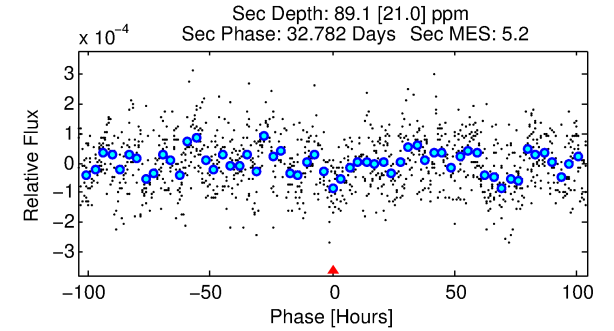
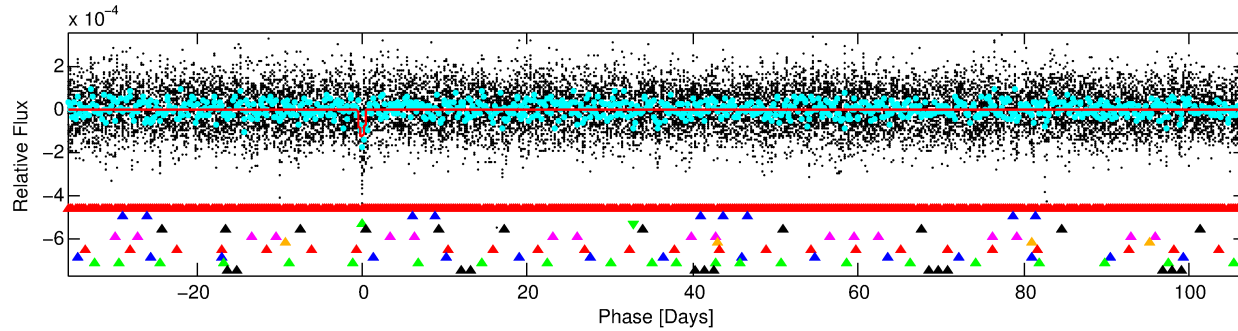
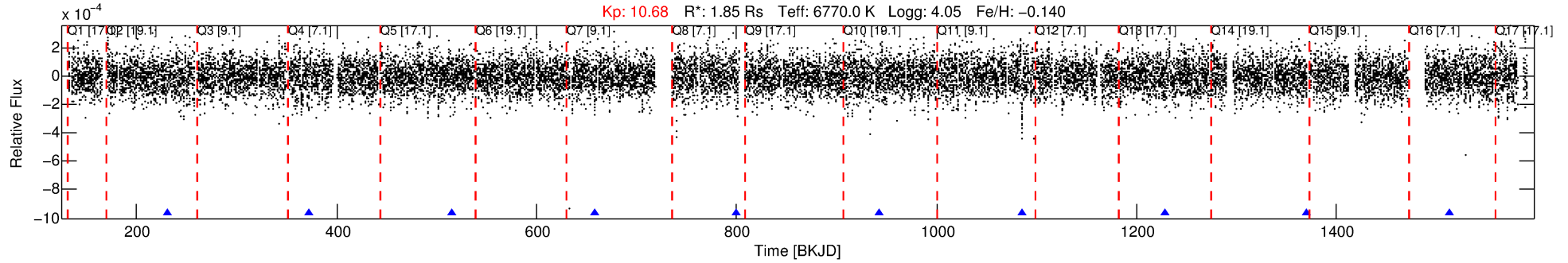
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-03

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 3 of 10 Period: 142.514 d



DV Fit Results:

Period = 142.51397 [0.00374] d
Epoch = 230.3435 [0.0201] BKJD
 R_p/R^* = 0.0113 [0.0019]
 a/R^* = 38.37 [31.64]
 b = 0.80 [0.37]
 S_{eff} = 18.05 [5.09]
 T_{eq} = 526 [37] K
 R_p = 2.28 [0.59] R_e
 a = 0.5980 [0.1068] AU
 A_g = 3357.49 [1677.25] [2.00σ]
 T_{effp} = 6186 [646] K [8.74σ]

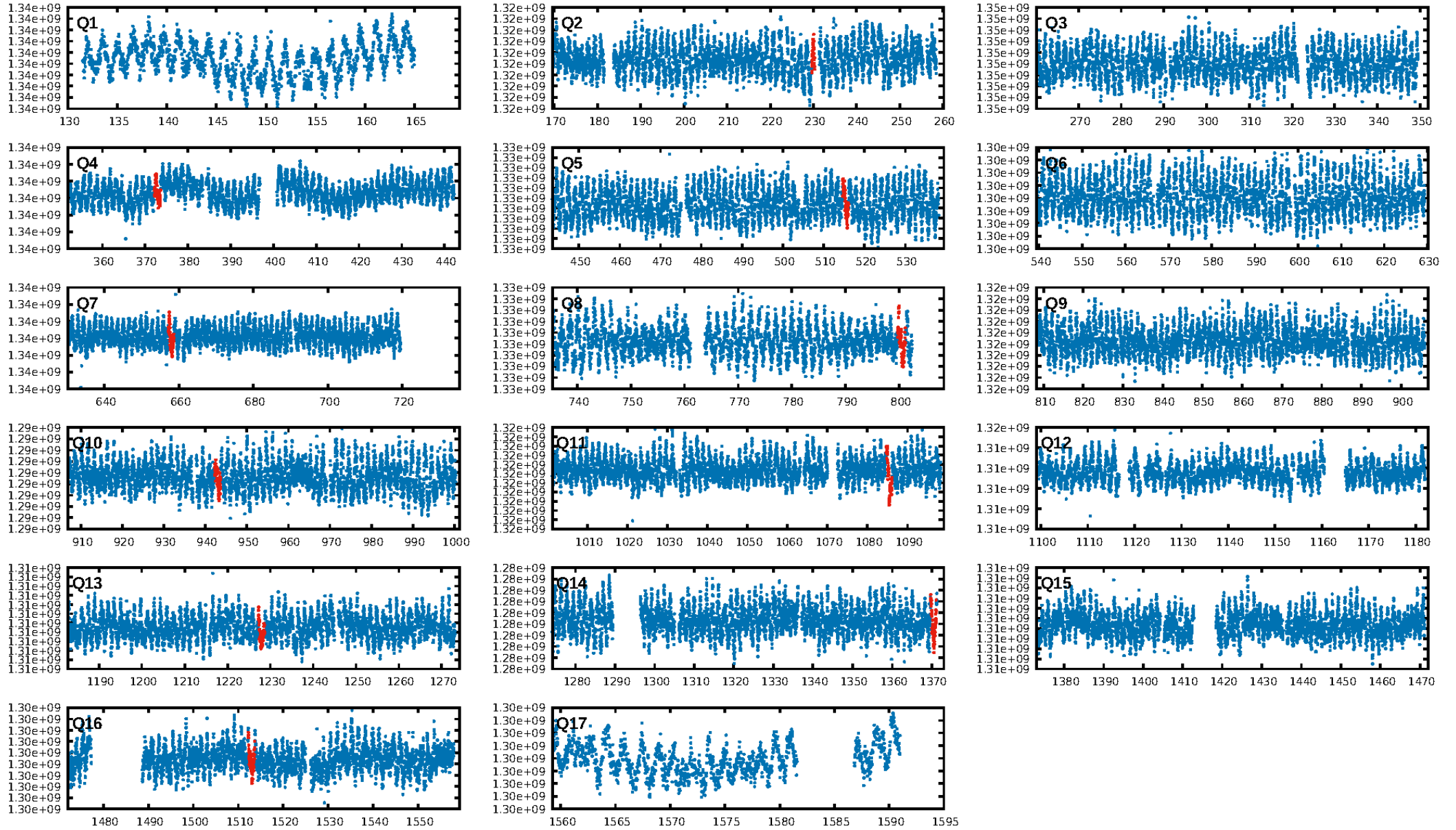
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.90σ]
LongPeriod-sig: 100.0% [46.51σ]
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.47e-11
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -1.063
Centroid-sig: 49.1%
Centroid-so: 0.809 arcsec [1.05σ]
OotOffset-rm: 2.462 arcsec [2.55σ]
KicOffset-rm: 3.421 arcsec [3.56σ]
OotOffset-st: 1/2/2/1 [6]
KicOffset-st: 1/2/2/1 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.00 [0/6]

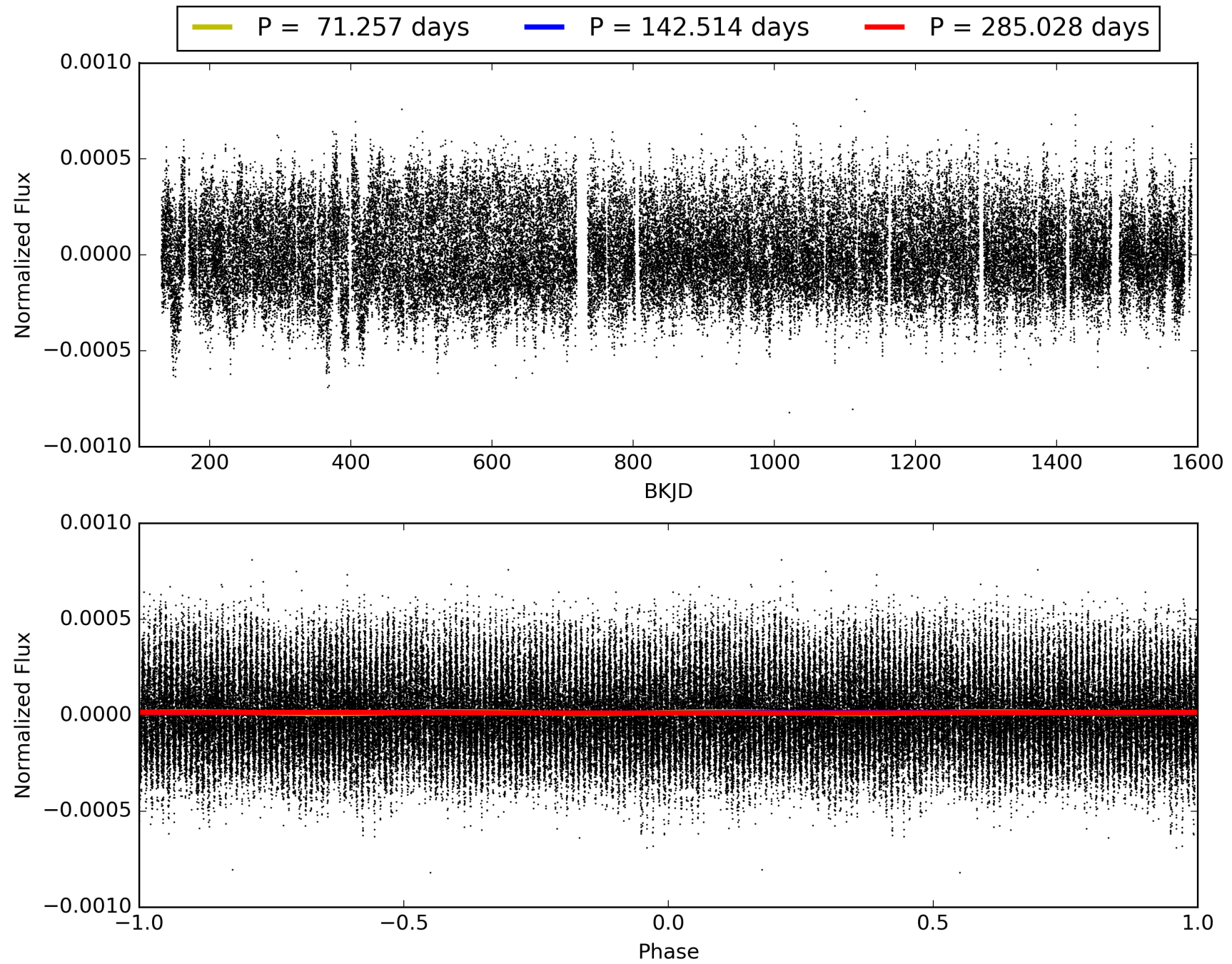
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:13 Z

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

TCE 010865397-03, PDC Light Curves

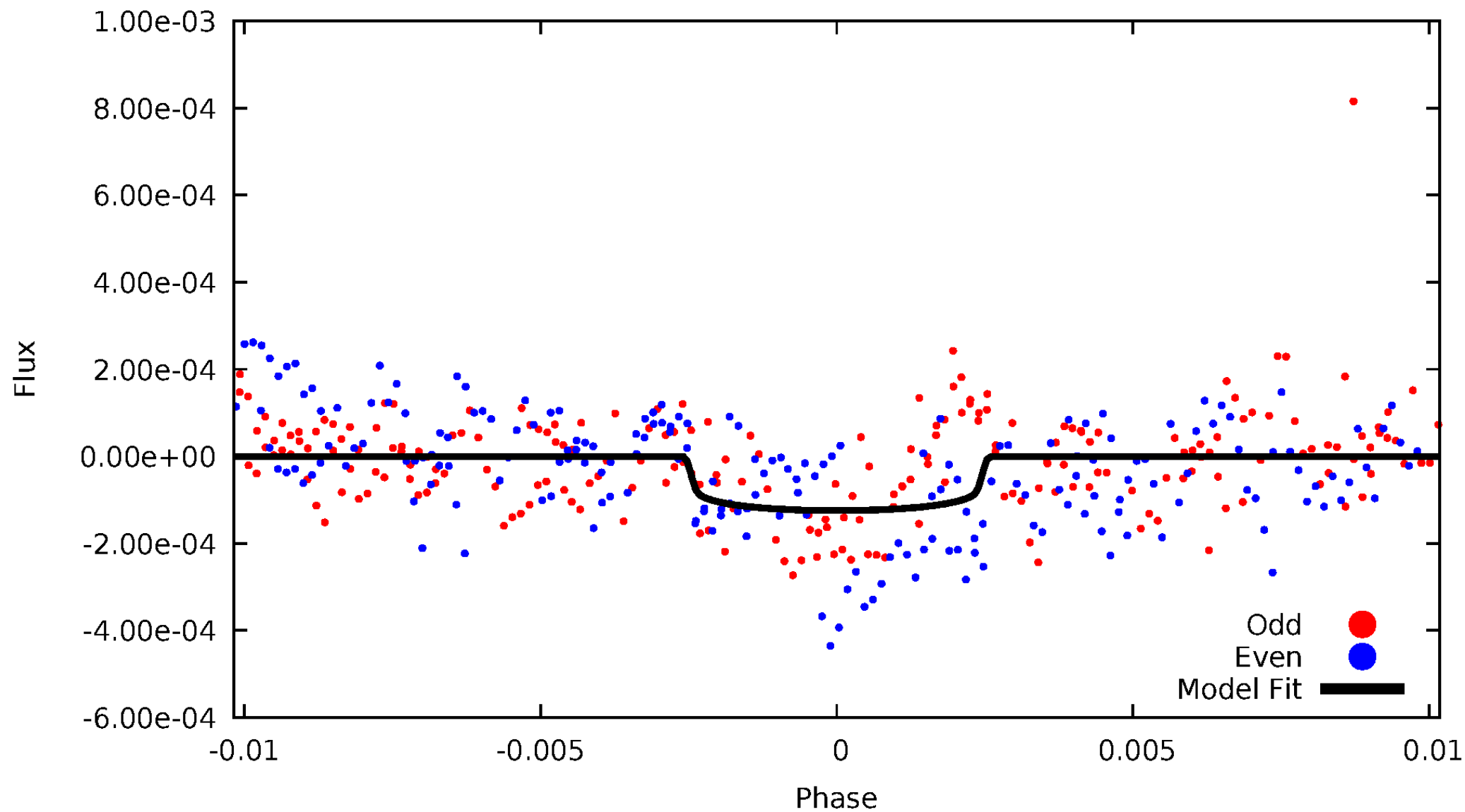


TCE 010865397-03



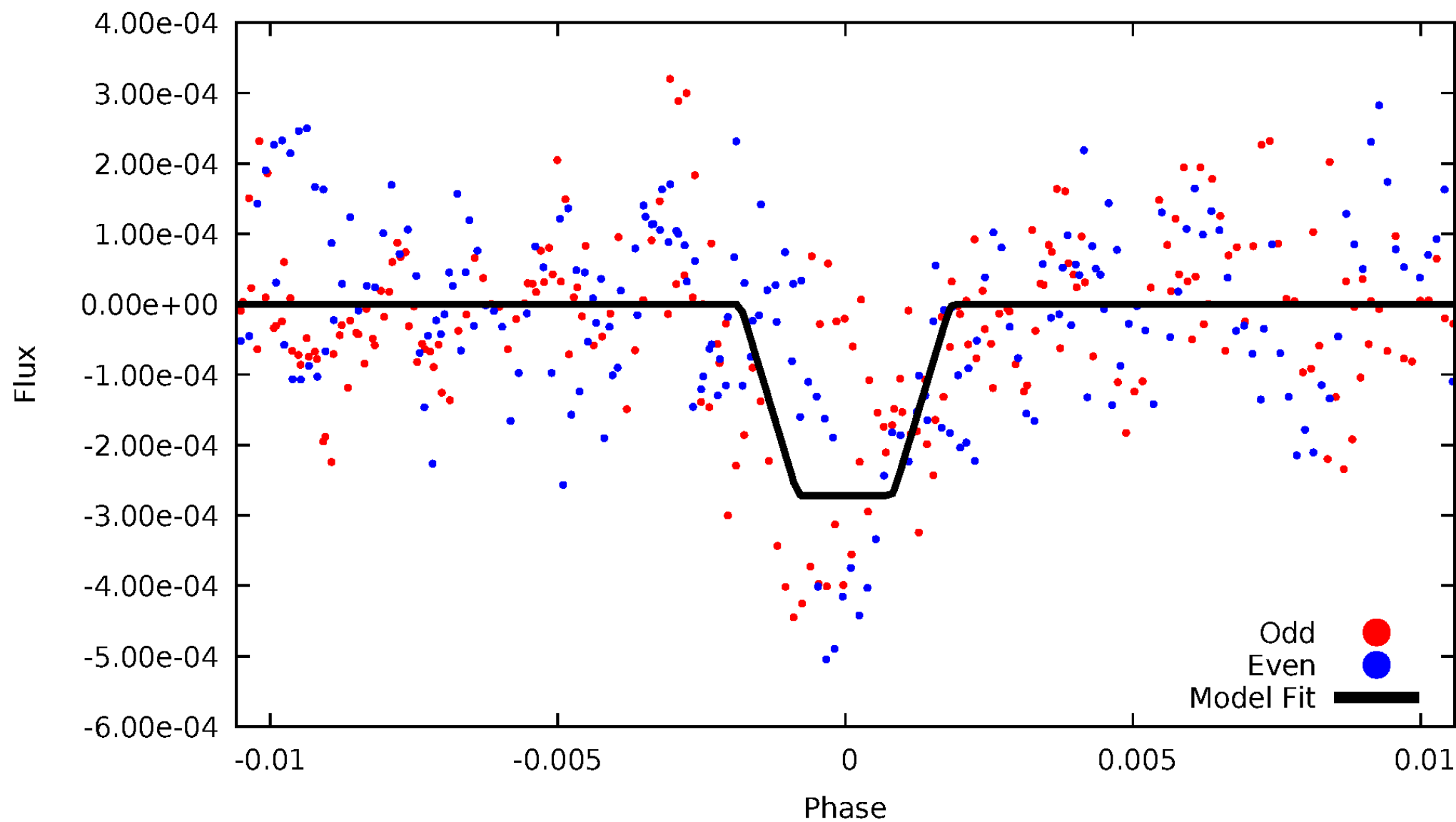
DV Odd/Even

TCE 010865397-03



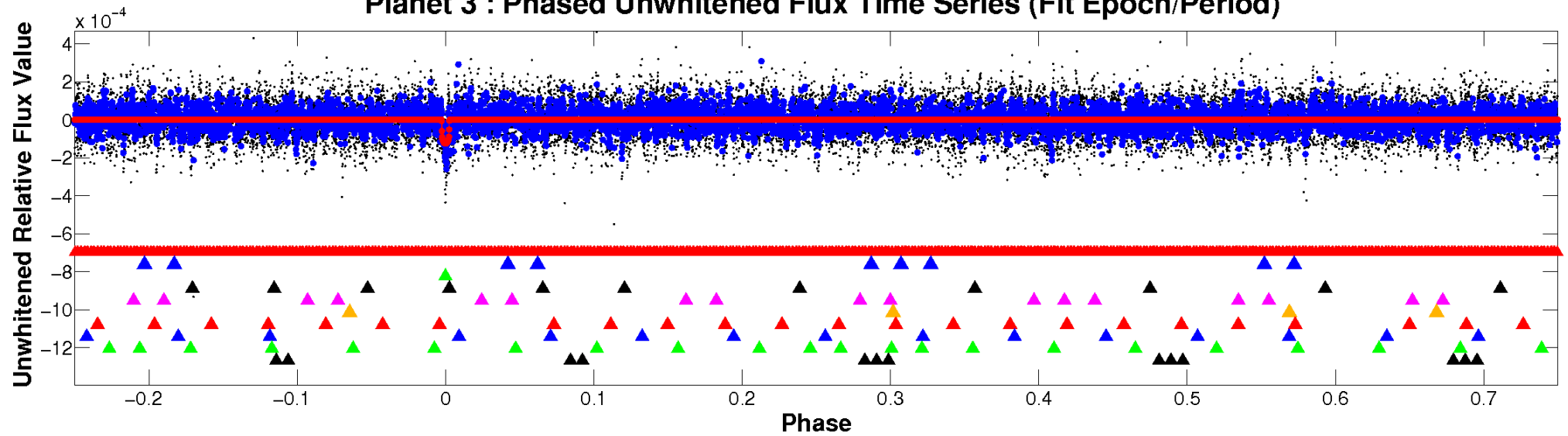
ALT Odd/Even

TCE 010865397-03

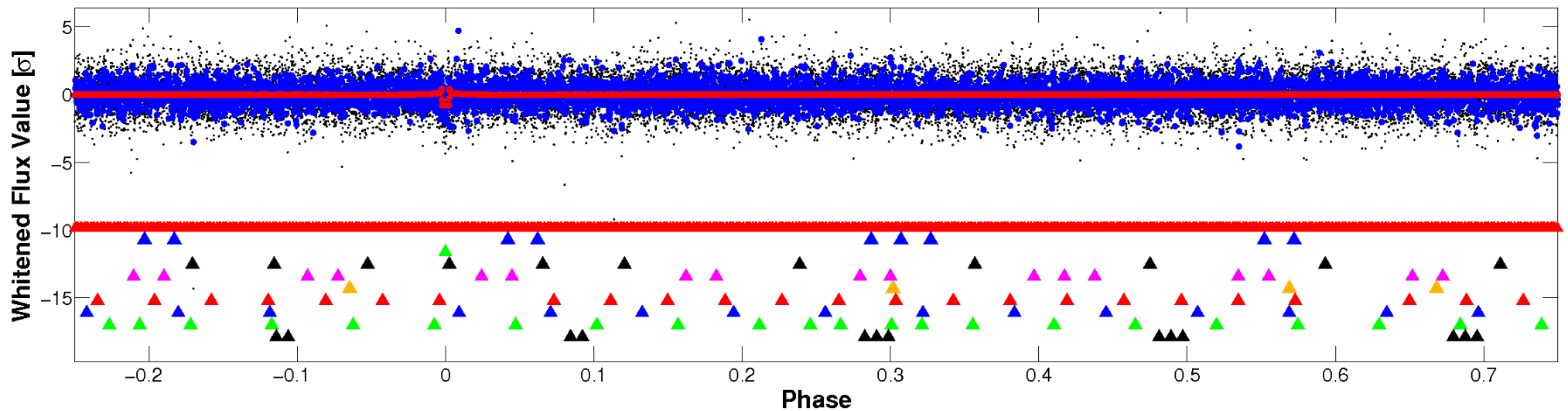


Non-Whitened Vs. Whitened Light Curve

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

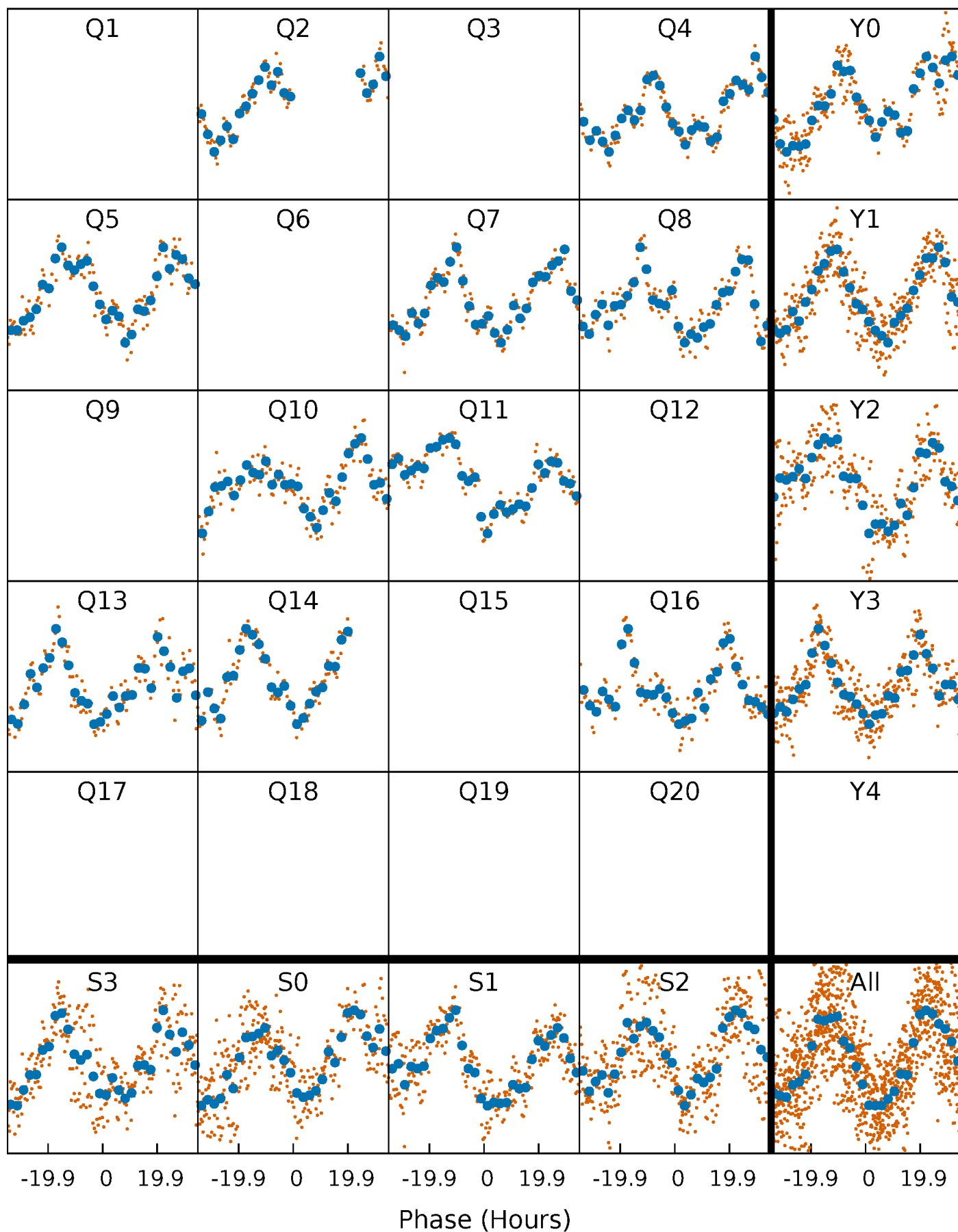


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



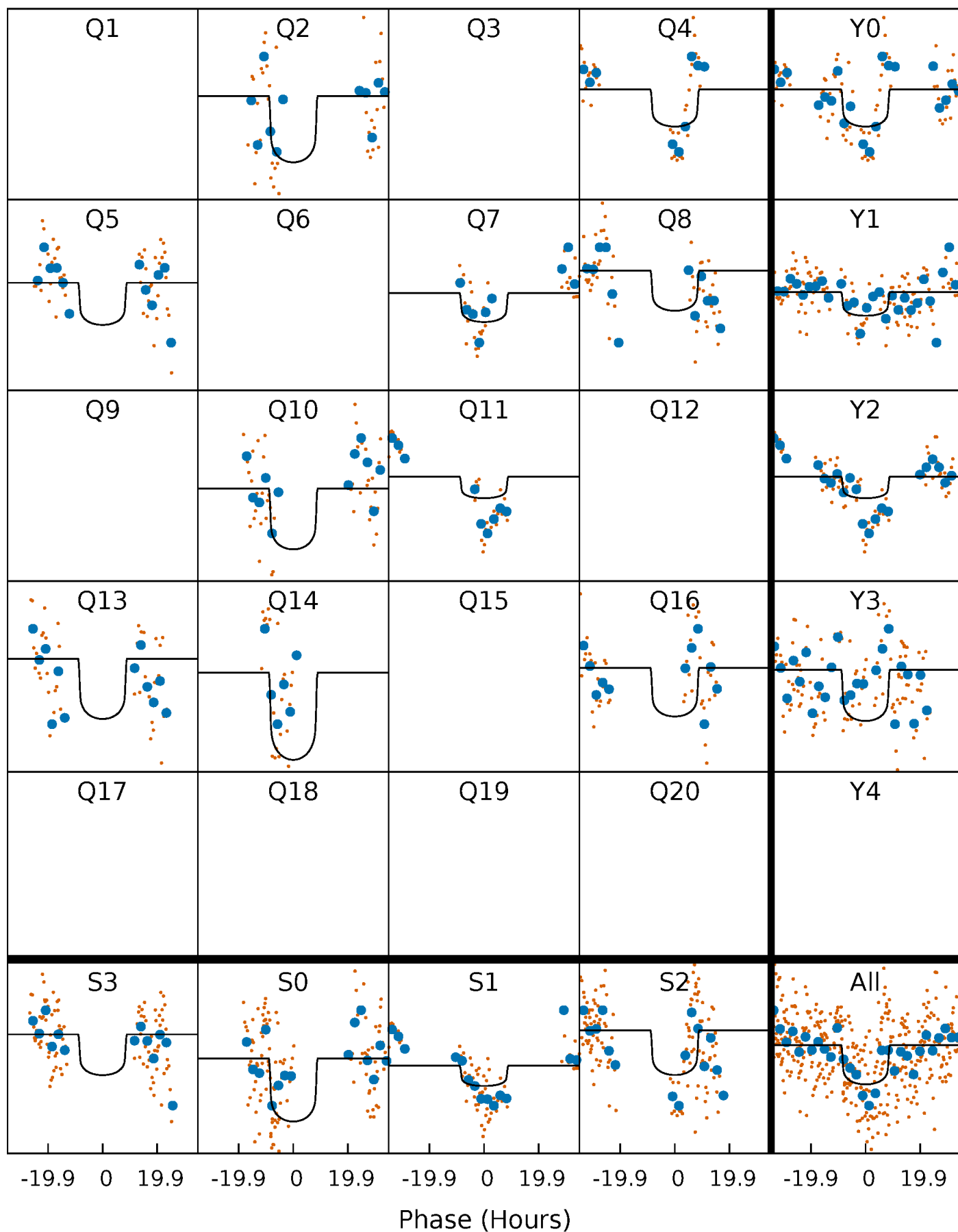
PDC Quarter-Phased Transit Curves

TCE 010865397-03 P=142.513972 Days $T_0=230.343522$ (BKJD)



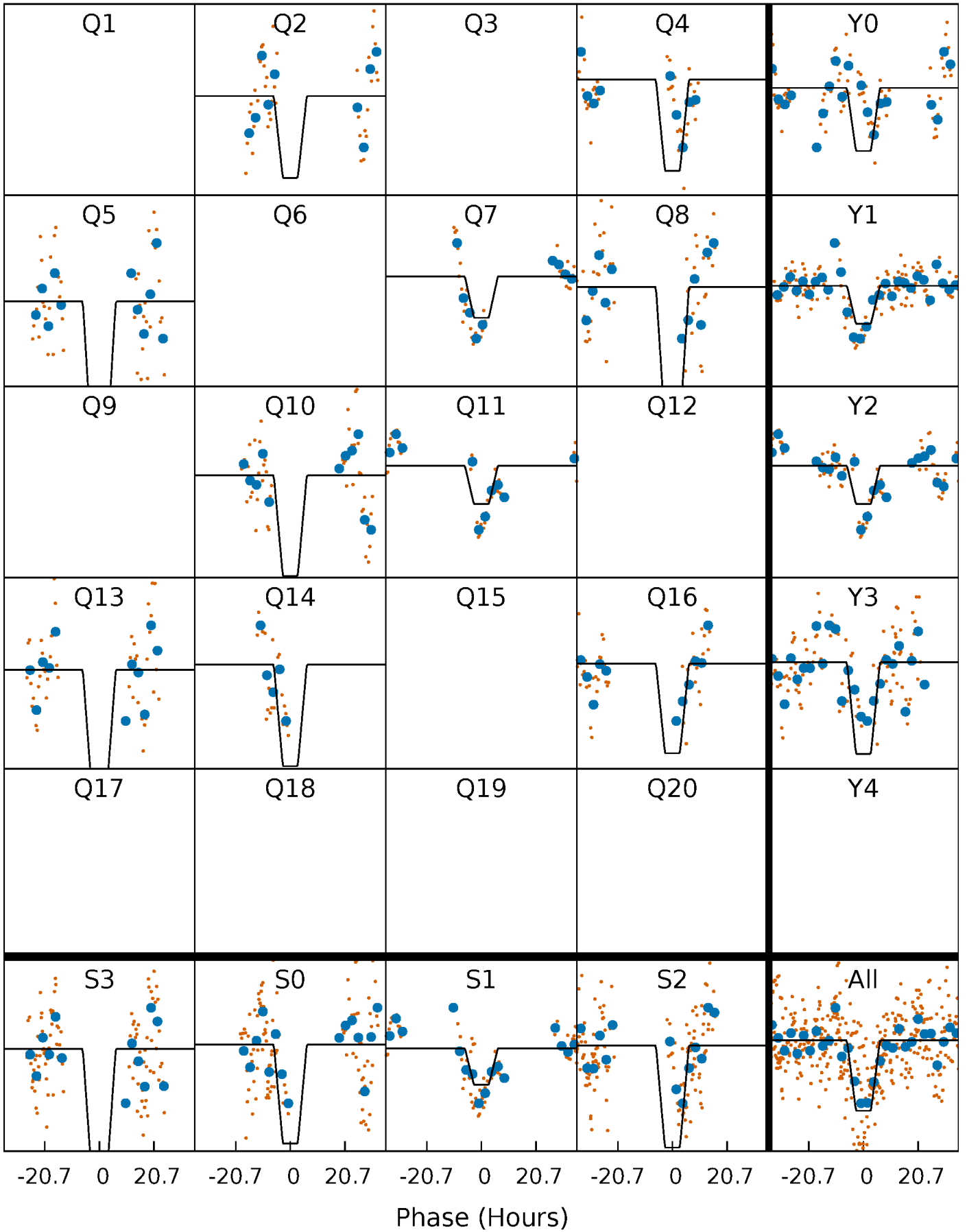
DV Quarter-Phased Transit Curves

TCE 010865397-03 $P=142.513972$ Days $T_0=230.343522$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

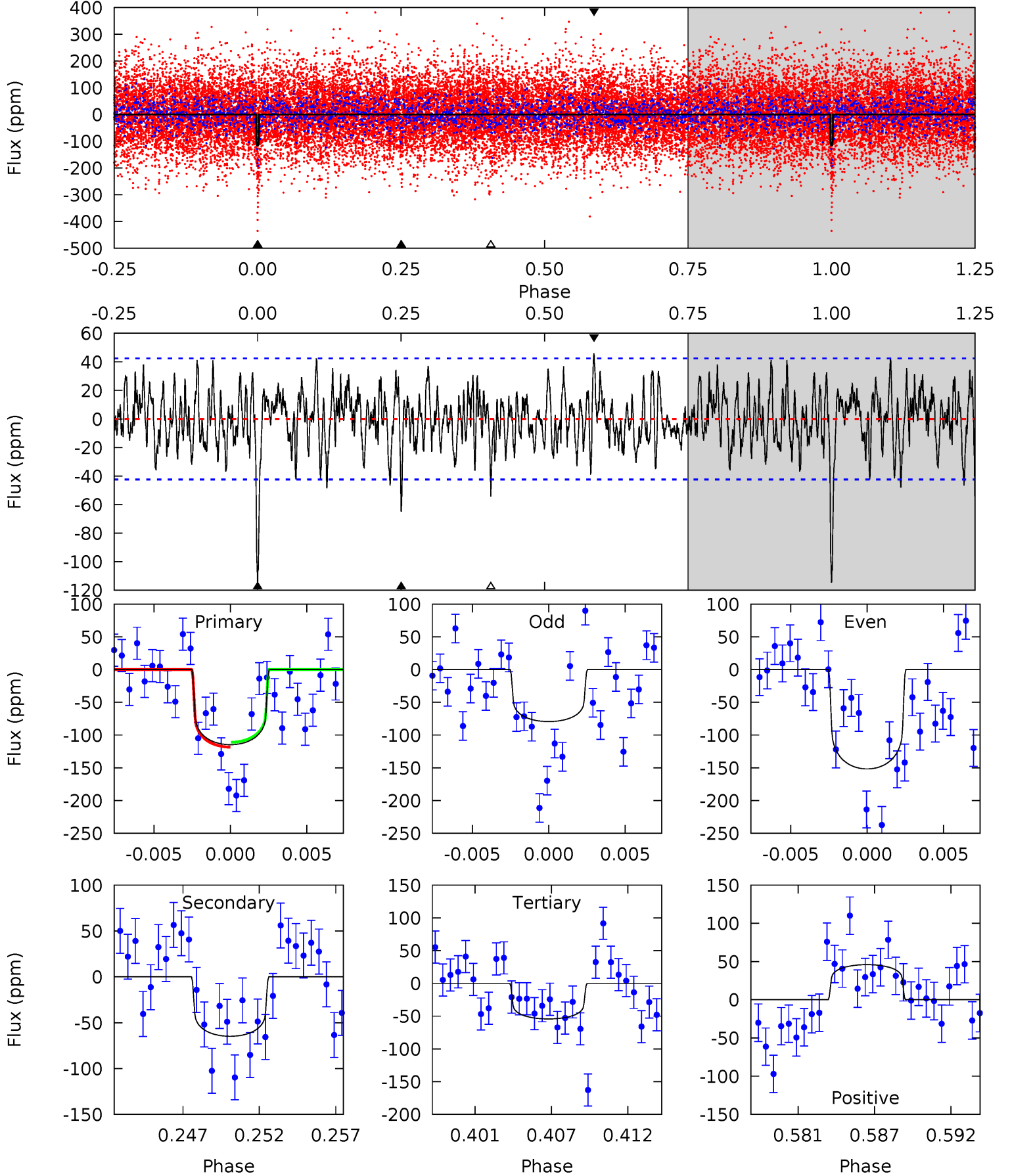
TCE 010865397-03 P=142.517270 Days $T_0=230.356354$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-03, $P = 142.513972$ Days, $E = 87.829550$ Days

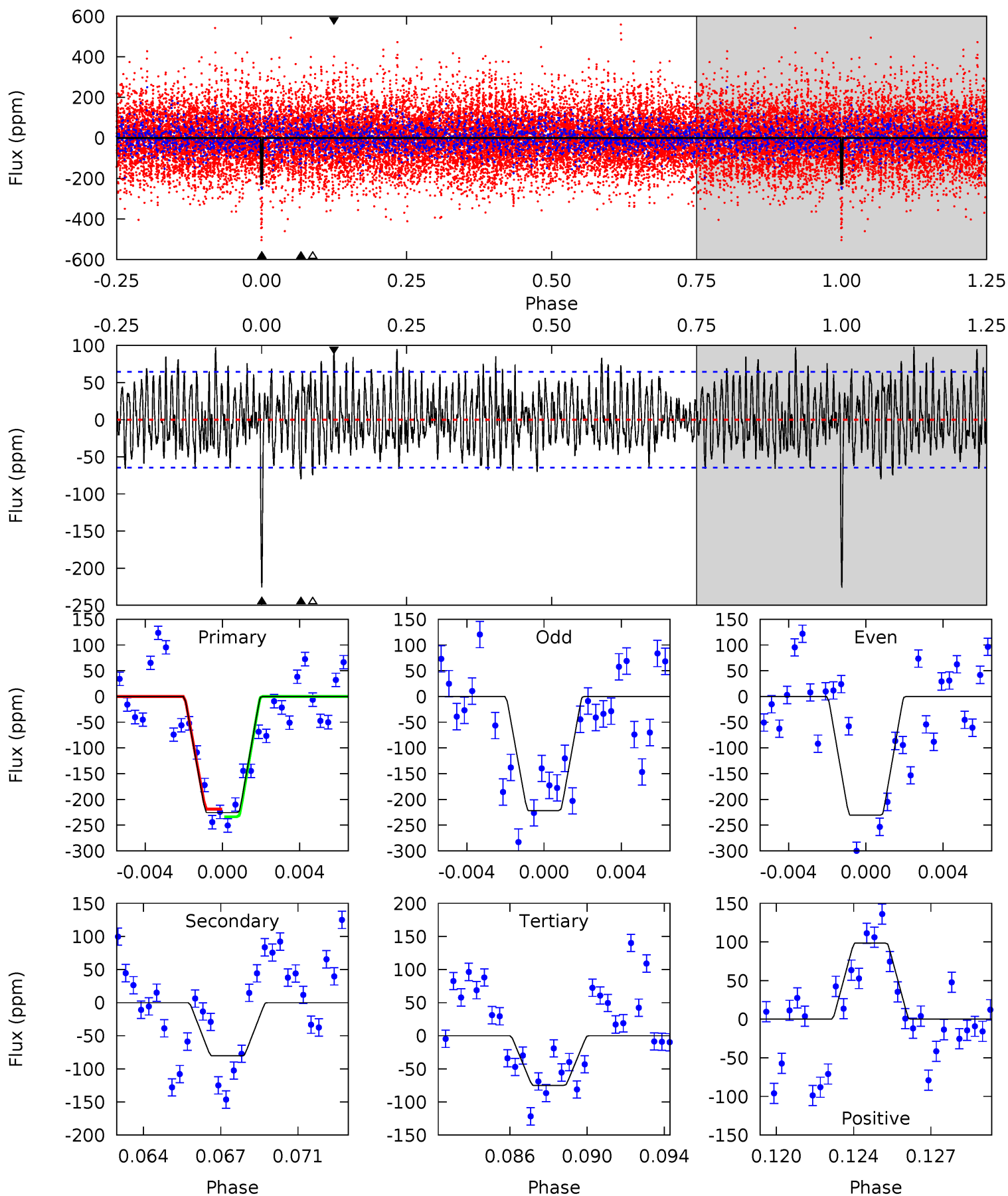
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	7.88	6.60	5.58	5.15	2.80	1.94	7.34	8.36	1.28	2.30	4.40	0.95	0.29	0.45



Alt Model-Shift Uniqueness Test

010865397-03, $P = 142.517270$ Days, $E = 87.839084$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	6.47	6.05	7.95	5.21	2.90	2.55	12.2	10.3	0.42	-1.48	0.37	0.83	0.30	0.60



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-65 ± 8	$2.25^{+0.47}_{-0.45}$	732^{+37}_{-38}	5713^{+607}_{-441}	2514^{+1464}_{-847}
Alt.	-80 ± 12	$3.29^{+0.52}_{-0.51}$	732^{+35}_{-39}	5052^{+341}_{-295}	1451^{+636}_{-406}

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

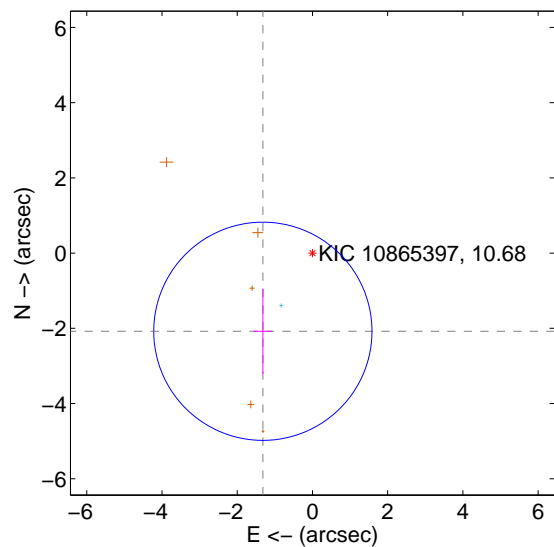
Supplemental centroid analysis for 010865397-03. **Kepler magnitude: 10.68.** Transit SNR 8.16

There are 1 quarters with good PRF difference image offsets

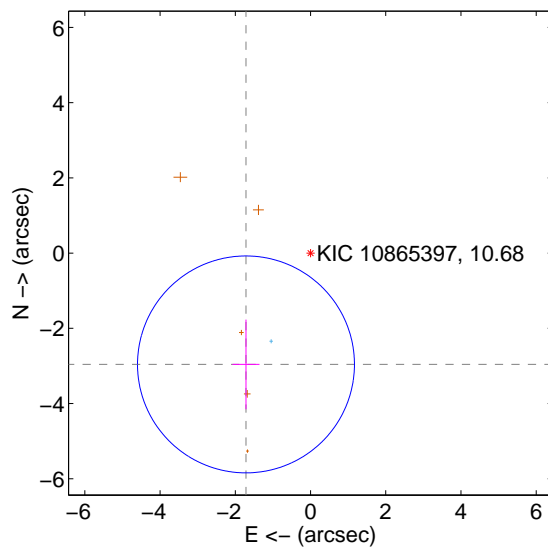
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.462 ± 0.967	2.55	1.318 ± 0.247	-2.079 ± 1.134
PRF-fit source offset from KIC position	3.421 ± 0.961	3.56	1.716 ± 0.359	-2.960 ± 1.193
photometric centroid source offset	0.81 ± 0.77	1.05	0.75 ± 0.71	-0.30 ± 1.05

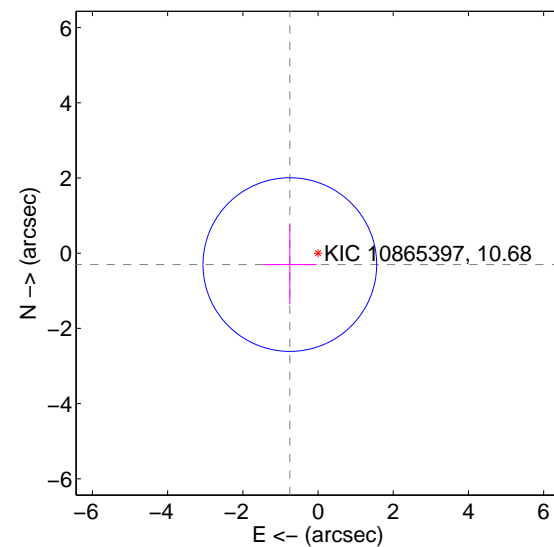
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

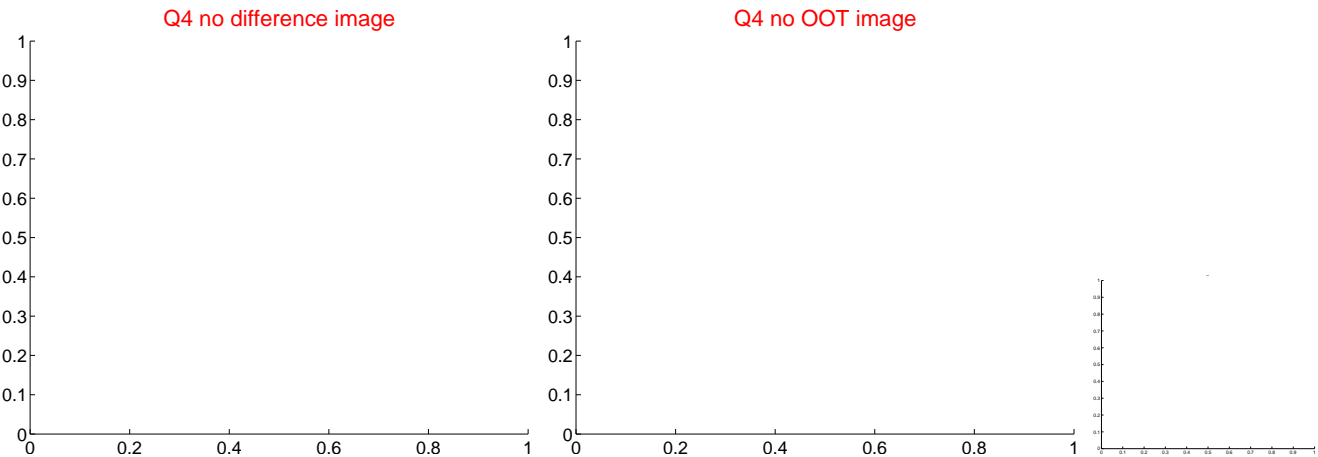
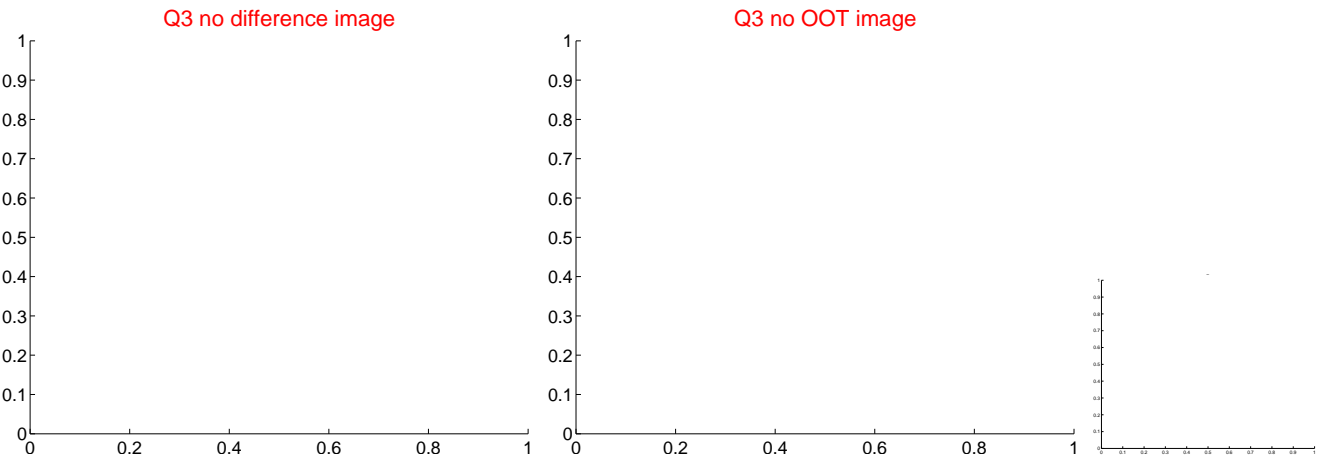
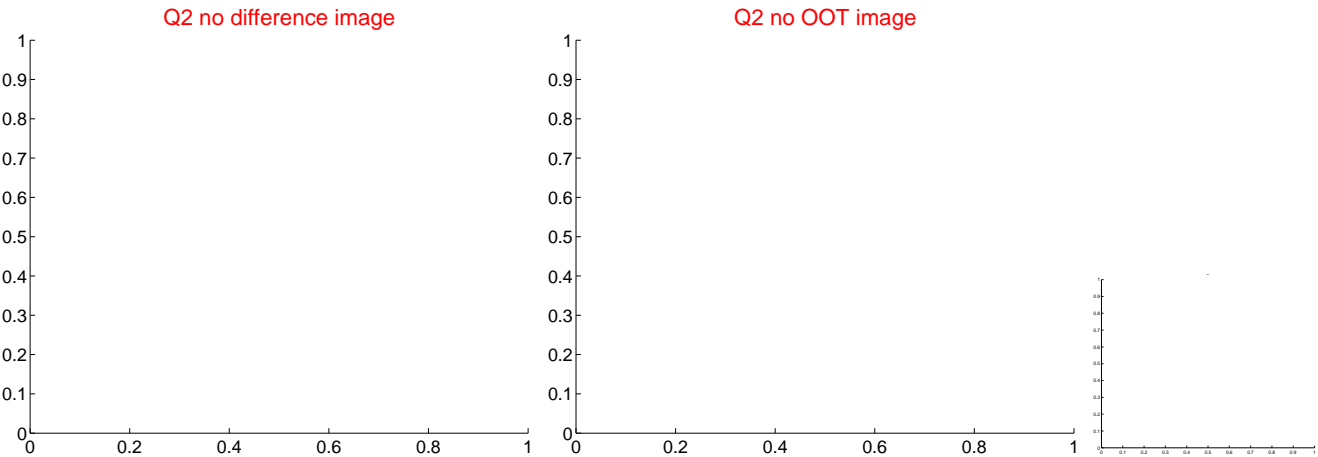
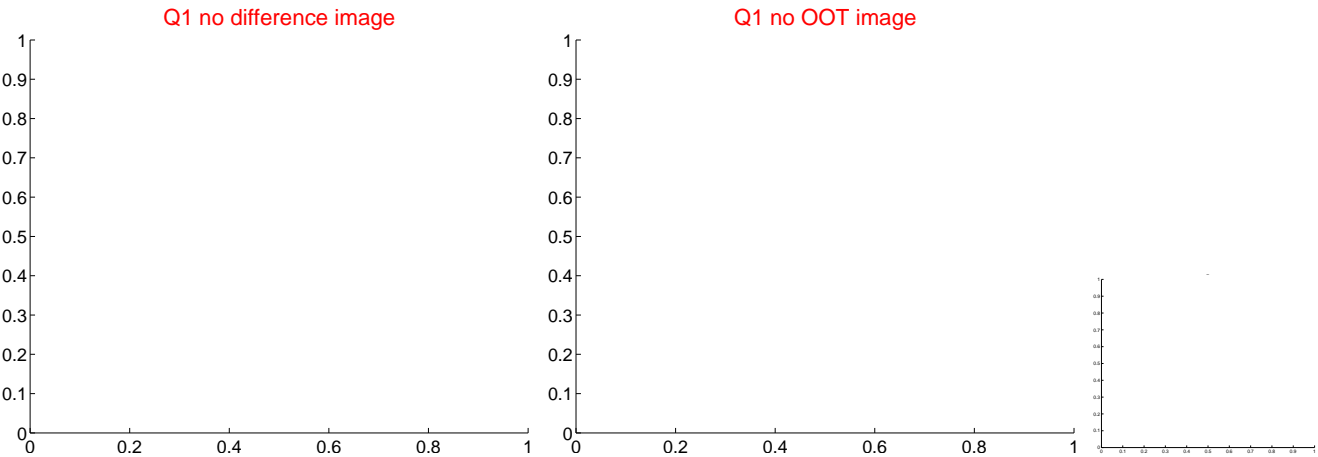


offset from photometric centroids

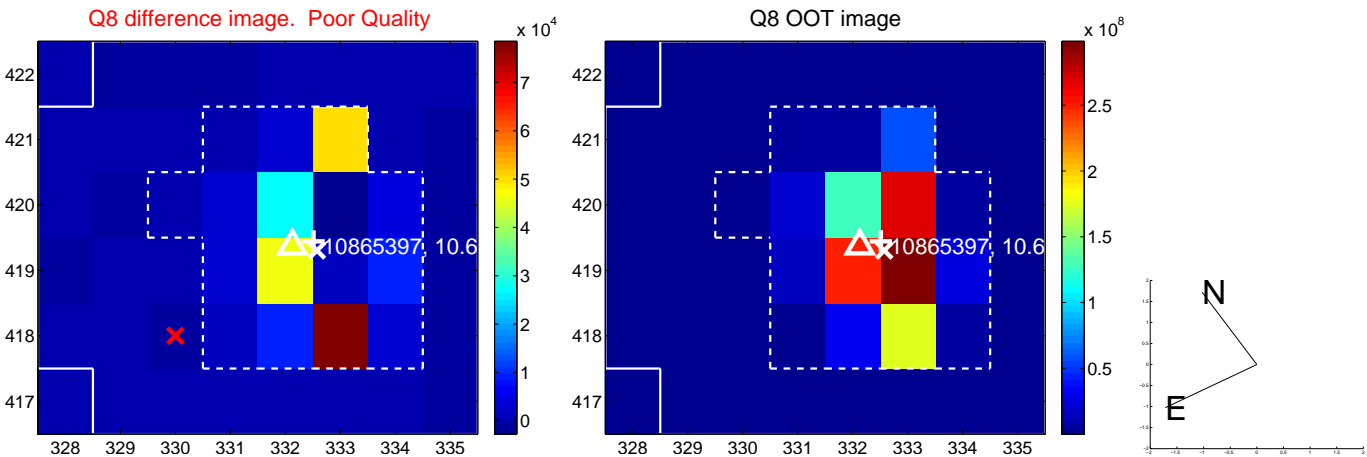
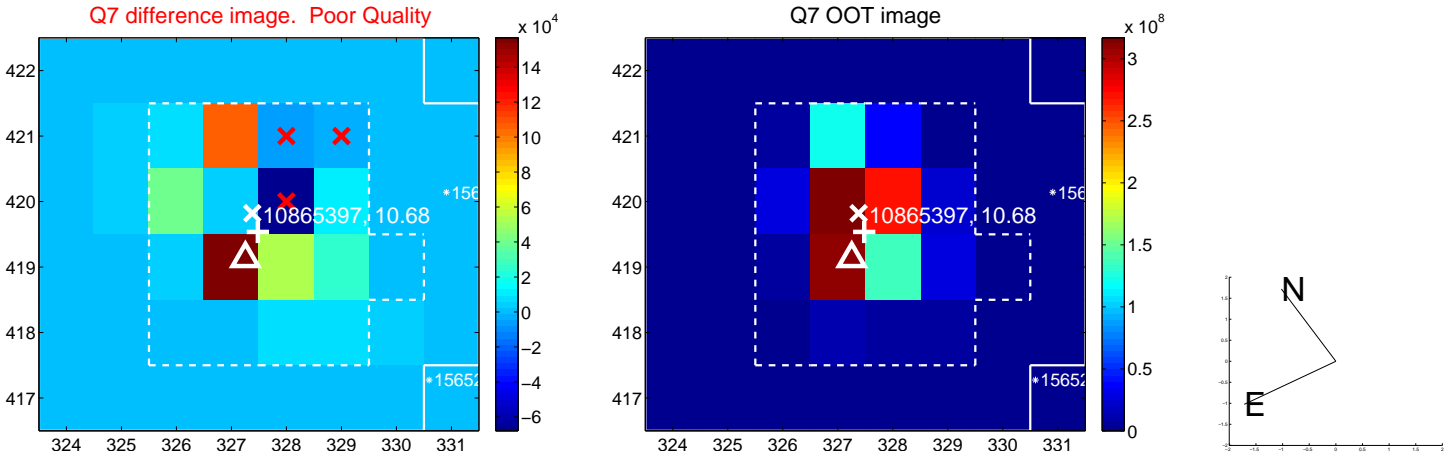
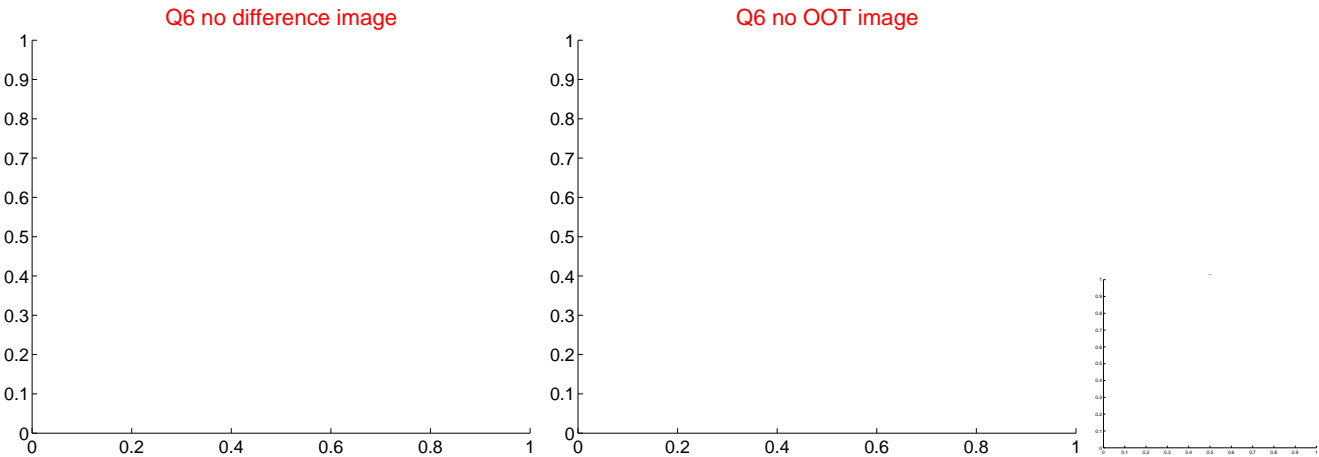
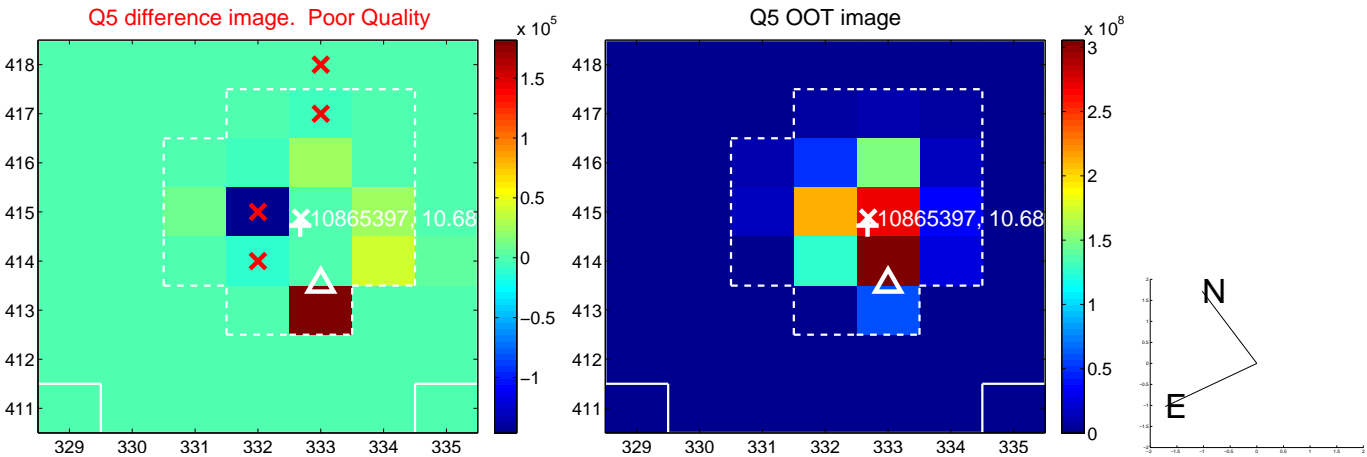


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

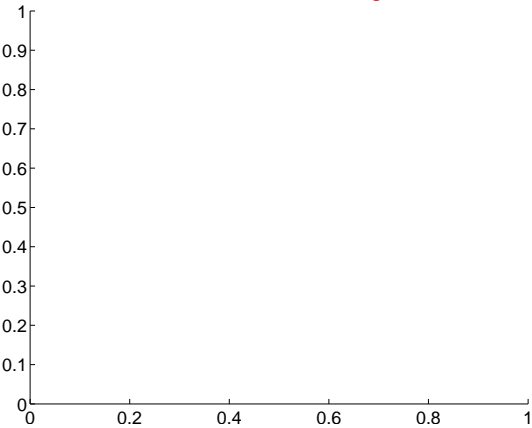


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

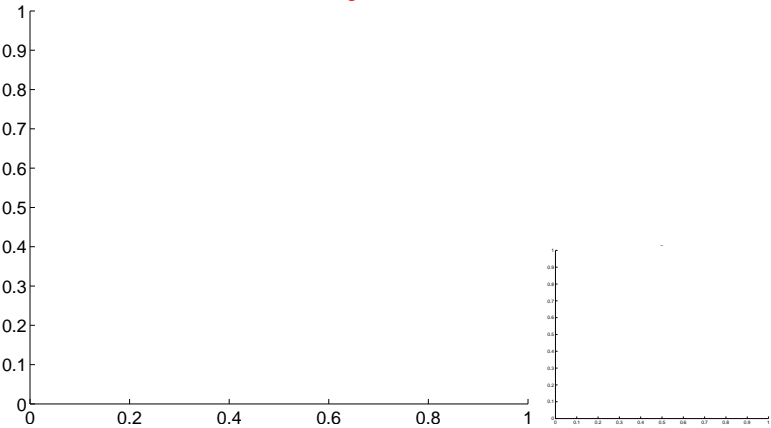


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

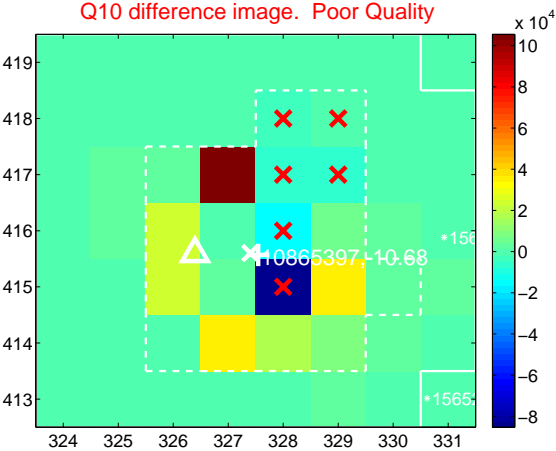
Q9 no difference image



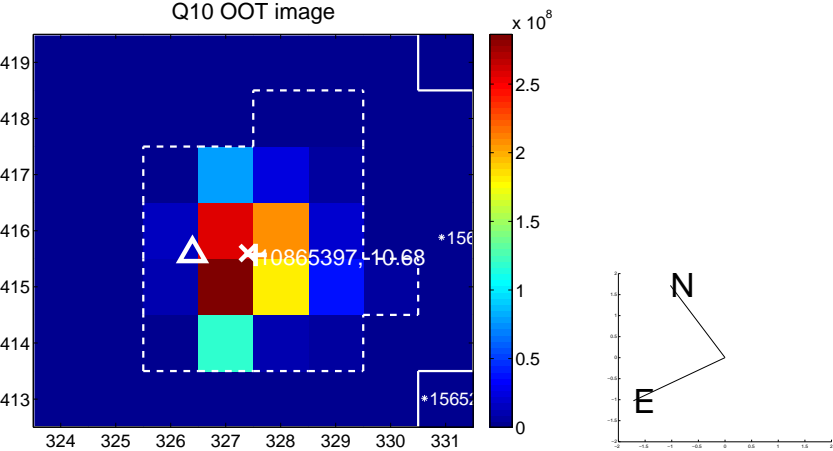
Q9 no OOT image



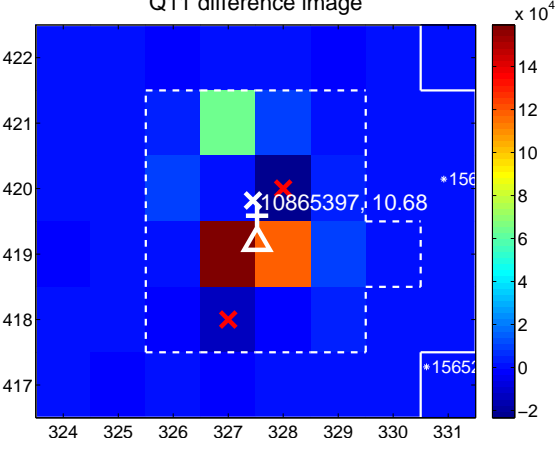
Q10 difference image. Poor Quality



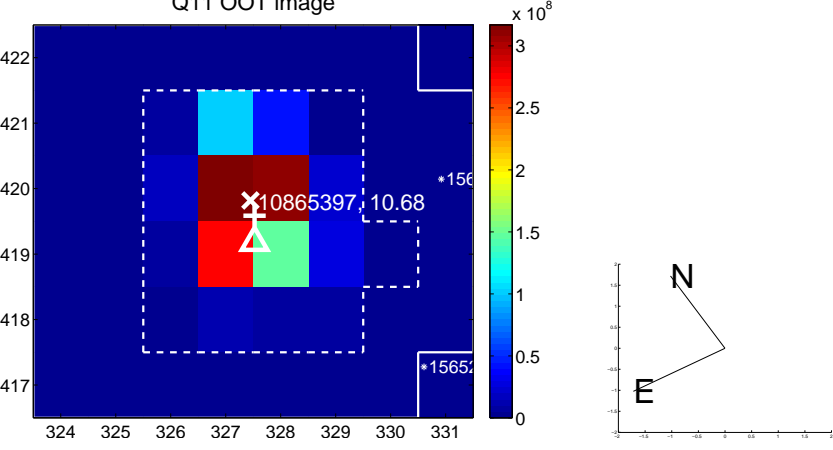
Q10 OOT image



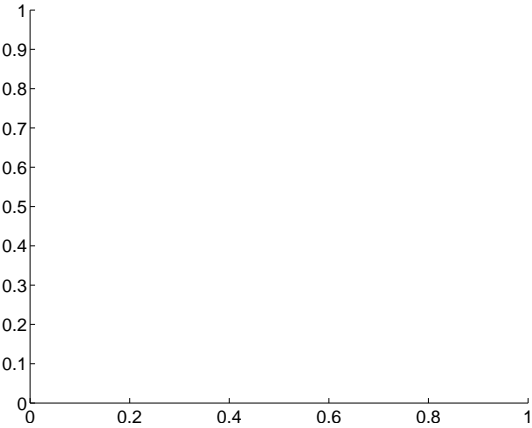
Q11 difference image



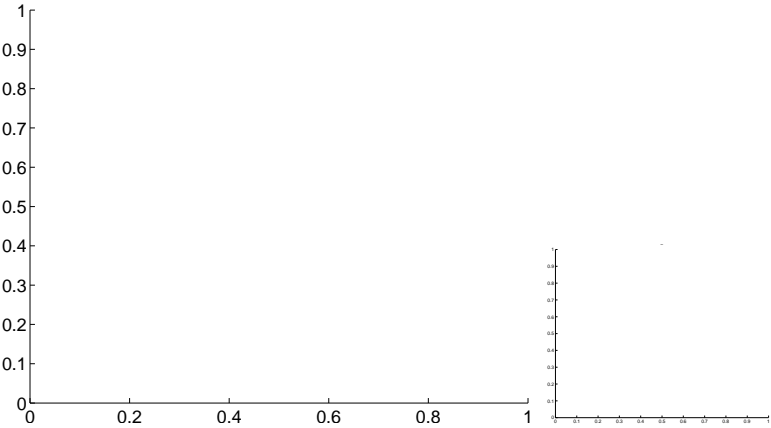
Q11 OOT image



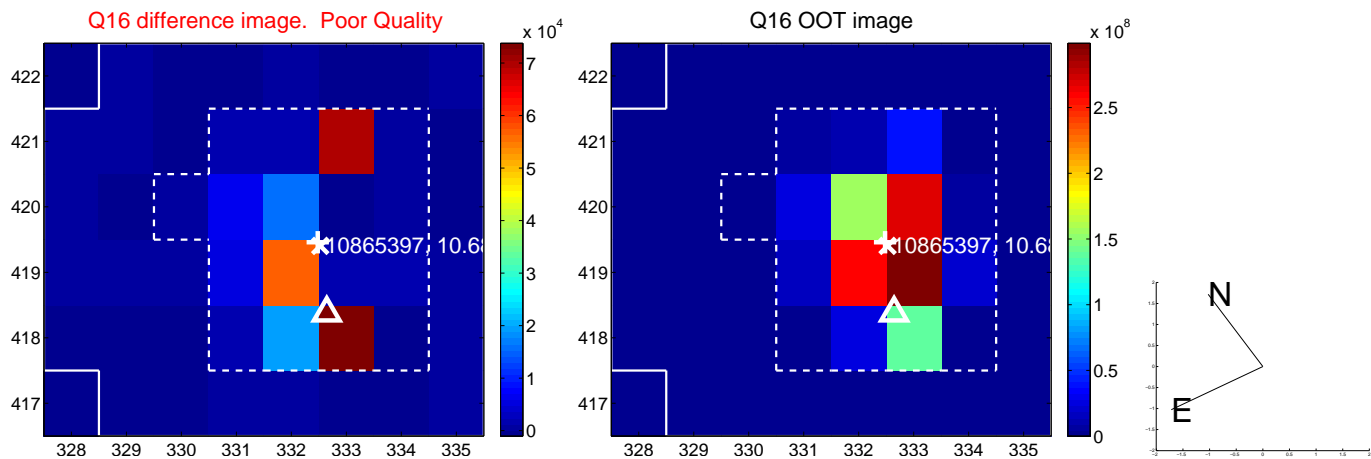
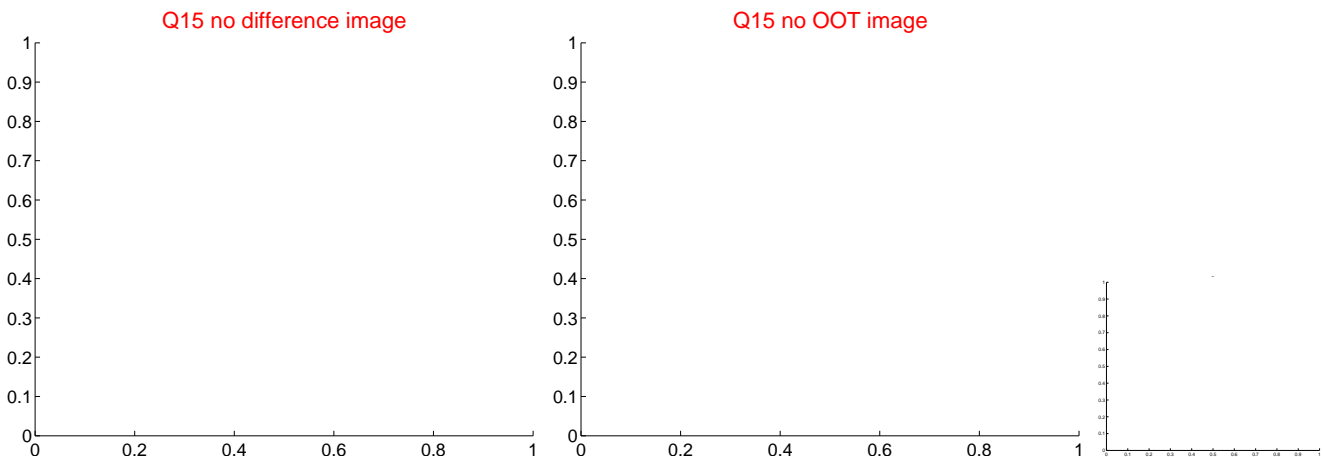
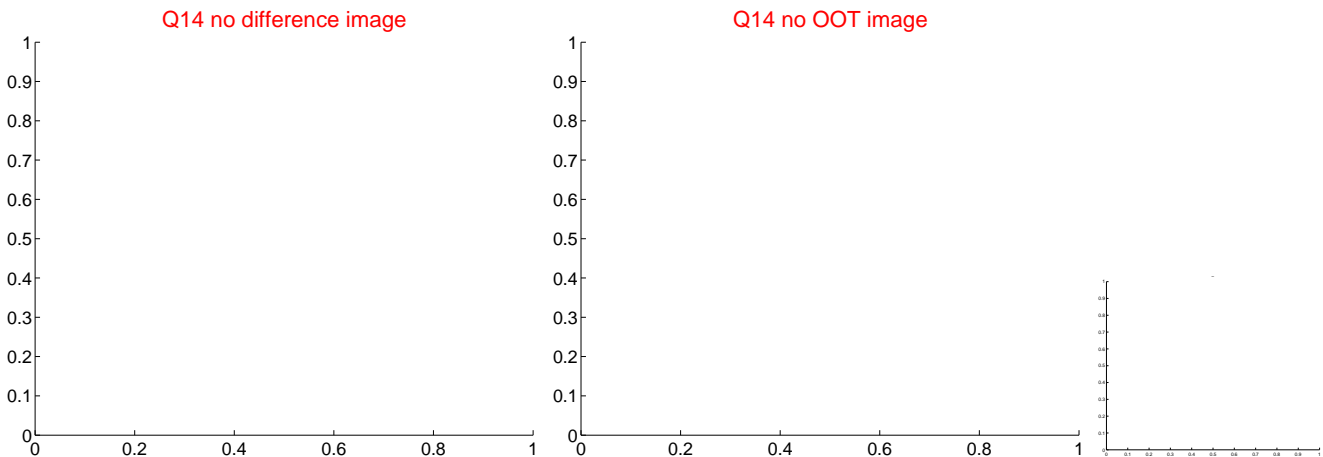
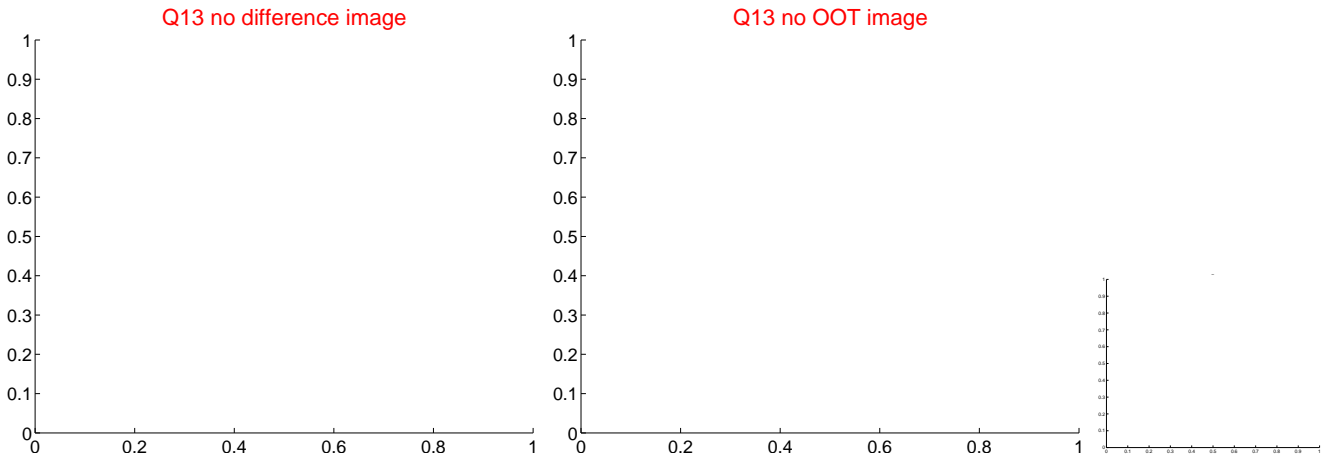
Q12 no difference image



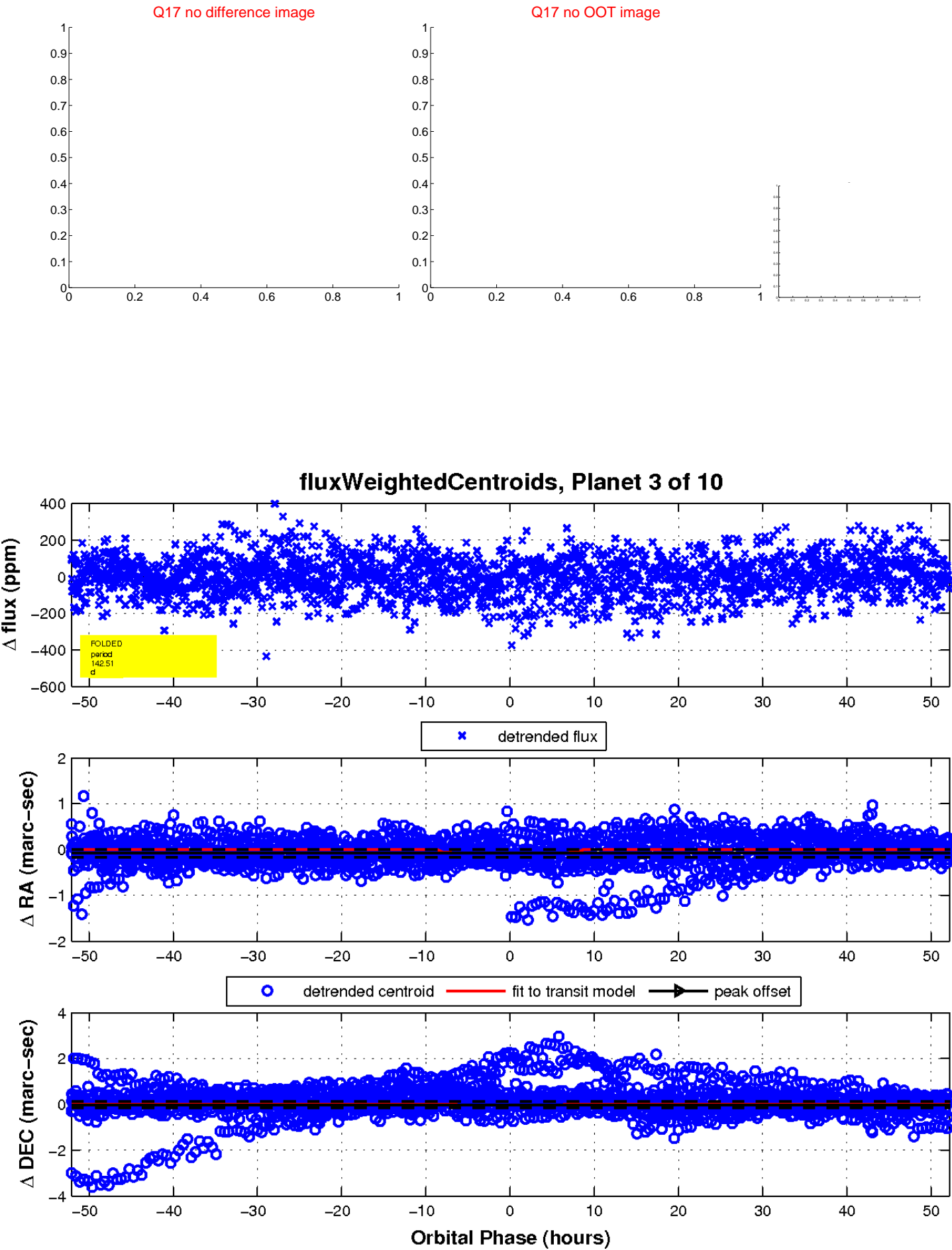
Q12 no OOT image



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

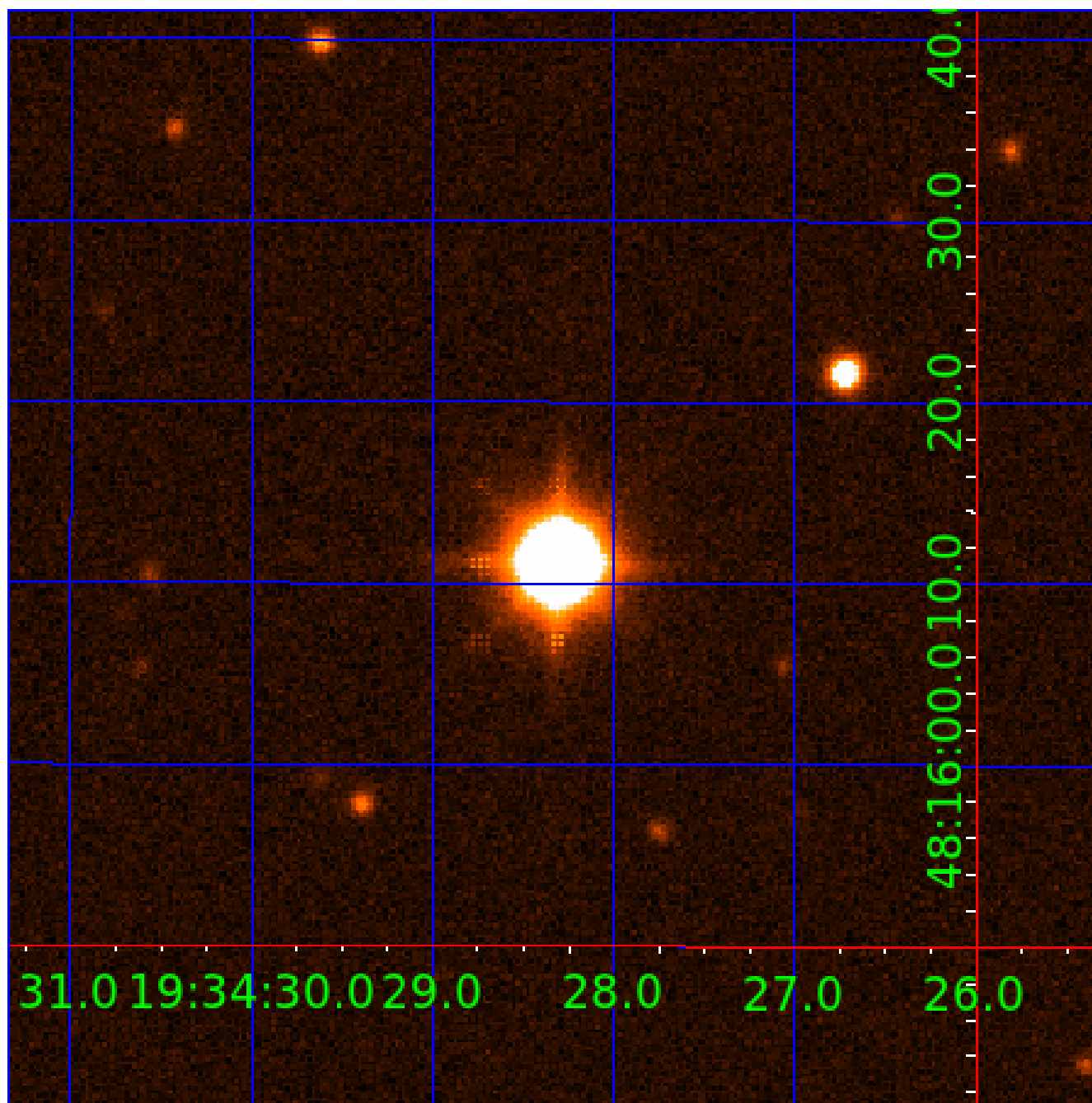


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

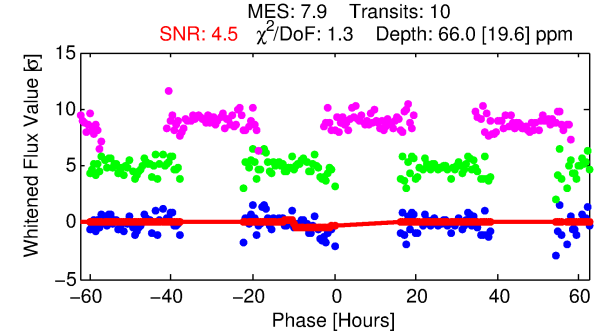
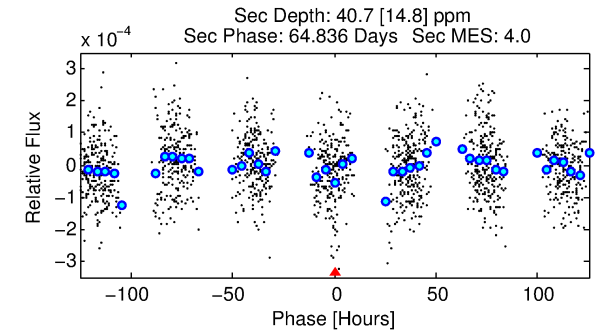
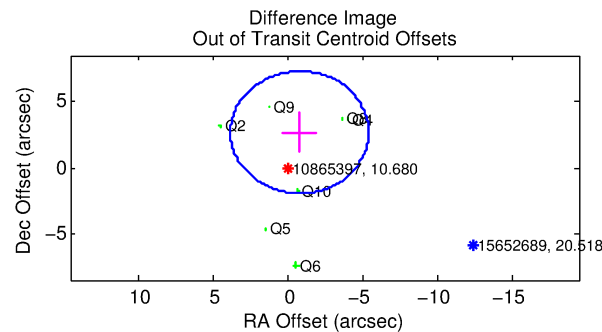
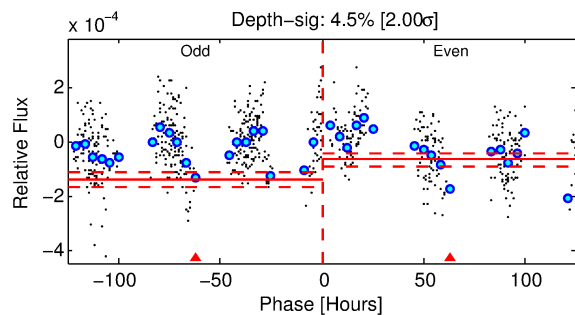
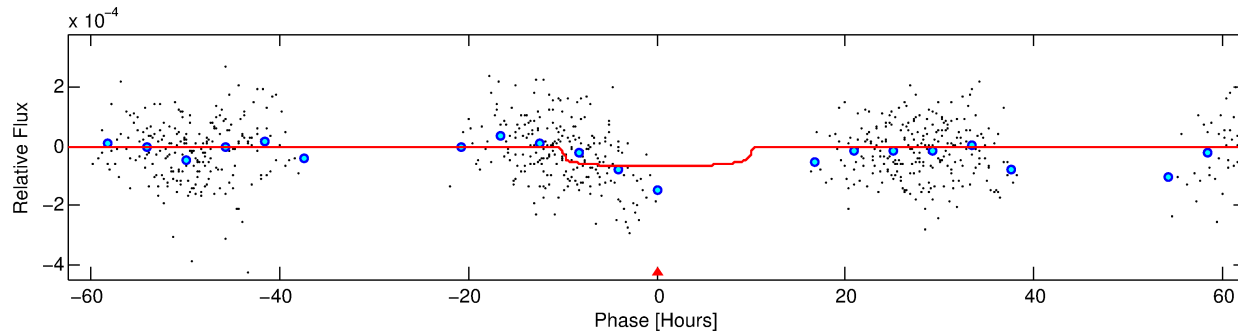
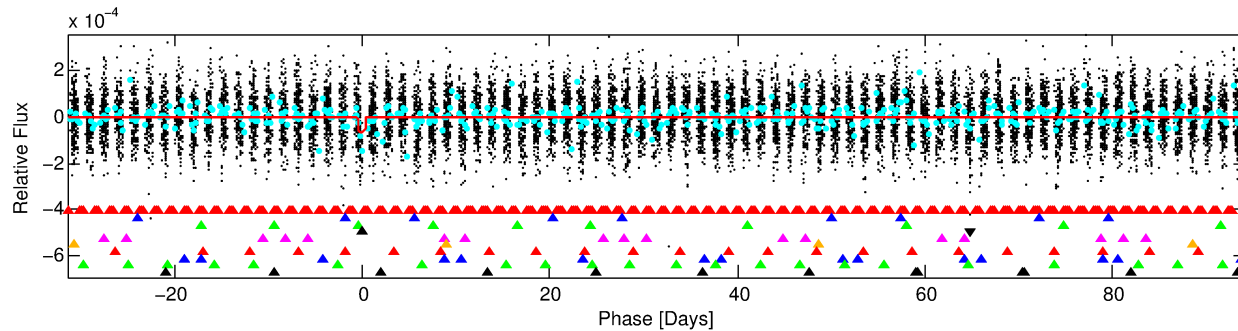
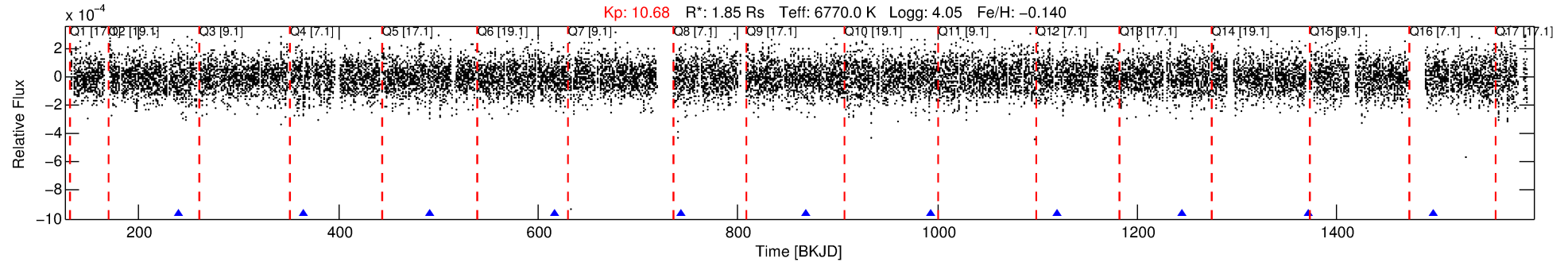
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-04

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 4 of 10 Period: 125.681 d



DV Fit Results:

Period = 125.68126 [0.00578] d
Epoch = 239.6943 [0.2389] BKJD
 R_p/R^* = 0.0087 [0.0022]
 a/R^* = 21.11 [22.55]
 b = 0.90 [0.33]
 S_{eff} = 21.35 [6.02]
 T_{eq} = 548 [39] K
 R_p = 1.75 [0.57] R_e
 a = 0.5499 [0.0982] AU
 A_g = 2206.67 [1528.39] [1.44 σ]
 T_{eff} = 5808 [924] K [5.69 σ]

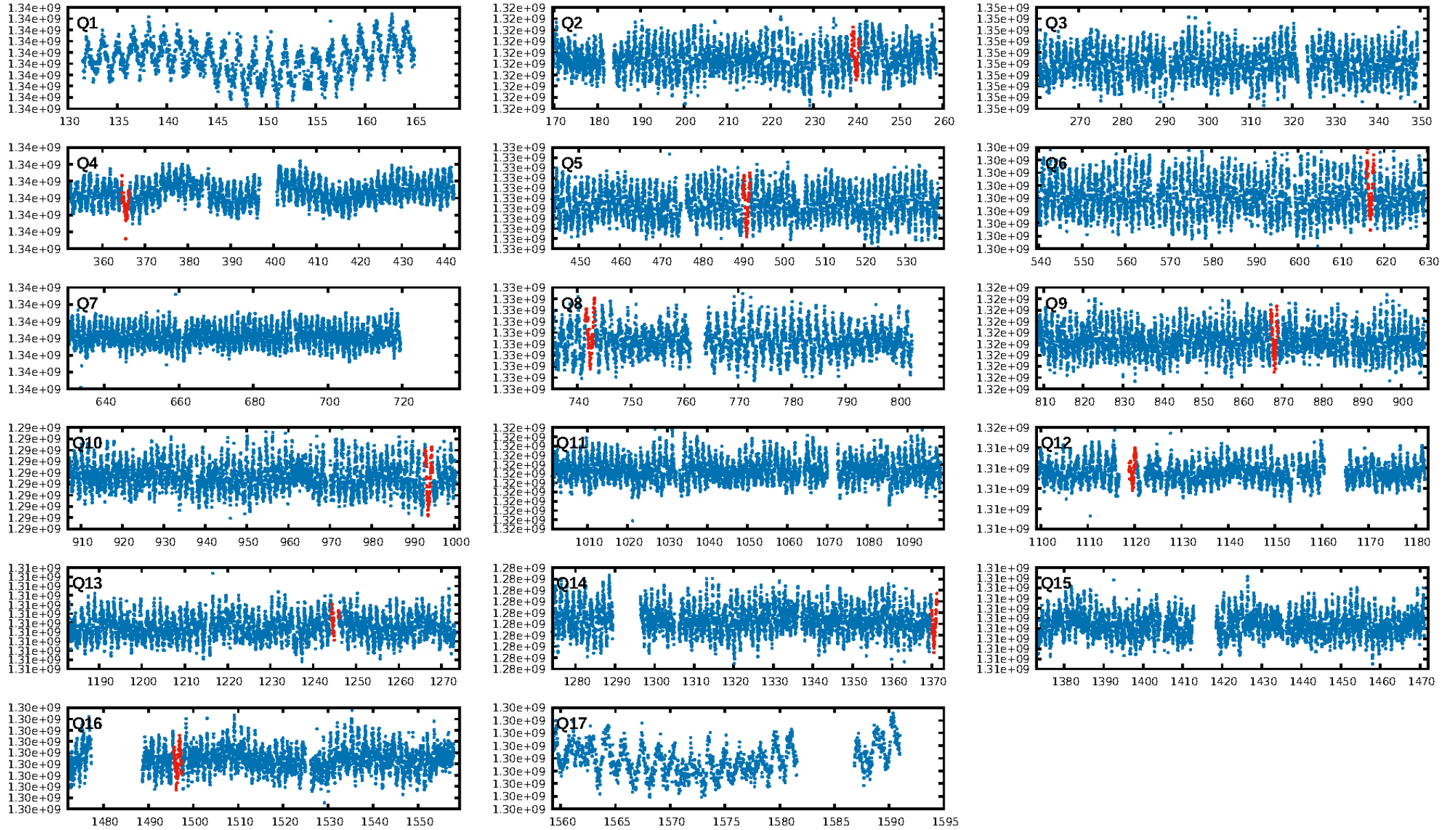
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.09 σ]
LongPeriod-sig: 100.0% [14.90 σ]
ModelChiSquare2-sig: 12.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.18e-09
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 45.15
Centroid-sig: 9.9%
Centroid-so: 2.333 arcsec [1.64 σ]
OotOffset-rm: 2.793 arcsec [1.81 σ]
KicOffset-rm: 2.561 arcsec [1.52 σ]
OotOffset-st: 3/0/2/2 [7]
KicOffset-st: 3/0/2/2 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 0.00 [0/8]

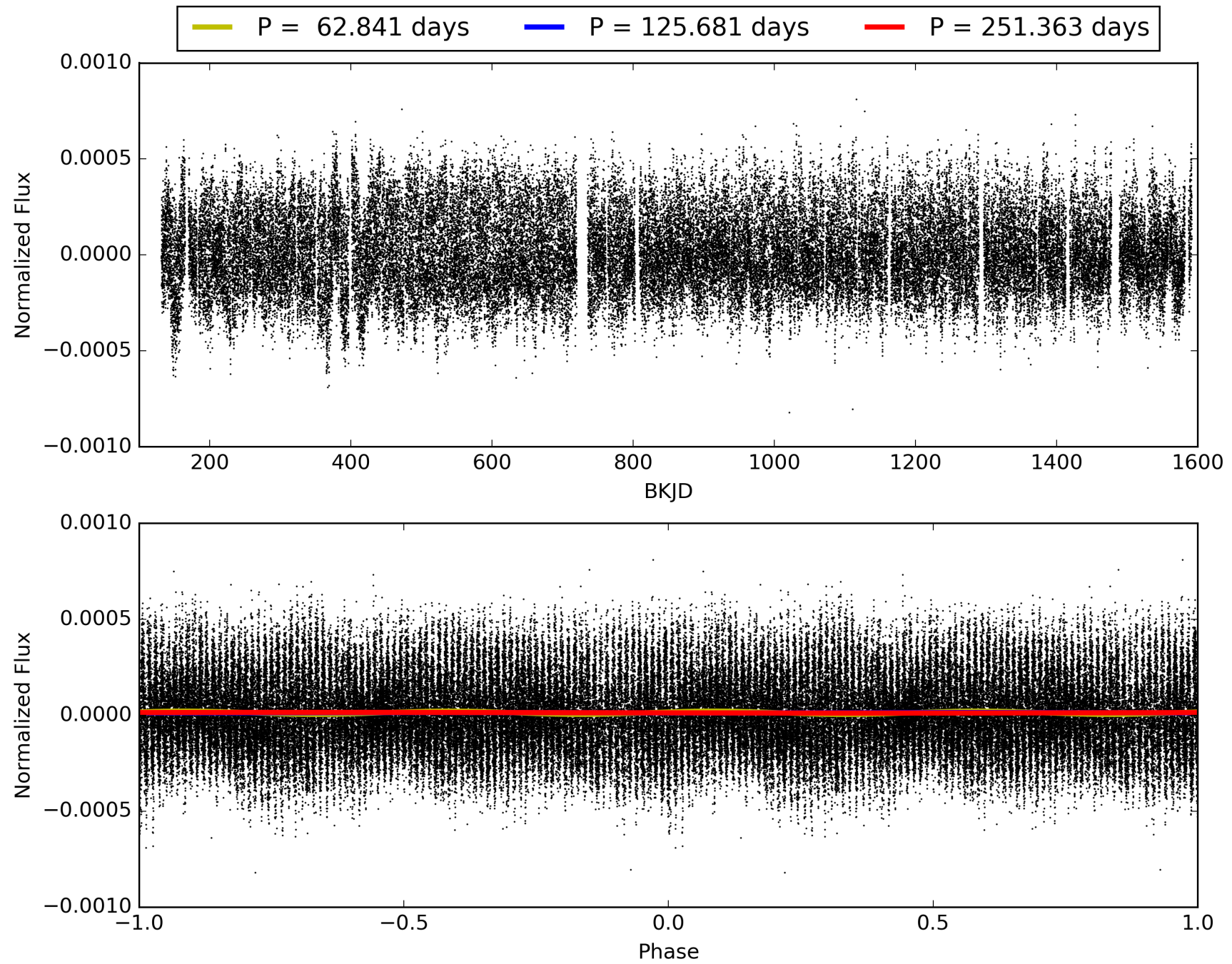
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:17 Z

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

TCE 010865397-04, PDC Light Curves

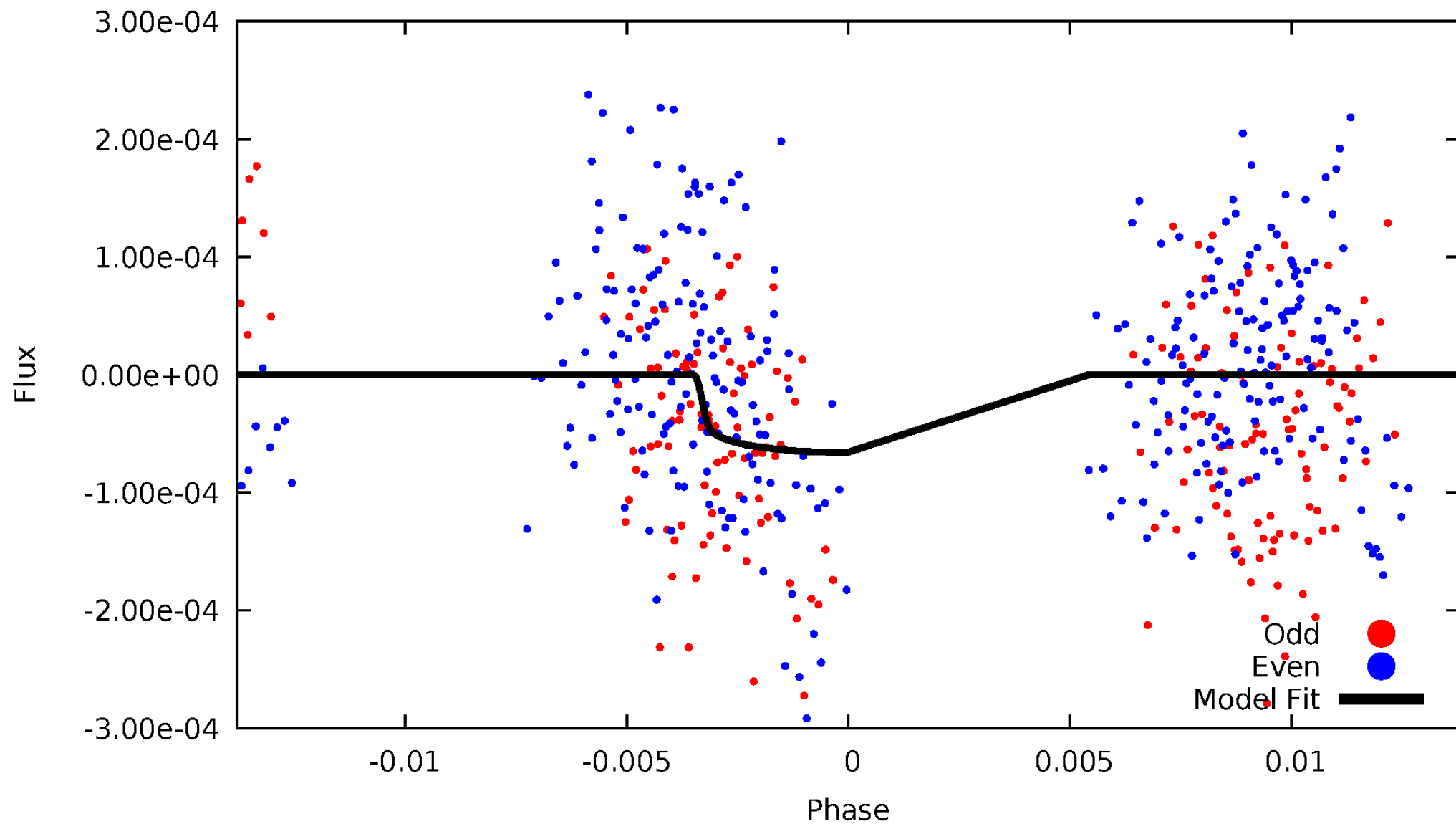


TCE 010865397-04



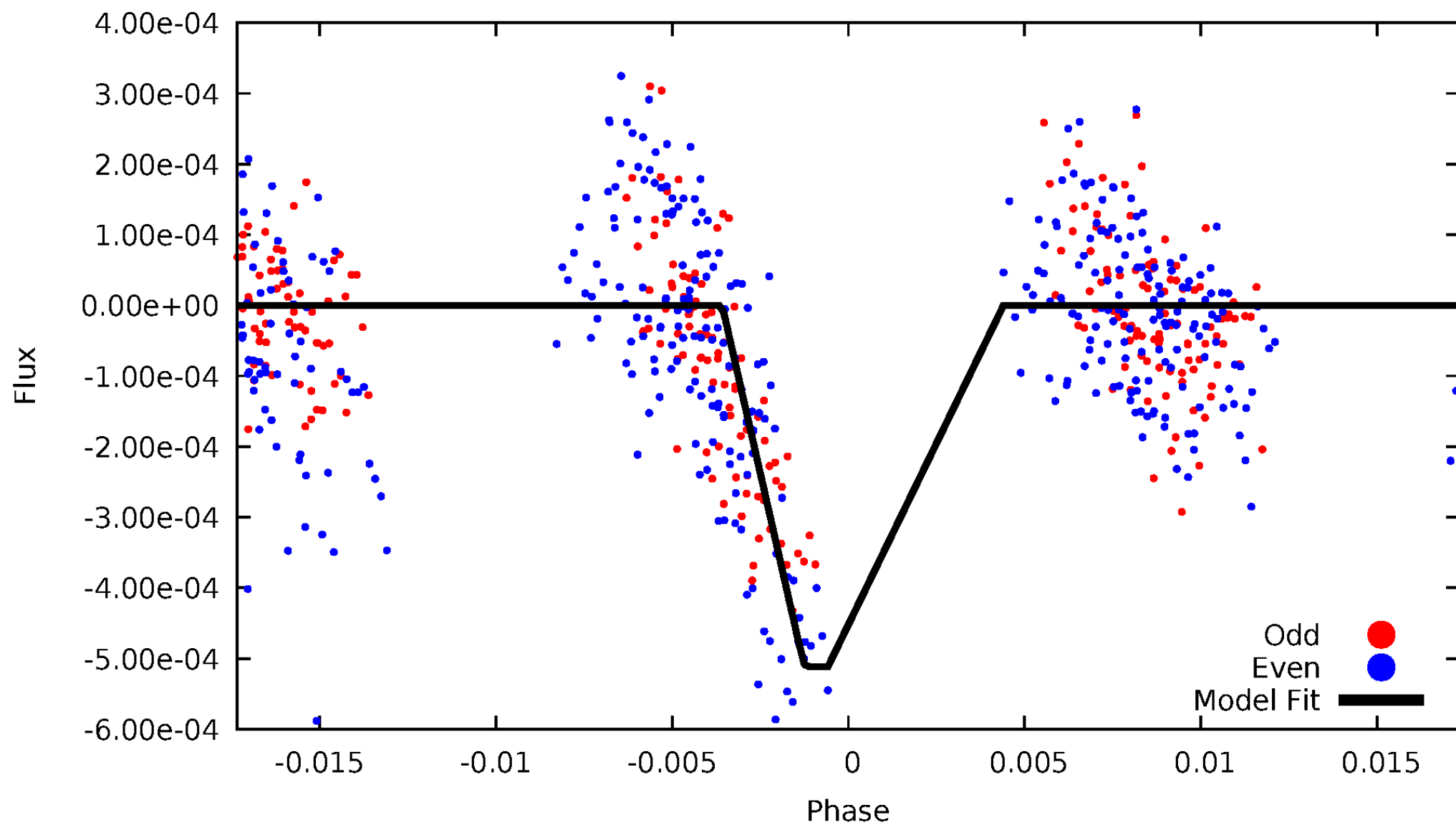
DV Odd/Even

TCE 010865397-04



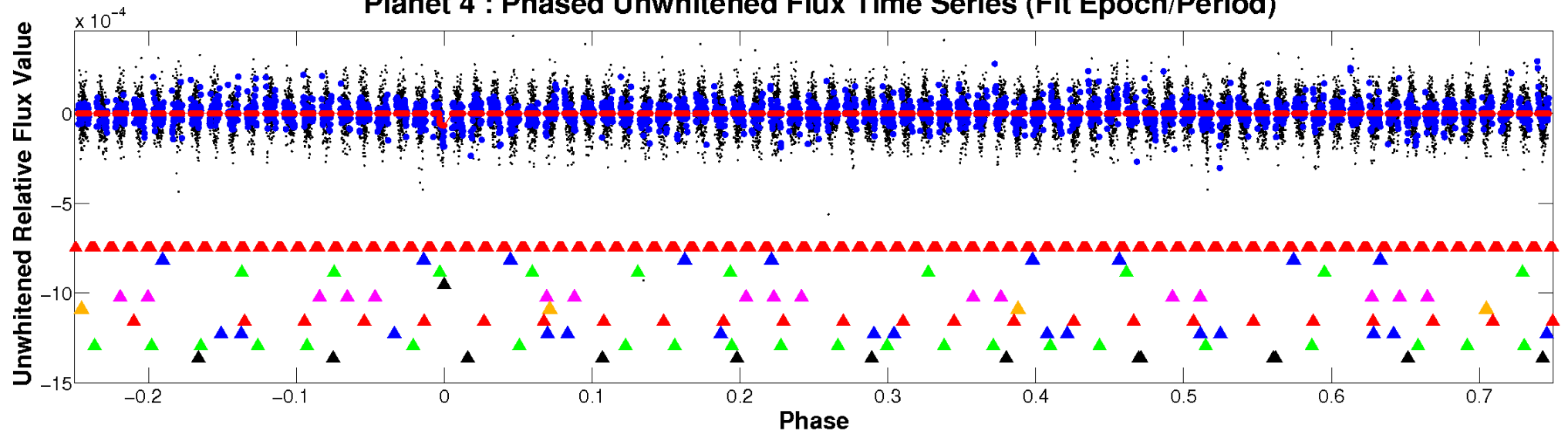
ALT Odd/Even

TCE 010865397-04

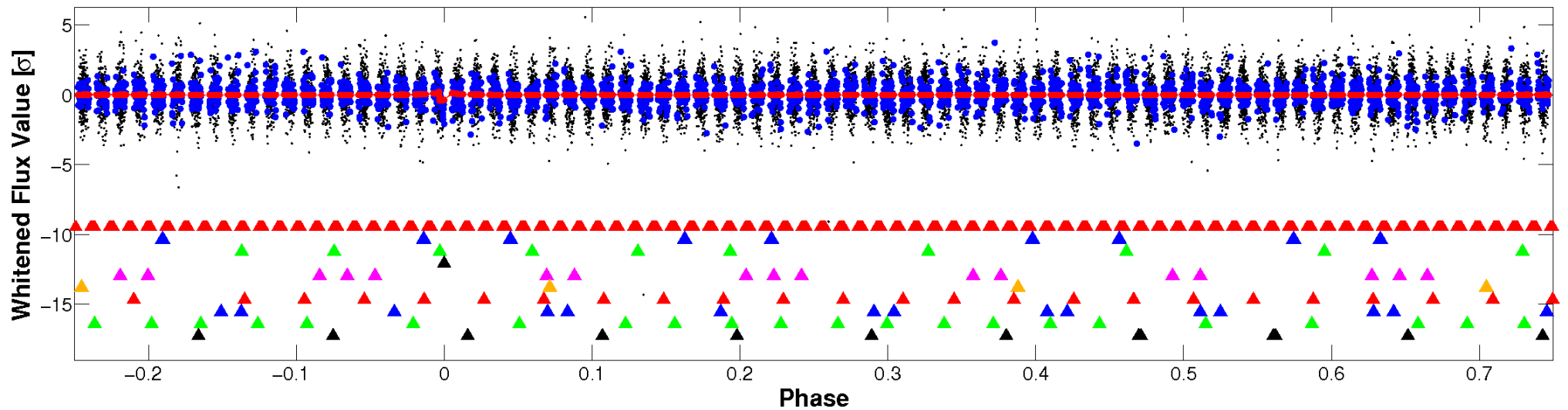


Non-Whitened Vs. Whitened Light Curve

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

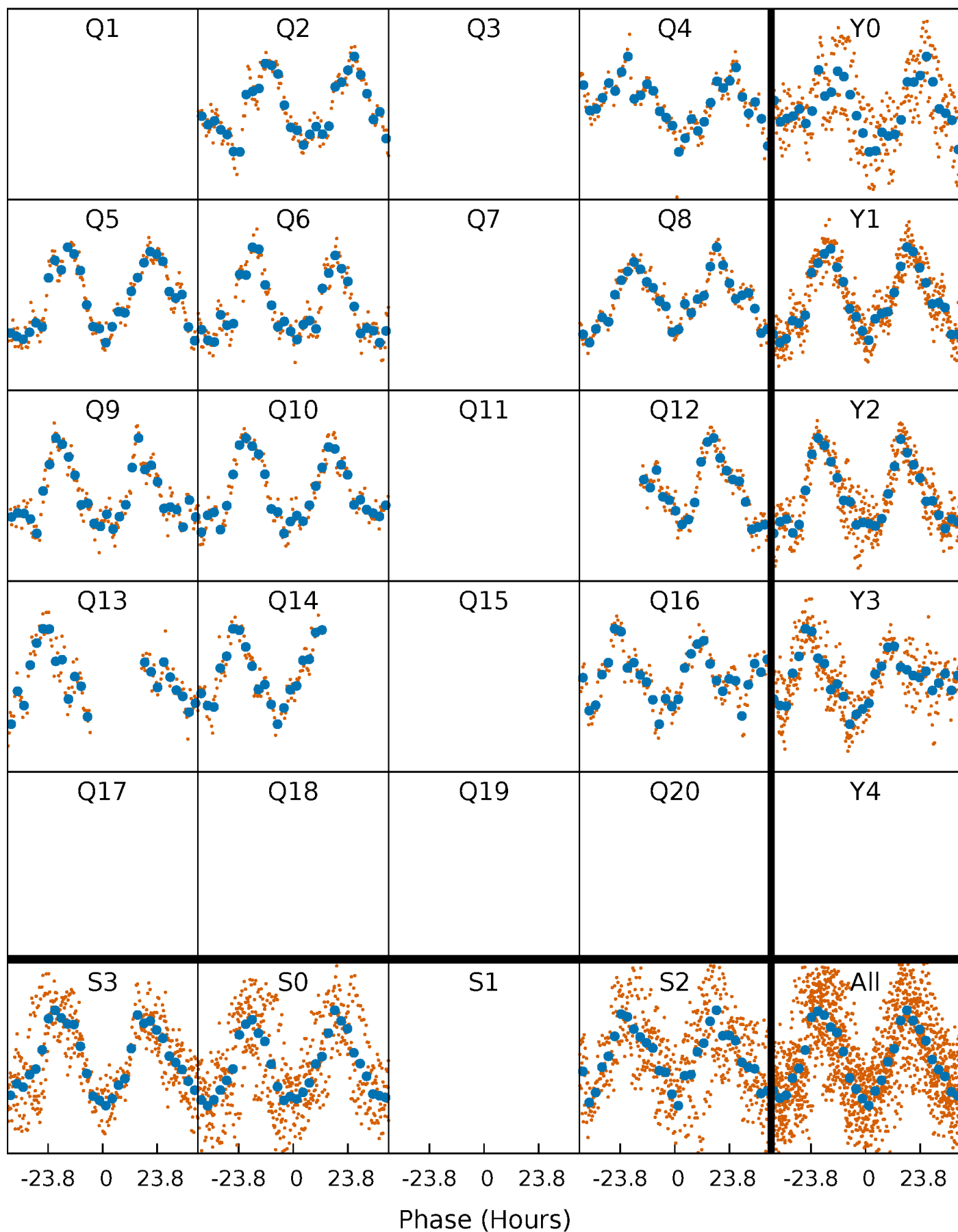


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



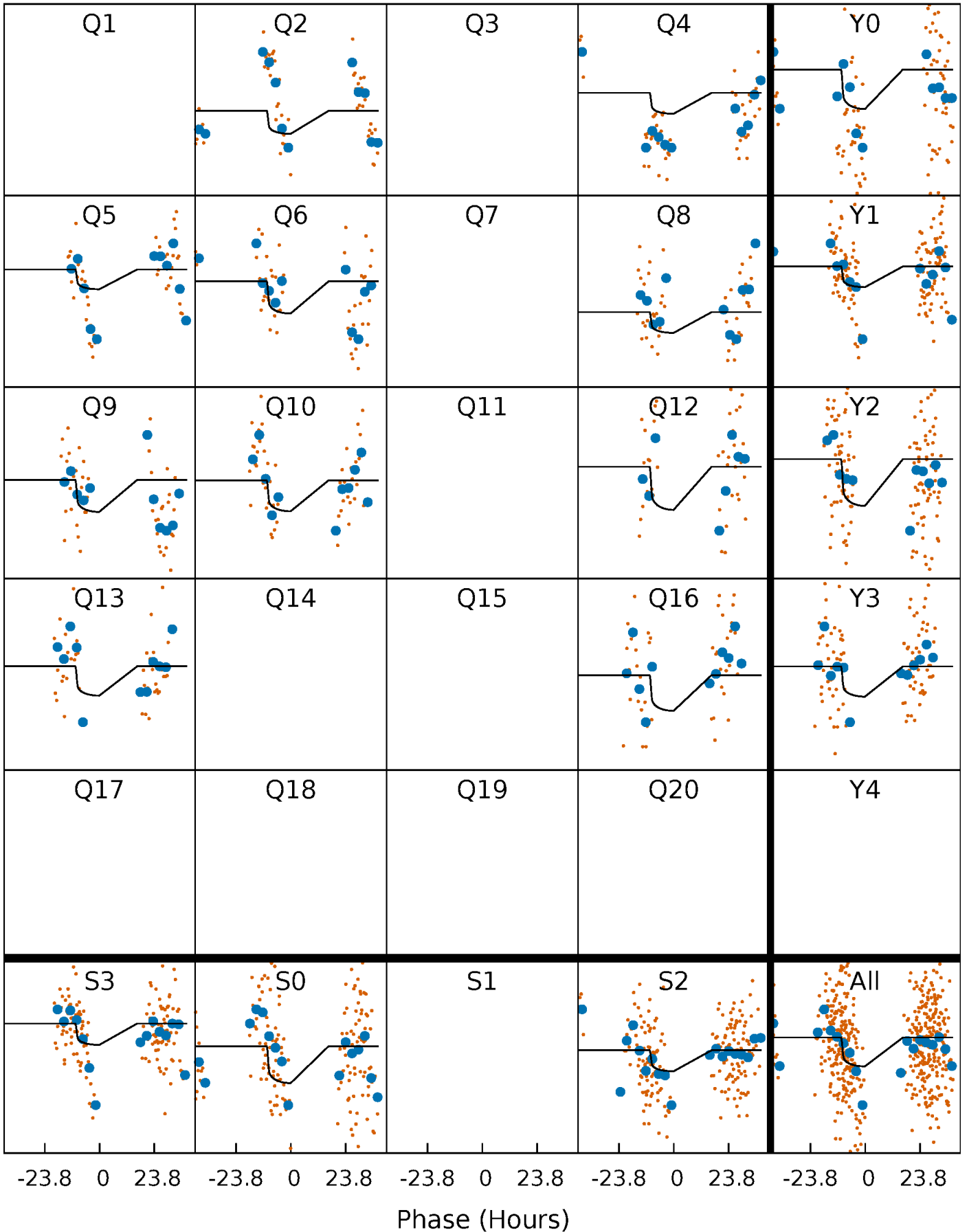
PDC Quarter-Phased Transit Curves

TCE 010865397-04 $P=125.681260$ Days $T_0=239.694256$ (BKJD)



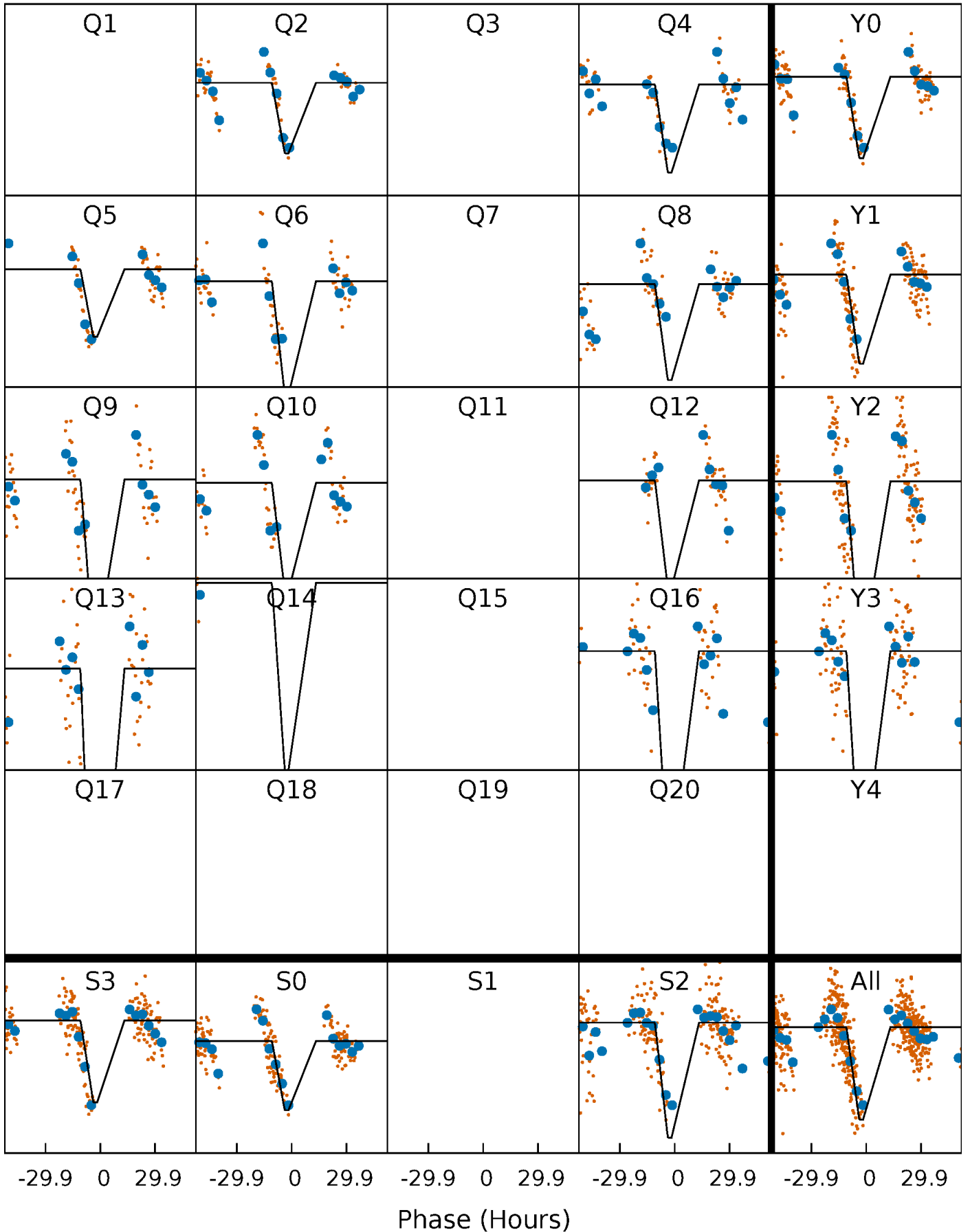
DV Quarter-Phased Transit Curves

TCE 010865397-04 $P=125.681260$ Days $T_0=239.694256$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

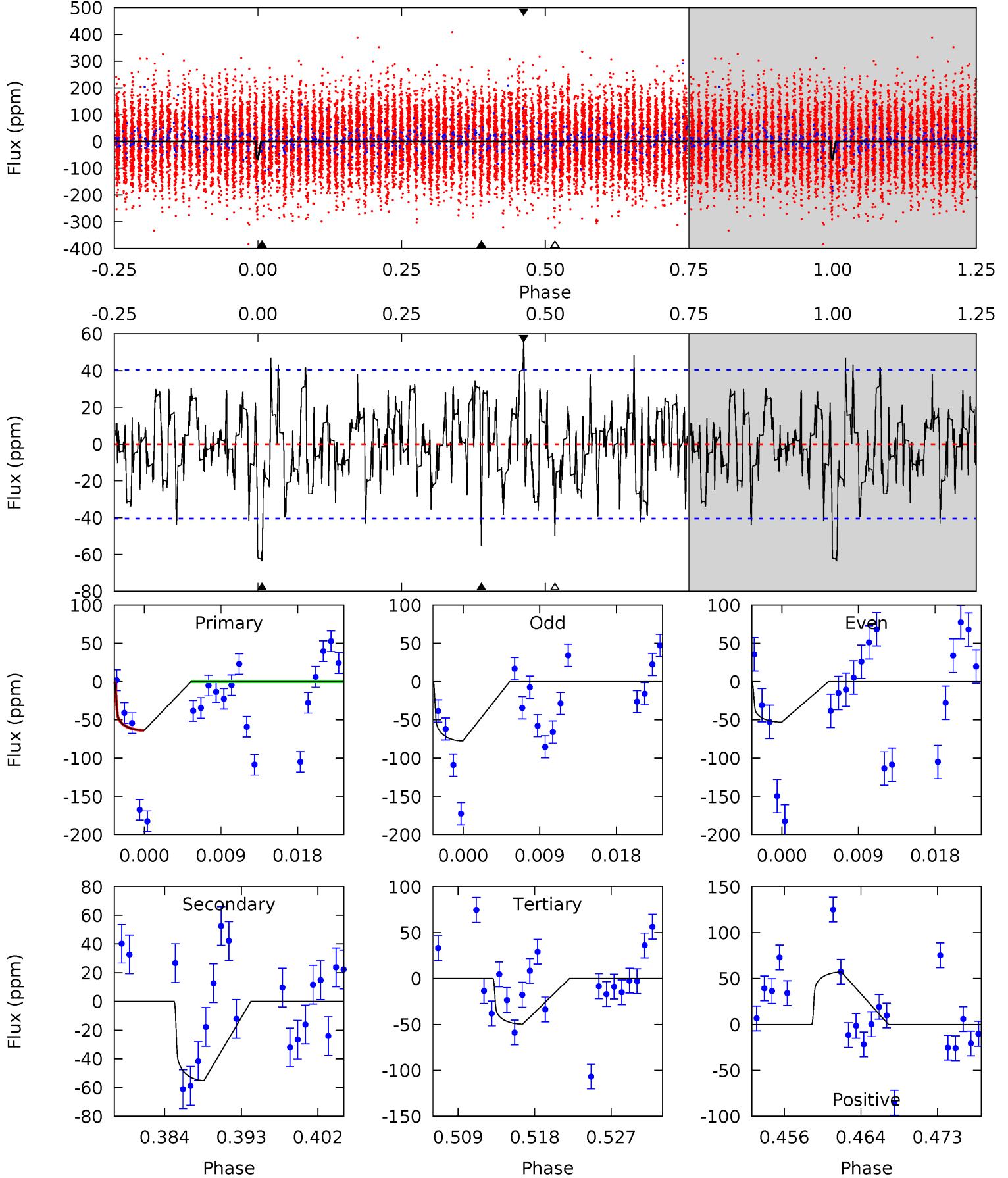
TCE 010865397-04 P=125.687368 Days $T_0=239.761934$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-04, P = 125.681260 Days, E = 114.012996 Days

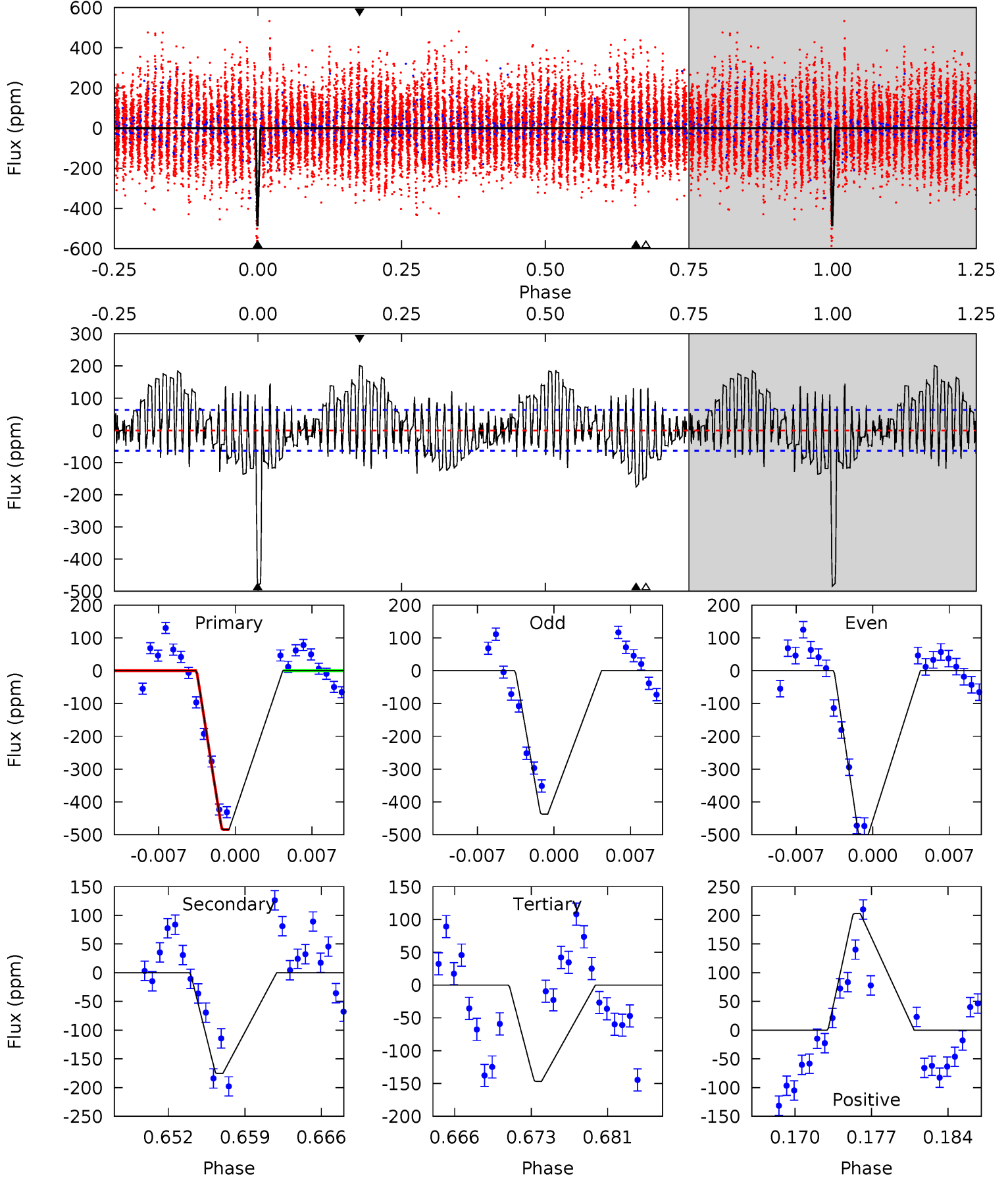
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.96	6.88	6.20	7.12	5.05	2.61	2.12	1.75	0.84	0.68	-0.24	1.54	0	0.47	0



Alt Model-Shift Uniqueness Test

010865397-04, P = 125.687368 Days, E = 114.074566 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.8	14.0	11.7	16.3	5.09	2.69	4.18	27.0	22.5	2.30	-2.21	3.10	0	0.30	0



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-55 ± 8	$1.74^{+0.49}_{-0.46}$	764^{+36}_{-33}	6208^{+1085}_{-686}	2974^{+2708}_{-1188}
Alt.	-175 ± 12	$4.52^{+0.63}_{-0.58}$	763^{+36}_{-43}	5213^{+263}_{-222}	1414^{+495}_{-329}

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 $A_{obs} \gg 1.0$

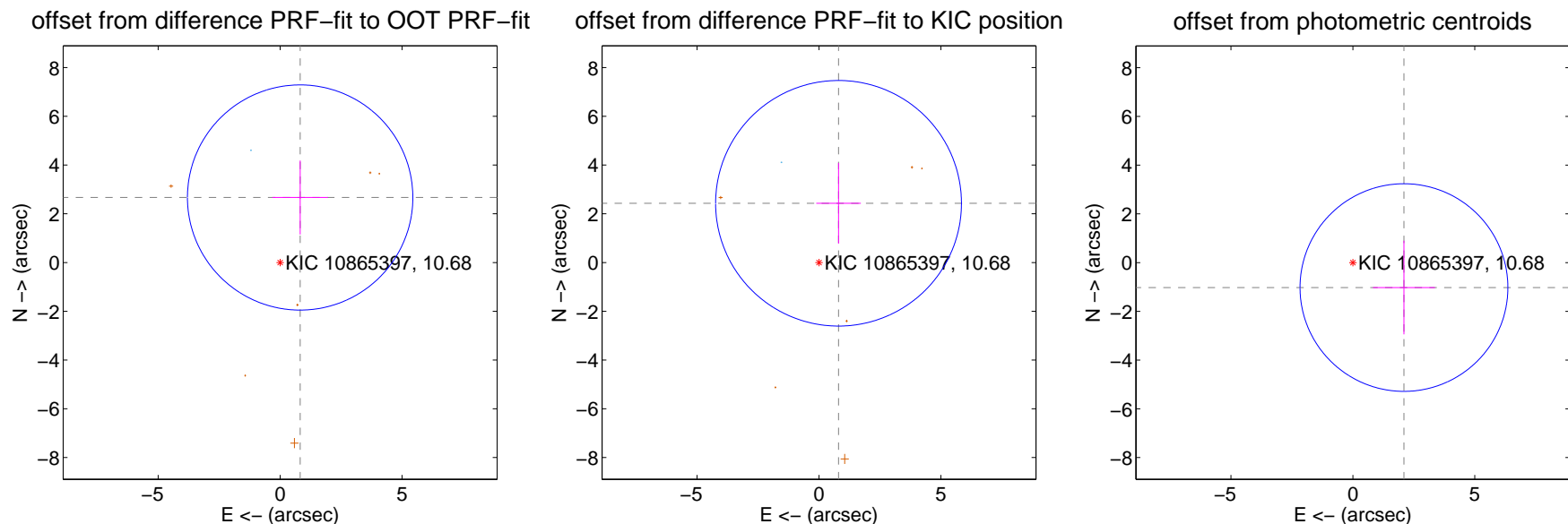
DV Centroid Data

Supplemental centroid analysis for 010865397-04. **Kepler magnitude: 10.68.** Transit SNR 4.49

There are 1 quarters with good PRF difference image offsets

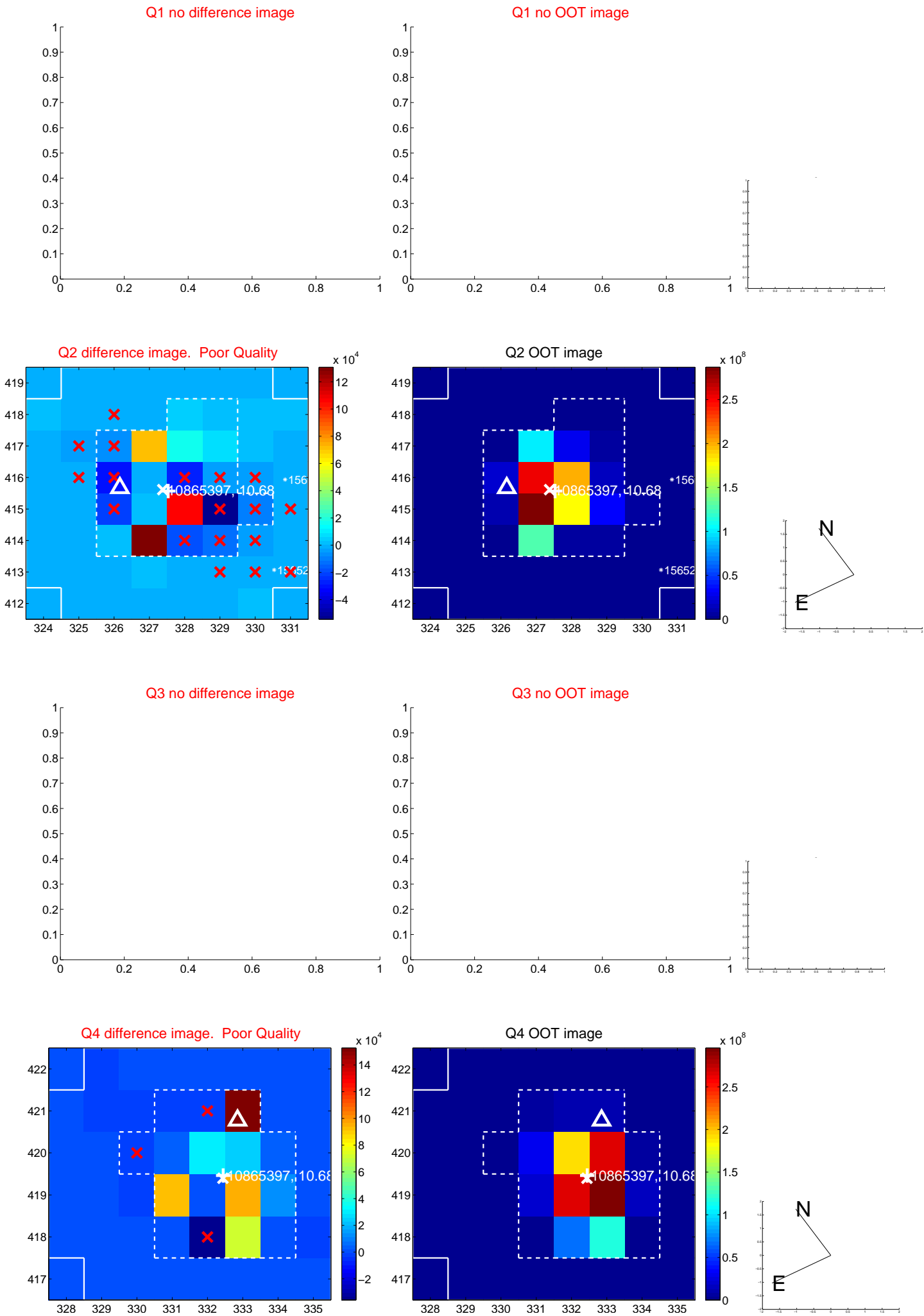
The direct PRF centroid is offset from the target star catalog position by about 0.79 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.793 ± 1.540	1.81	-0.821 ± 1.139	2.670 ± 1.518
PRF-fit source offset from KIC position	2.561 ± 1.680	1.52	-0.801 ± 0.915	2.432 ± 1.655
photometric centroid source offset	2.33 ± 1.42	1.64	-2.10 ± 1.27	-1.02 ± 1.92

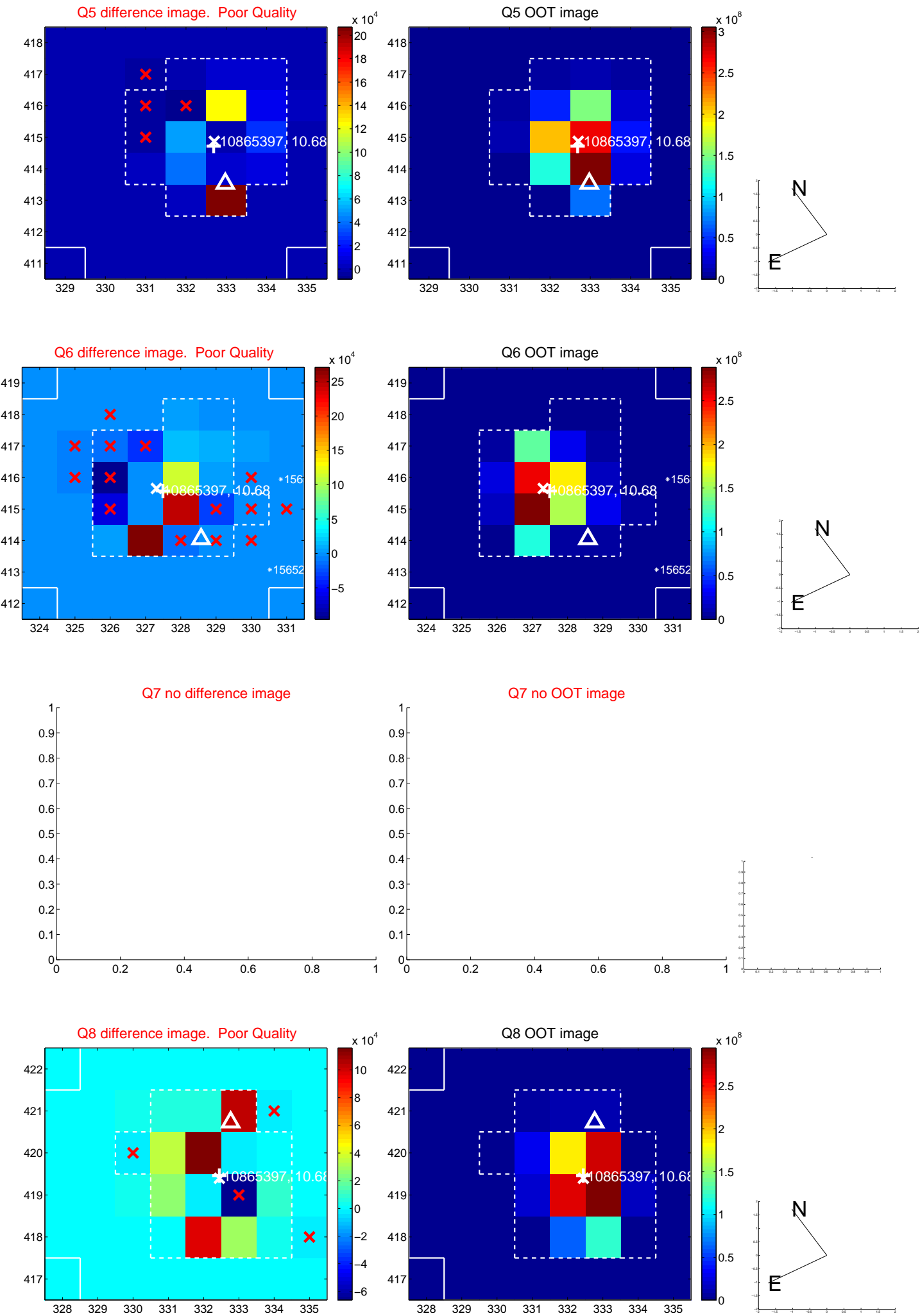


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

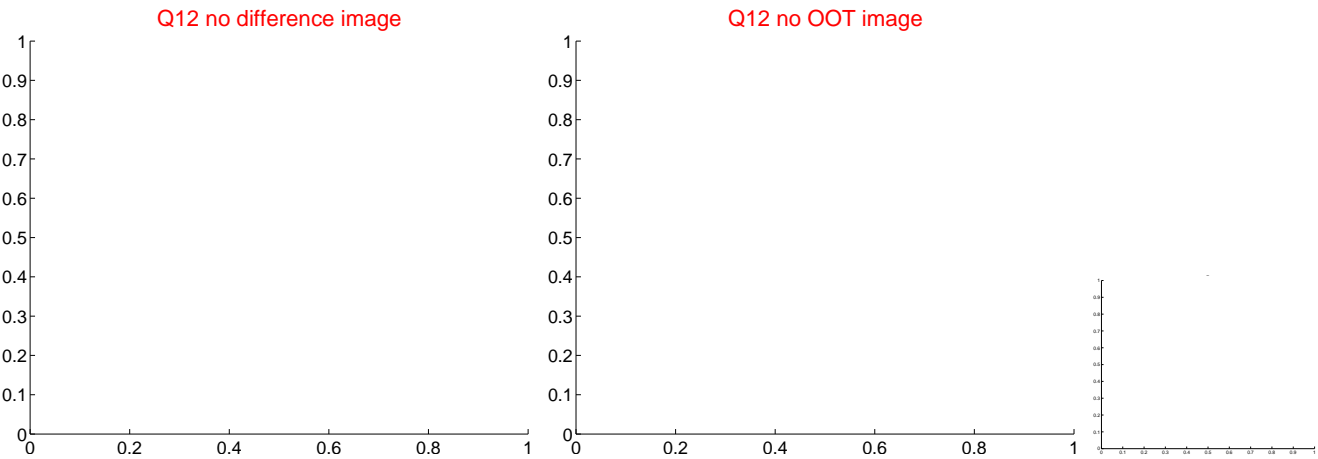
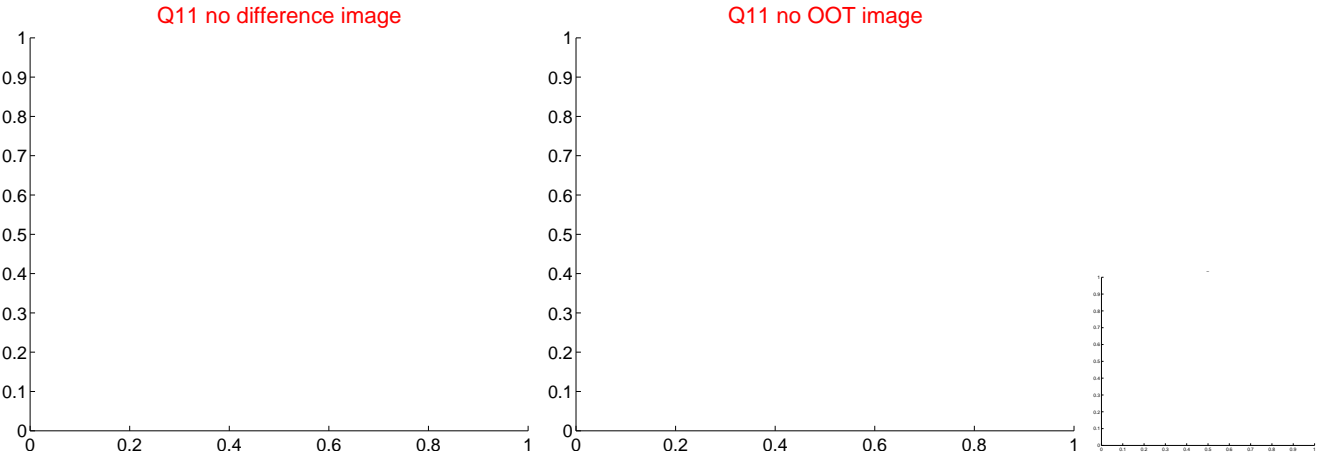
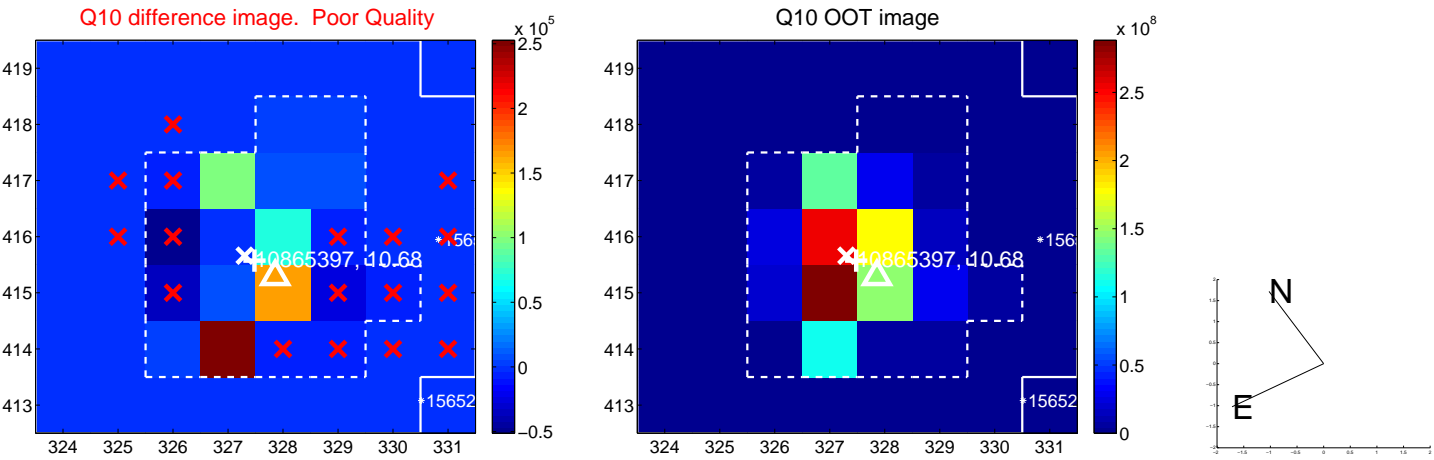
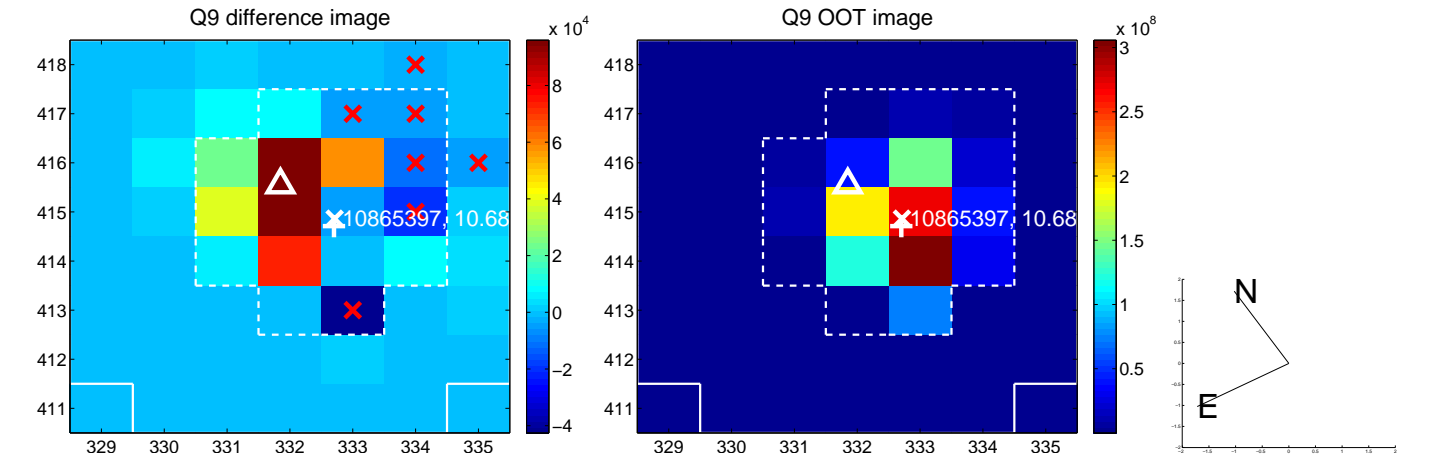
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



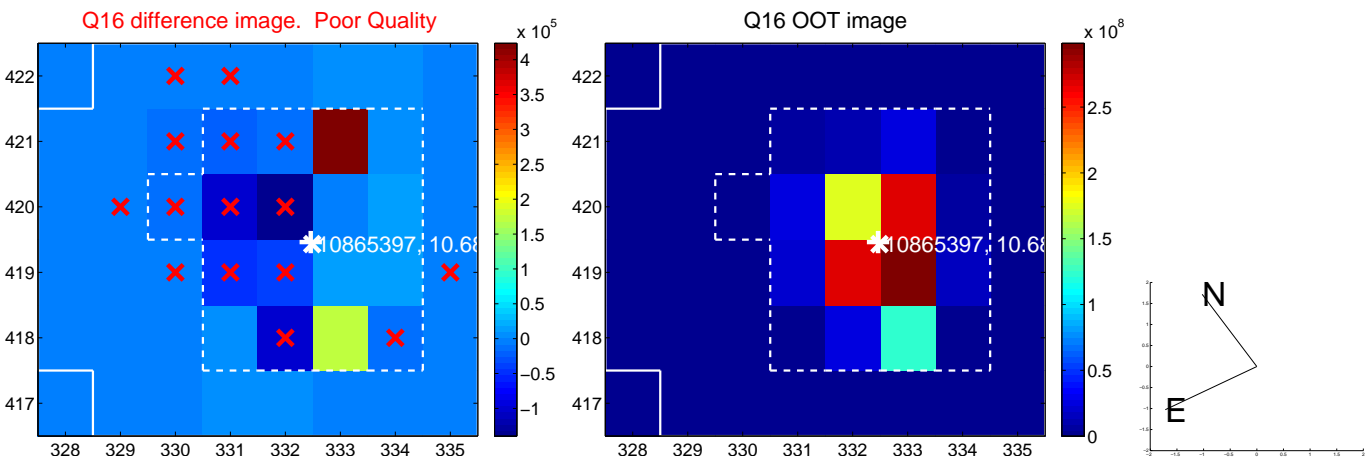
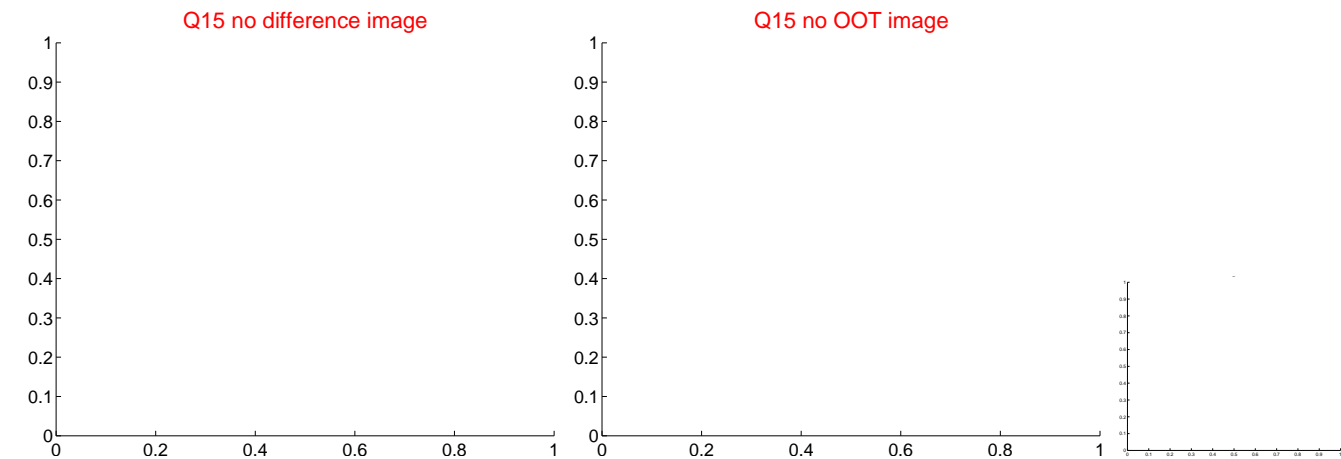
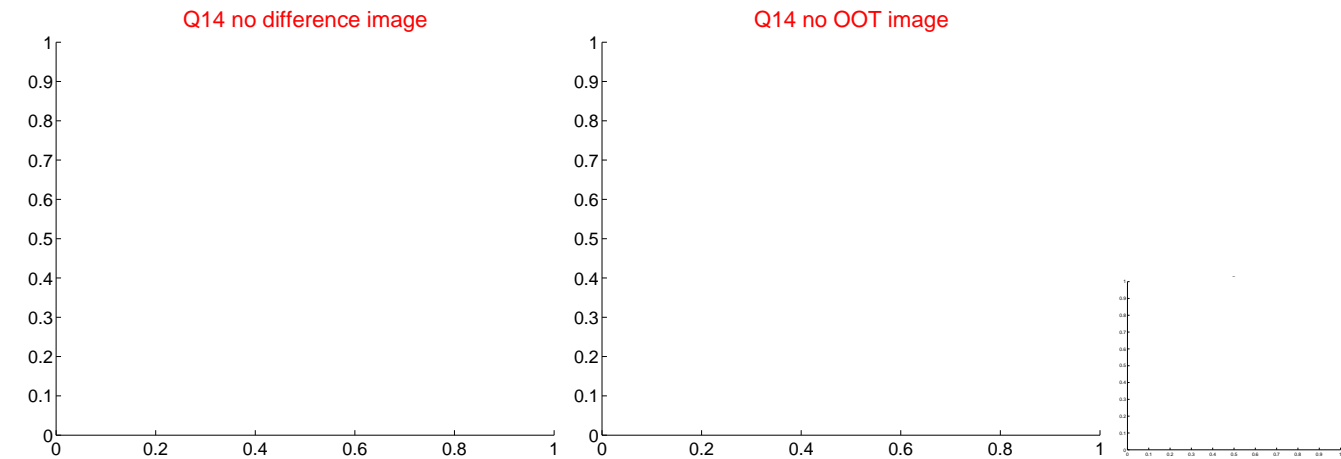
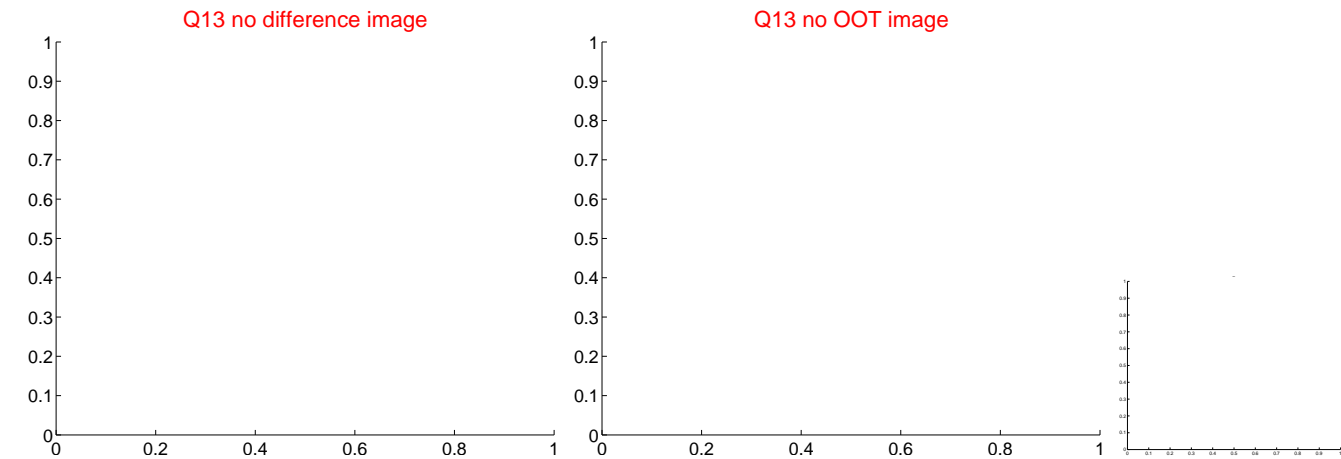
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



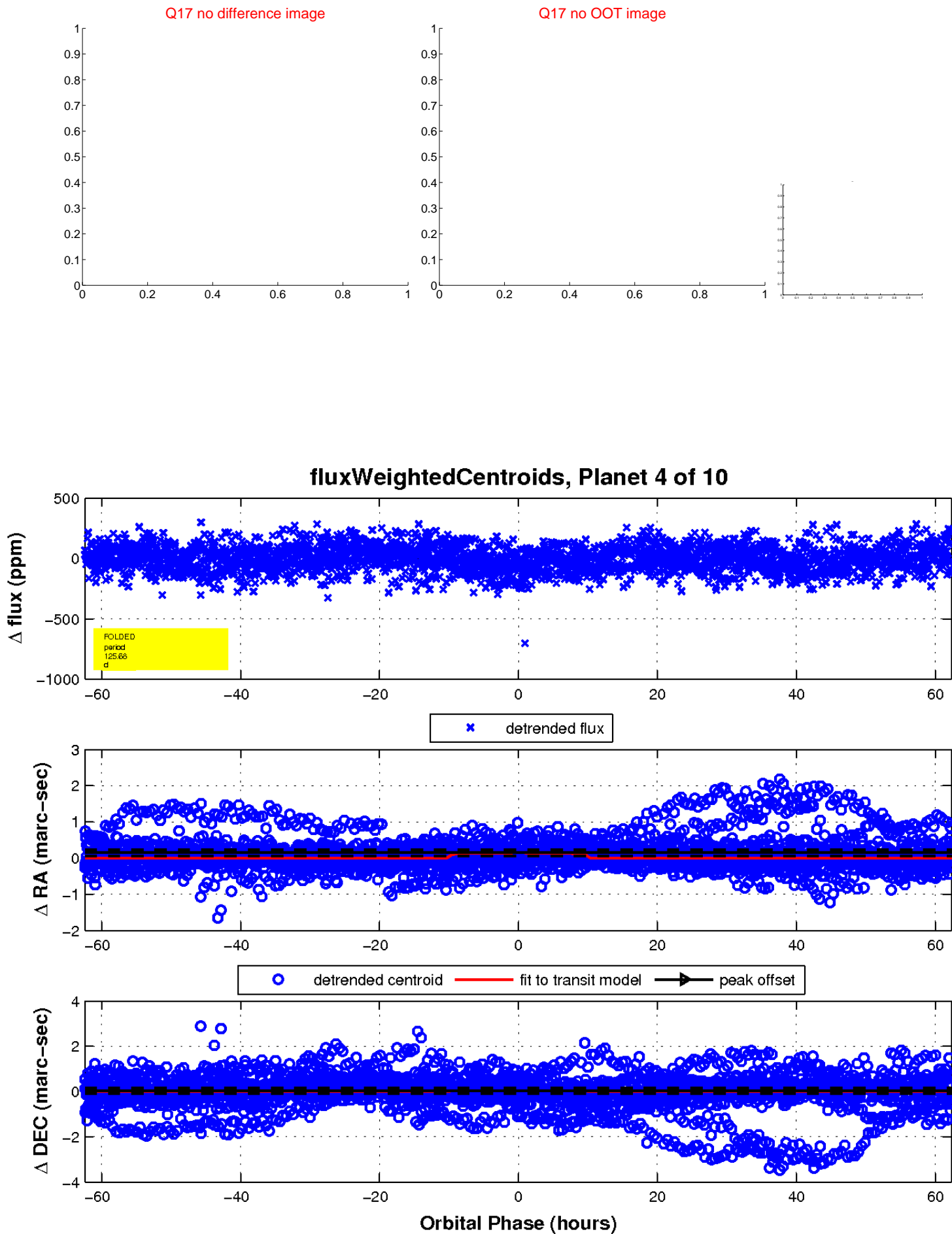
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

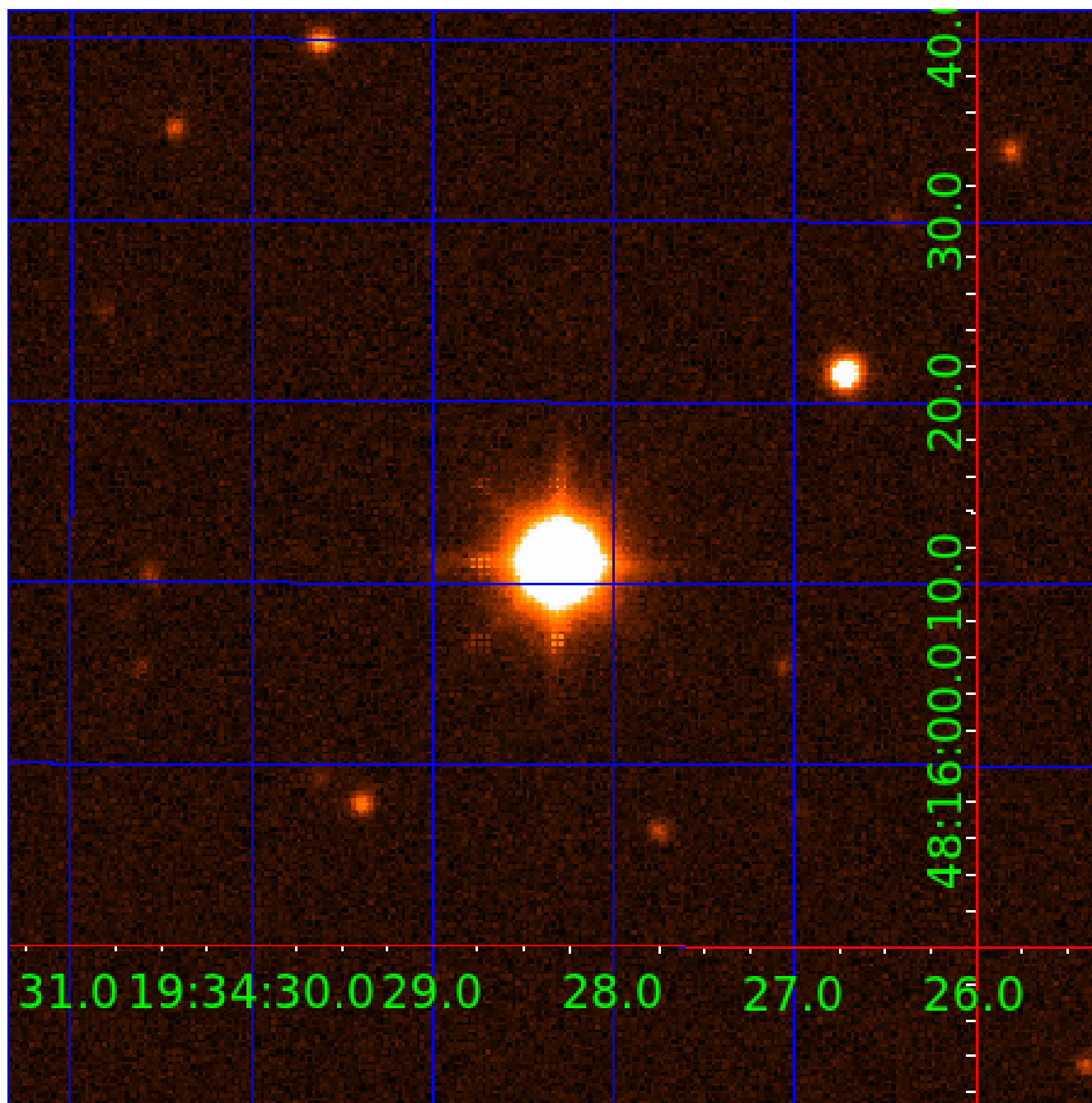


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

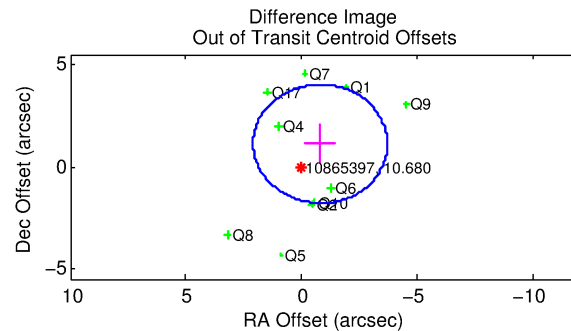
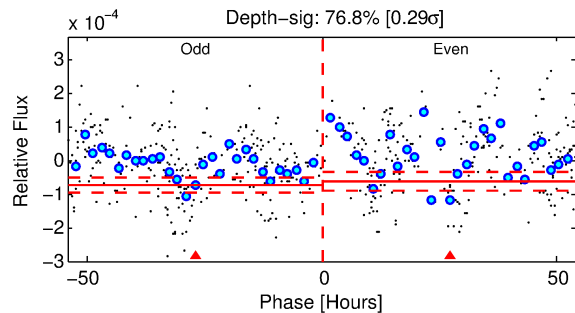
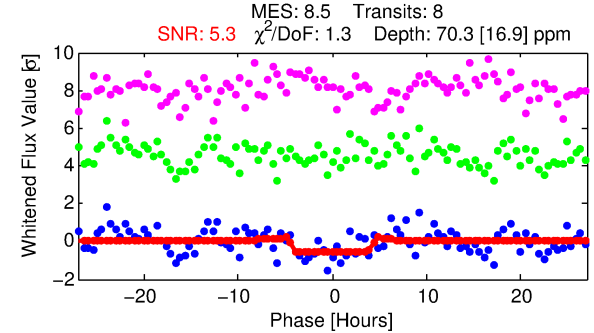
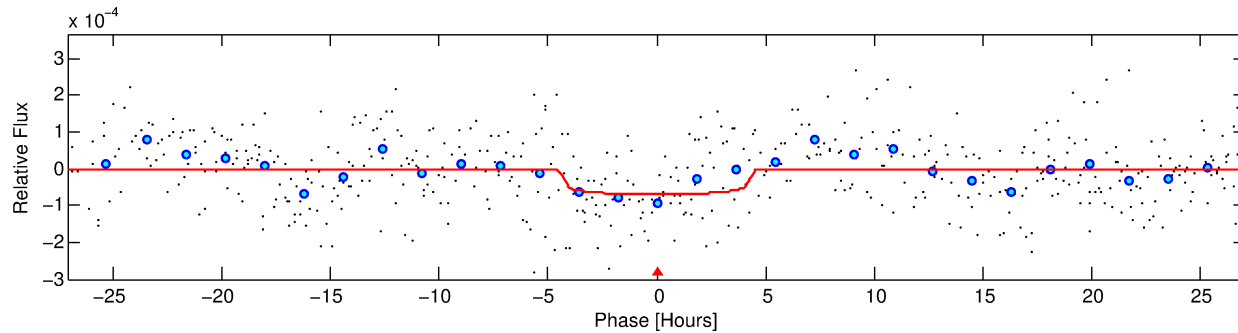
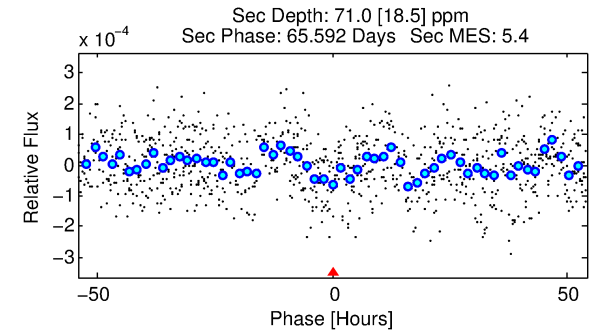
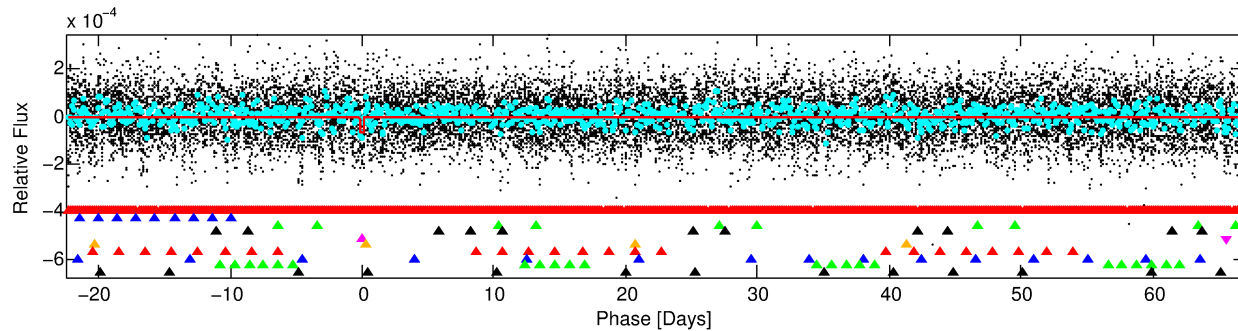
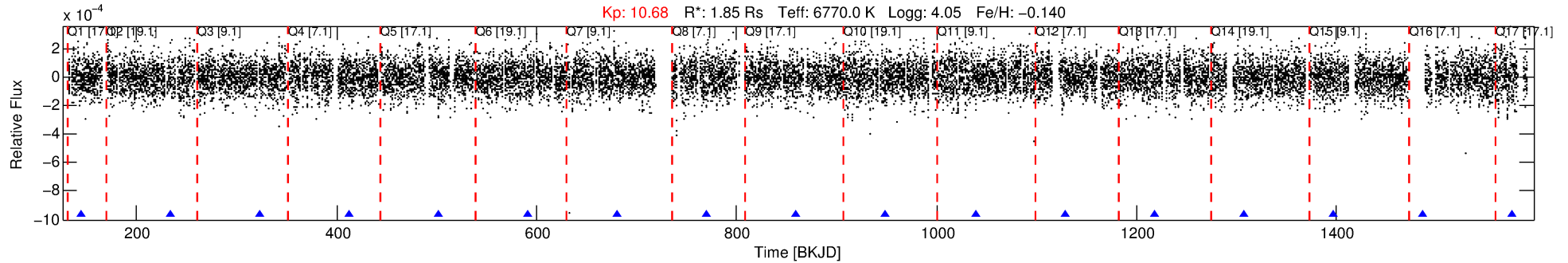
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-05

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 5 of 10 Period: 89.436 d



DV Fit Results:

Period = 89.43580 [0.00255] d
Epoch = 144.3833 [0.0254] BKJD
Rp/R* = 0.0089 [0.0034]
a/R* = 34.48 [73.09]
b = 0.90 [0.45]
Seff = 33.60 [9.47]
Teq = 614 [43] K
Rp = 1.81 [0.77] Re
a = 0.4383 [0.0783] AU
Ag = 2297.04 [1959.75] [1.17σ]
Teffp = 6571 [1328] K [4.48σ]

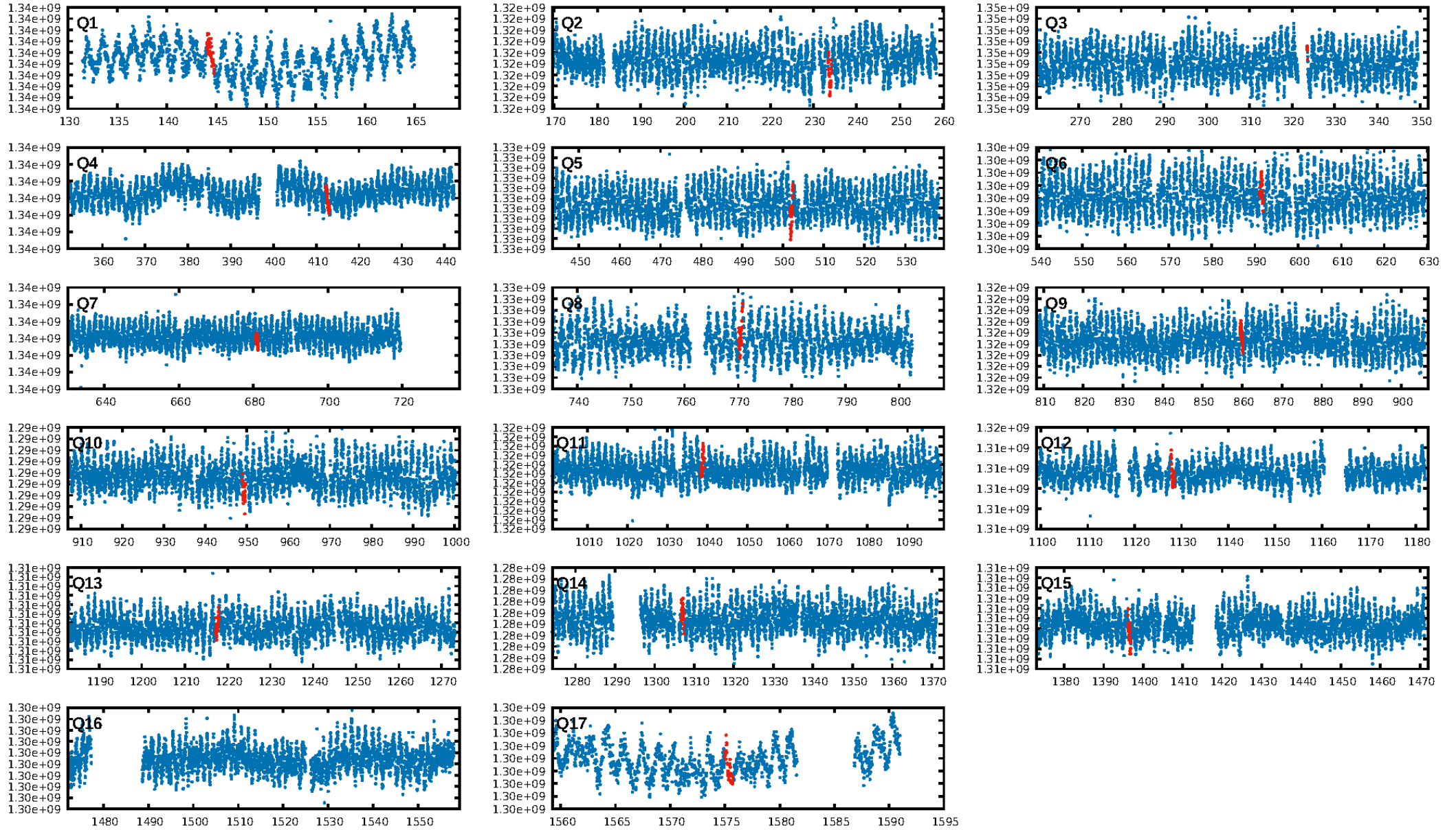
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.18σ]
LongPeriod-sig: 100.0% [21.11σ]
ModelChiSquare2-sig: 1.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.34e-10
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -4.496
Centroid-sig: 2.6%
Centroid-so: 2.007 arcsec [1.83σ]
OotOffset-rm: 1.377 arcsec [1.42σ]
KicOffset-rm: 1.270 arcsec [1.43σ]
OotOffset-st: 3/1/2/4 [10]
KicOffset-st: 3/1/2/4 [10]
DiffImageQuality-fgm: 0.20 [2/10]
DiffImageOverlap-fno: 0.00 [0/10]

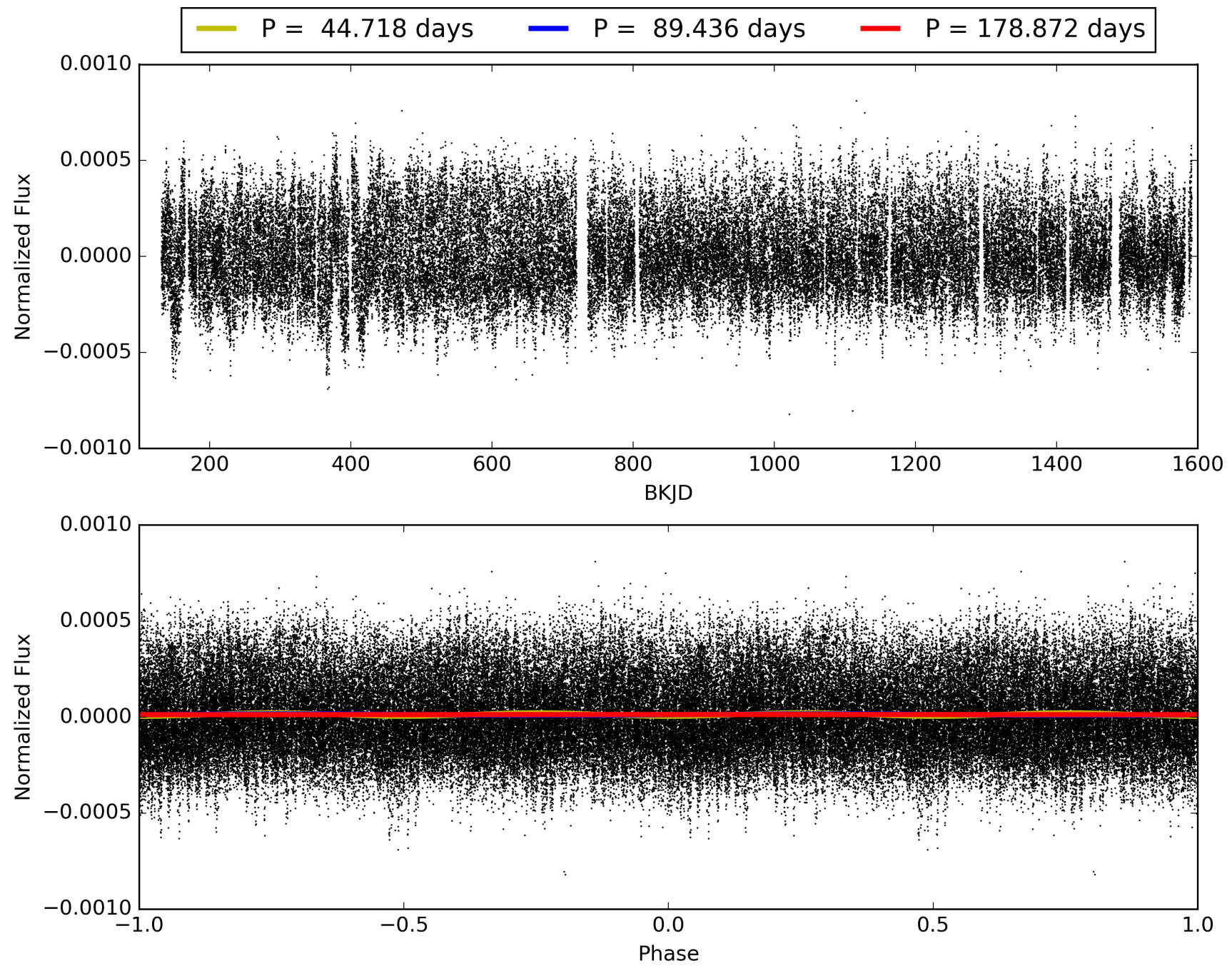
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:22 Z

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

TCE 010865397-05, PDC Light Curves

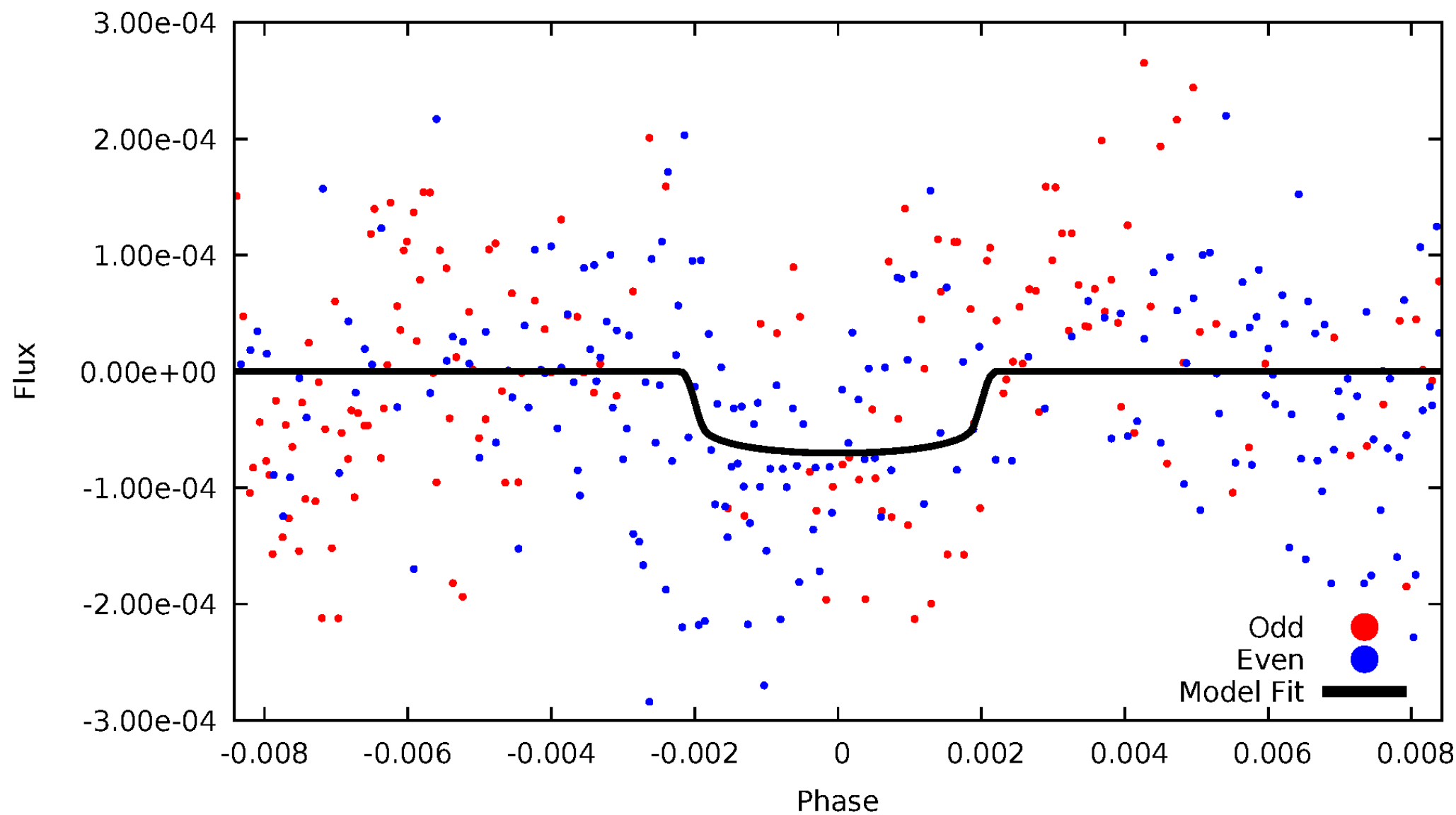


TCE 010865397-05



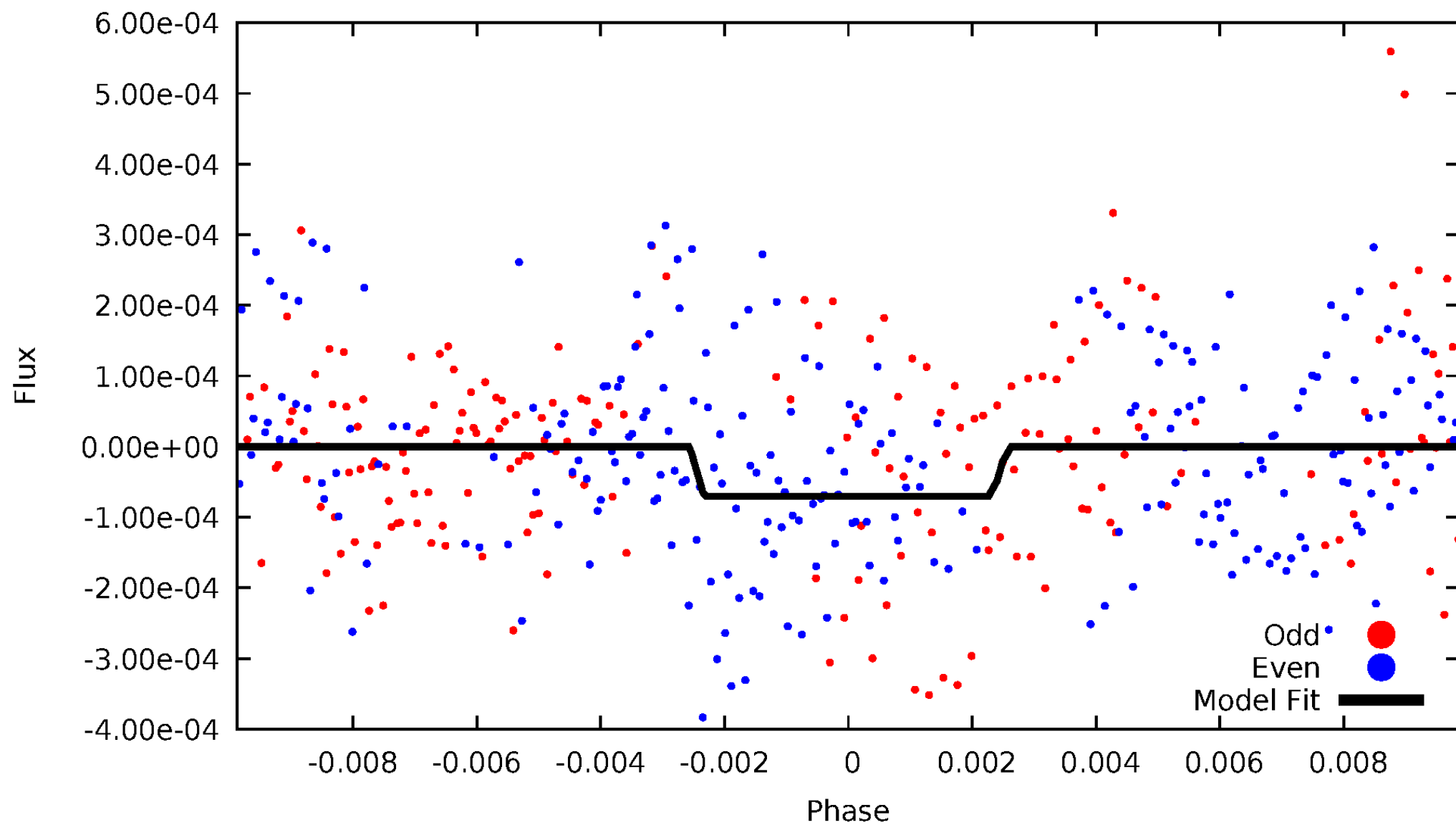
DV Odd/Even

TCE 010865397-05



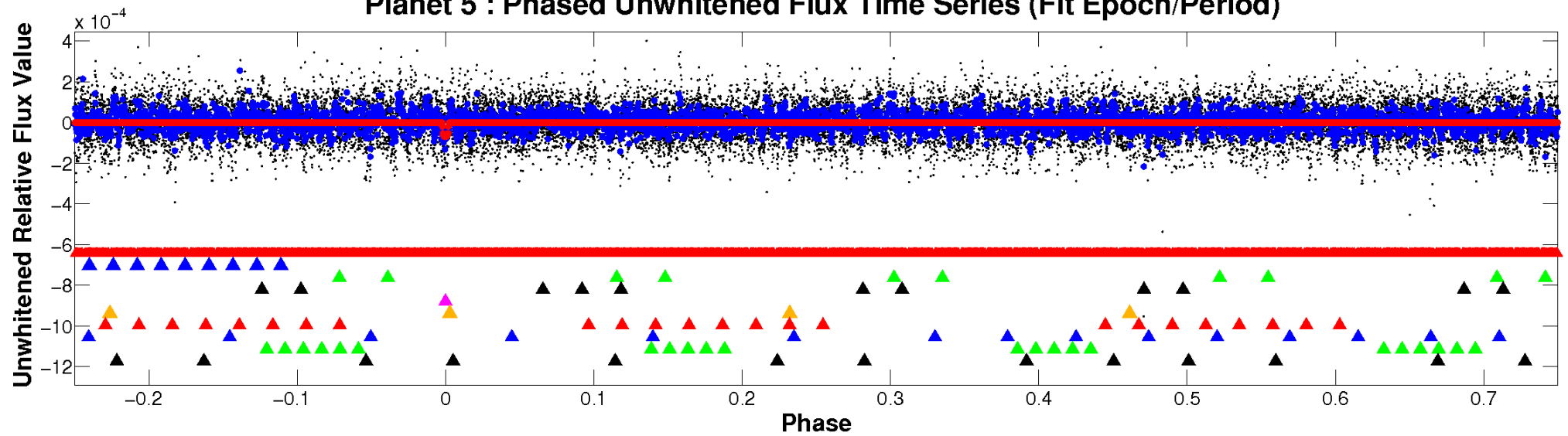
ALT Odd/Even

TCE 010865397-05

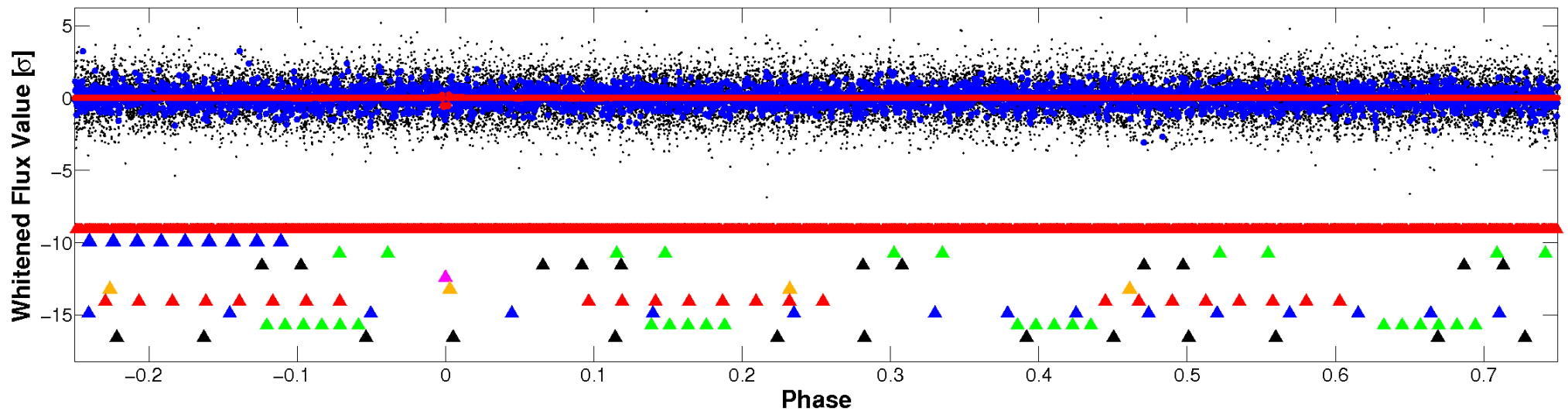


Non-Whitened Vs. Whitened Light Curve

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

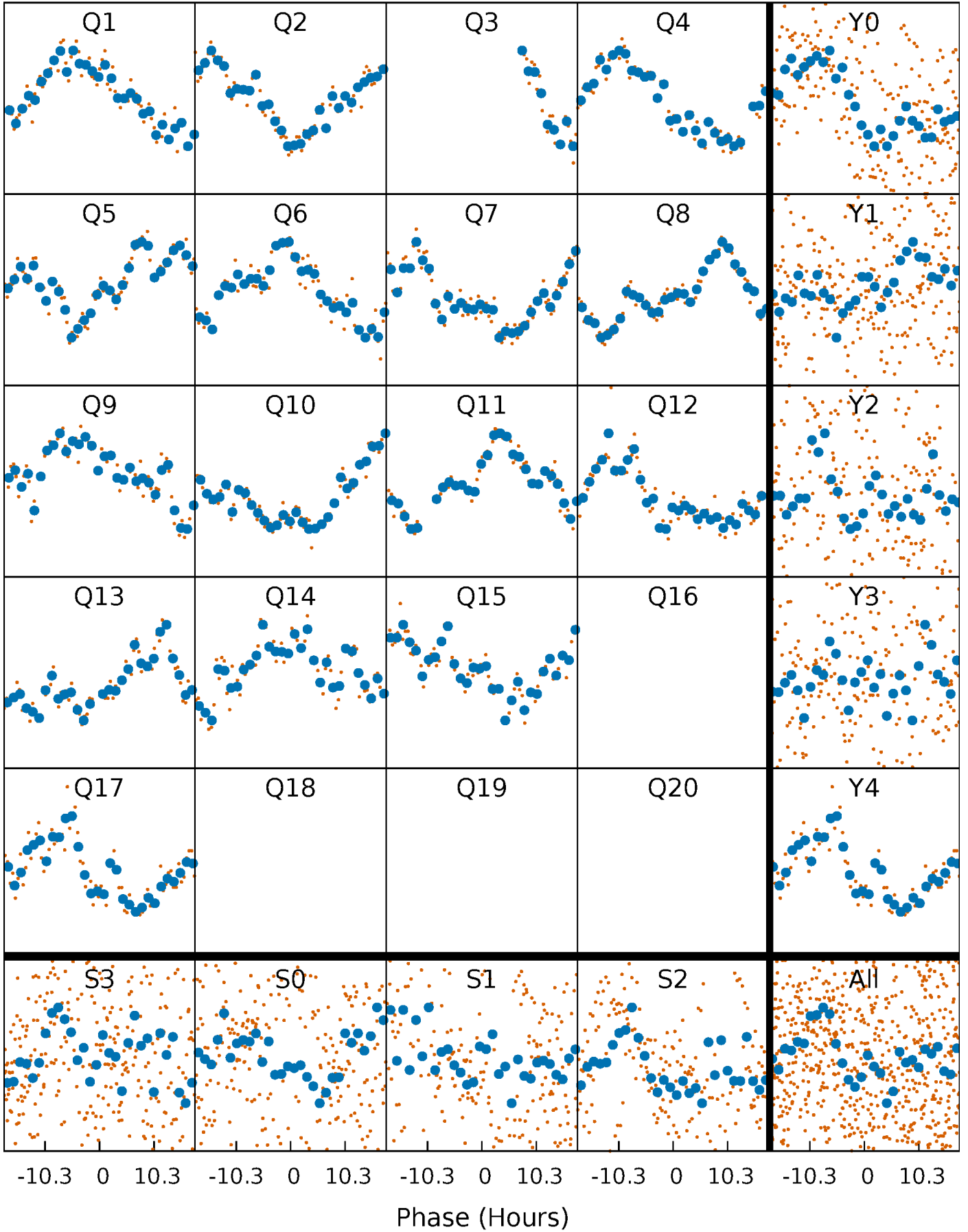


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



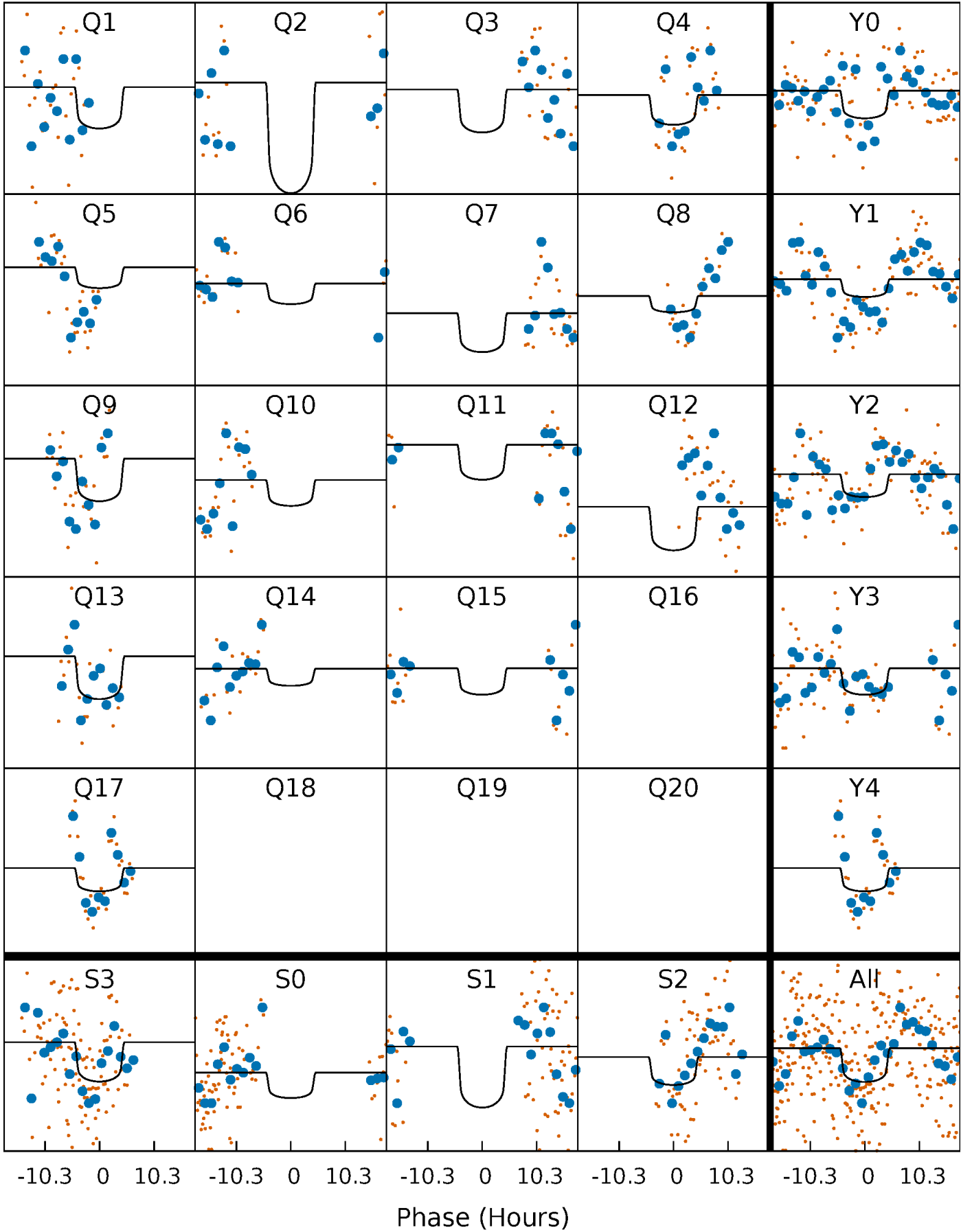
PDC Quarter-Phased Transit Curves

TCE 010865397-05 $P = 89.435801$ Days $T_0 = 144.383308$ (BKJD)



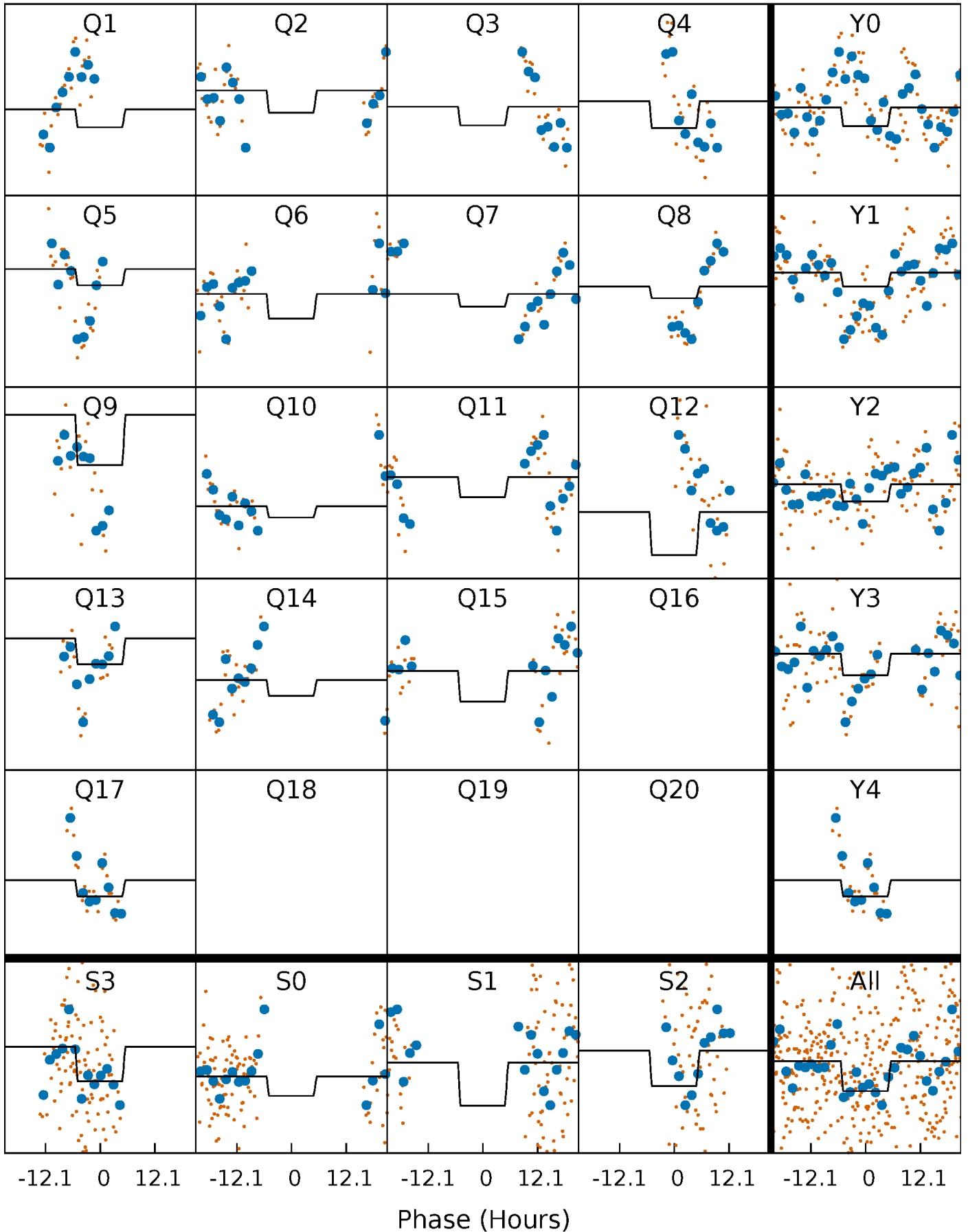
DV Quarter-Phased Transit Curves

TCE 010865397-05 $P = 89.435801$ Days $T_0 = 144.383308$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

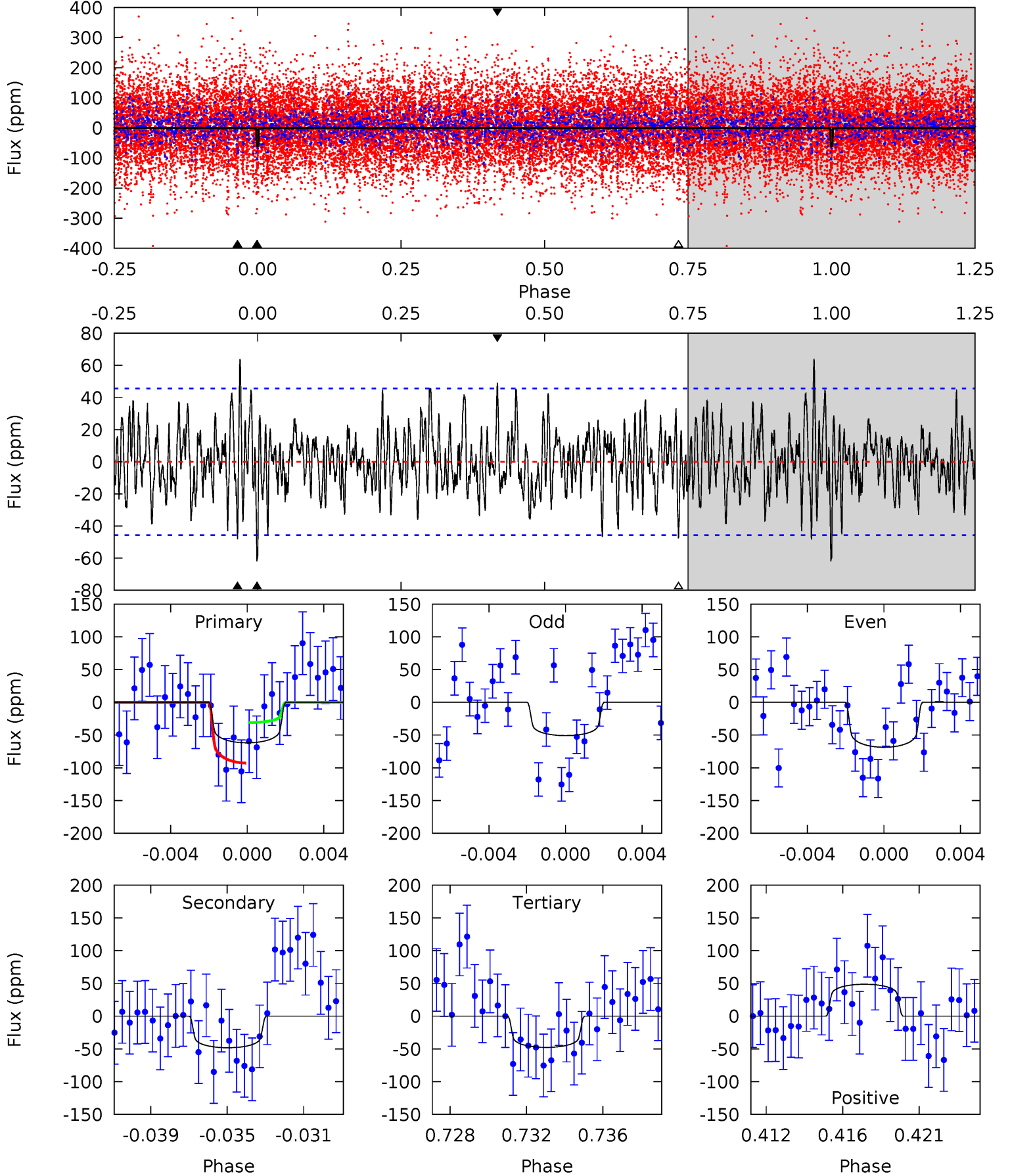
TCE 010865397-05 $P = 89.443958$ Days $T_0 = 144.325528$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-05, P = 89.435801 Days, E = 54.947507 Days

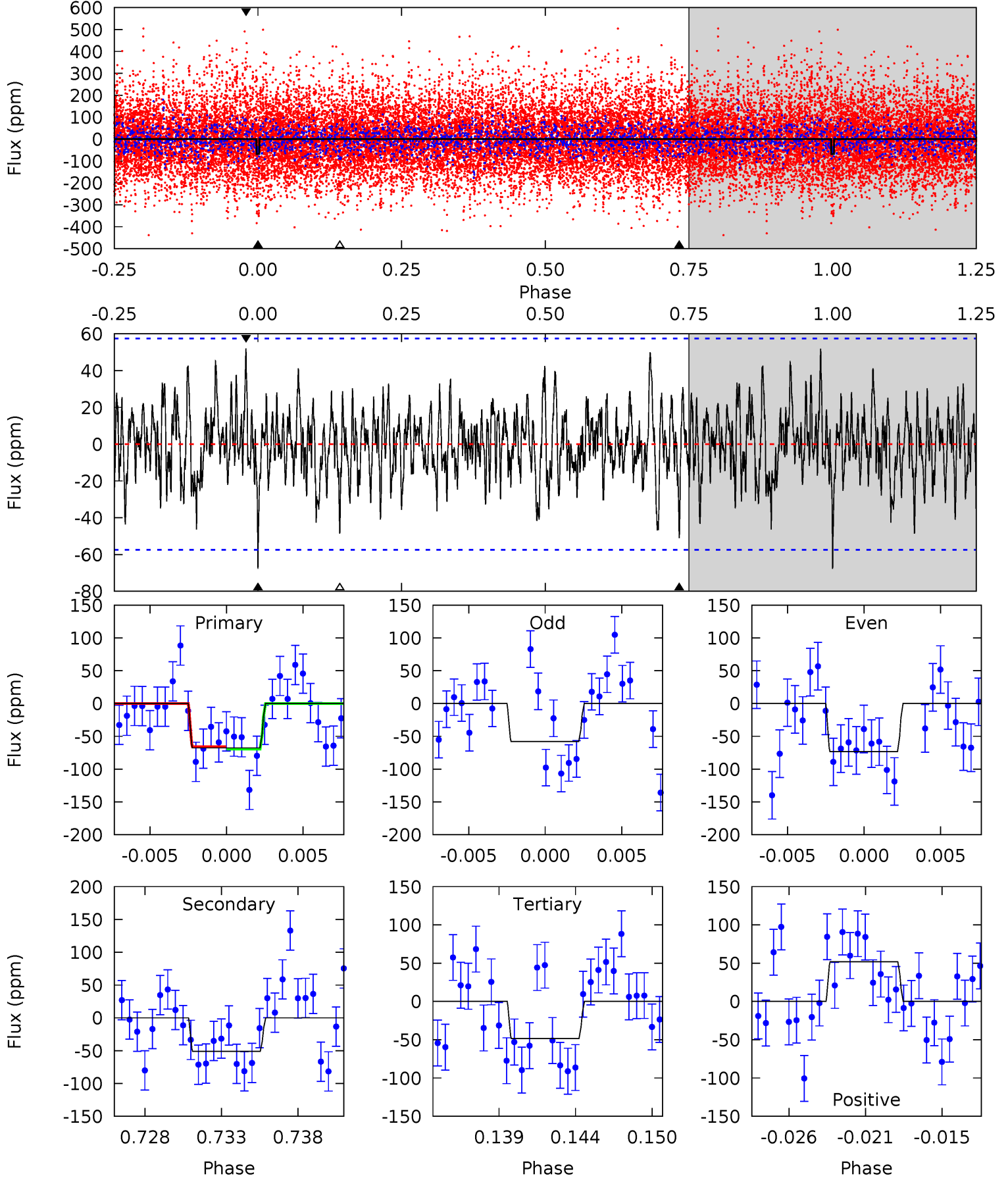
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.02	5.48	5.42	5.52	5.18	2.85	1.86	1.60	1.50	0.06	-0.04	0.98	1.10	0.51	3.51



Alt Model-Shift Uniqueness Test

010865397-05, P = 89.443958 Days, E = 54.881570 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.07	4.58	4.36	4.65	5.15	2.80	1.43	1.71	1.41	0.22	-0.08	0.66	0.77	0.43	0.15



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-48 ± 9	$1.83^{+0.69}_{-0.72}$	854^{+45}_{-42}	5881^{+1742}_{-774}	1533^{+2499}_{-739}
Alt.	-51 ± 11	$1.67^{+0.75}_{-0.72}$	854^{+42}_{-46}	6245^{+2000}_{-997}	1968^{+3725}_{-1055}

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

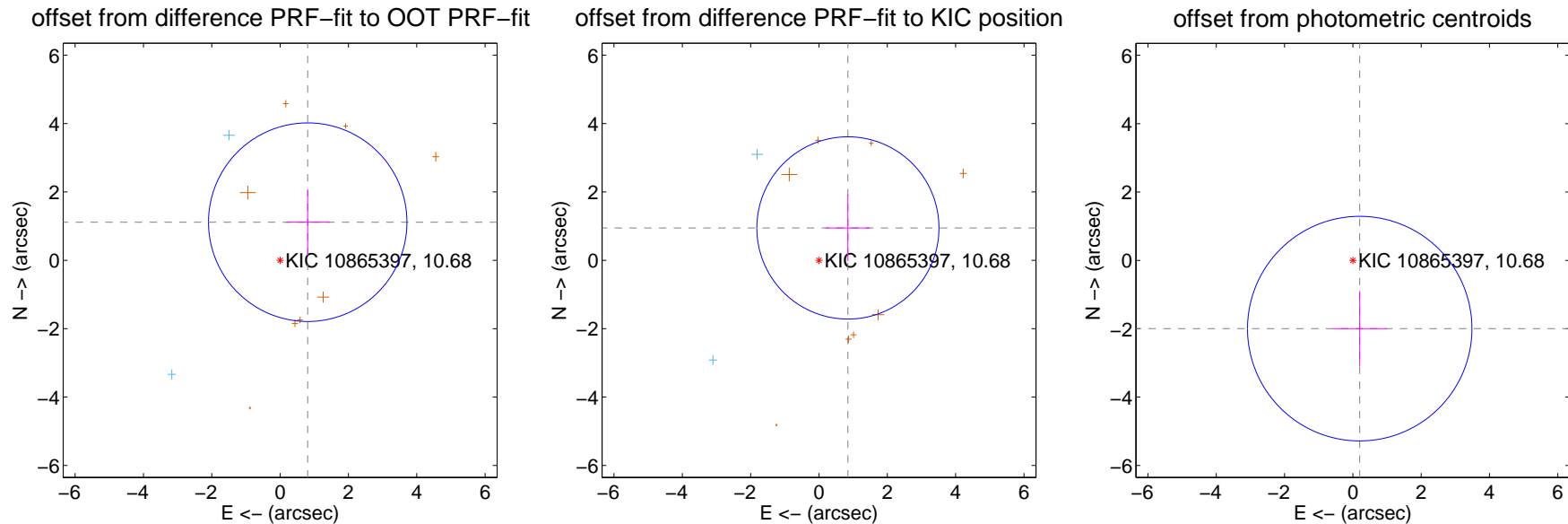
DV Centroid Data

Supplemental centroid analysis for 010865397-05. **Kepler magnitude: 10.68.** Transit SNR 5.34

There are 2 quarters with good PRF difference image offsets

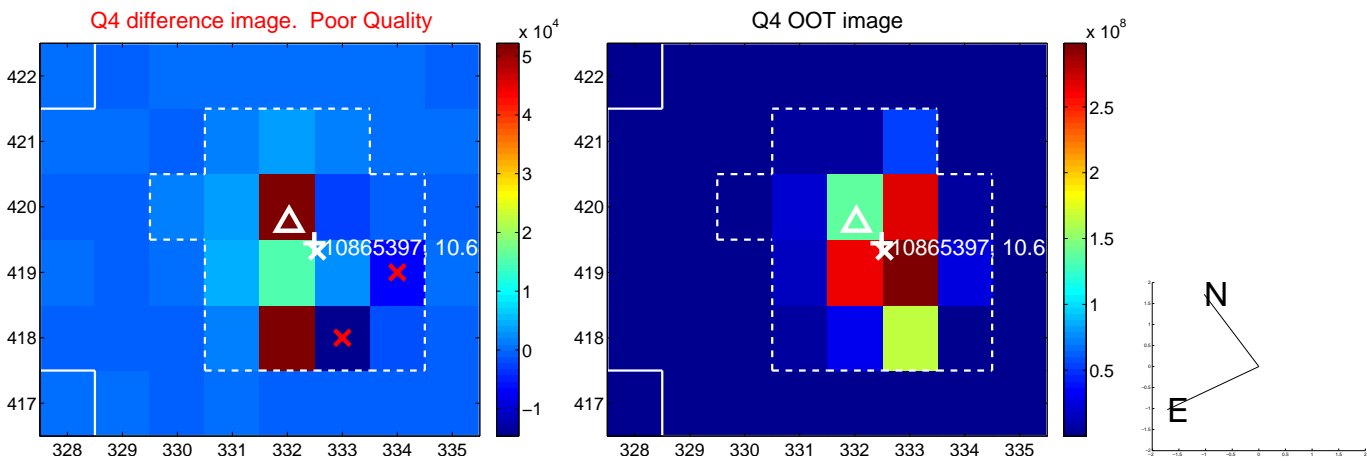
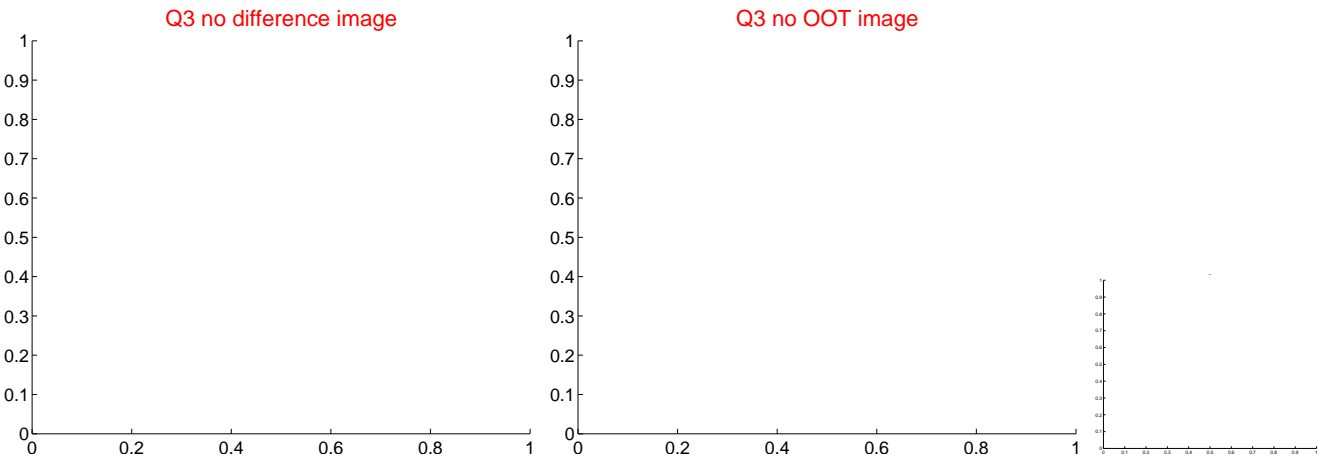
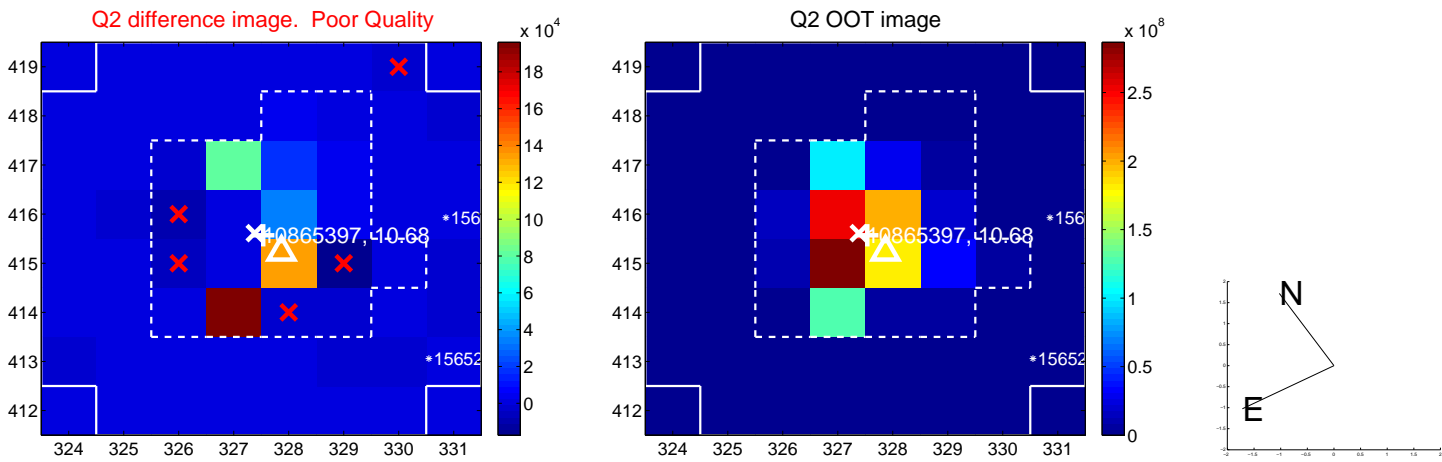
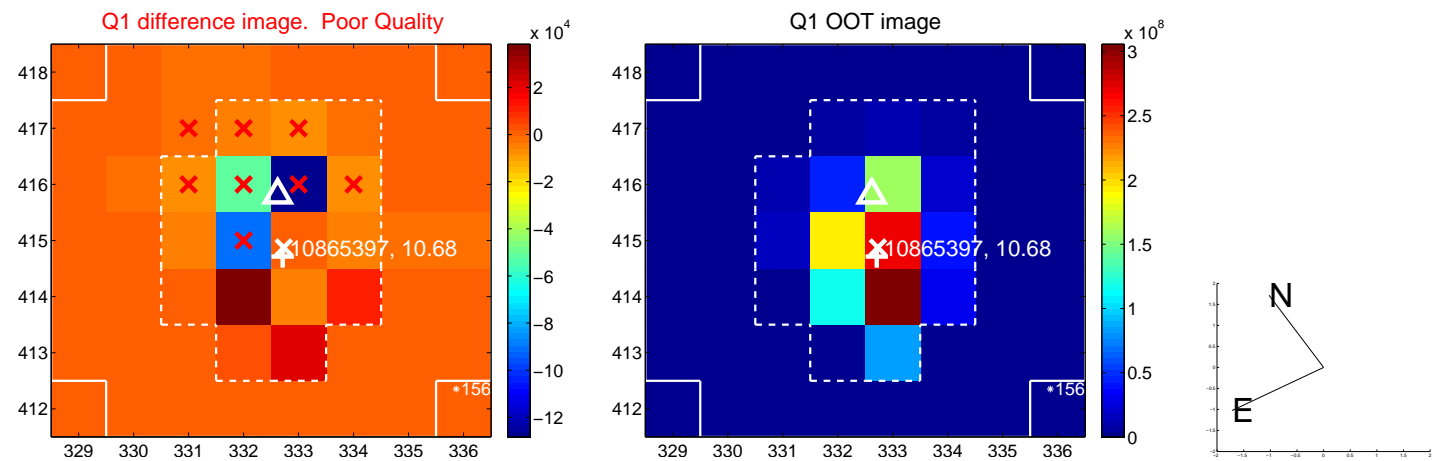
The direct PRF centroid is offset from the target star catalog position by about 0.64 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.377 ± 0.968	1.42	-0.808 ± 0.633	1.114 ± 0.927
PRF-fit source offset from KIC position	1.270 ± 0.889	1.43	-0.847 ± 0.646	0.947 ± 0.973
photometric centroid source offset	2.01 ± 1.10	1.83	-0.20 ± 0.79	-2.00 ± 1.10

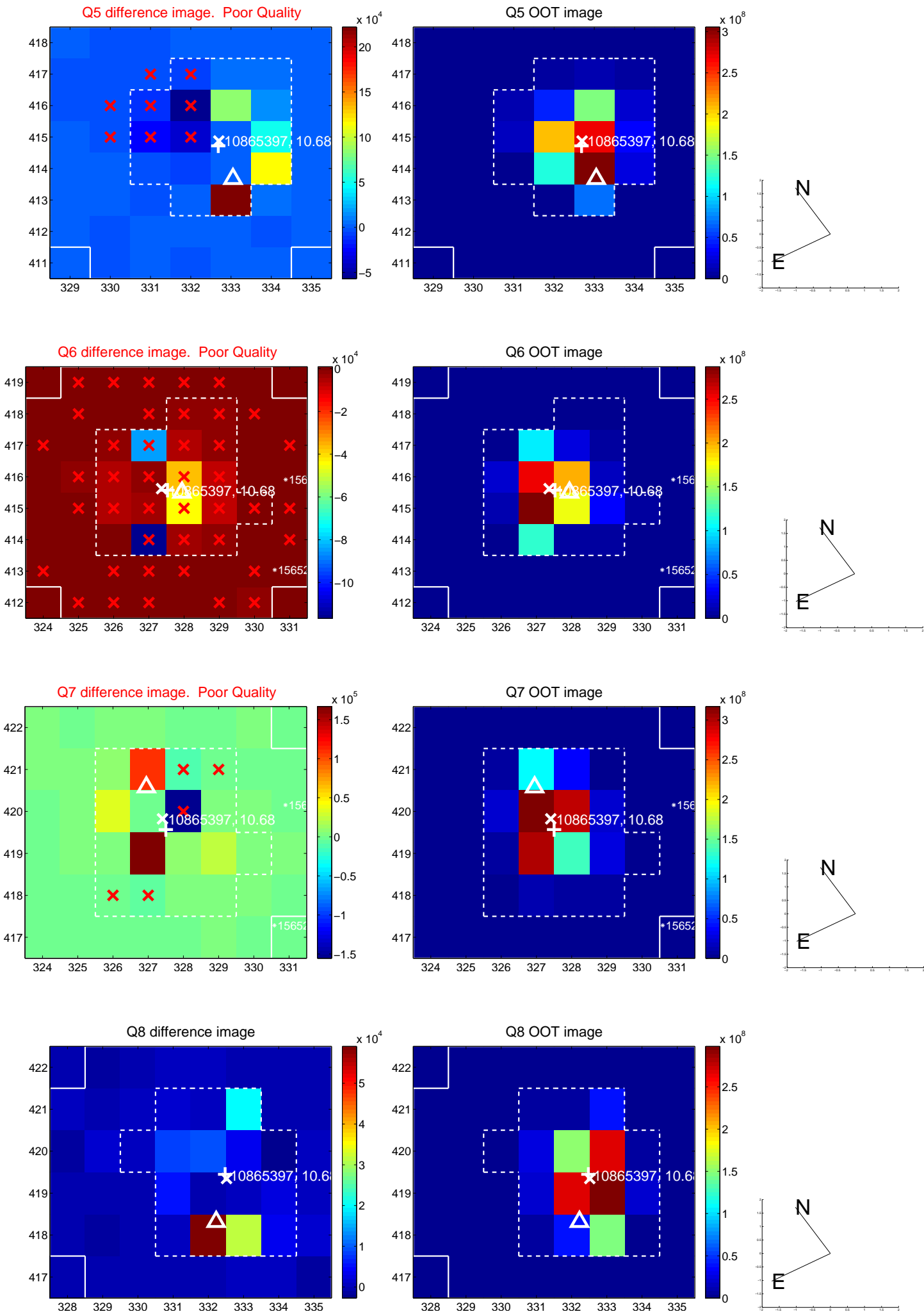


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

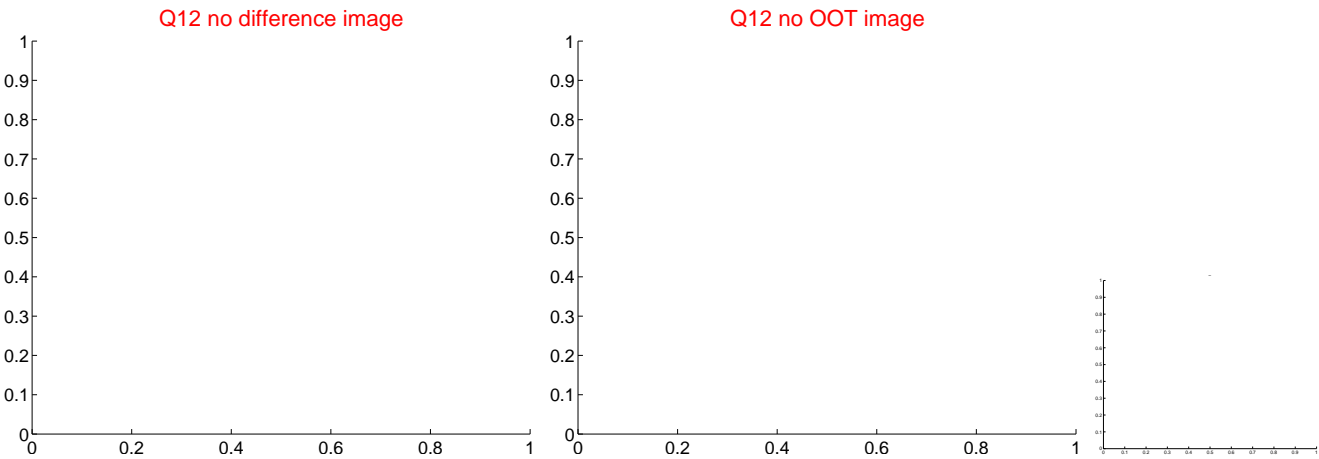
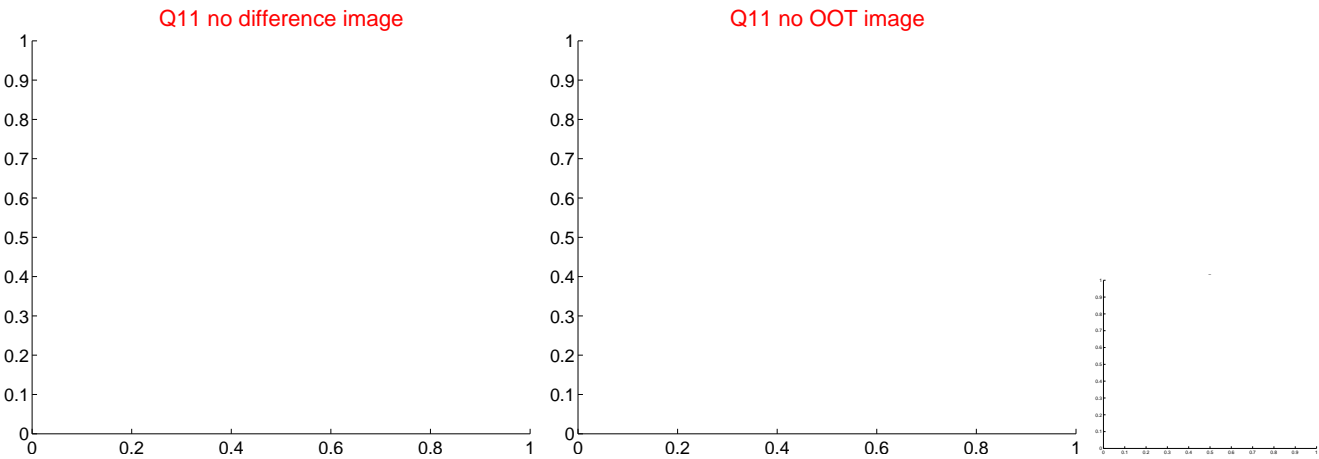
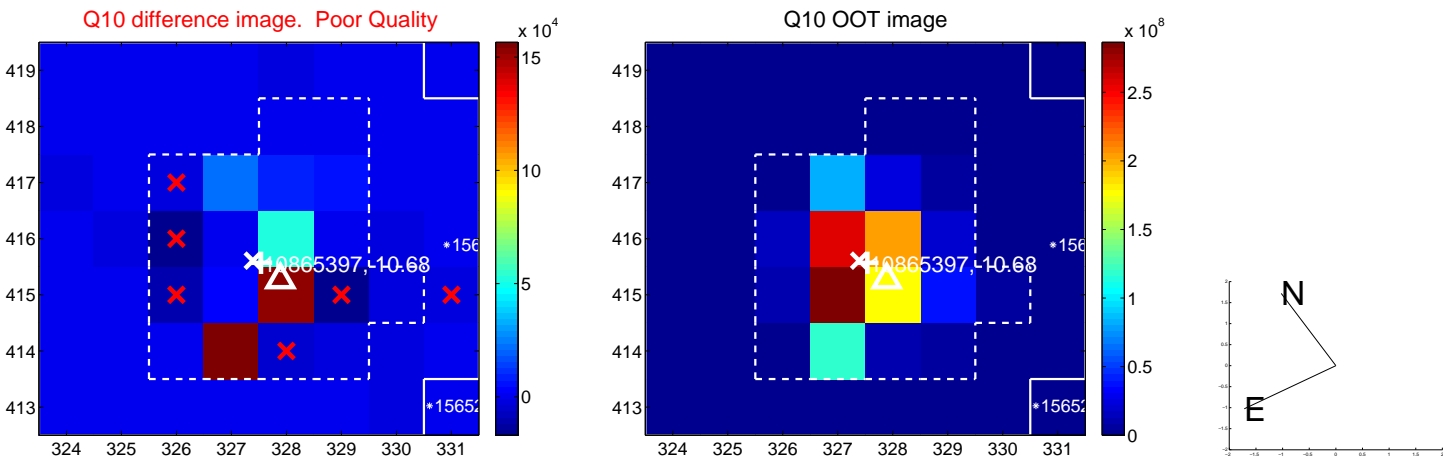
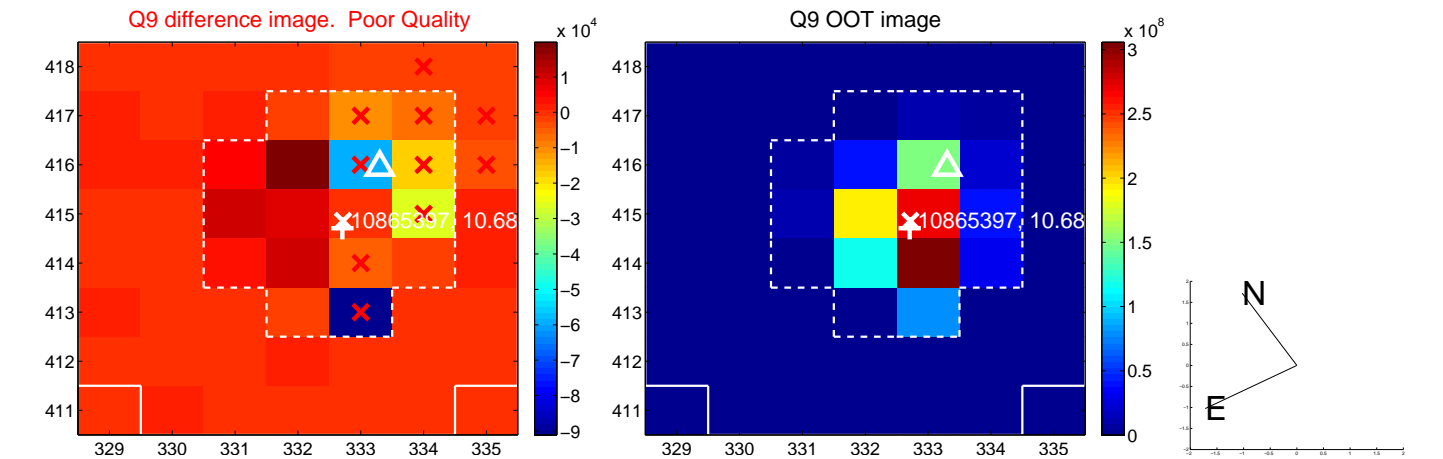
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



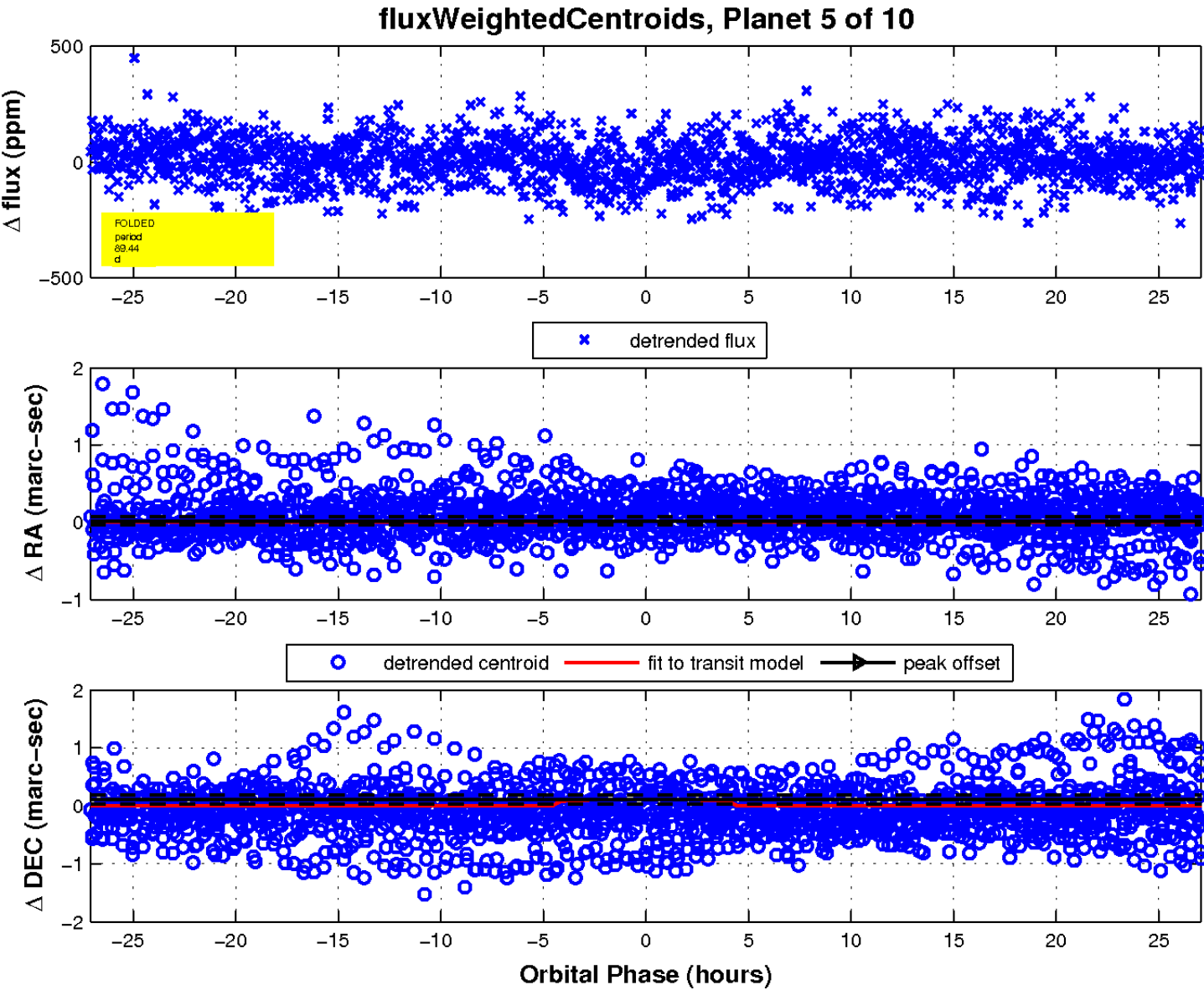
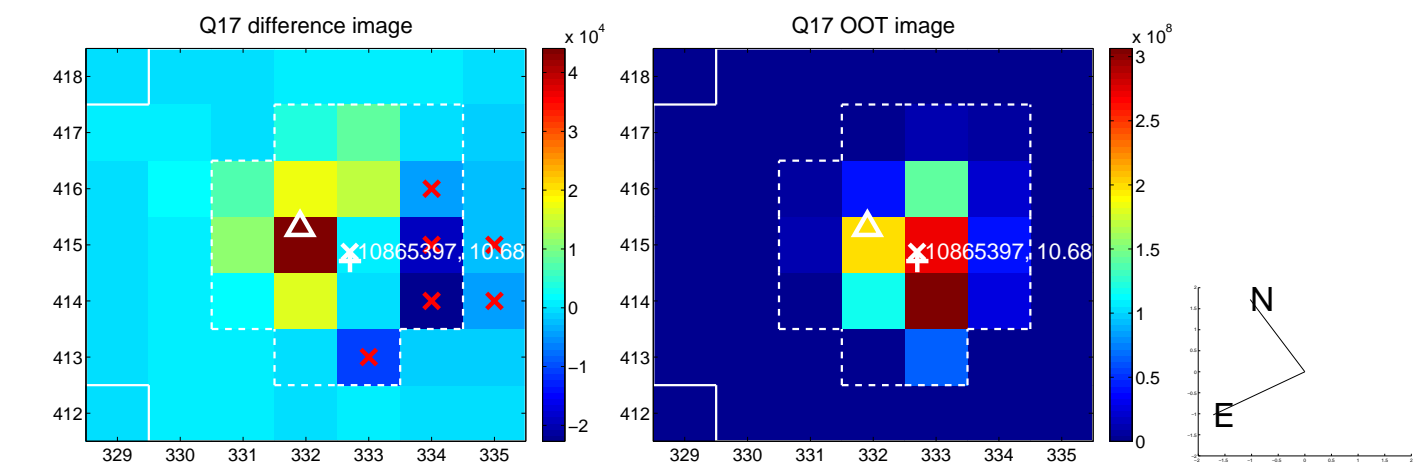
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

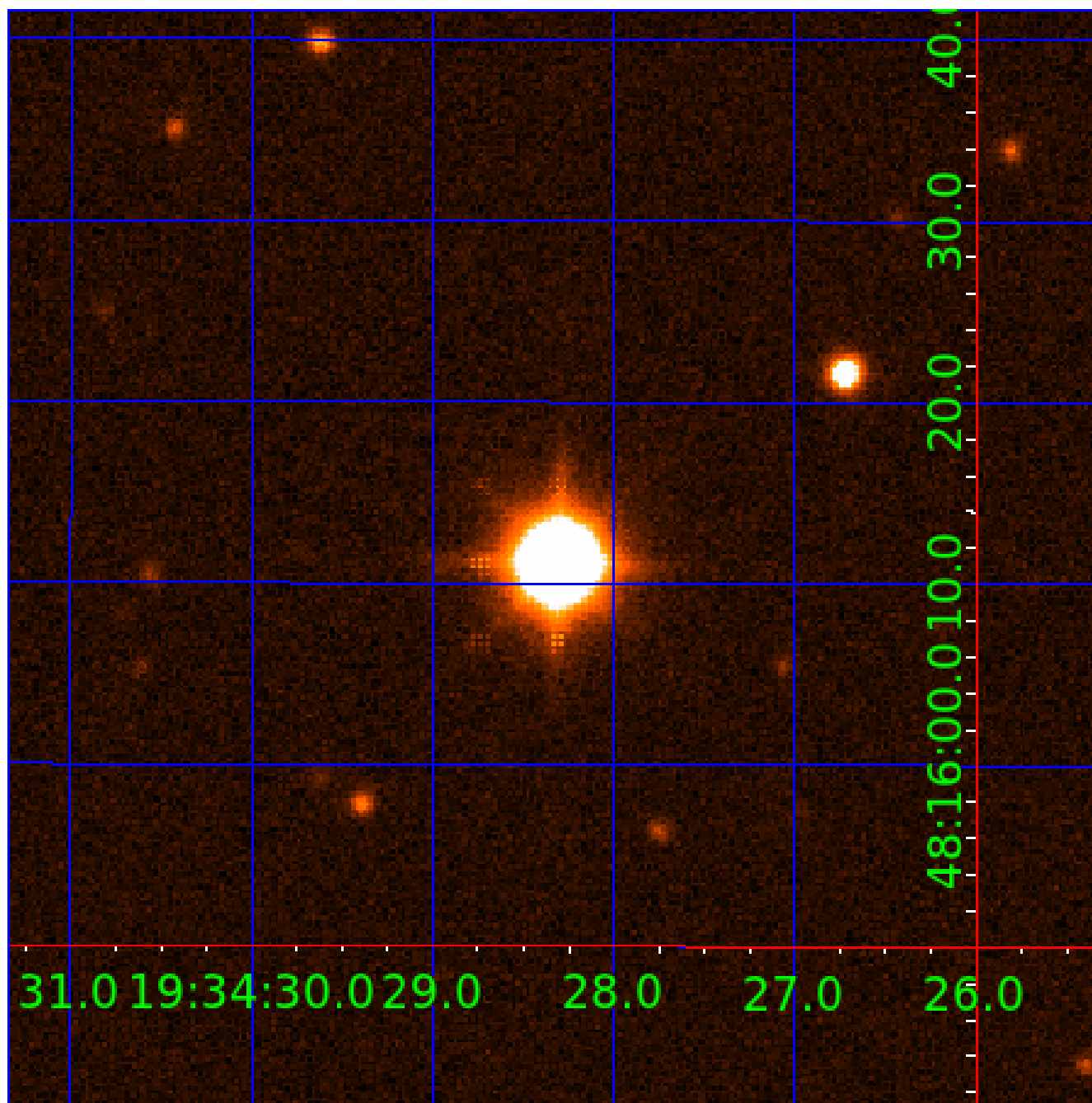


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

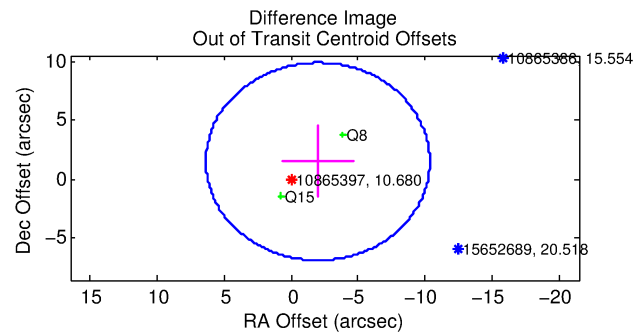
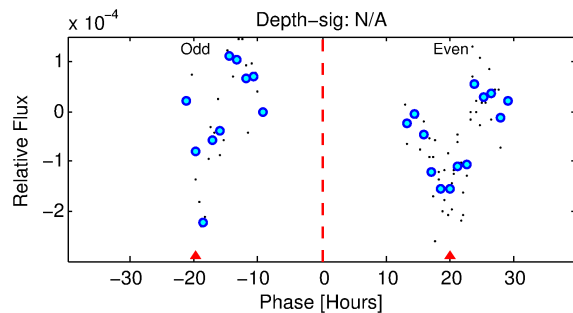
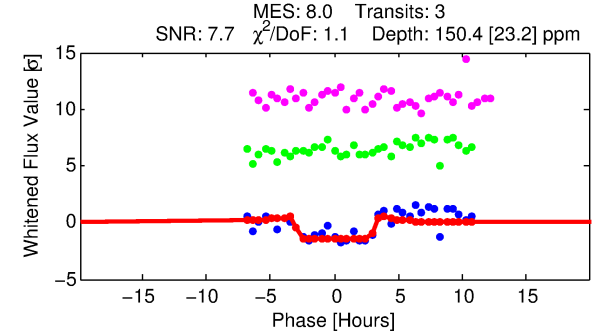
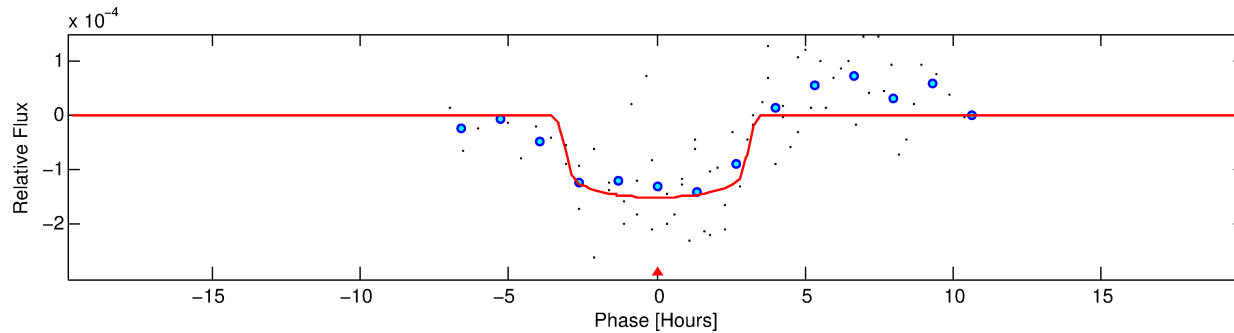
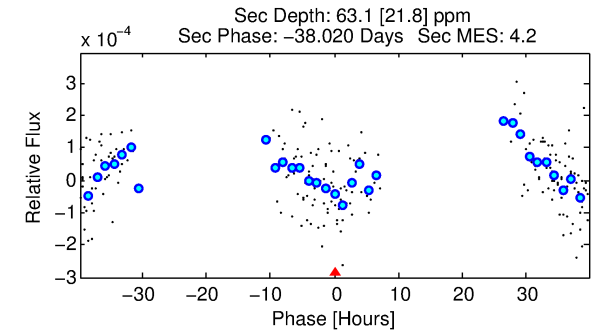
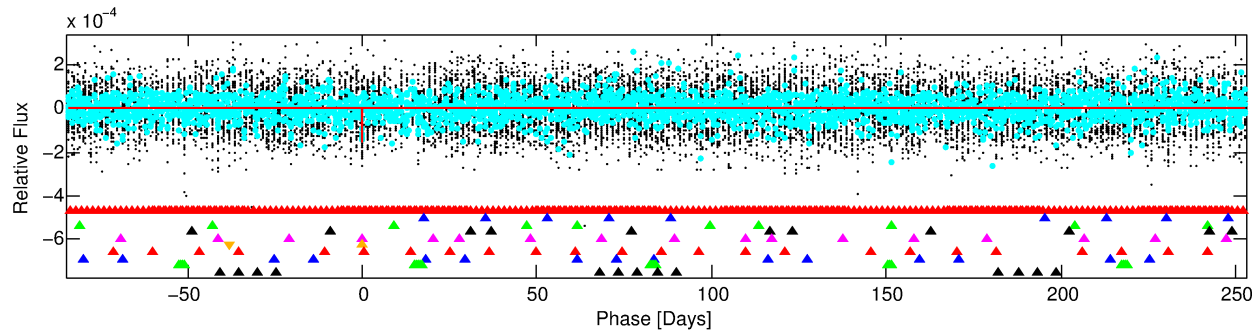
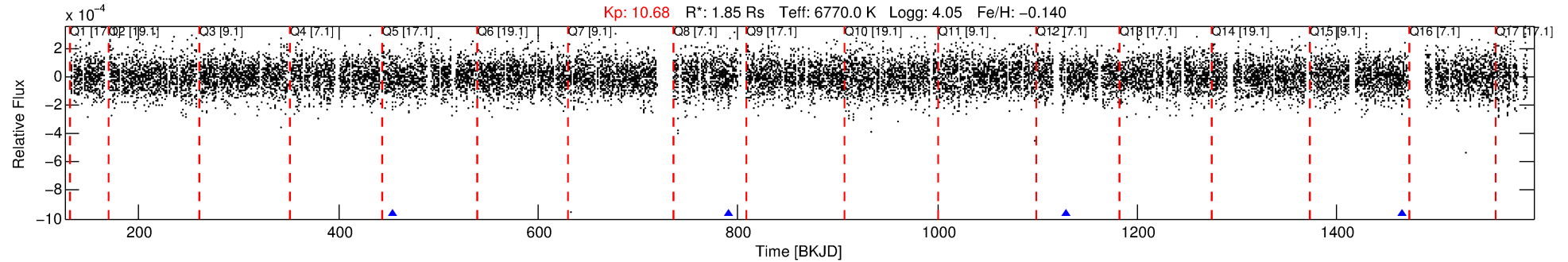
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-06

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 6 of 10 Period: 337.247 d



DV Fit Results:

Period = 337.24669 [0.00585] d
Epoch = 453.9474 [0.0107] BKJD
 $R_p/R^* = 0.0129$ [0.0053]
 $a/R^* = 197.15$ [464.54]
 $b = 0.88$ [0.63]
 $\text{Seff} = 5.72$ [1.61]
 $T_{\text{eq}} = 394$ [28] K
 $R_p = 2.60$ [1.19] R_e
 $a = 1.0619$ [0.1896] AU
 $A_g = 5788.42$ [5430.02] [1.07σ]
 $T_{\text{eff}} = 5319$ [1193] K [4.13σ]

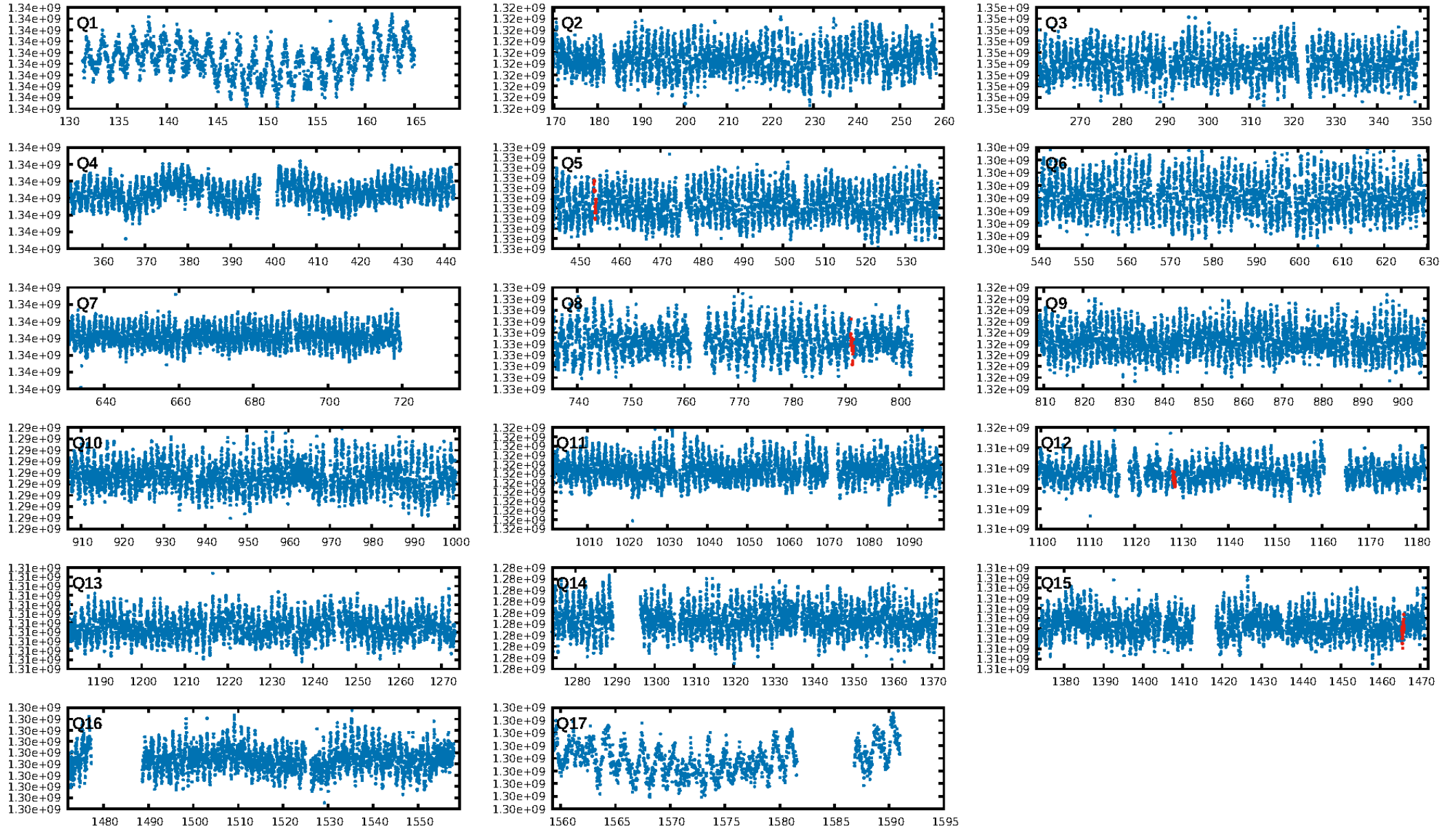
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [472.46σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 78.1%
ModelChiSquareGof-sig: 97.4%
Bootstrap-pfa: 3.90e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 10.51
Centroid-sig: 0.0%
Centroid-so: 2.338 arcsec [1.78σ]
OotOffset-rm: 2.500 arcsec [0.90σ]
KicOffset-rm: 2.402 arcsec [0.75σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.25 [1/4]

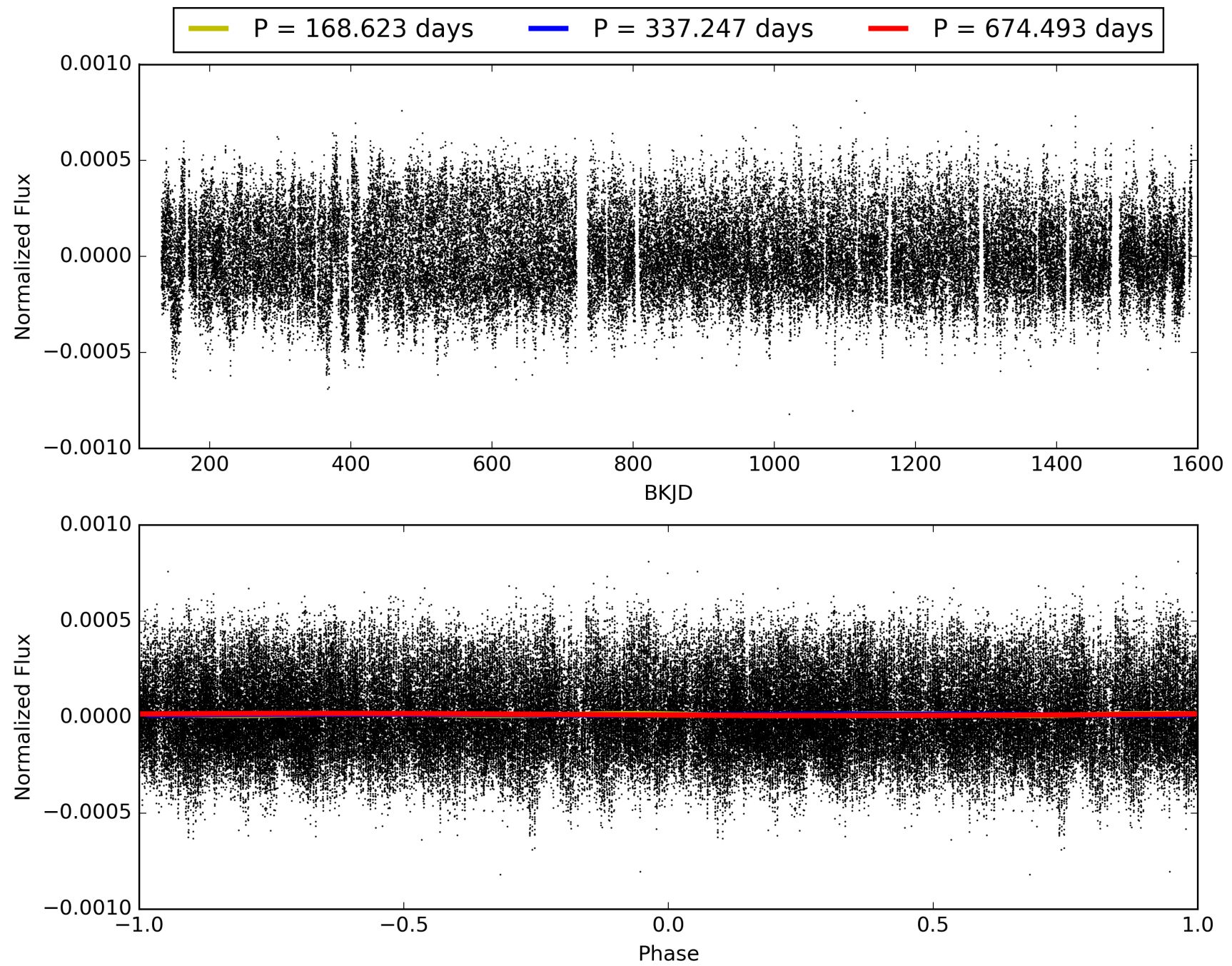
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:27 Z

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

TCE 010865397-06, PDC Light Curves

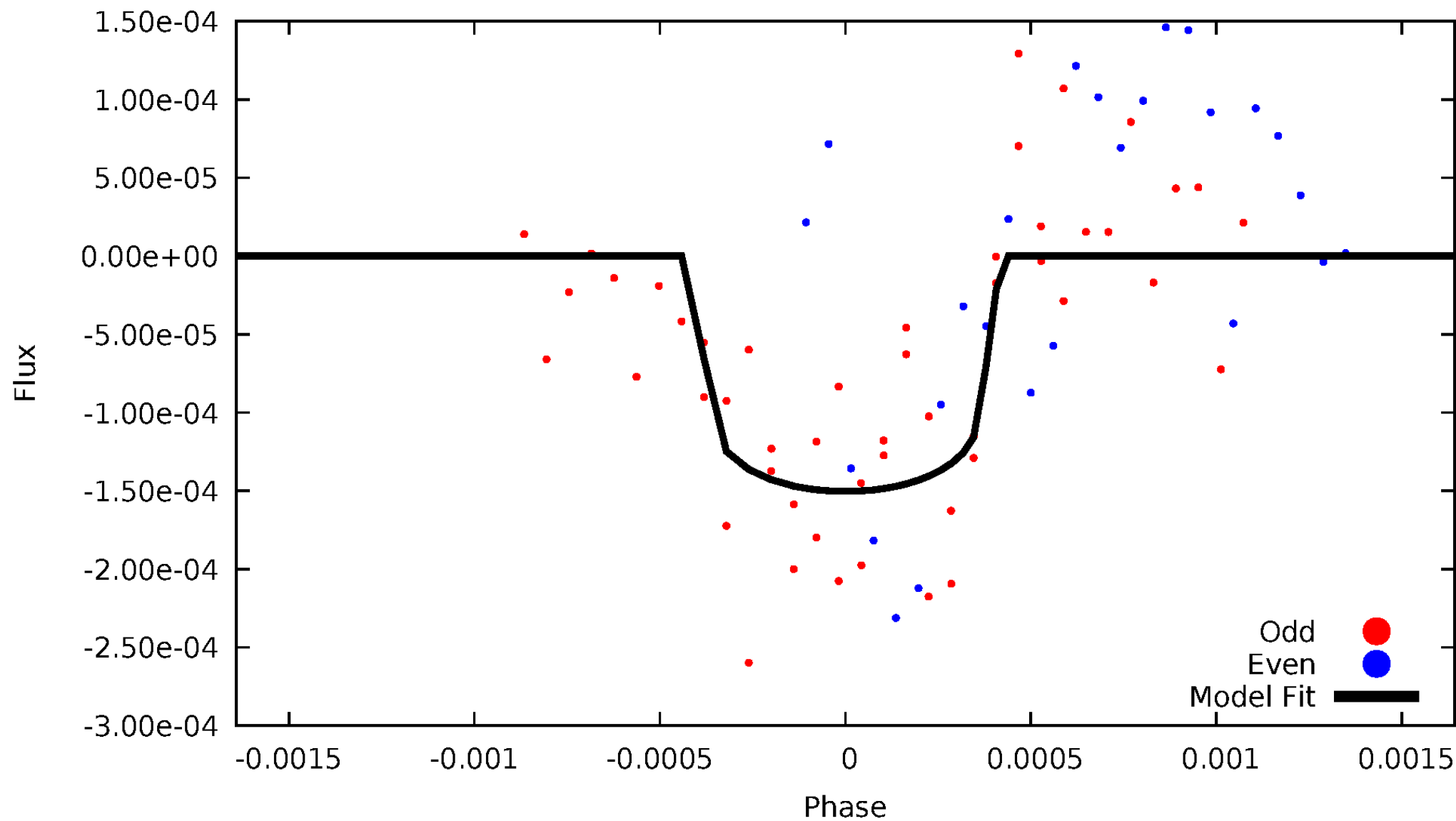


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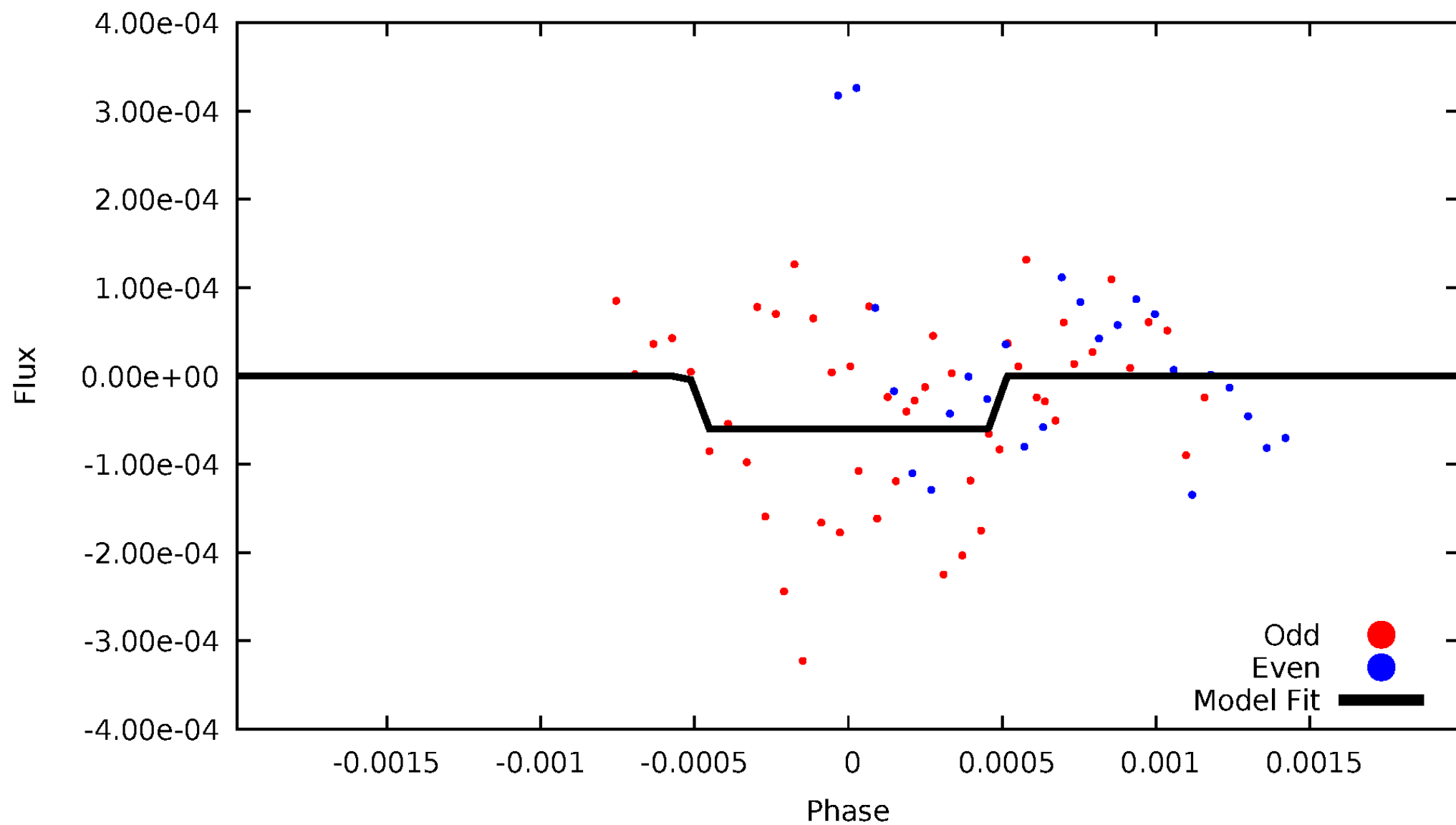
DV Odd/Even

TCE 010865397-06



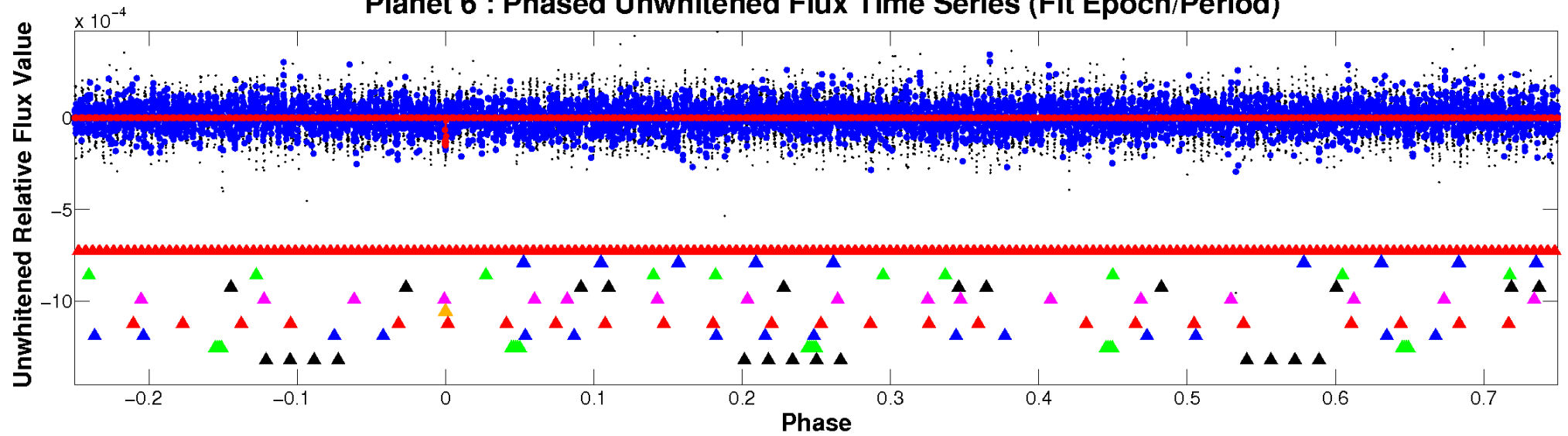
ALT Odd/Even

TCE 010865397-06

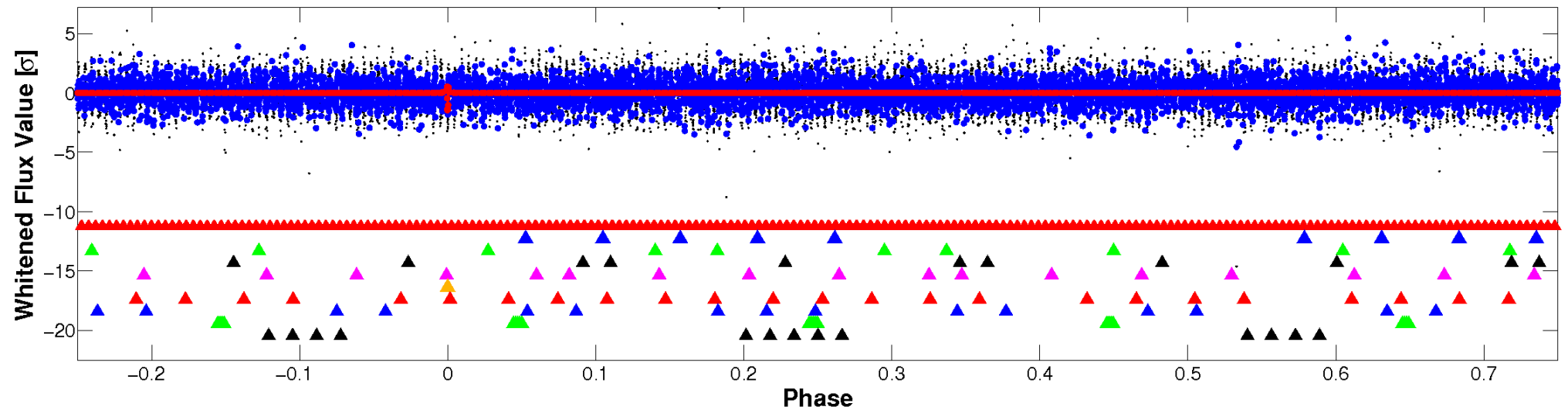


Non-Whitened Vs. Whitened Light Curve

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

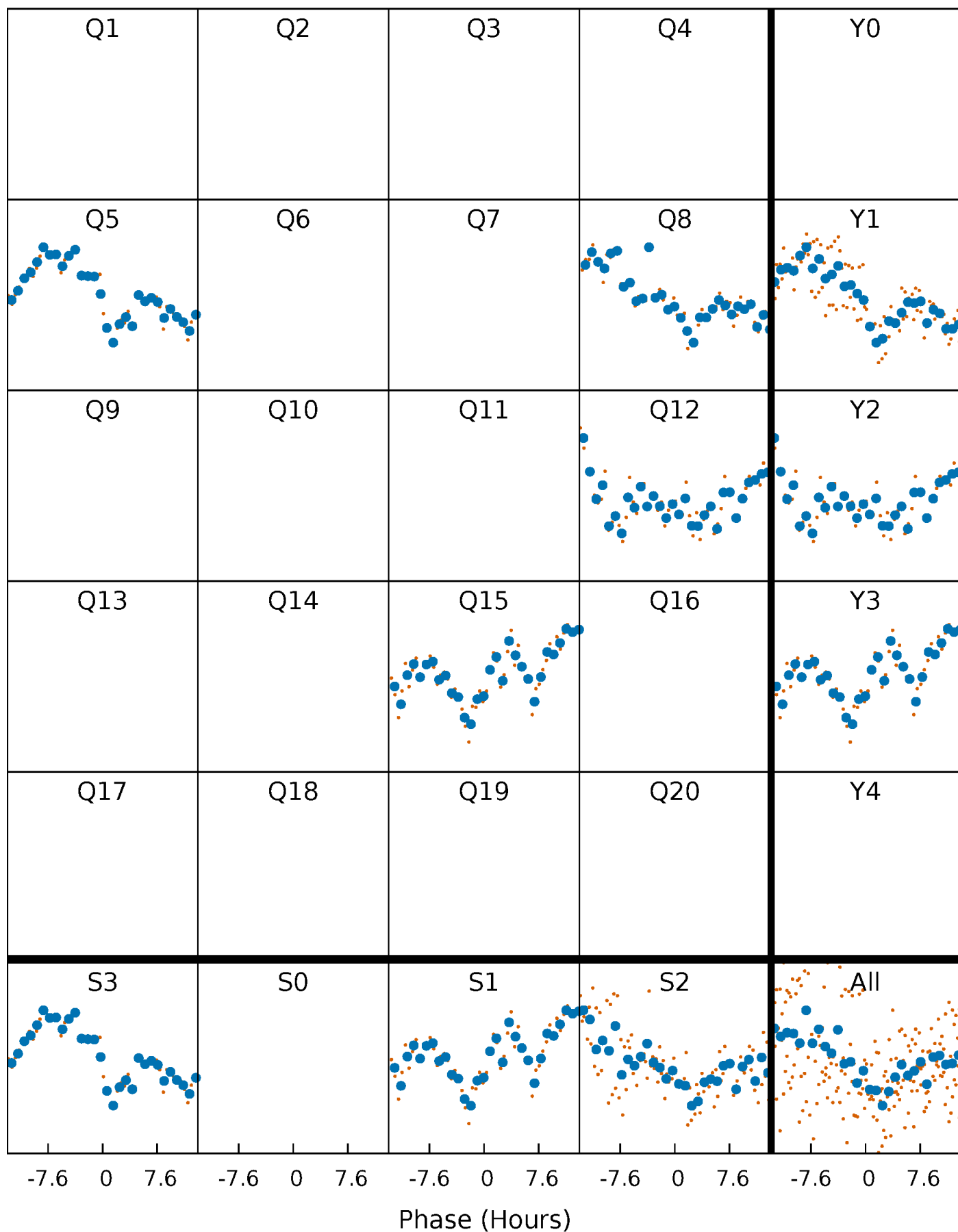


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 010865397-06 $P=337.246691$ Days $T_0=453.947386$ (BKJD)



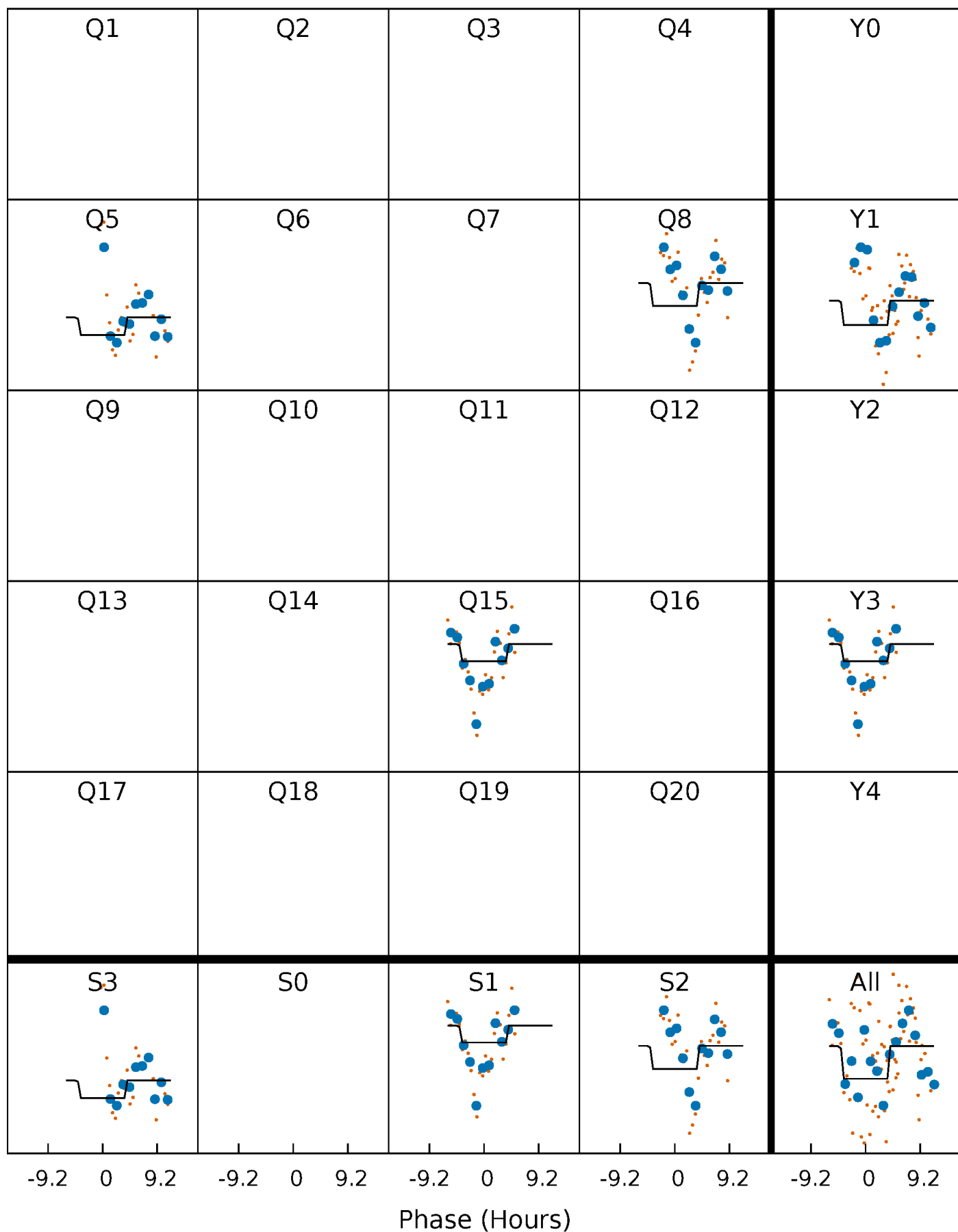
DV Quarter-Phased Transit Curves

TCE 010865397-06 $P=337.246691$ Days $T_0=453.947386$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

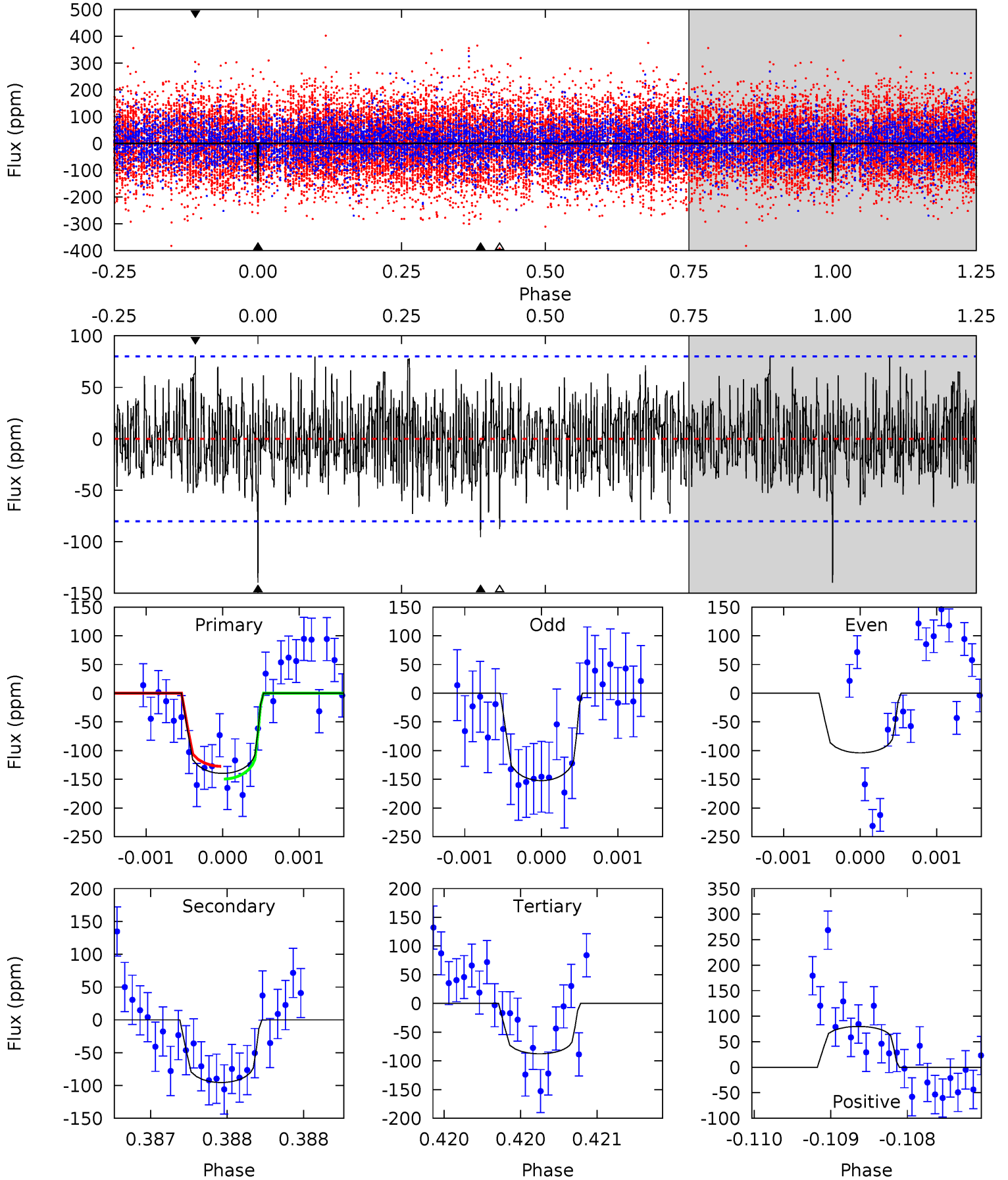
TCE 010865397-06 P=337.242285 Days $T_0=453.922966$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-06, P = 337.246691 Days, E = 116.700695 Days

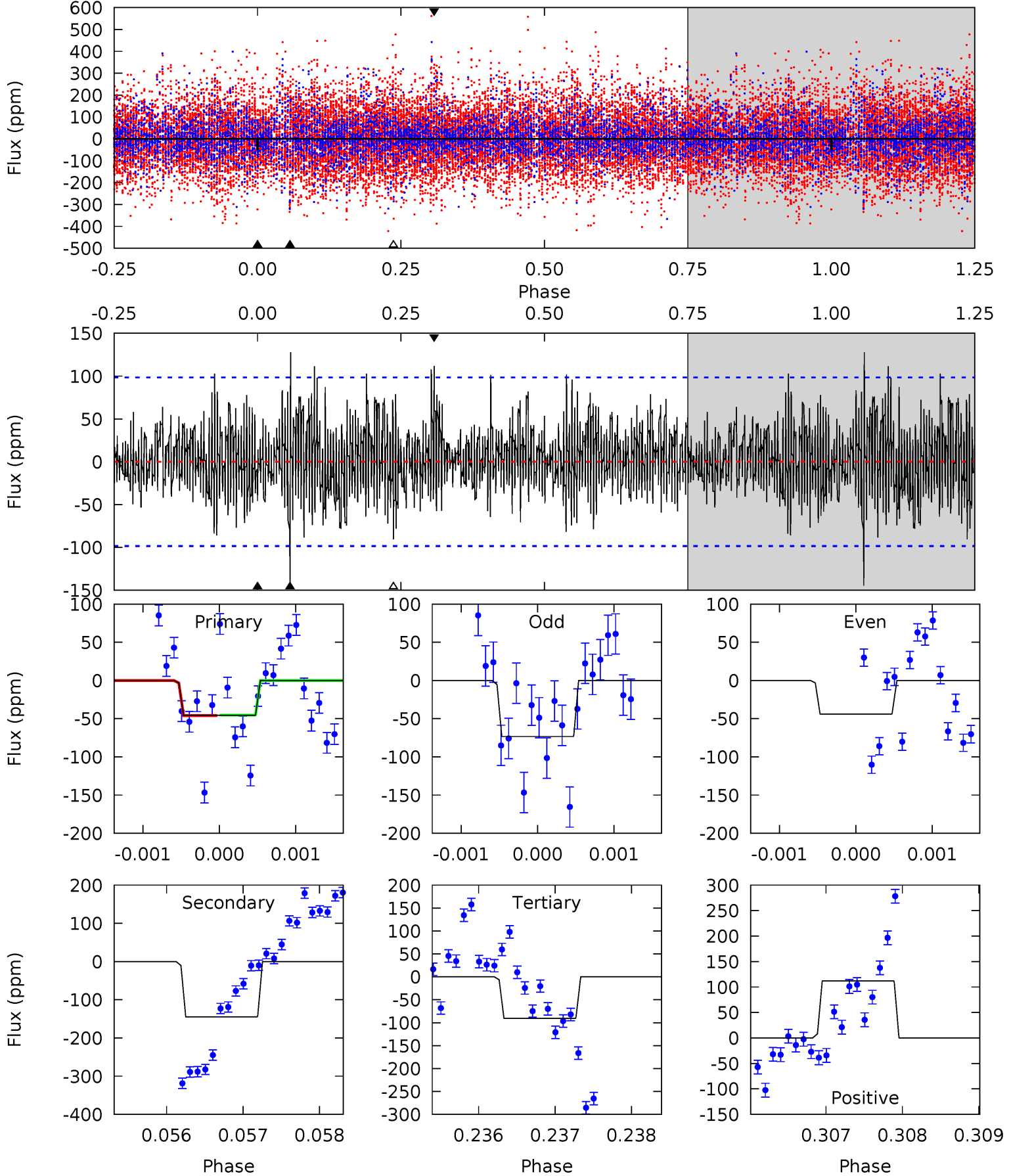
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	6.54	6.01	5.48	5.49	3.35	1.75	3.56	4.10	0.53	1.06	1.50	0.98	0.36	0.75



Alt Model-Shift Uniqueness Test

010865397-06, $P = 337.242285$ Days, $E = 116.680681$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.53	8.02	5.02	6.20	5.46	3.30	1.64	-2.49	-3.67	3.00	1.83	0.69	1.46	0.47	0.02



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-95 ± 15	$2.52^{+1.03}_{-1.06}$	549^{+25}_{-25}	5983^{+1909}_{-921}	9602^{+18830}_{-5019}
Alt.	-145 ± 18	$1.59^{+1.10}_{-0.85}$	550^{+26}_{-30}	8539^{+7317}_{-2189}	$35613^{+125366}_{-23240}$

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 $A_{obs} \gg 1.0$

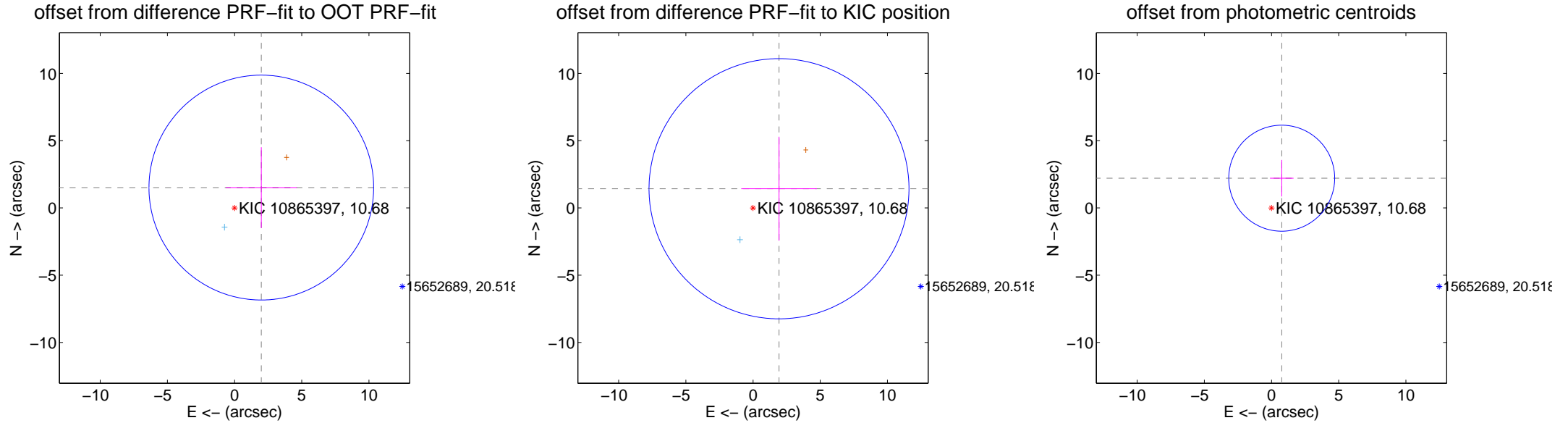
DV Centroid Data

Supplemental centroid analysis for 010865397-06. **Kepler magnitude: 10.68.** Transit SNR 7.68

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.96 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.500 ± 2.786	0.90	-1.988 ± 2.652	1.515 ± 3.003
PRF-fit source offset from KIC position	2.402 ± 3.224	0.75	-1.931 ± 2.813	1.428 ± 3.863
photometric centroid source offset	2.34 ± 1.31	1.78	-0.76 ± 0.88	2.21 ± 1.36

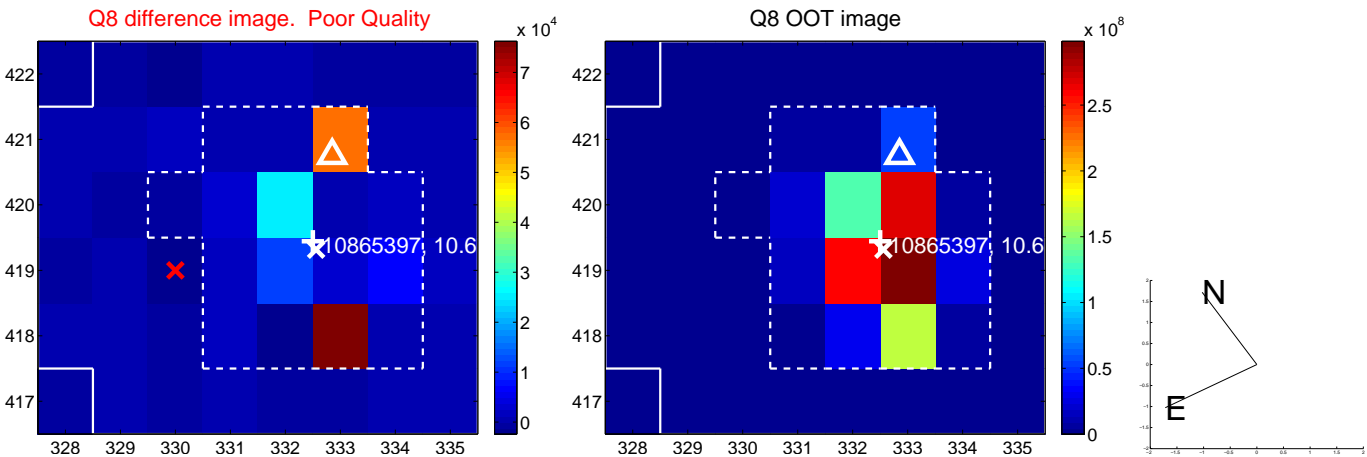
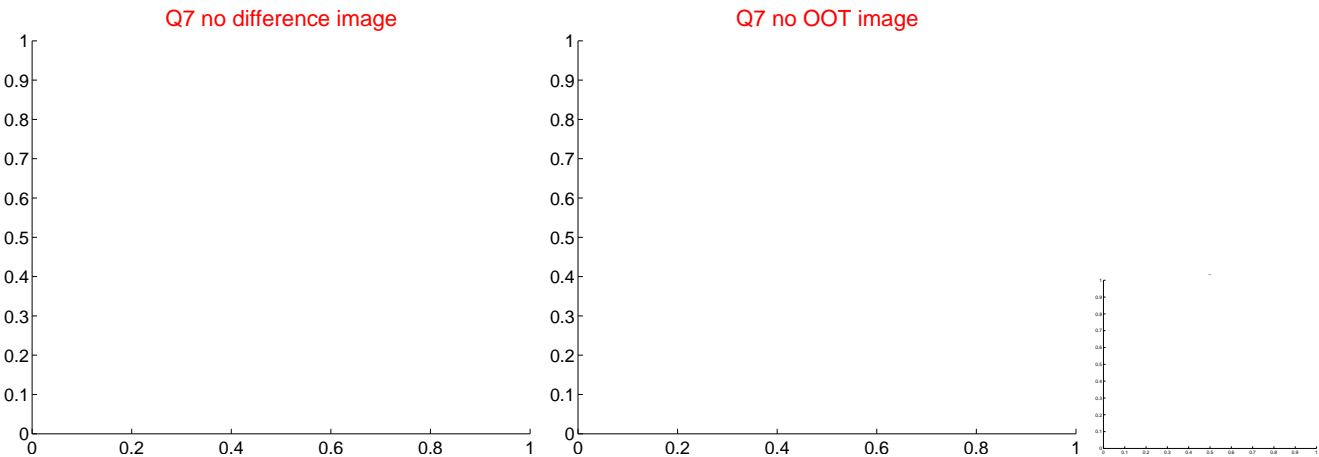
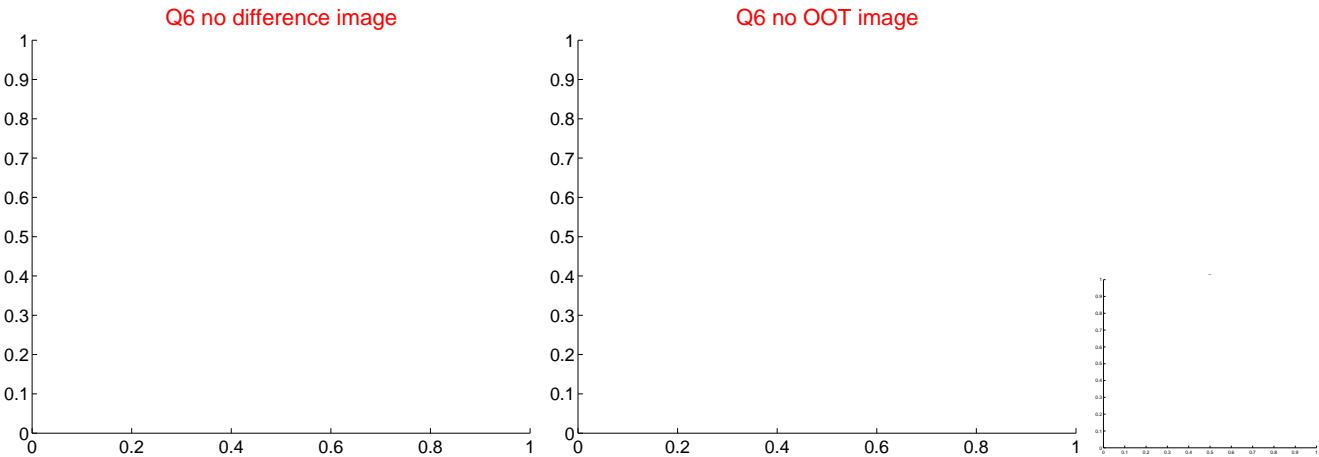
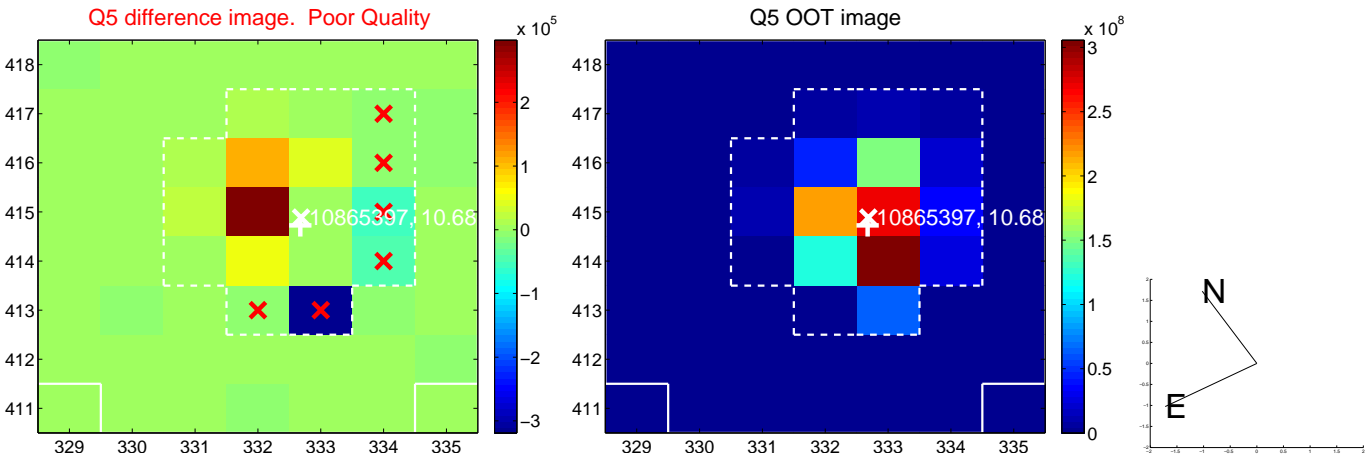


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

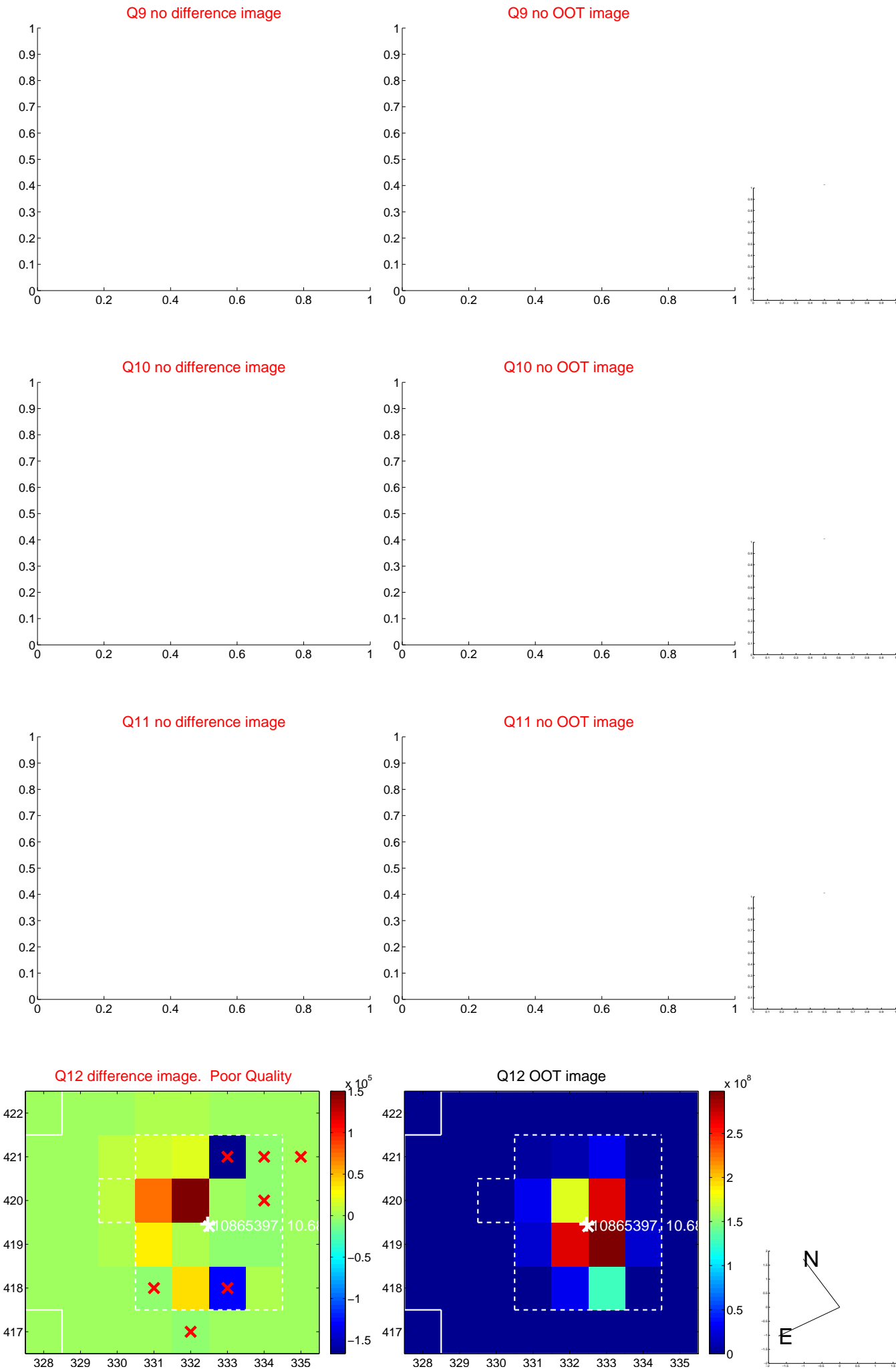
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

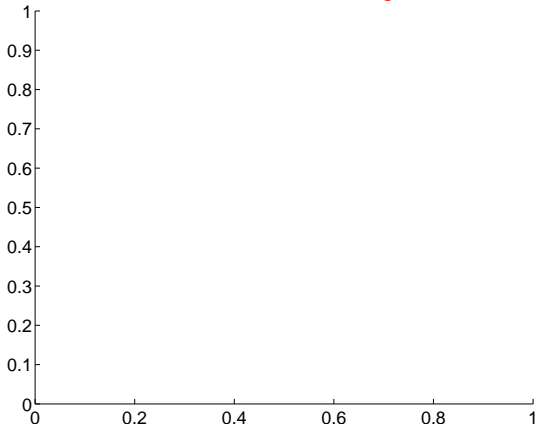


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

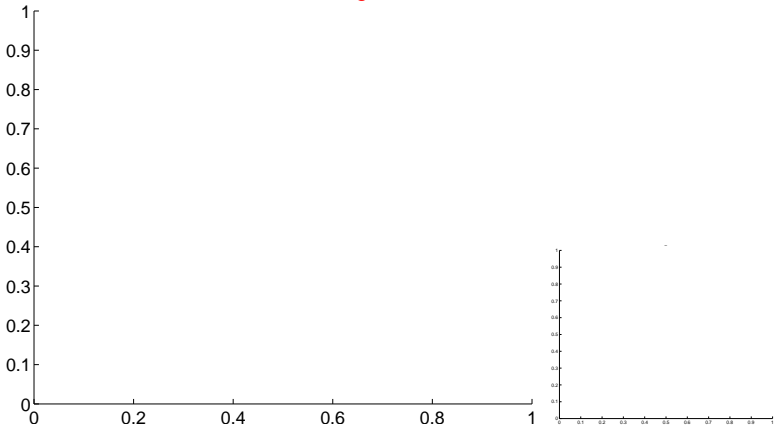


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

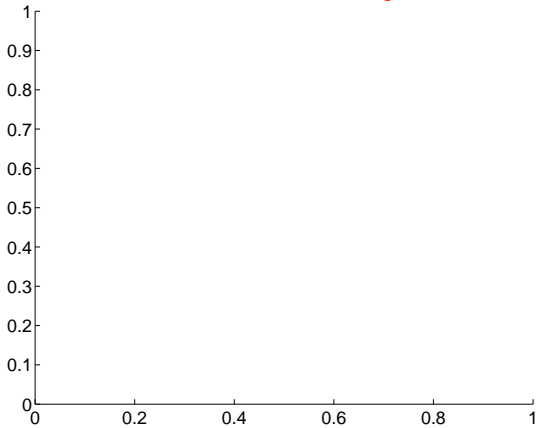
Q13 no difference image



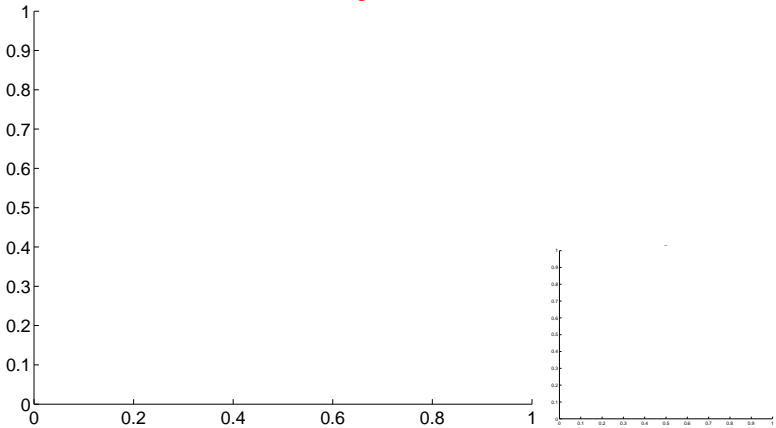
Q13 no OOT image



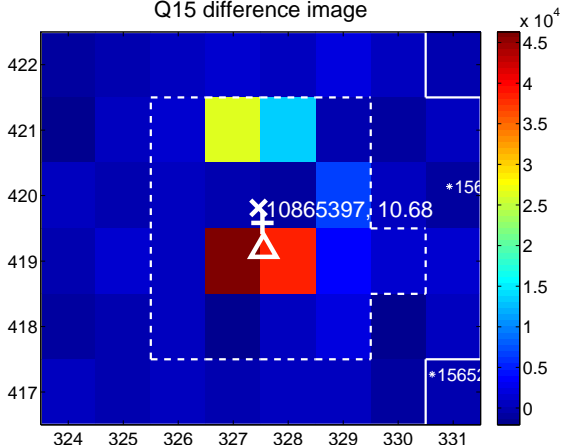
Q14 no difference image



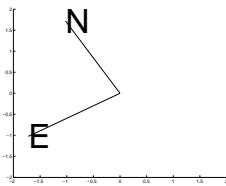
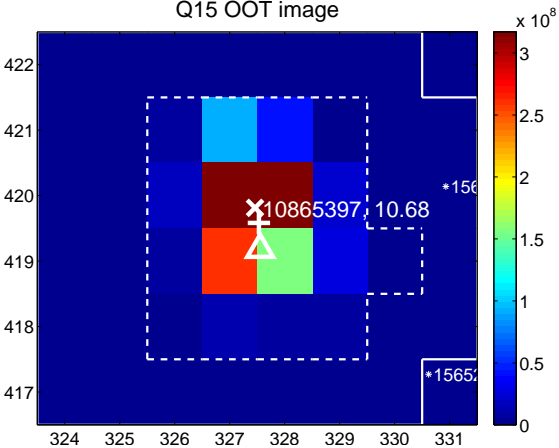
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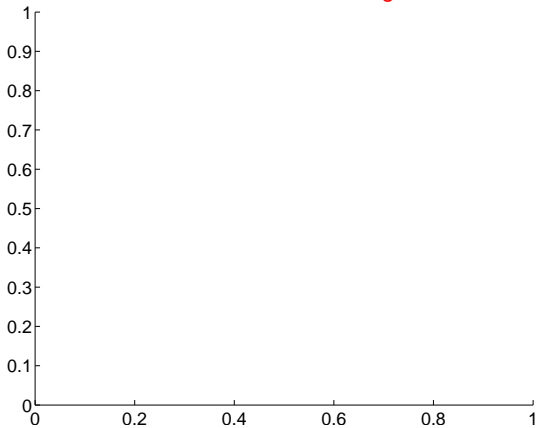
Q15 difference image



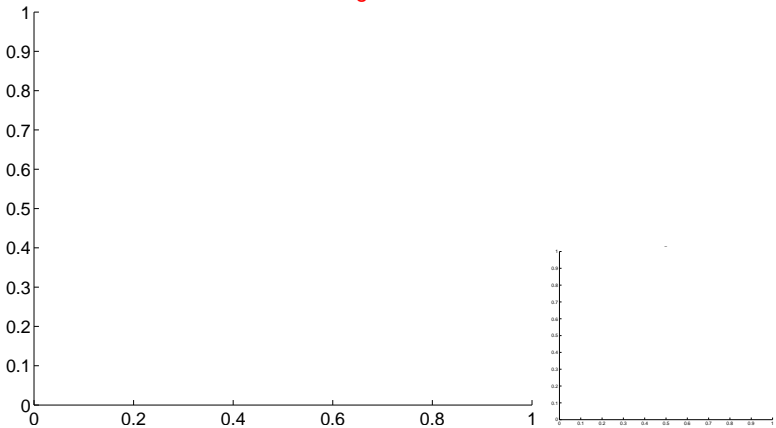
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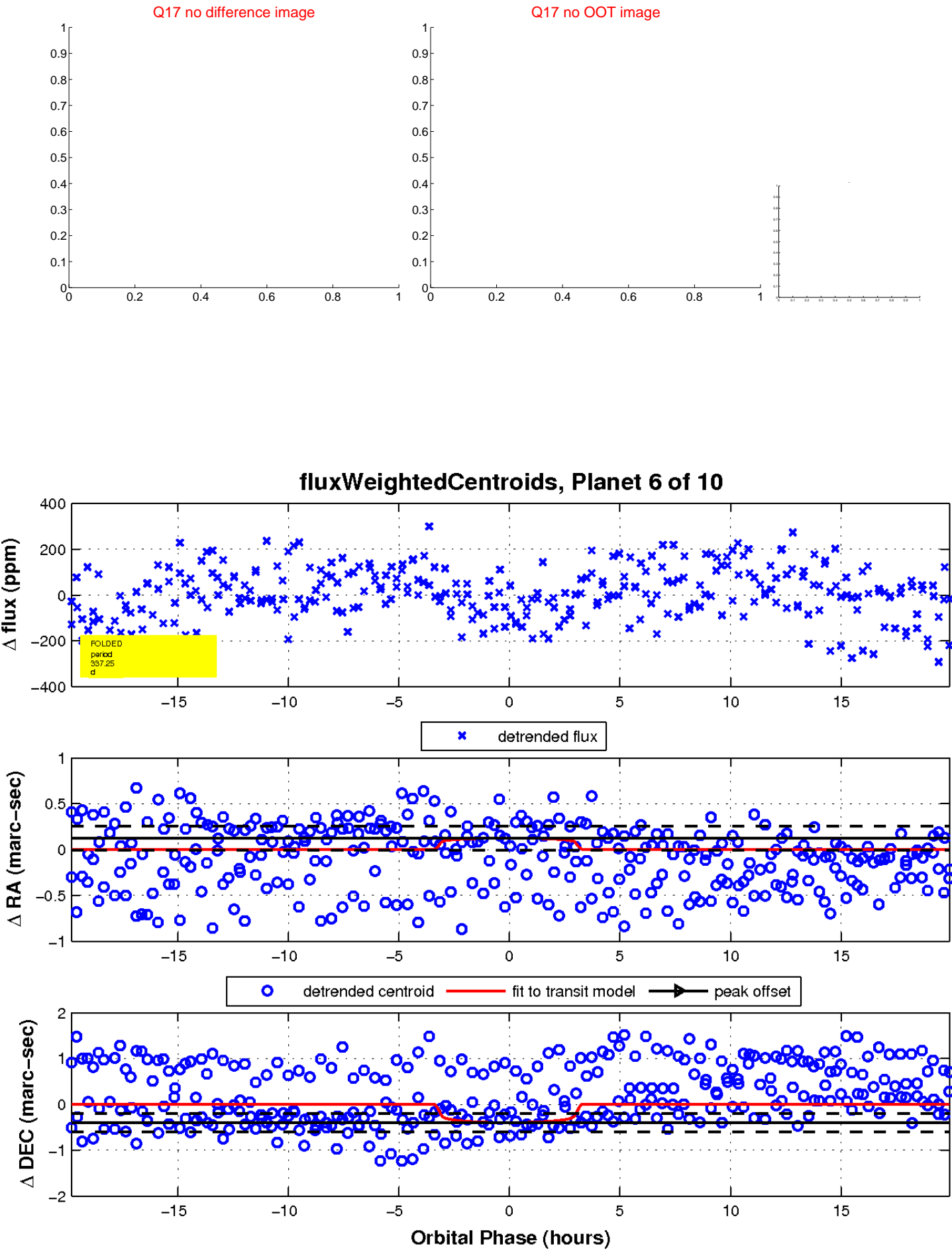
Q16 no difference image



Q16 no OOT image

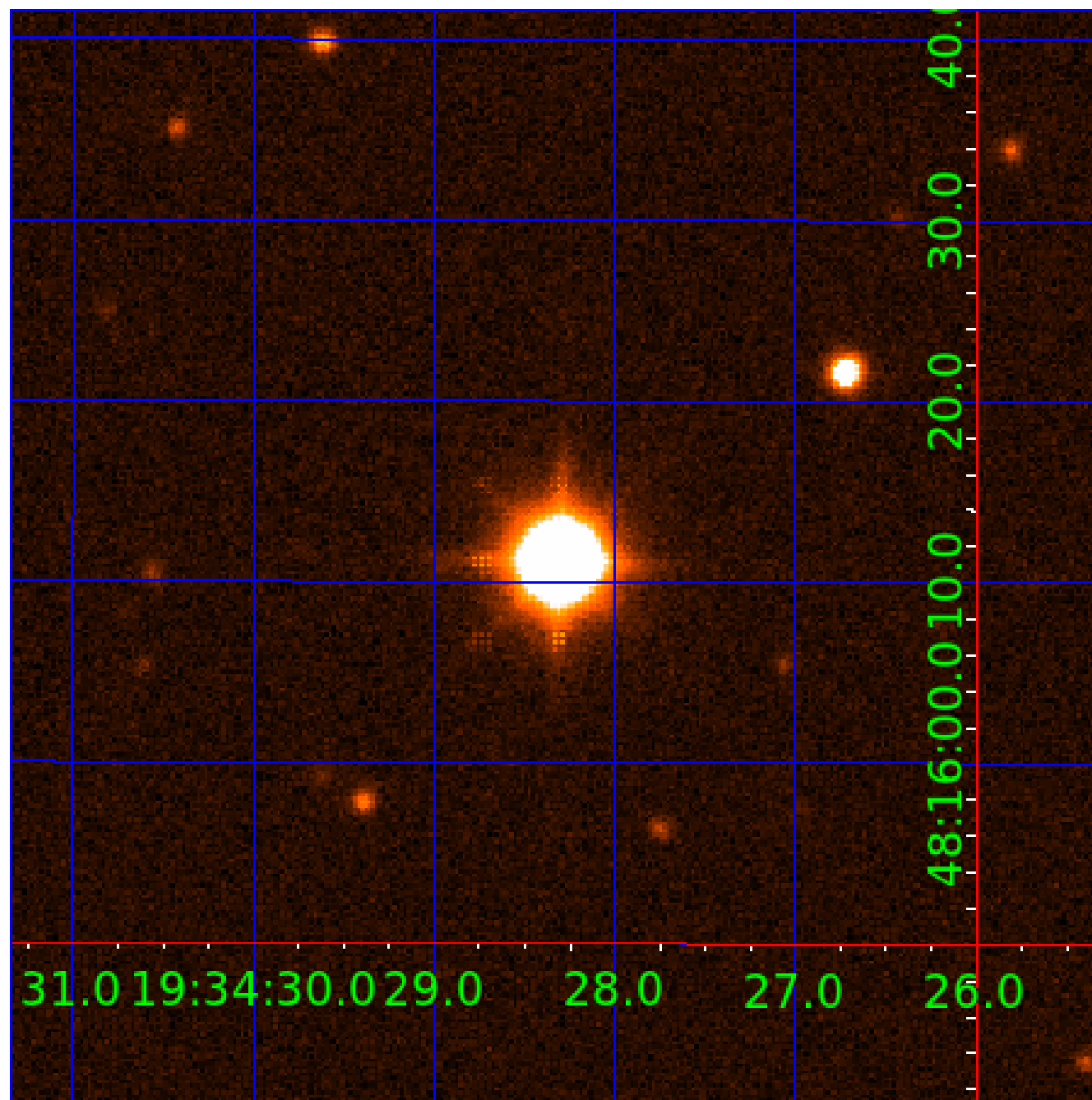


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

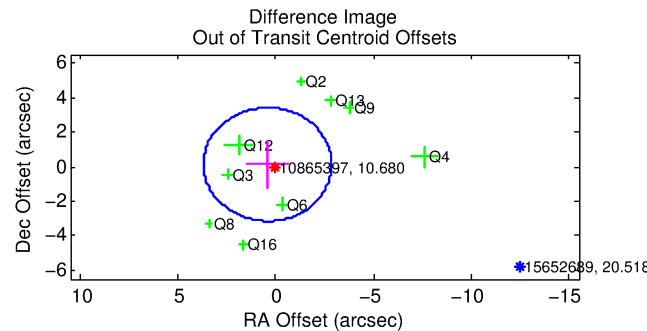
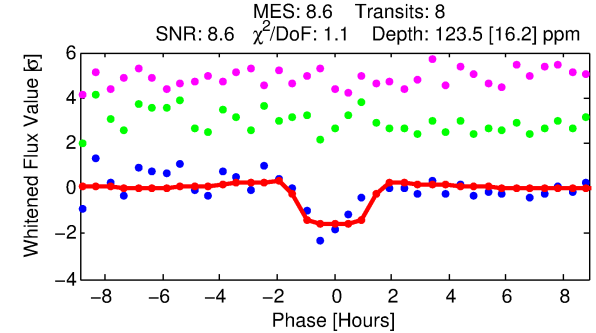
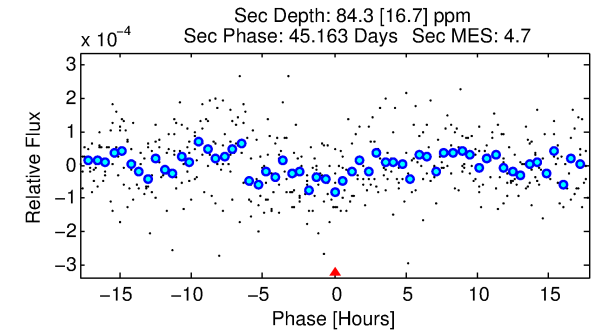
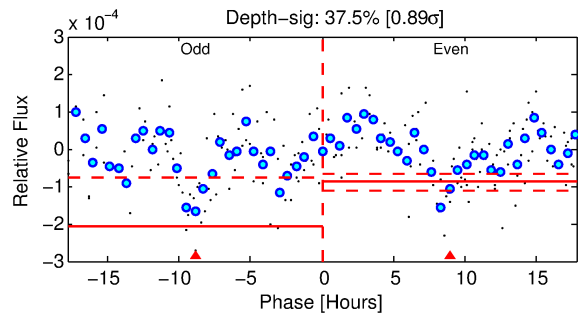
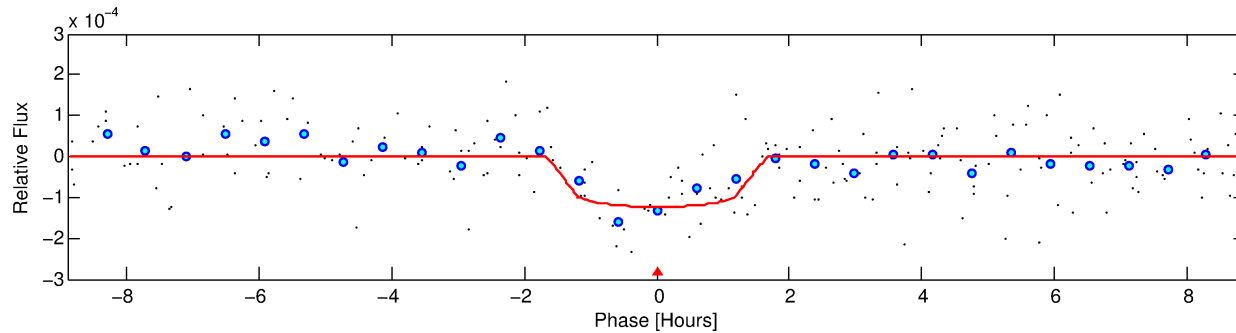
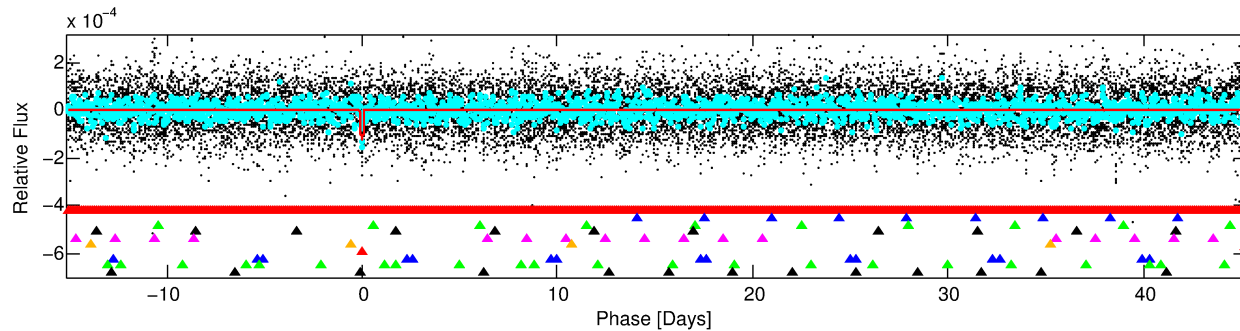
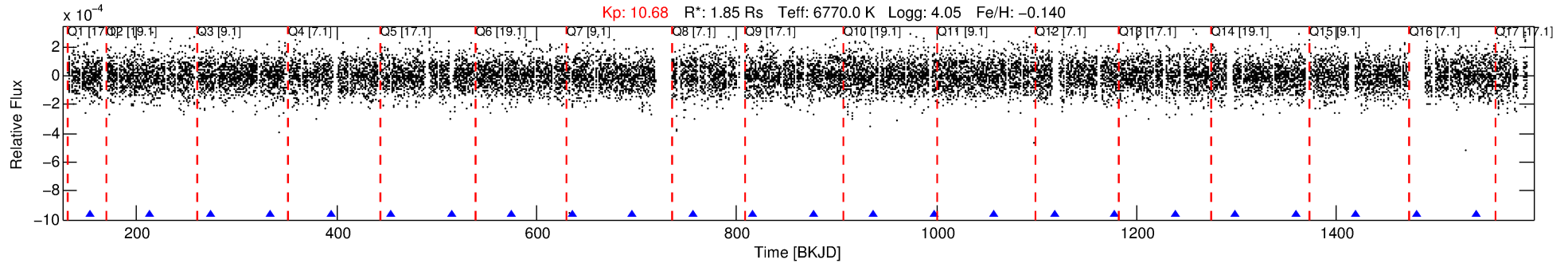
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-07

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 7 of 10 Period: 60.297 d



DV Fit Results:

Period = 60.29682 [0.00077] d
Epoch = 153.0160 [0.0119] BKJD
 $R_p/R^* = 0.0113$ [0.0084]
 $a/R^* = 95.72$ [414.28]
 $b = 0.80$ [1.95]
 $S_{\text{eff}} = 56.84$ [16.02]
 $T_{\text{eq}} = 700$ [49] K
 $R_p = 2.27$ [1.74] R_e
 $a = 0.3370$ [0.0602] AU
 $A_g = 1019.01$ [1552.22] [0.66 σ]
 $T_{\text{eff}} = 6116$ [2291] K [2.36 σ]

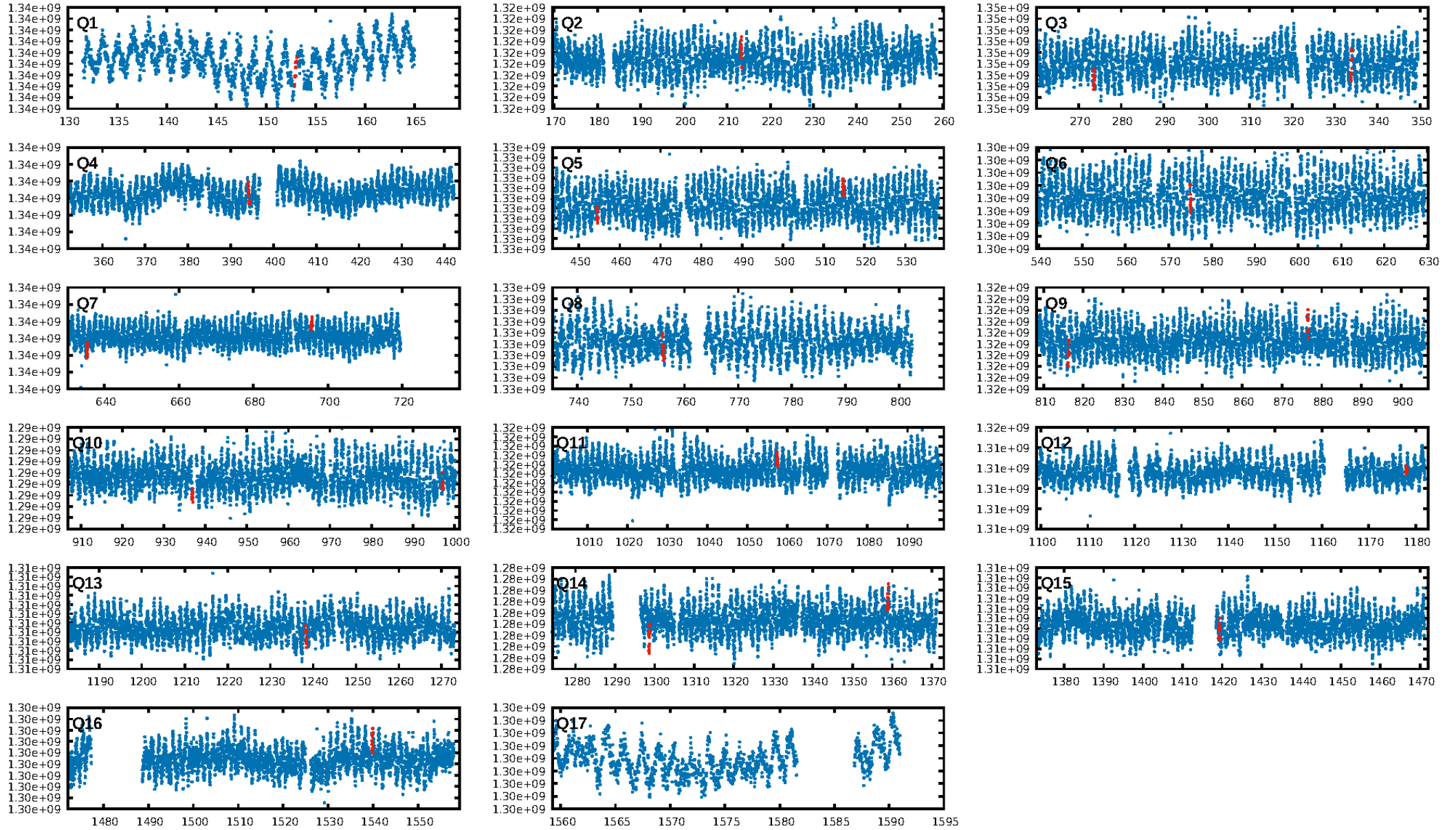
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [157.32 σ]
LongPeriod-sig: 100.0% [28.89 σ]
ModelChiSquare2-sig: 17.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 8.75e-10
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -3.056
Centroid-sig: 12.6%
Centroid-so: 0.460 arcsec [0.97 σ]
OotOffset-rm: 0.438 arcsec [0.40 σ]
KicOffset-rm: 0.426 arcsec [0.36 σ]
OotOffset-st: 2/1/4/2 [9]
KicOffset-st: 2/1/4/2 [9]
DiffImageQuality-fgm: 0.22 [2/9]
DiffImageOverlap-fno: 0.33 [5/15]

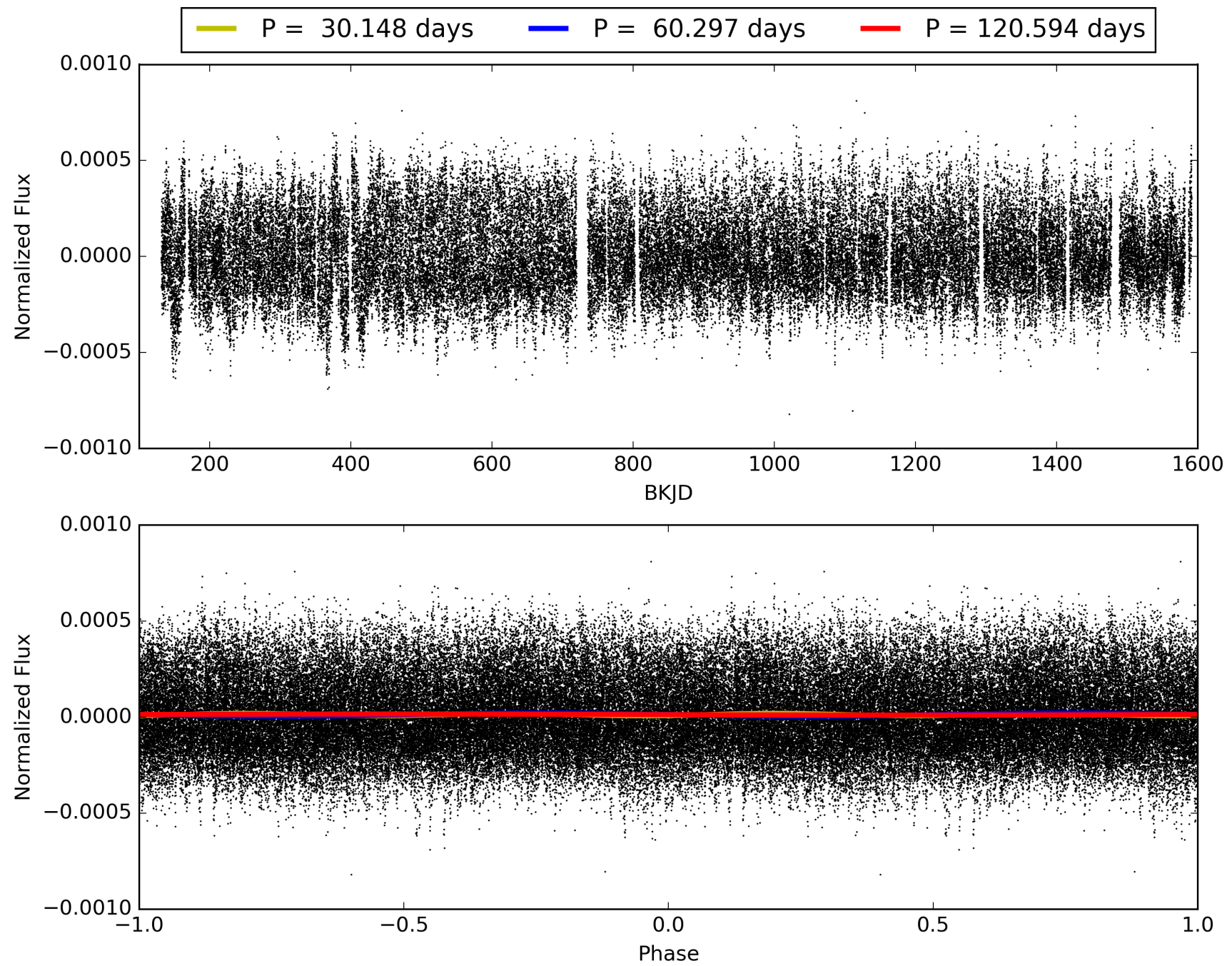
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:31 Z

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

TCE 010865397-07, PDC Light Curves

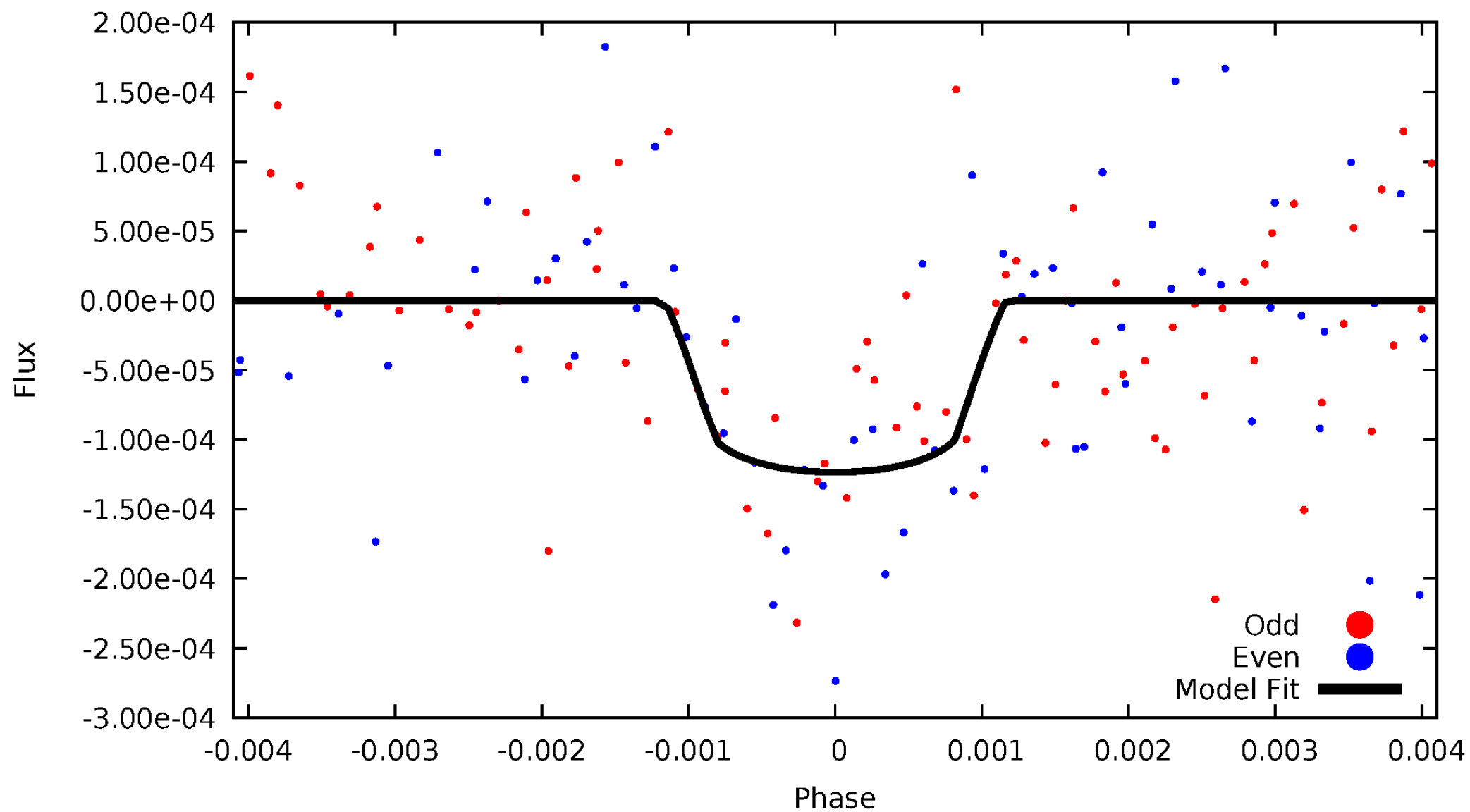


TCE 010865397-07



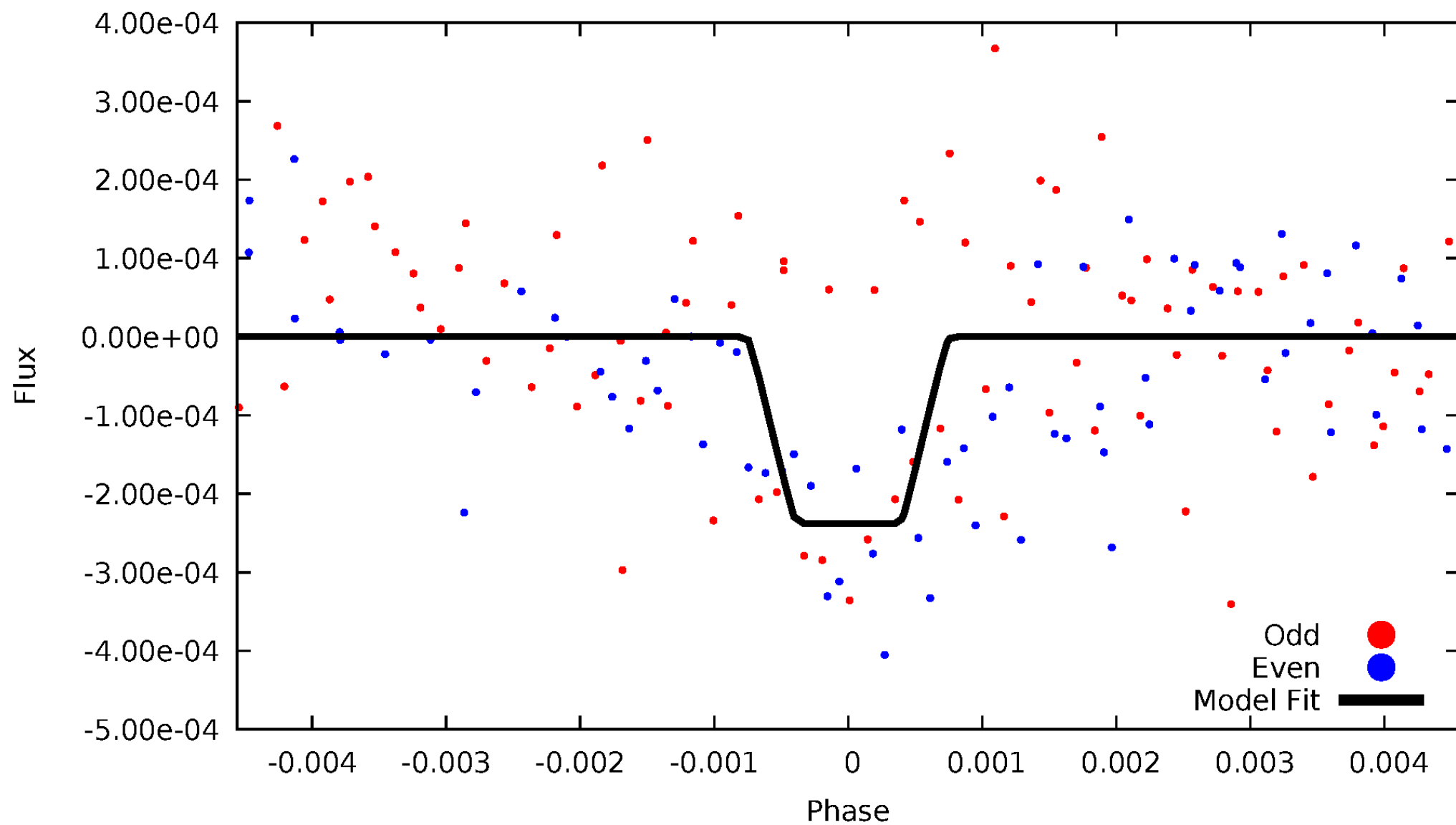
DV Odd/Even

TCE 010865397-07



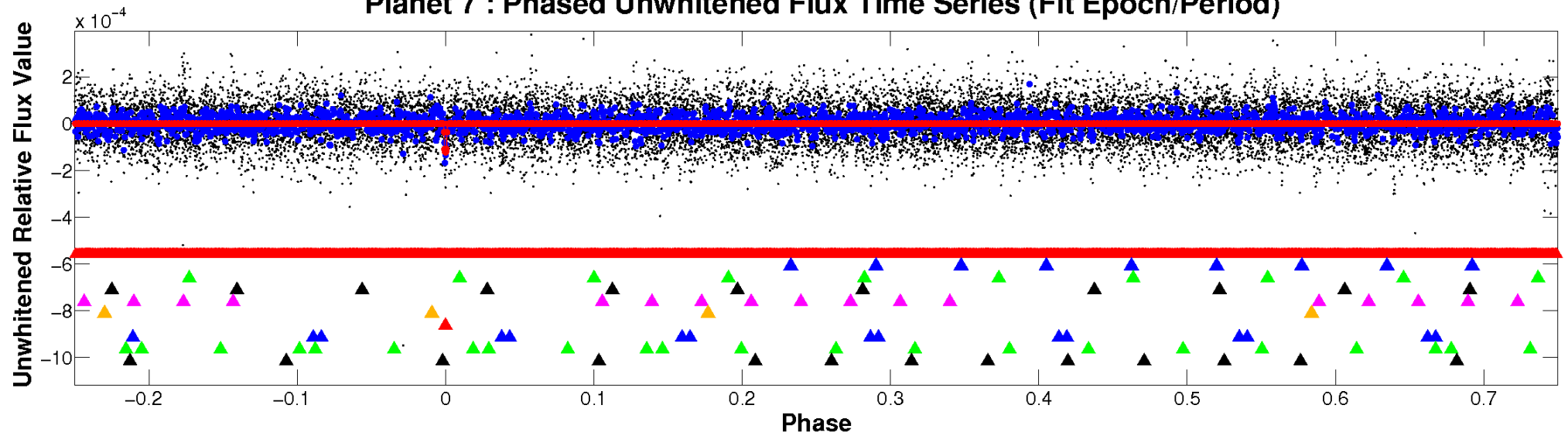
ALT Odd/Even

TCE 010865397-07

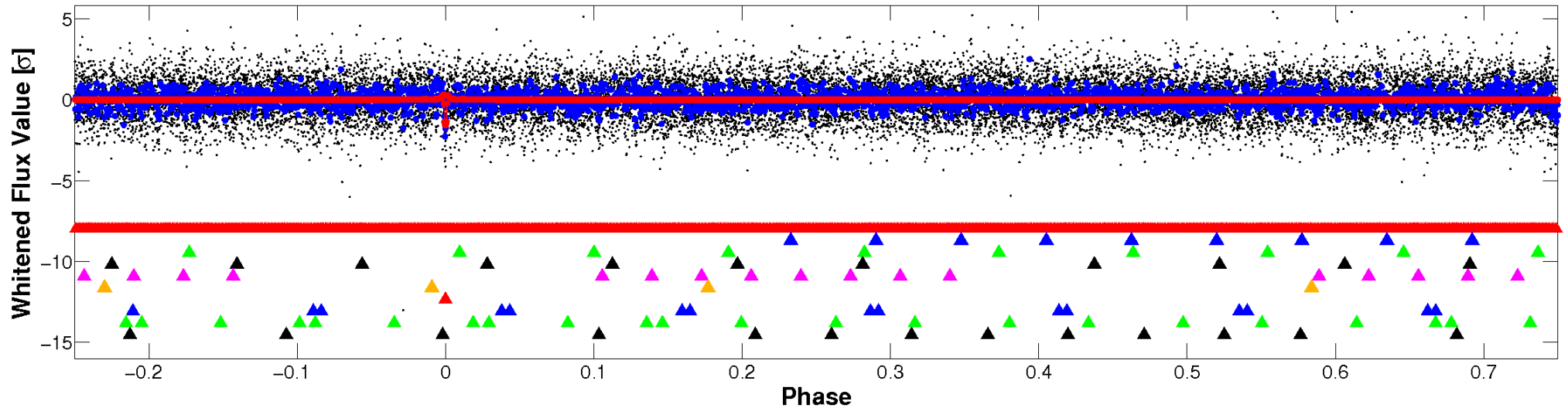


Non-Whitened Vs. Whitened Light Curve

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

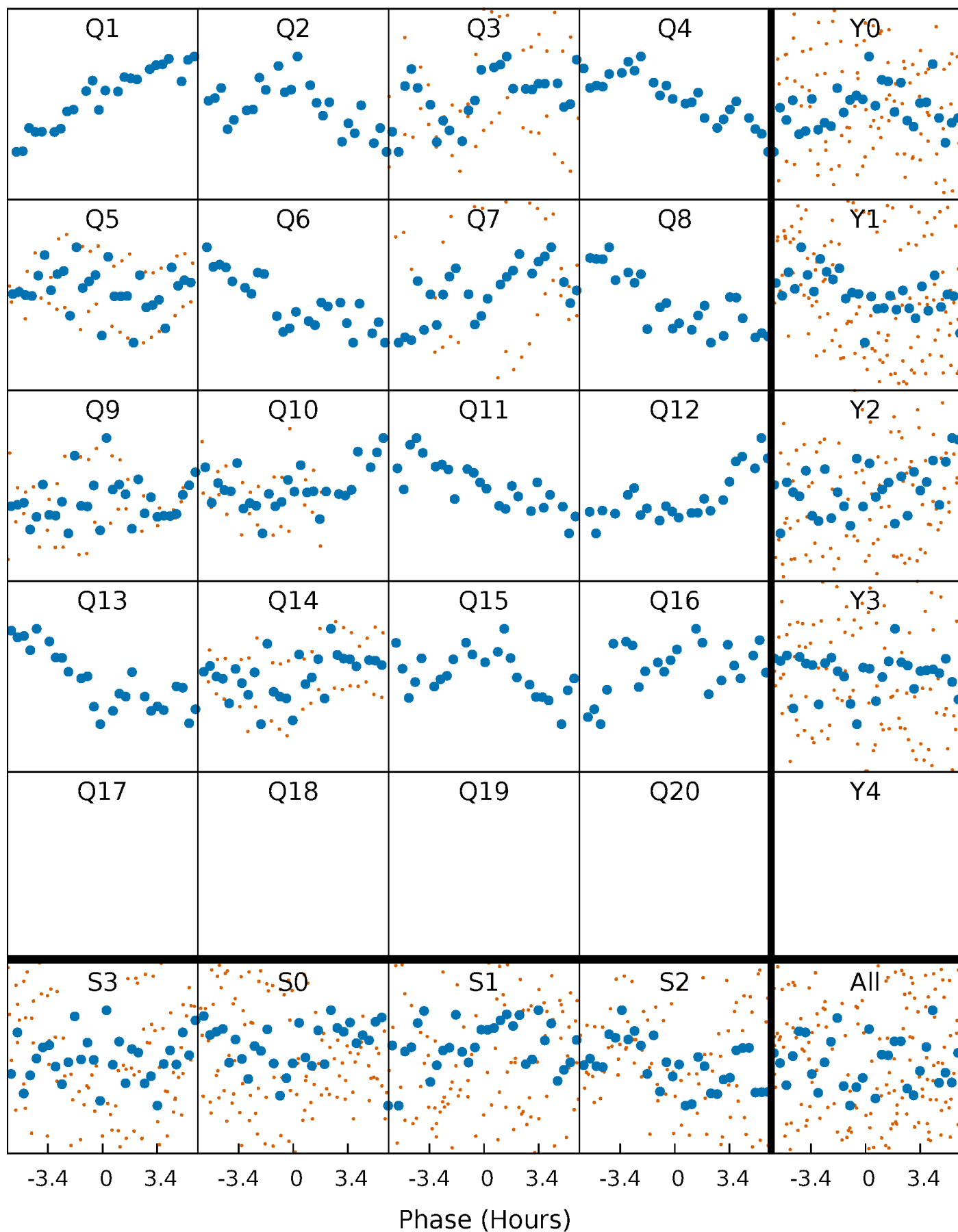


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



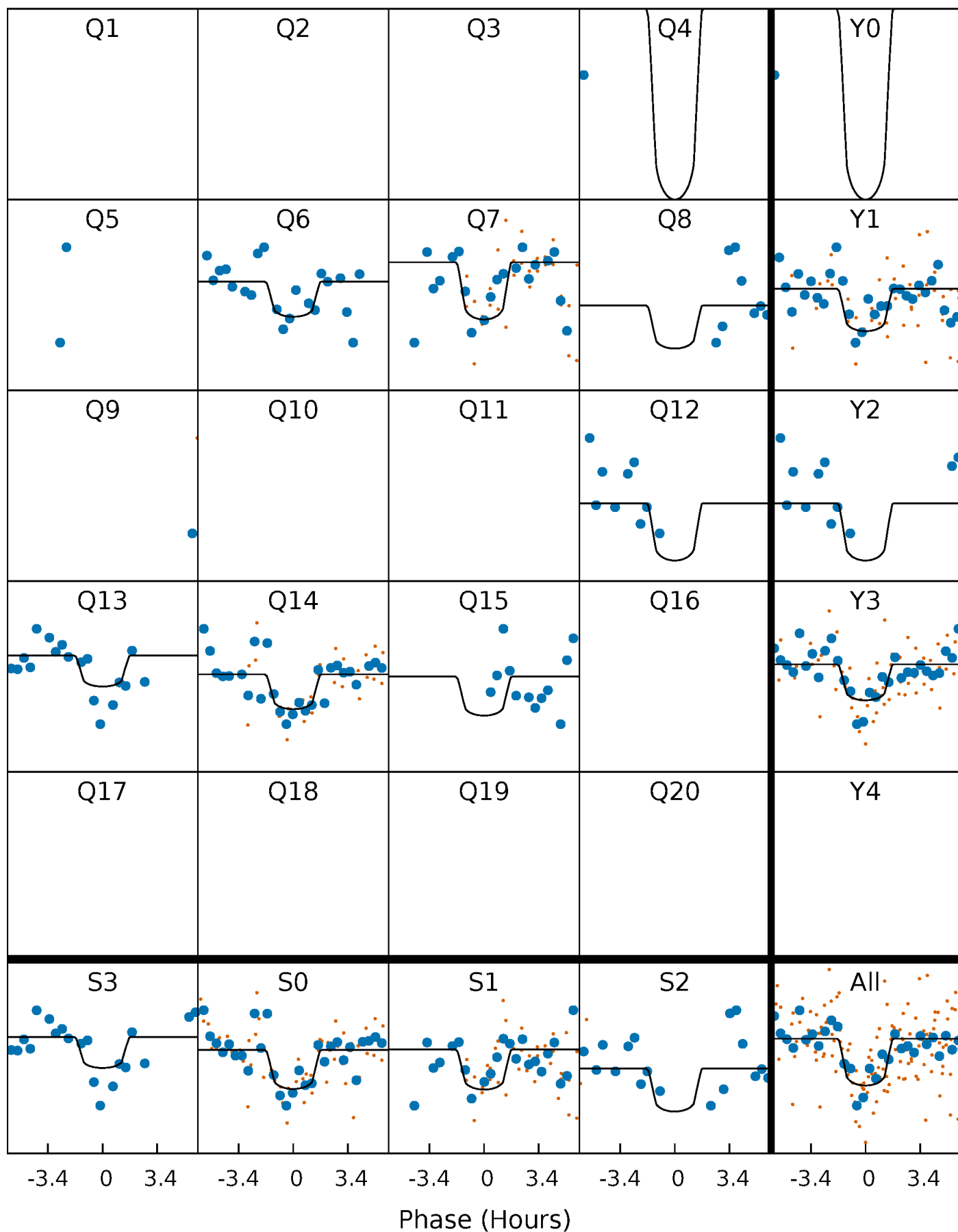
PDC Quarter-Phased Transit Curves

TCE 010865397-07 $P = 60.296819$ Days $T_0 = 153.015956$ (BKJD)



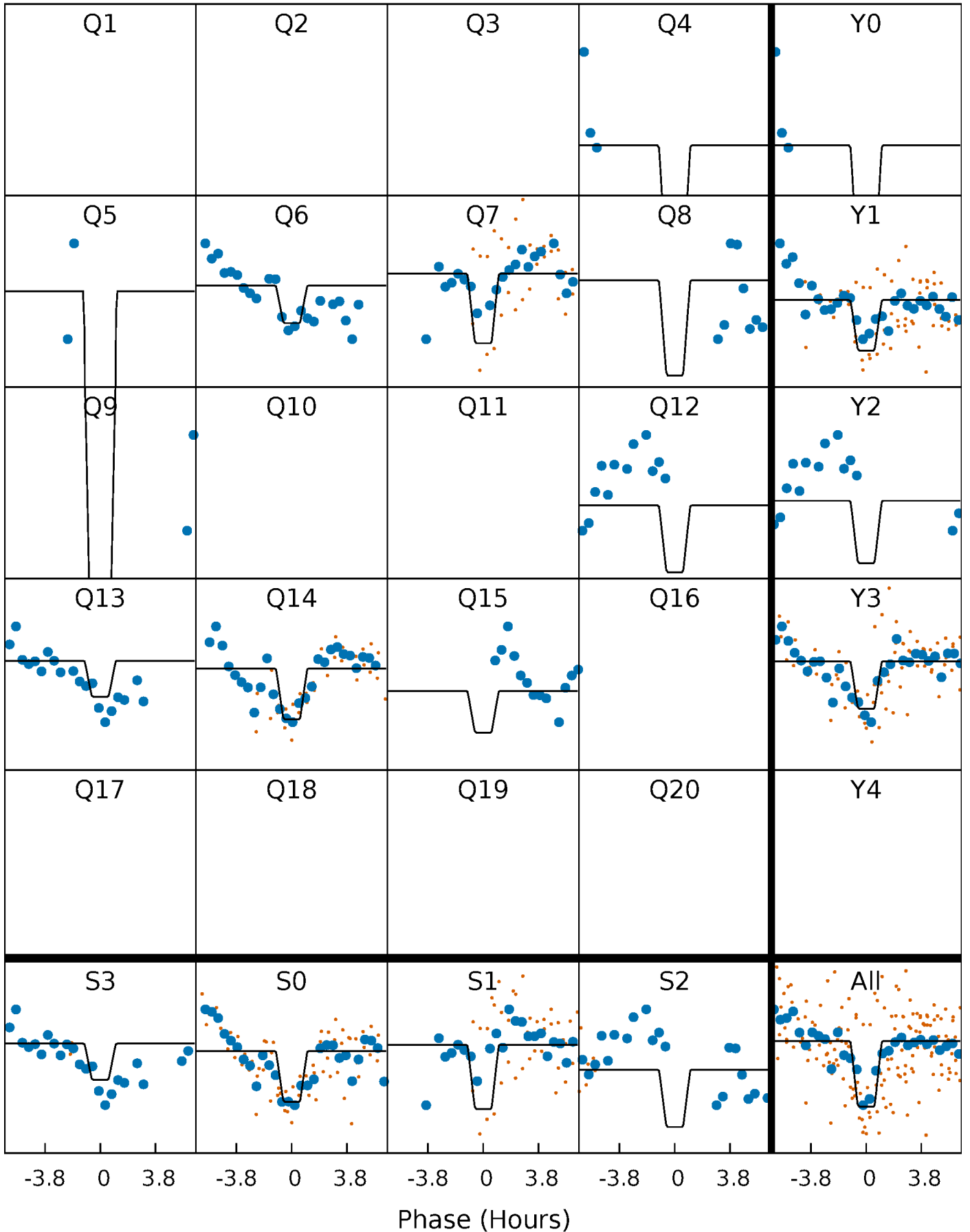
DV Quarter-Phased Transit Curves

TCE 010865397-07 $P = 60.296819$ Days $T_0 = 153.015956$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

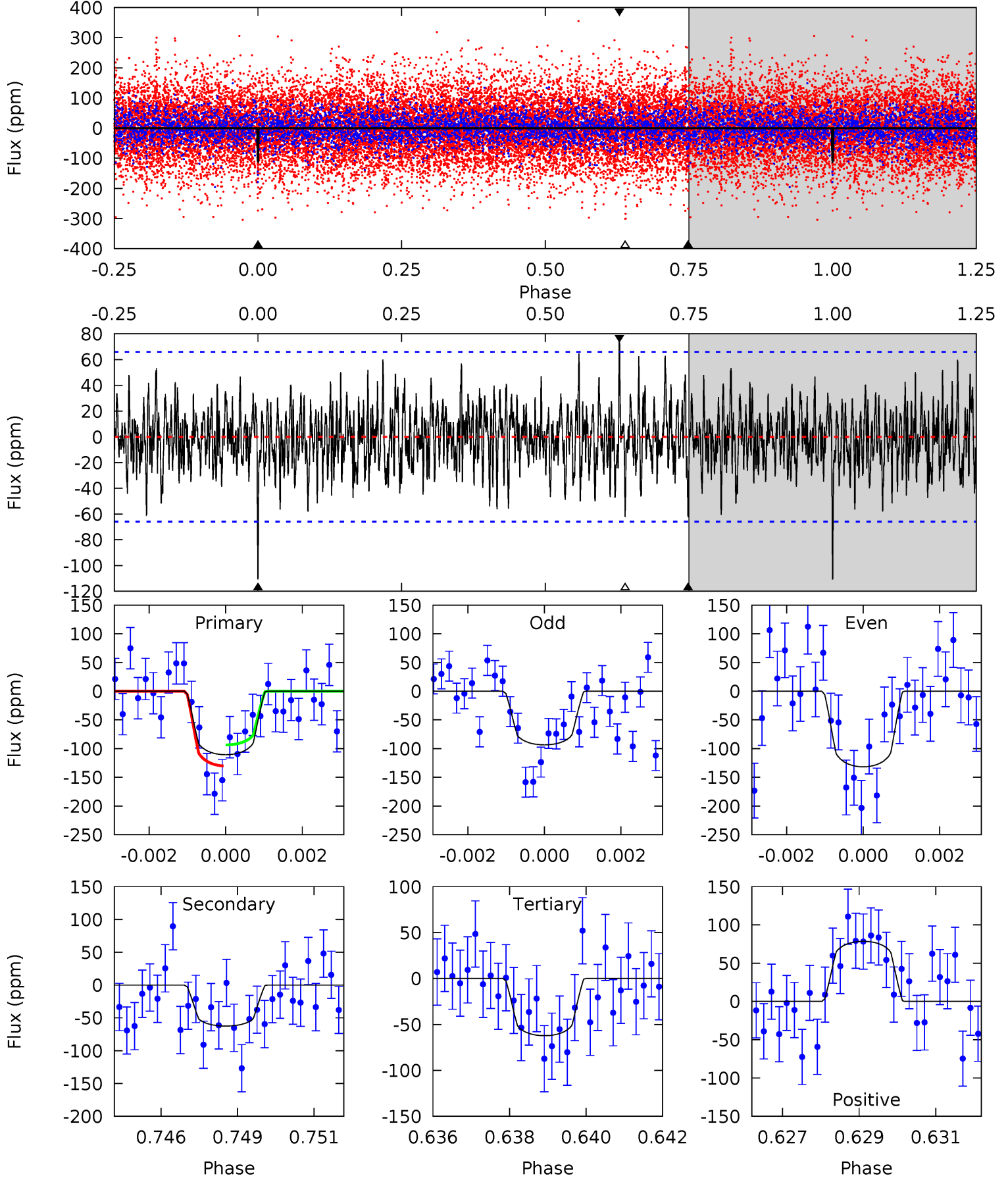
TCE 010865397-07 $P = 60.296797$ Days $T_0 = 153.000121$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-07, P = 60.296819 Days, E = 92.719137 Days

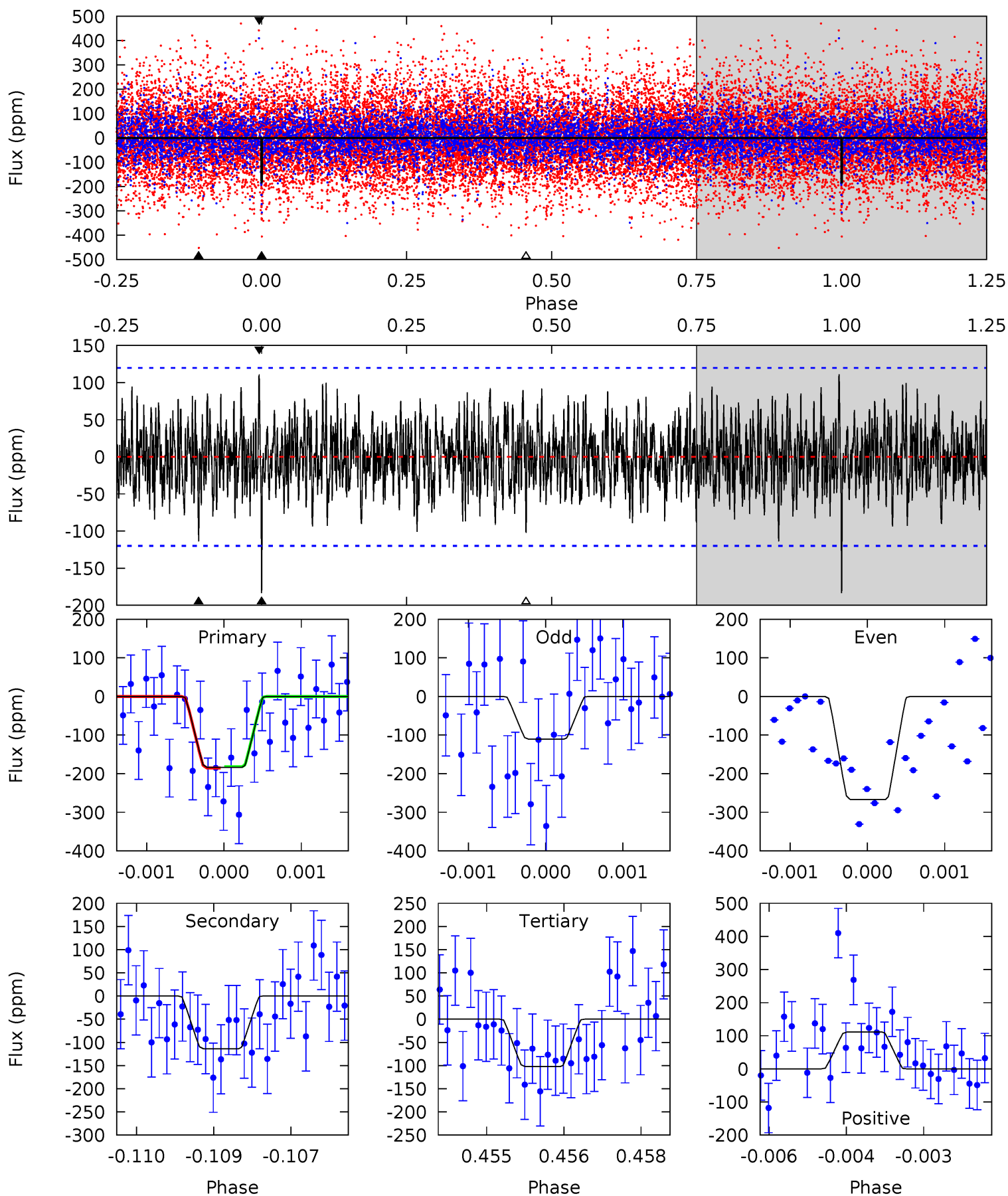
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.90	5.03	5.01	6.32	5.30	3.05	1.63	3.89	2.59	0.02	-1.29	1.53	0.98	0.42	1.47



Alt Model-Shift Uniqueness Test

010865397-07, P = 60.296797 Days, E = 92.703324 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.24	5.11	4.59	4.99	5.38	3.18	1.59	3.65	3.25	0.52	0.12	3.50	0.58	0.38	0.07



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-63 ± 12	$2.52^{+1.55}_{-1.49}$	976^{+46}_{-54}	5424^{+3163}_{-1024}	628^{+2872}_{-400}
Alt.	-114 ± 22	$3.06^{+1.65}_{-1.52}$	975^{+46}_{-51}	5634^{+2504}_{-977}	743^{+2281}_{-428}

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 $A_{obs} \gg 1.0$

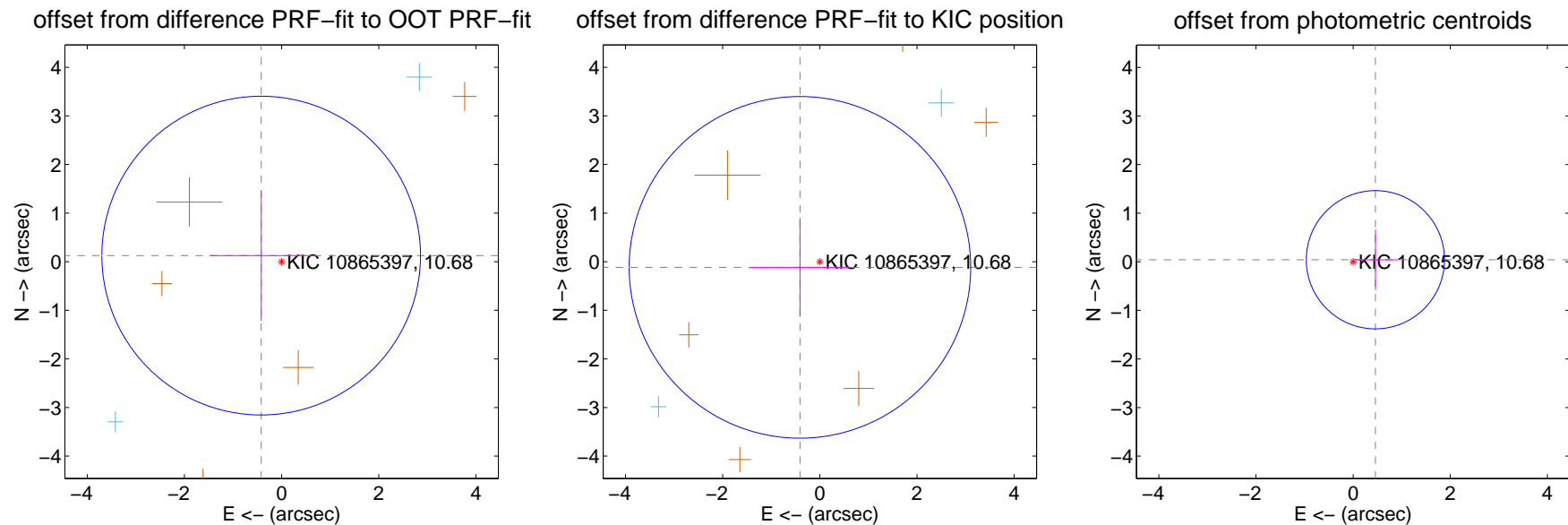
DV Centroid Data

Supplemental centroid analysis for 010865397-07. **Kepler magnitude: 10.68.** Transit SNR 8.63

There are 2 quarters with good PRF difference image offsets

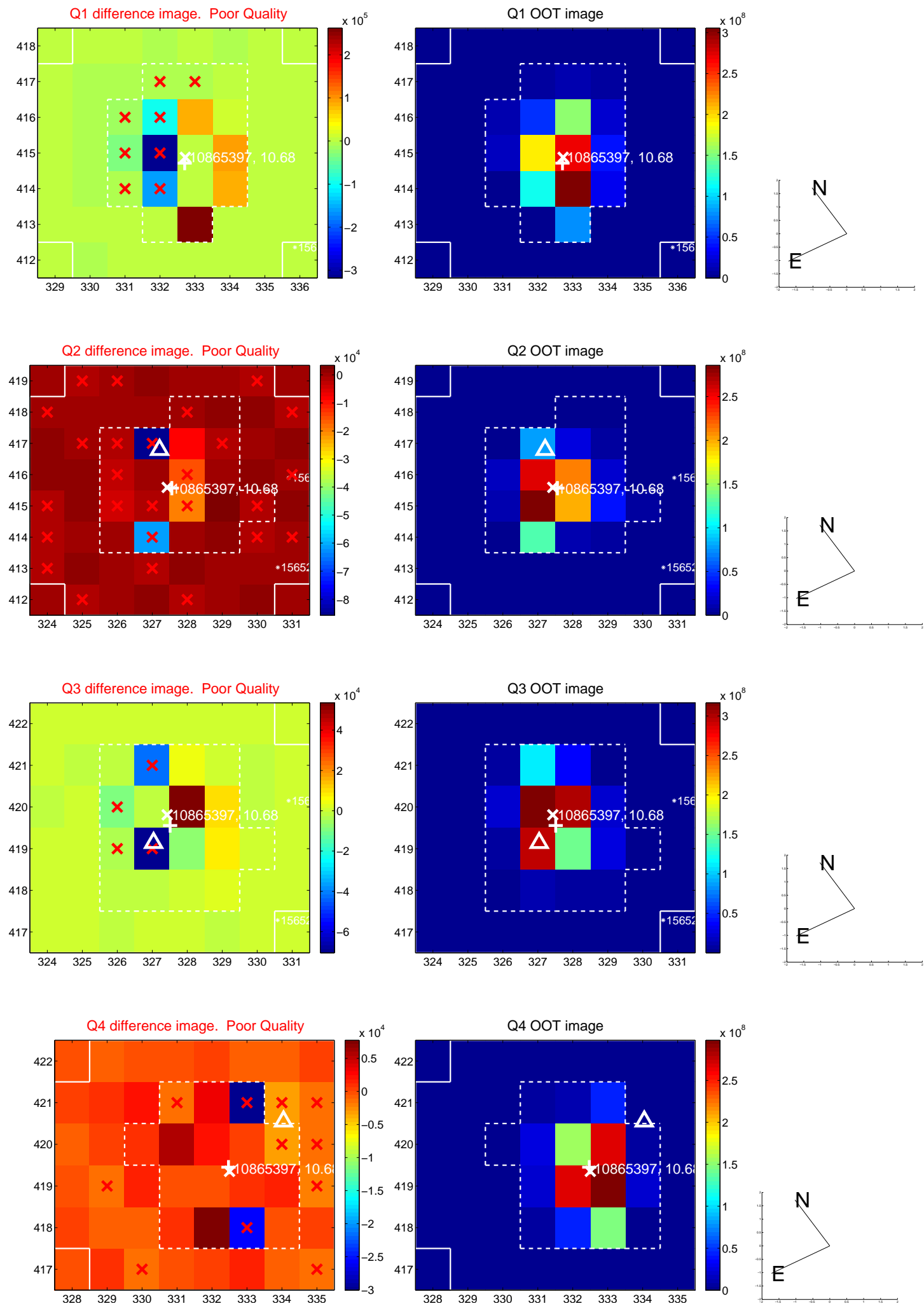
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.438 ± 1.093	0.40	0.420 ± 1.068	0.125 ± 1.340
PRF-fit source offset from KIC position	0.426 ± 1.172	0.36	0.410 ± 1.020	-0.116 ± 1.016
photometric centroid source offset	0.46 ± 0.47	0.97	-0.46 ± 0.47	0.04 ± 0.62

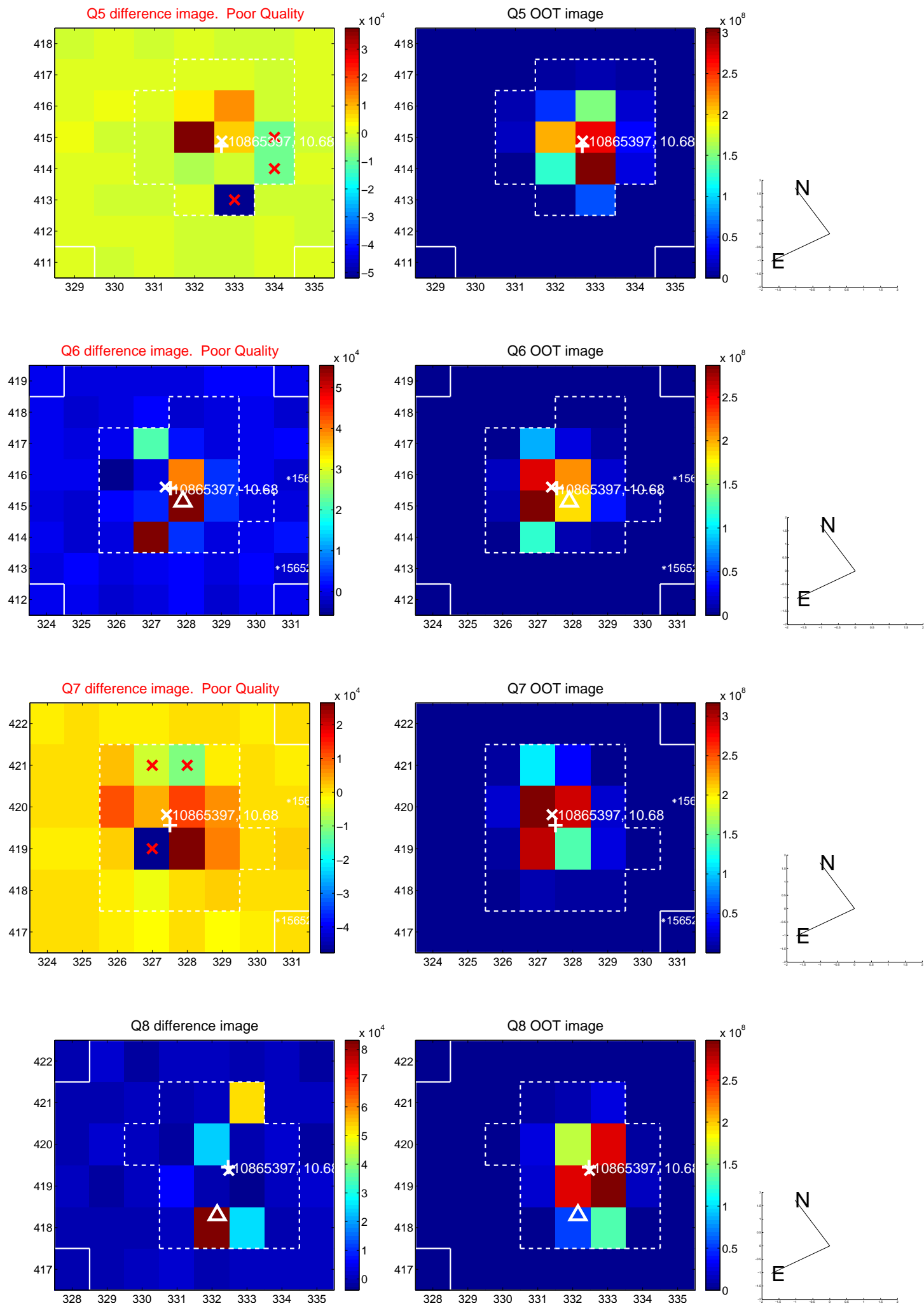


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

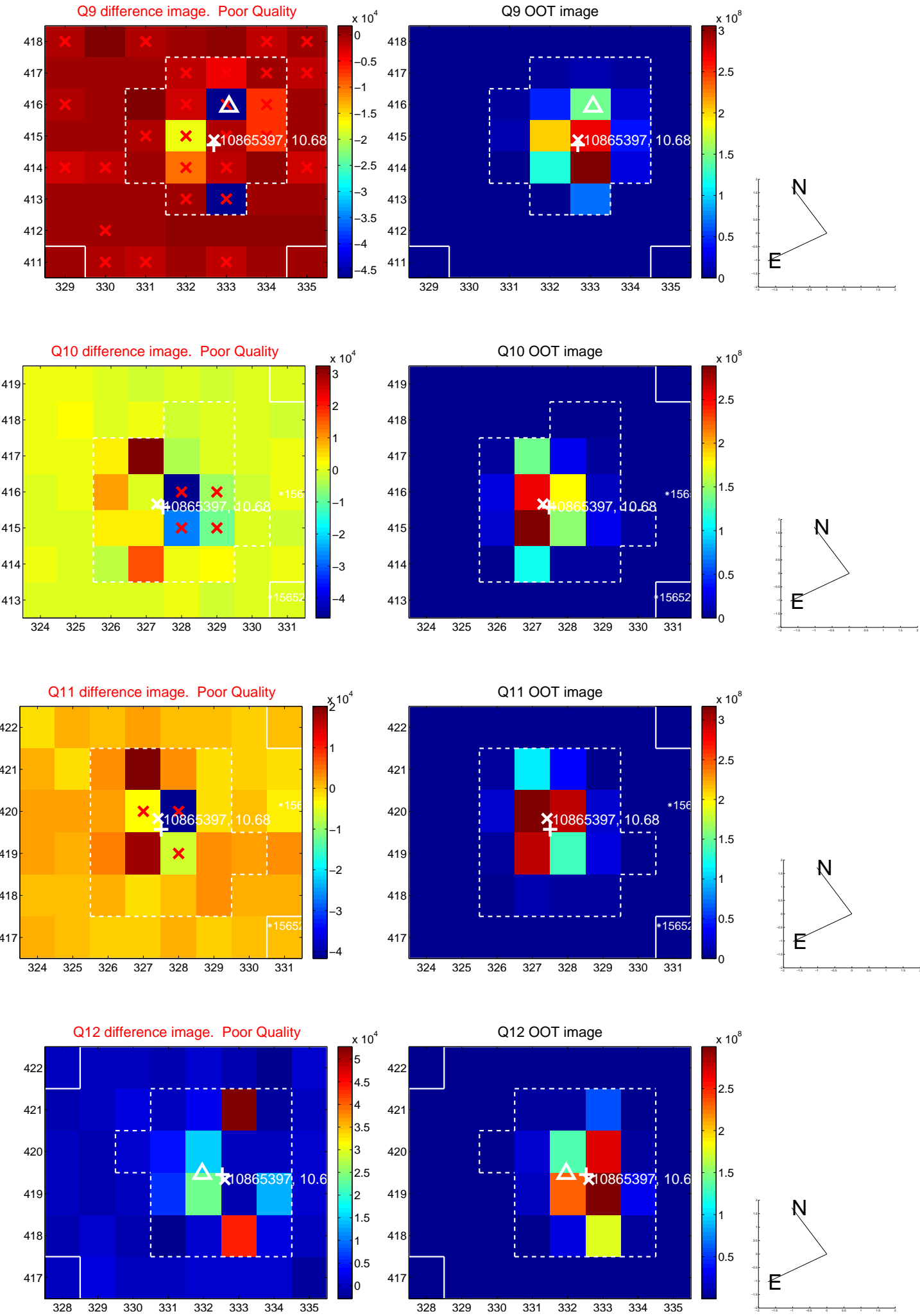
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



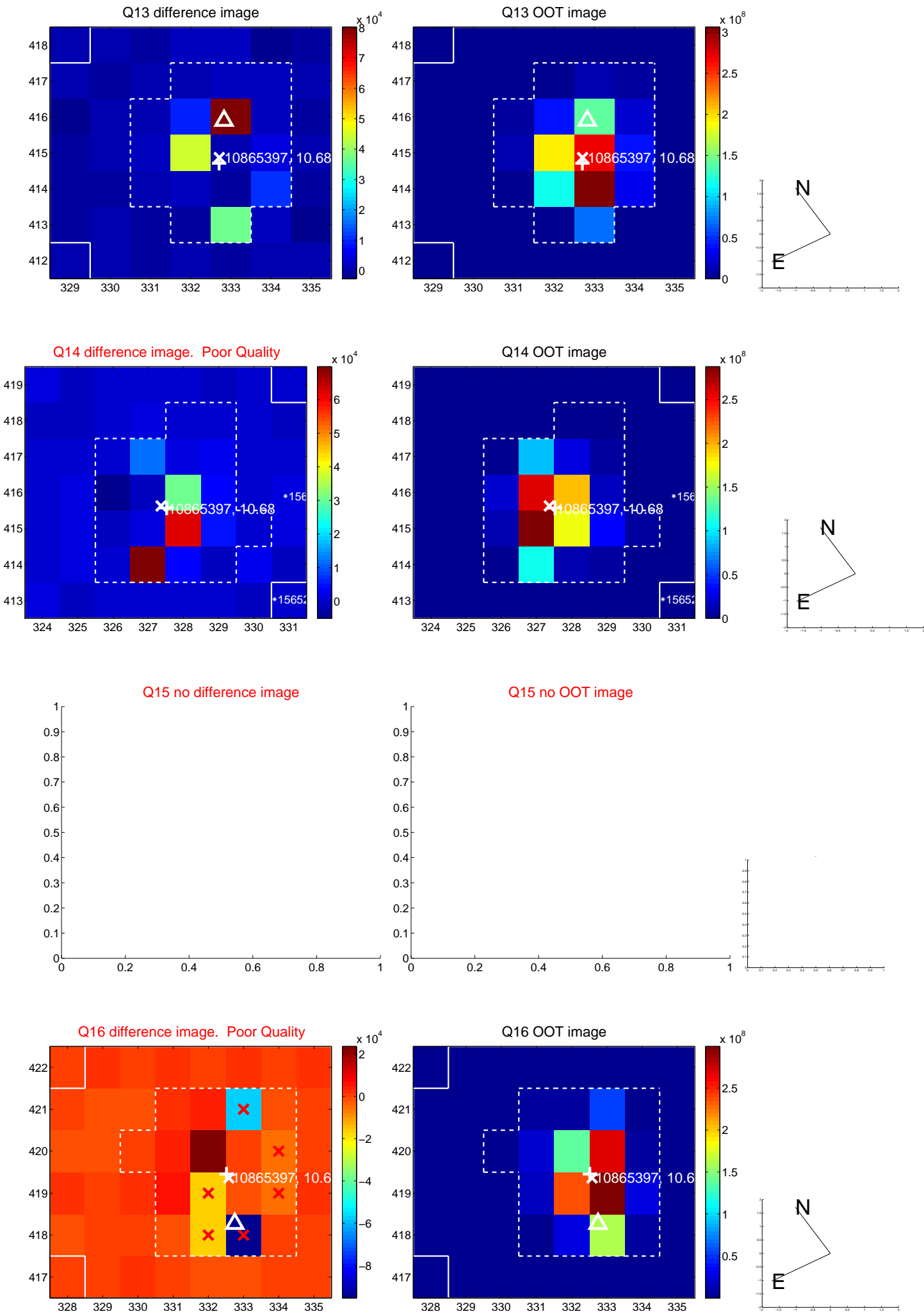
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



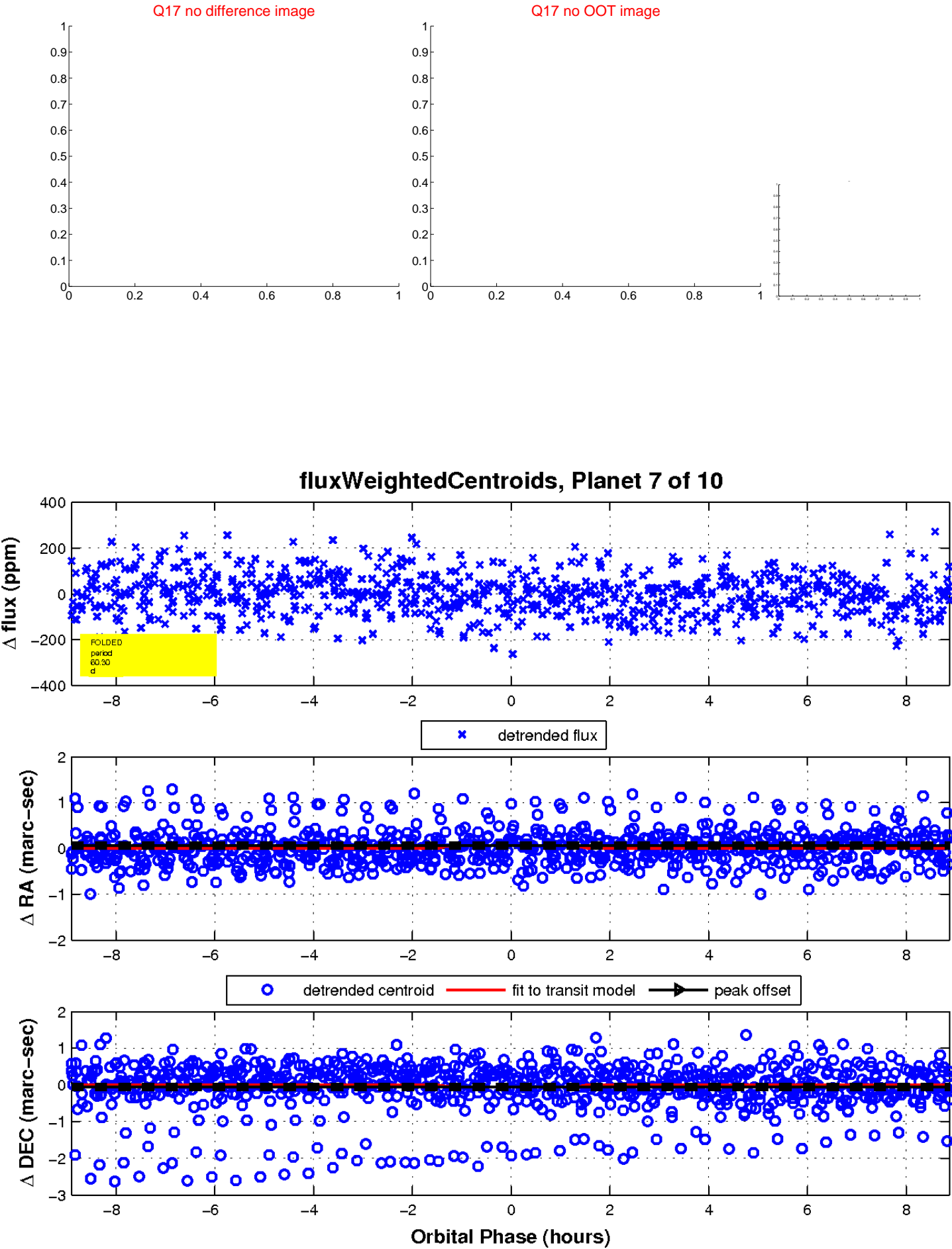
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

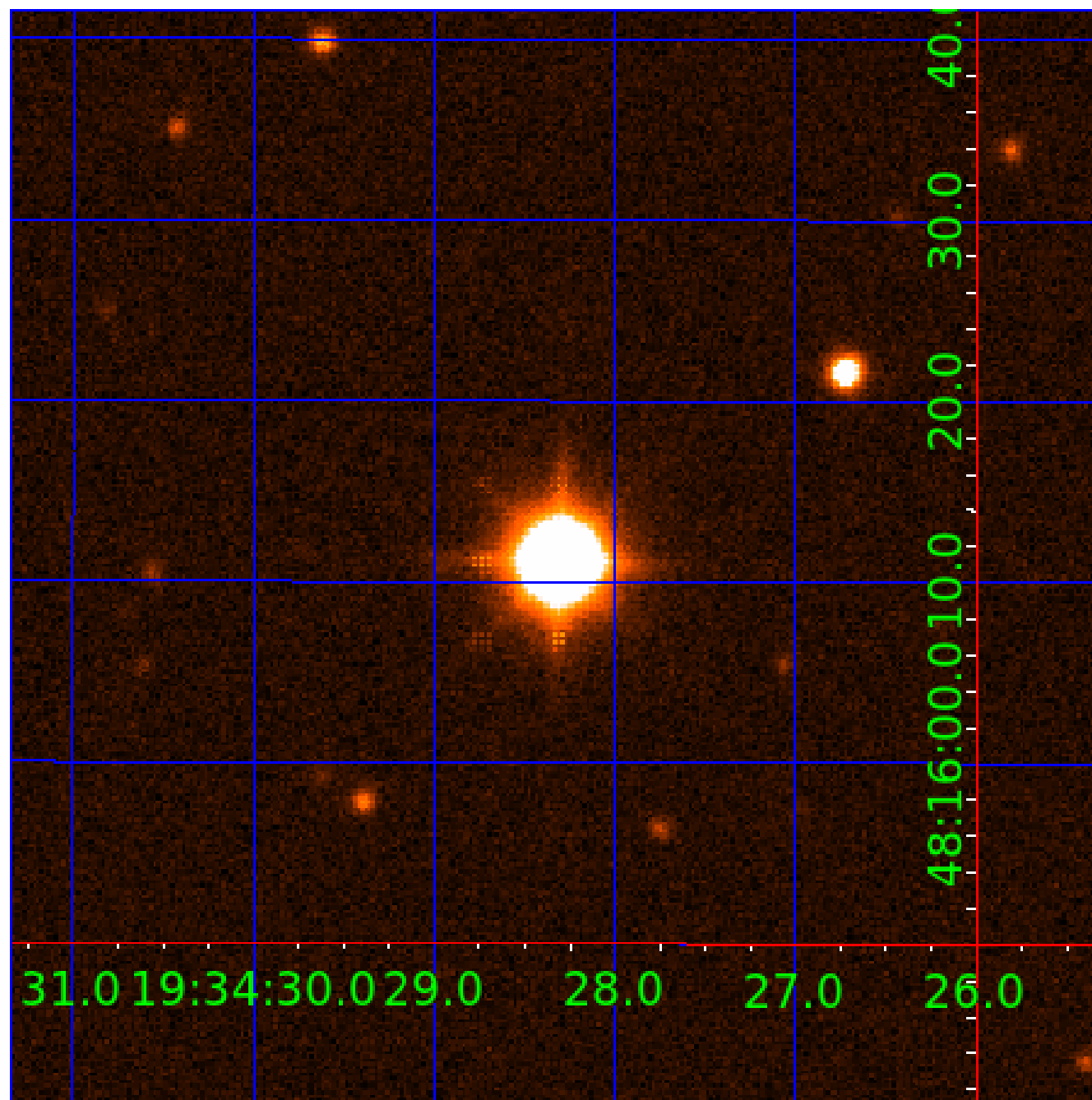


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

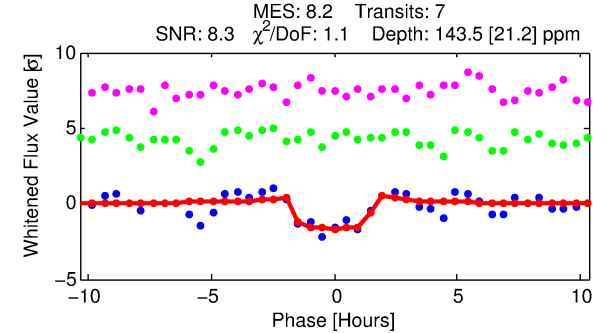
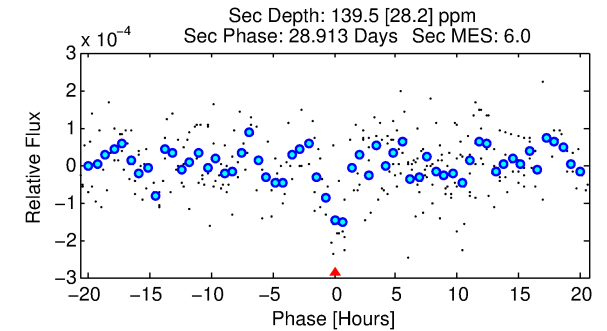
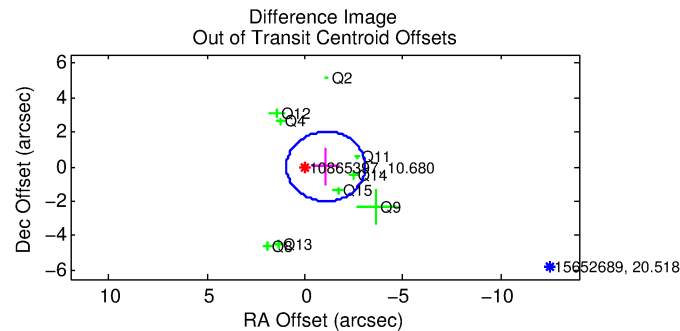
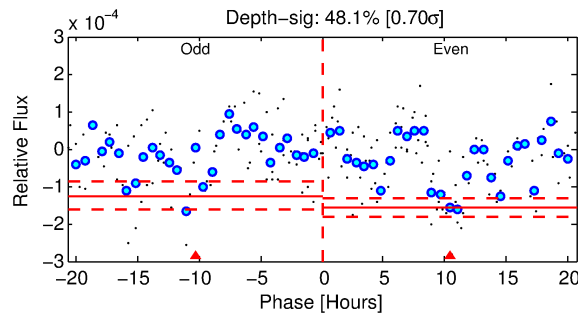
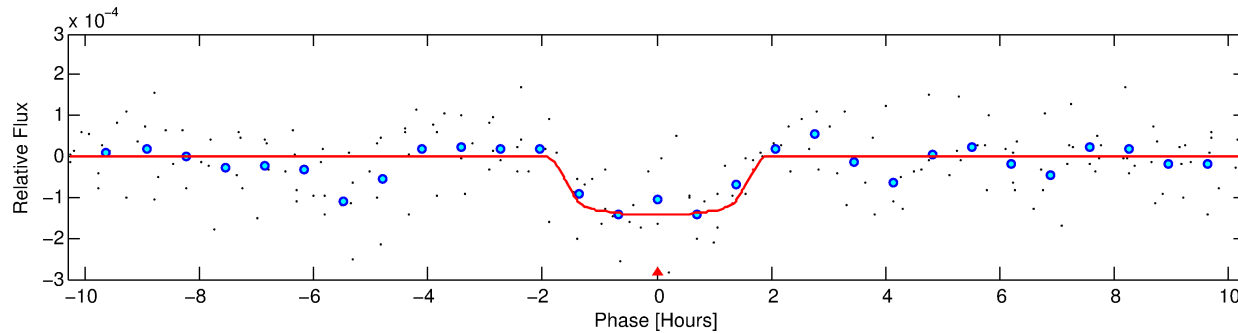
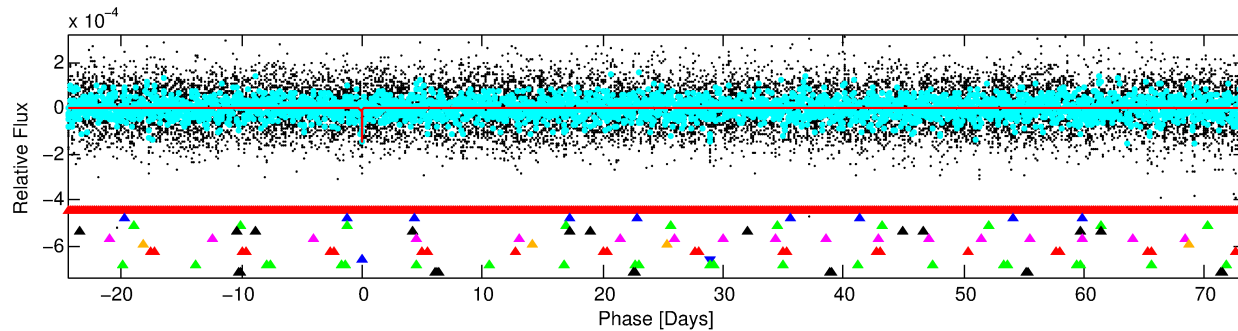
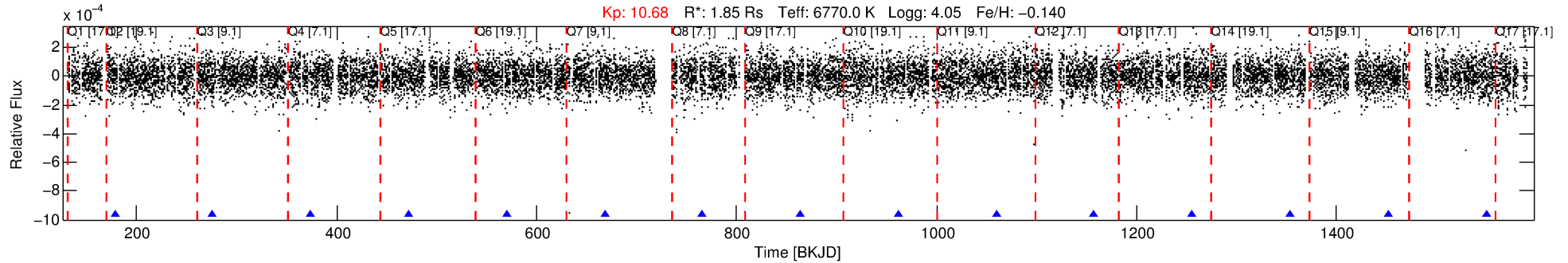
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-08

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 8 of 10 Period: 97.942 d



DV Fit Results:

Period = 97.94168 [0.00108] d
Epoch = 178.2787 [0.0089] BKJD
 $R_p/R^* = 0.0127$ [0.0053]
 $a/R^* = 102.65$ [250.11]
 $b = 0.90$ [0.54]
 $\text{Seff} = 29.77$ [8.39]
 $T_{\text{eq}} = 596$ [42] K
 $R_p = 2.58$ [1.18] R_e
 $a = 0.4657$ [0.0831] AU
 $\text{Ag} = 2506.63$ [2258.23] [1.11 σ]
 $T_{\text{eff}} = 6516$ [1398] K [4.23 σ]

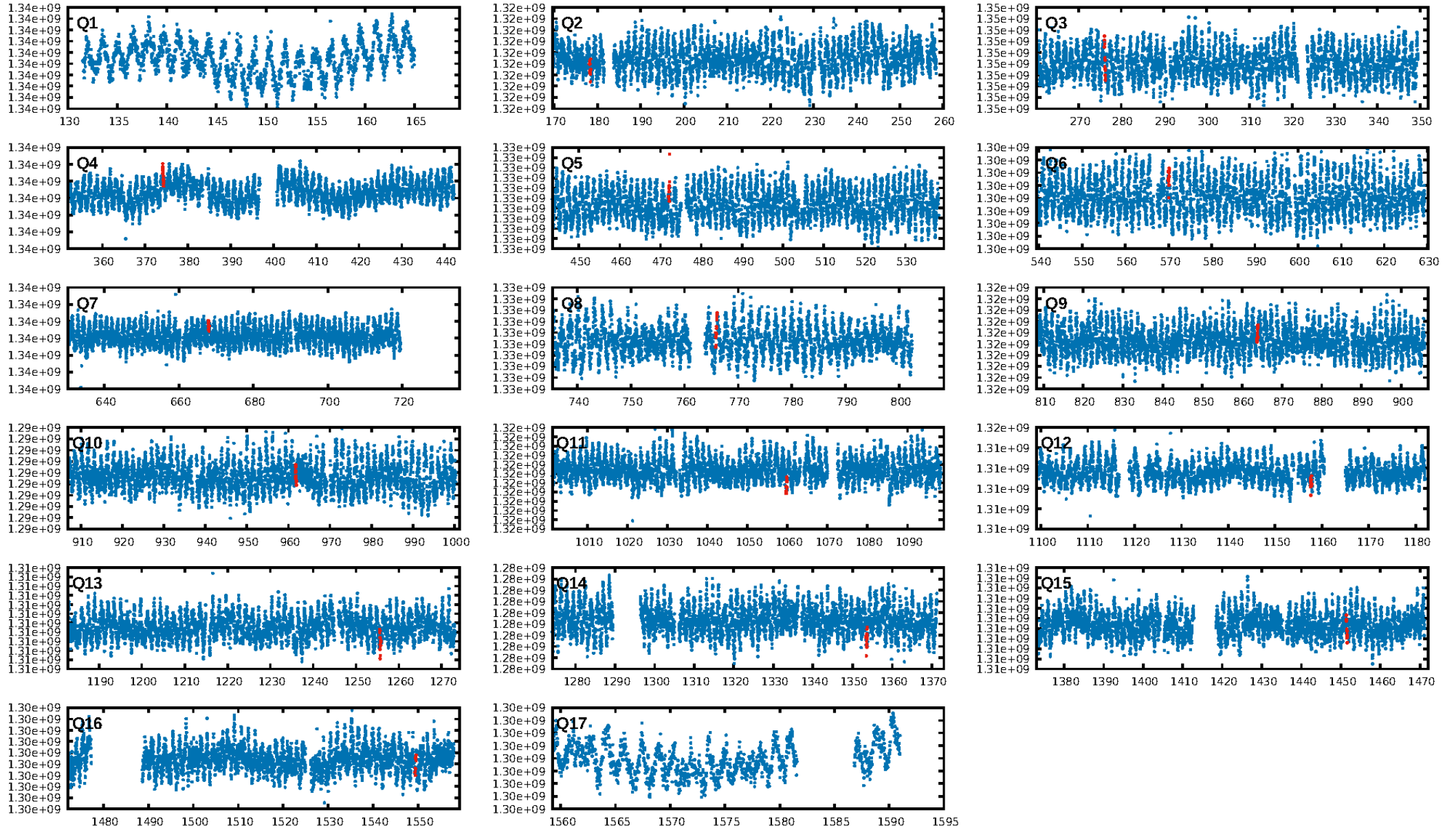
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.11 σ]
LongPeriod-sig: 100.0% [88.40 σ]
ModelChiSquare2-sig: 68.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.57e-08
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 2.447
Centroid-sig: 93.9%
Centroid-so: 0.460 arcsec [0.76 σ]
OotOffset-rm: 1.055 arcsec [1.57 σ]
KicOffset-rm: 1.500 arcsec [2.02 σ]
OotOffset-st: 2/2/3/2 [9]
KicOffset-st: 2/2/3/2 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 0.36 [5/14]

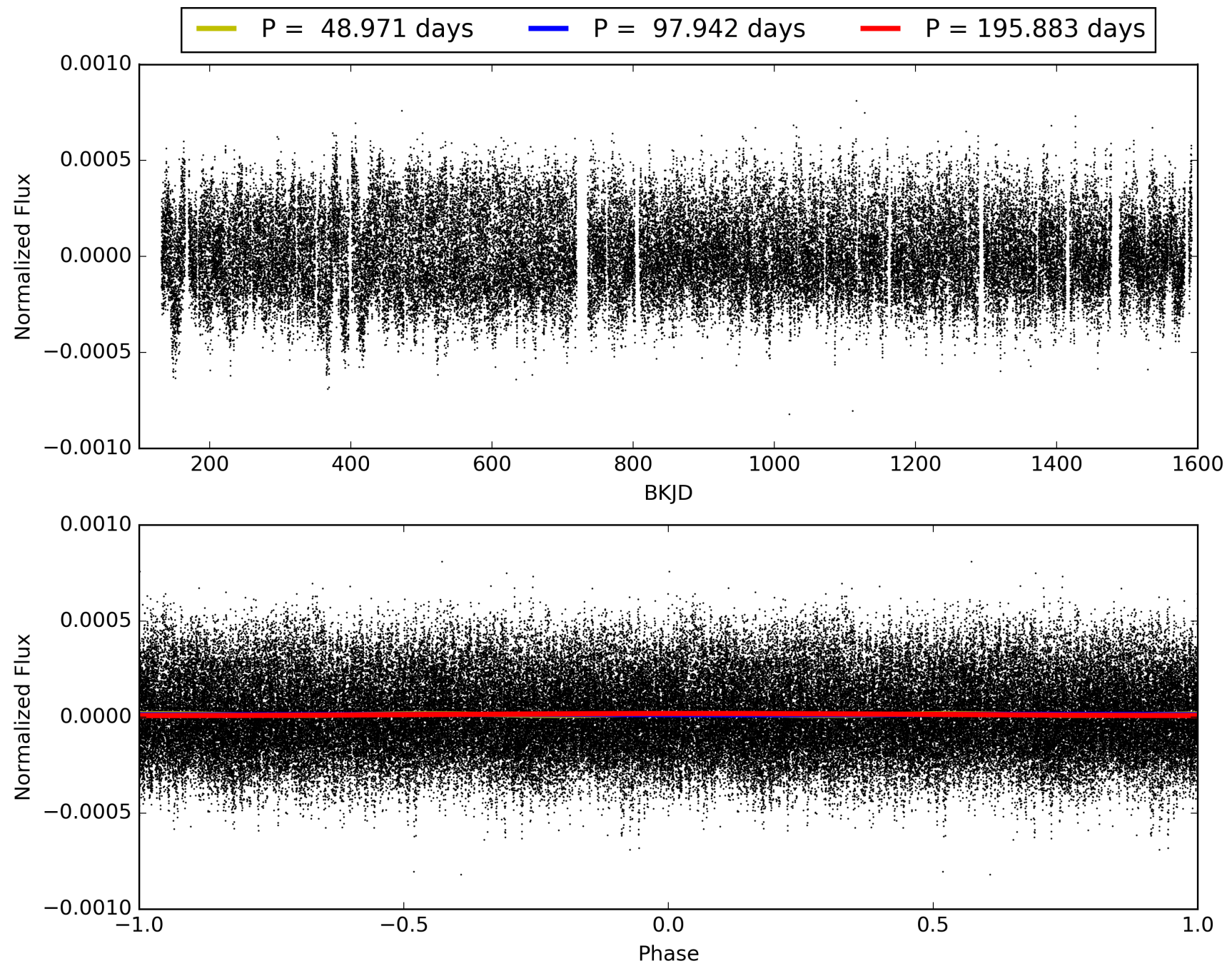
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:36 Z

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

TCE 010865397-08, PDC Light Curves

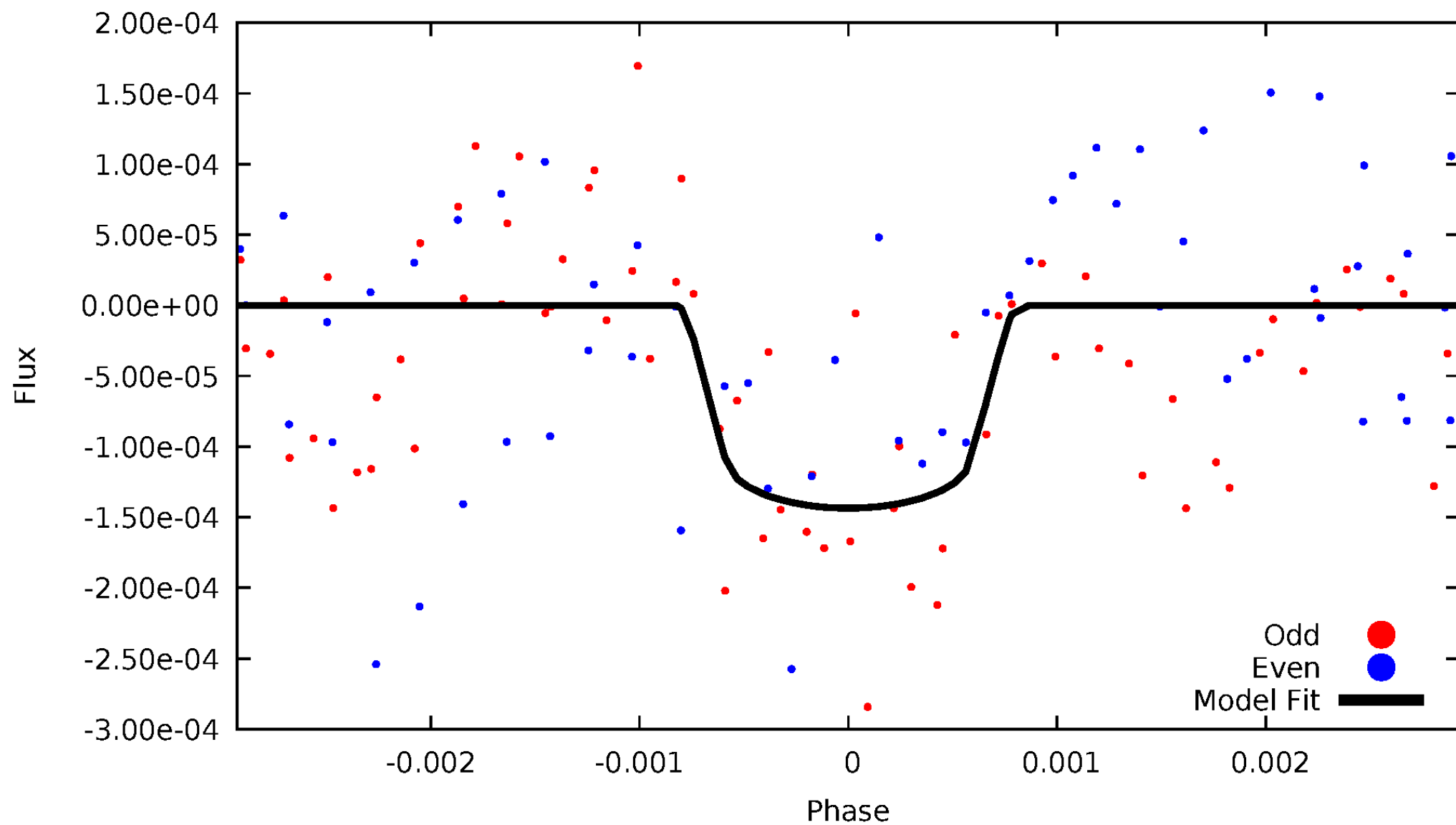


TCE 010865397-08



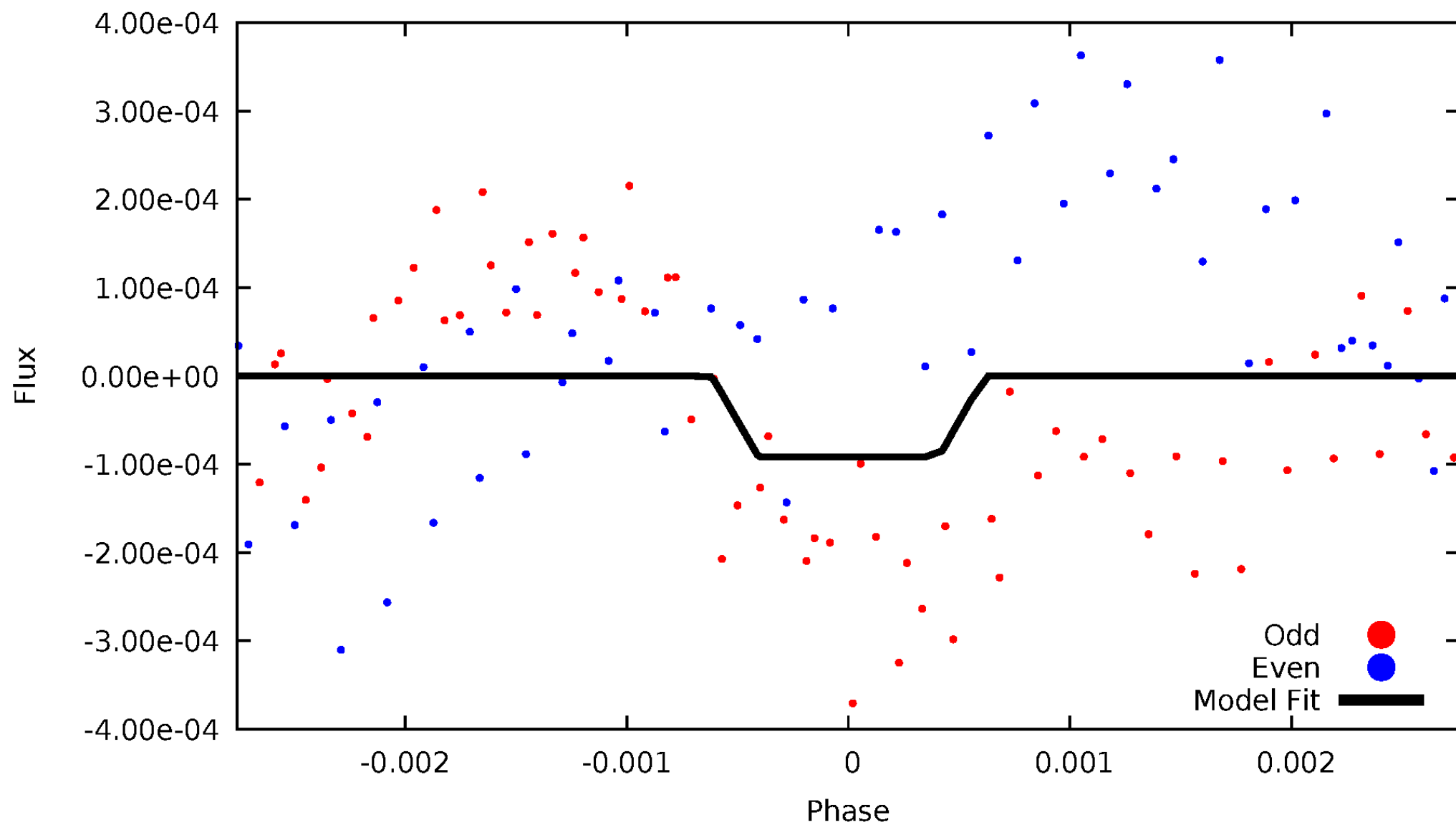
DV Odd/Even

TCE 010865397-08



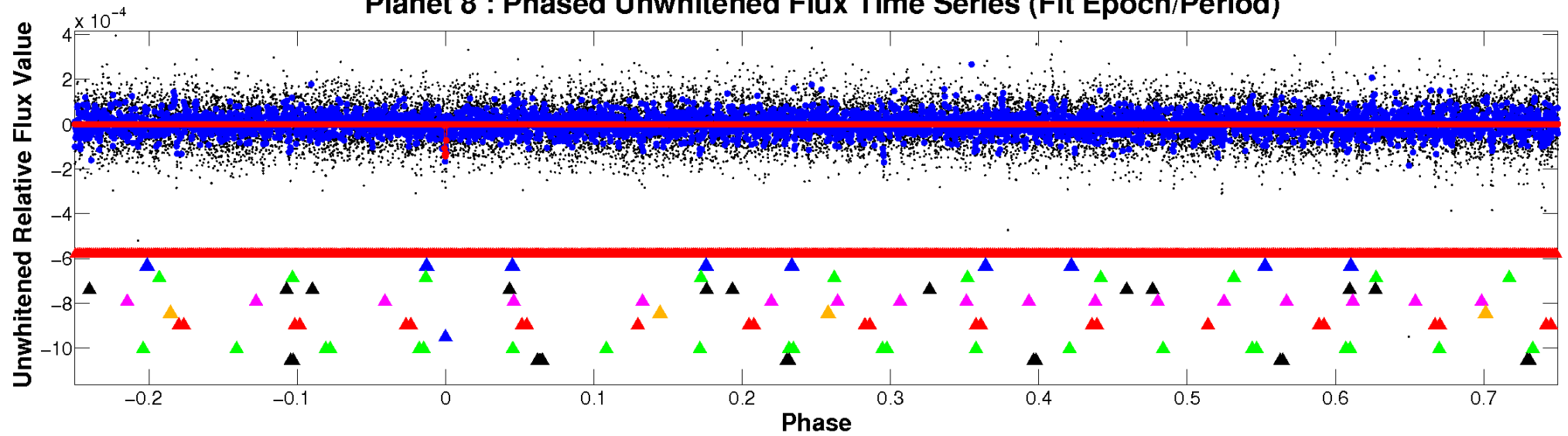
ALT Odd/Even

TCE 010865397-08

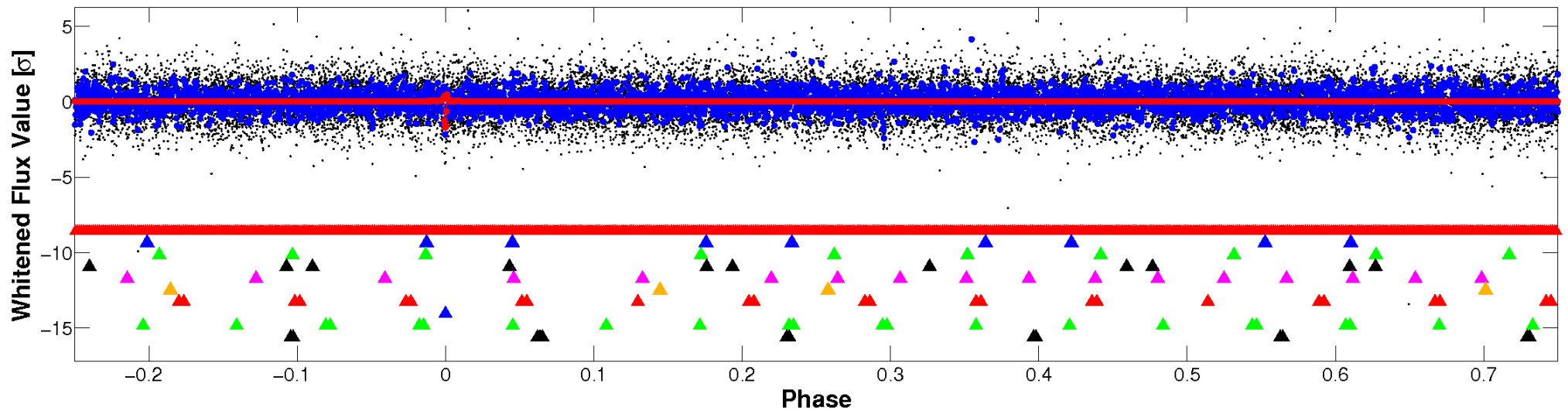


Non-Whitened Vs. Whitened Light Curve

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

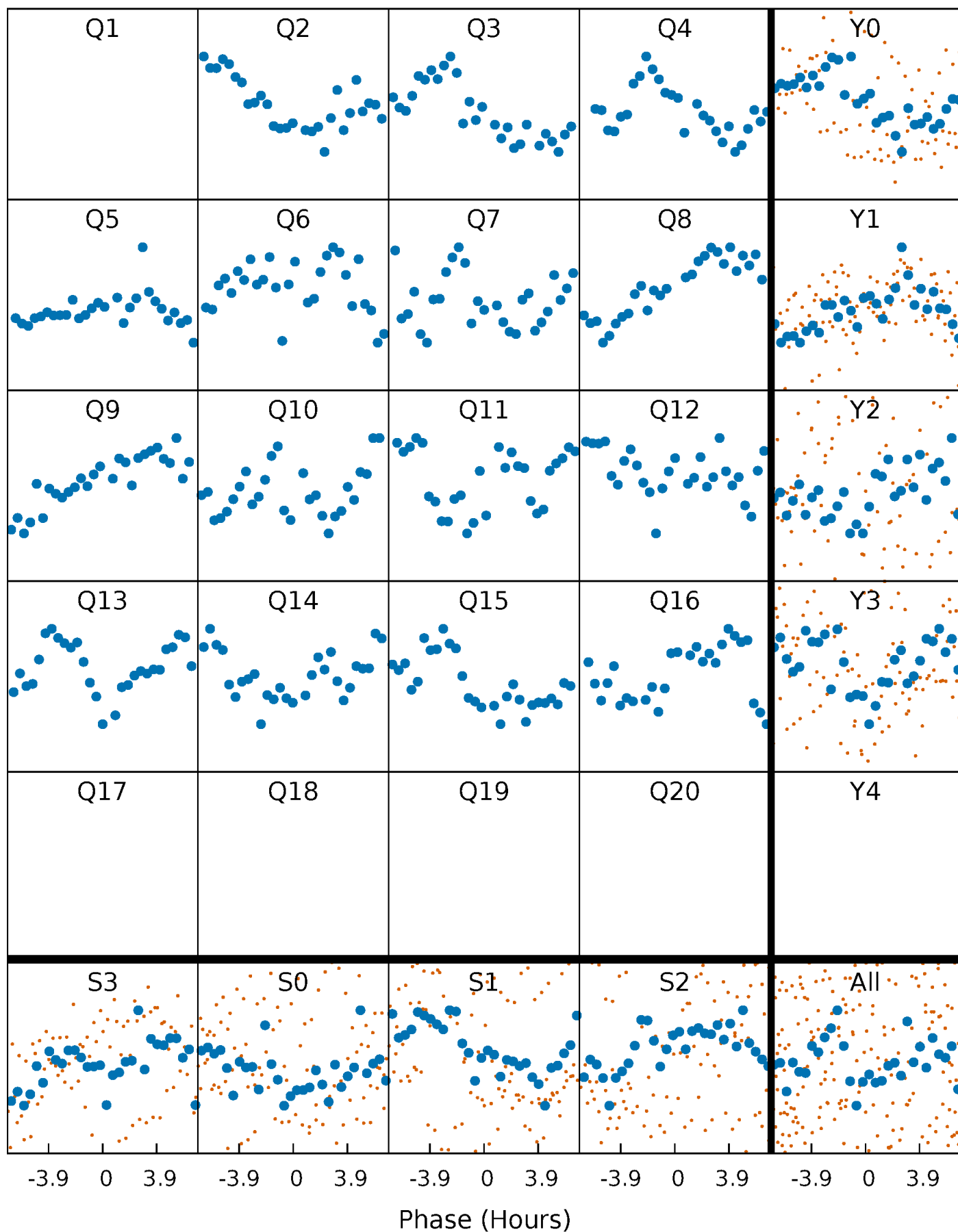


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



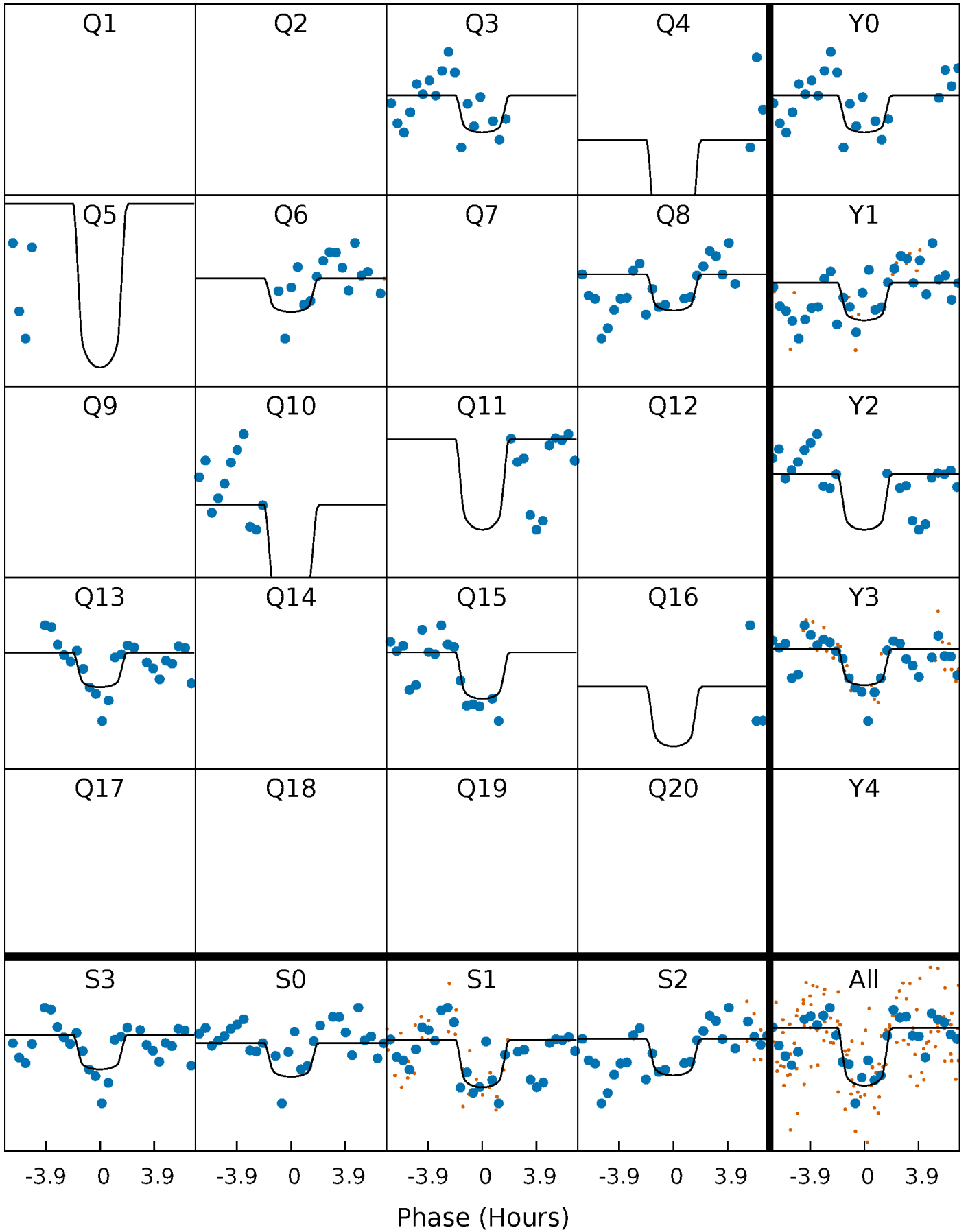
PDC Quarter-Phased Transit Curves

TCE 010865397-08 P= 97.941680 Days $T_0=178.278715$ (BKJD)



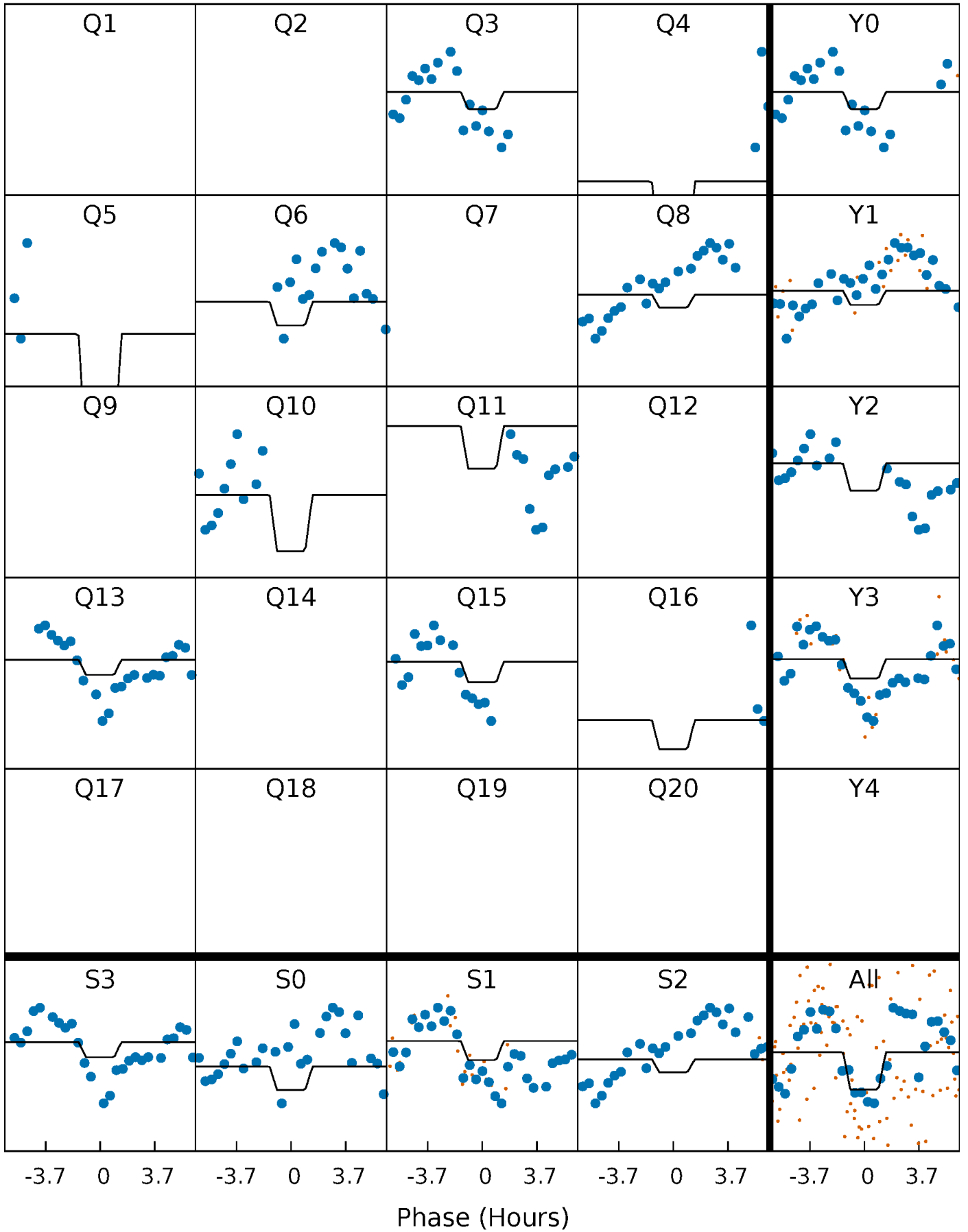
DV Quarter-Phased Transit Curves

TCE 010865397-08 $P = 97.941680$ Days $T_0 = 178.278715$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

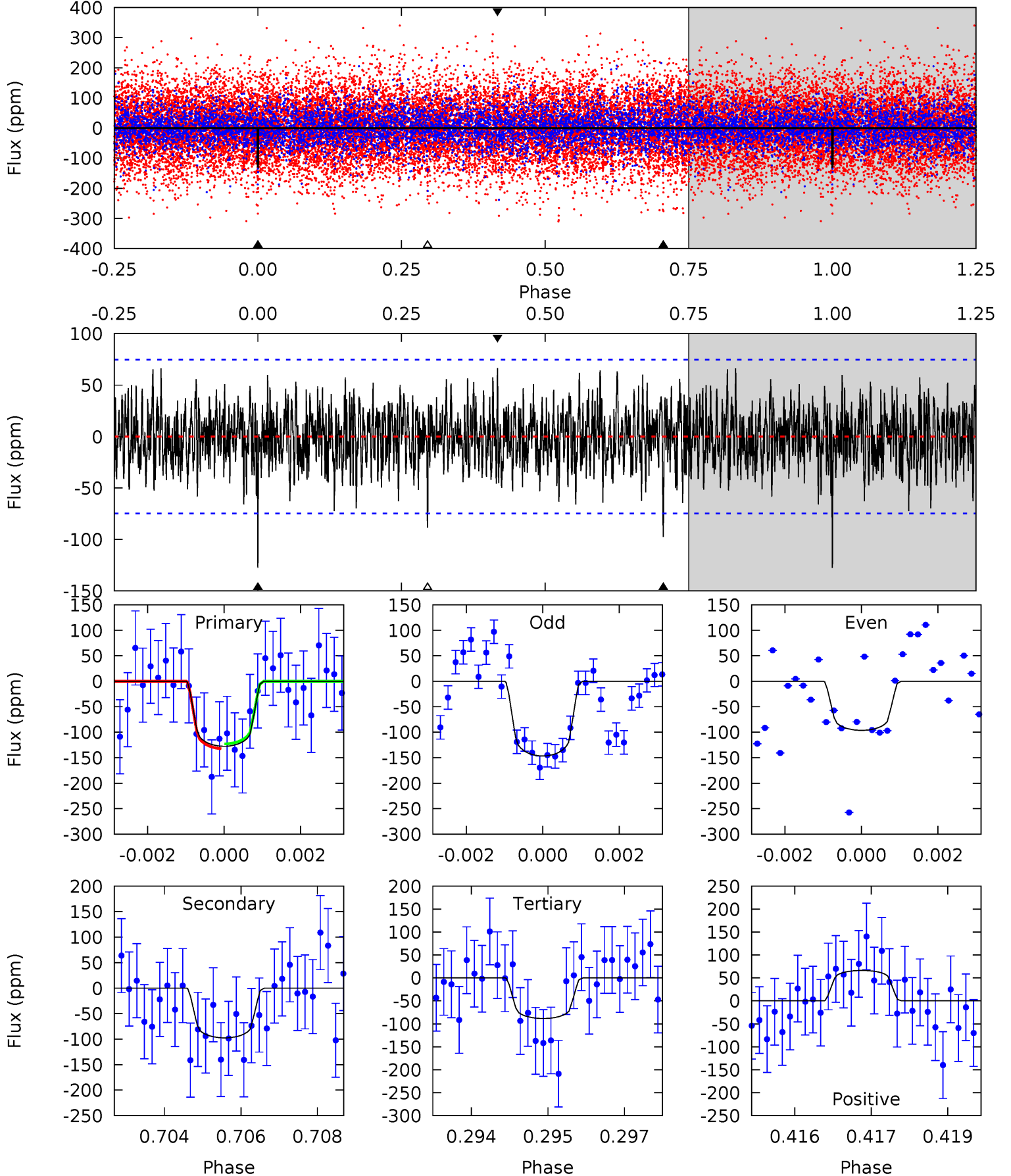
TCE 010865397-08 $P = 97.942600$ Days $T_0 = 178.275766$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-08, P = 97.941680 Days, E = 80.337035 Days

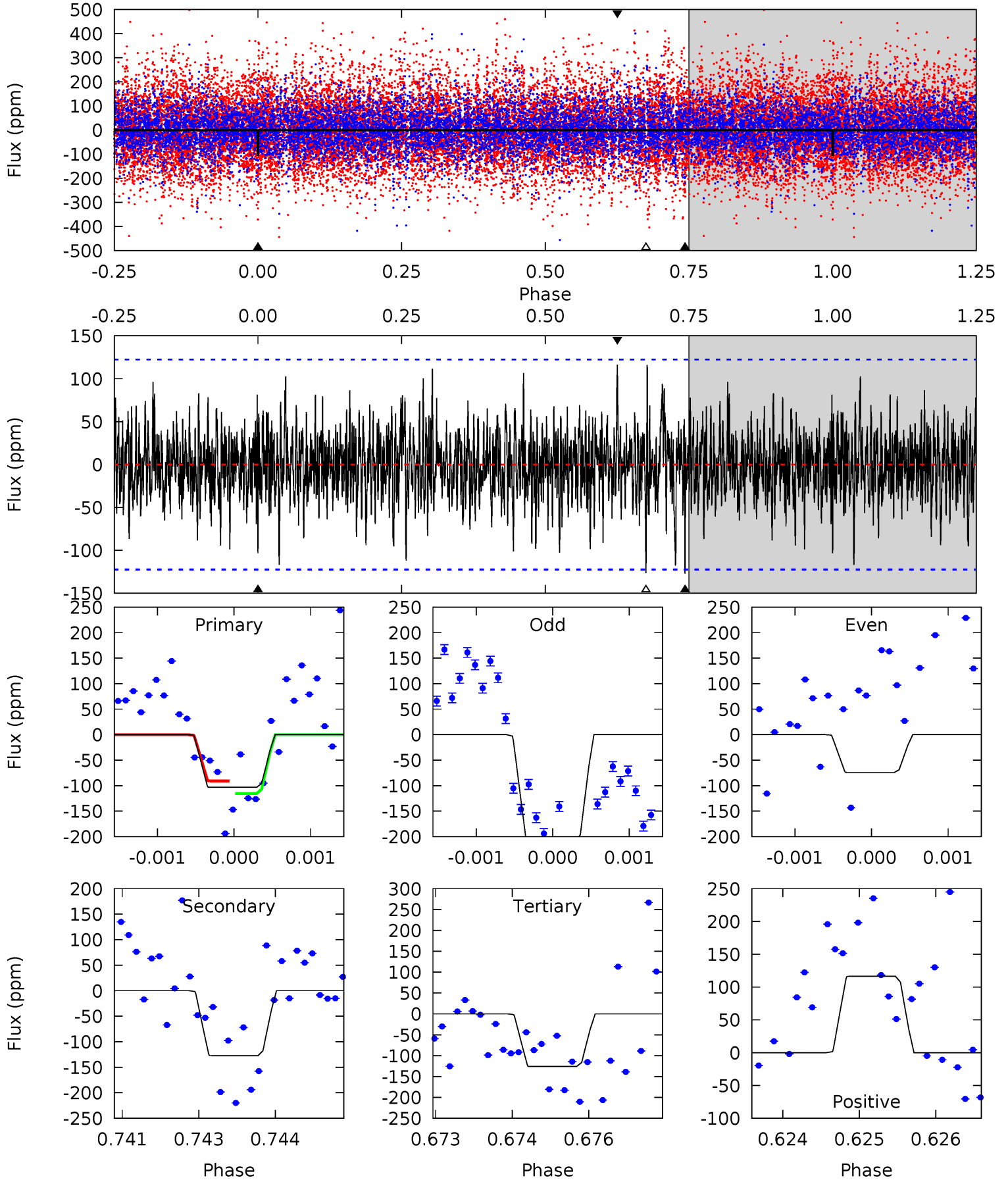
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.15	7.00	6.34	4.75	5.36	3.14	1.63	2.81	4.40	0.66	2.24	1.77	1.15	0.34	0.33



Alt Model-Shift Uniqueness Test

010865397-08, P = 97.942600 Days, E = 80.333166 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.58	5.64	5.58	5.16	5.42	3.24	1.45	-1.00	-0.58	0.06	0.48	2.87	0.53	0.48	0.55



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-98 ± 14	$2.50^{+1.21}_{-1.06}$	830^{+38}_{-41}	6010^{+1992}_{-960}	1900^{+3687}_{-1054}
Alt.	-127 ± 23	$1.97^{+1.08}_{-1.02}$	829^{+41}_{-46}	7224^{+4579}_{-1434}	3846^{+12766}_{-2296}

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 $A_{obs} \gg 1.0$

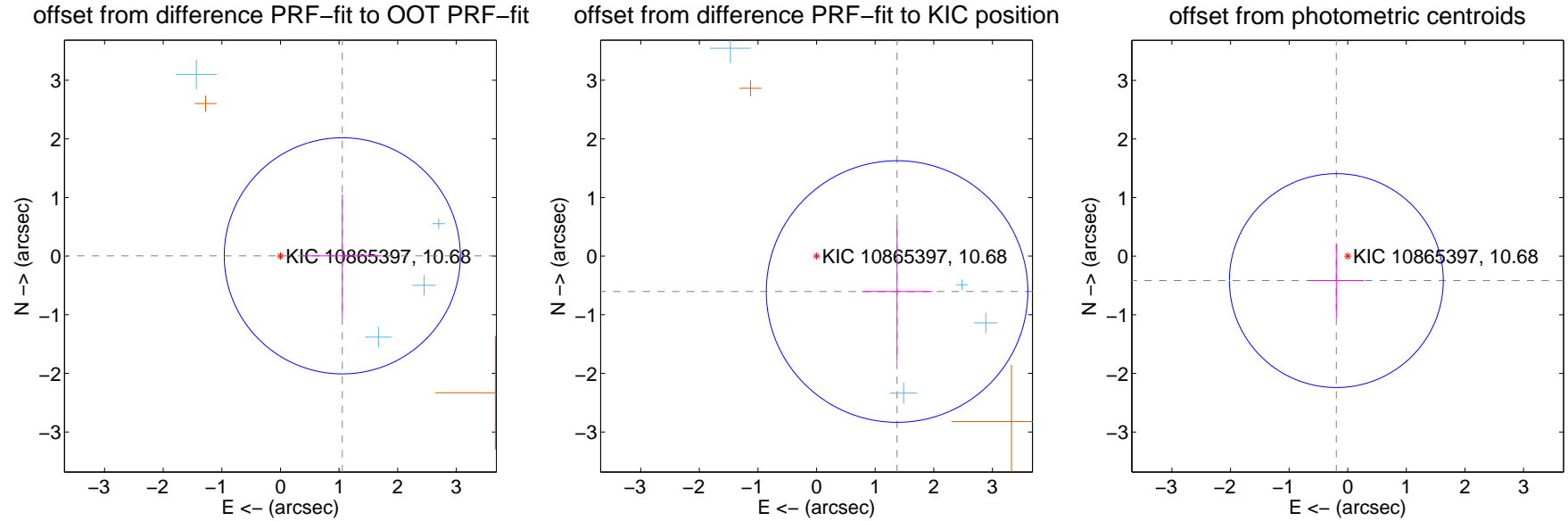
DV Centroid Data

Supplemental centroid analysis for 010865397-08. **Kepler magnitude: 10.68.** Transit SNR 8.31

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.97 arcsec

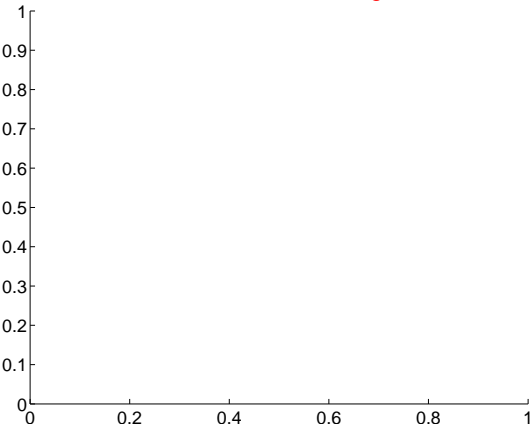
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.055 ± 0.671	1.57	-1.055 ± 0.671	0.005 ± 1.052
PRF-fit source offset from KIC position	1.500 ± 0.744	2.02	-1.373 ± 0.597	-0.604 ± 1.189
photometric centroid source offset	0.46 ± 0.61	0.76	0.19 ± 0.47	-0.42 ± 0.63



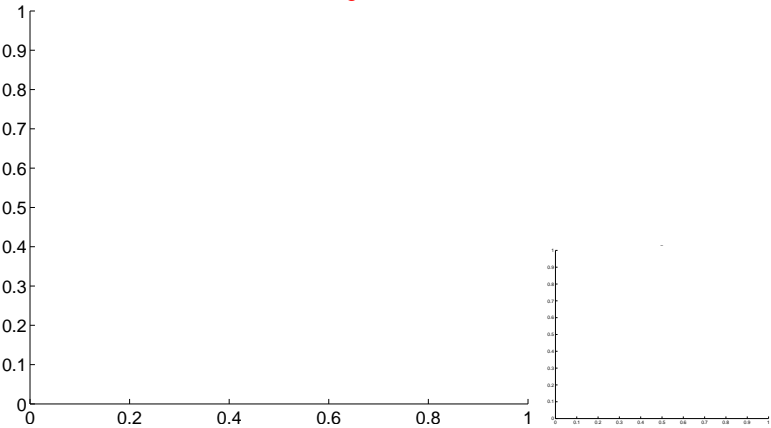
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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

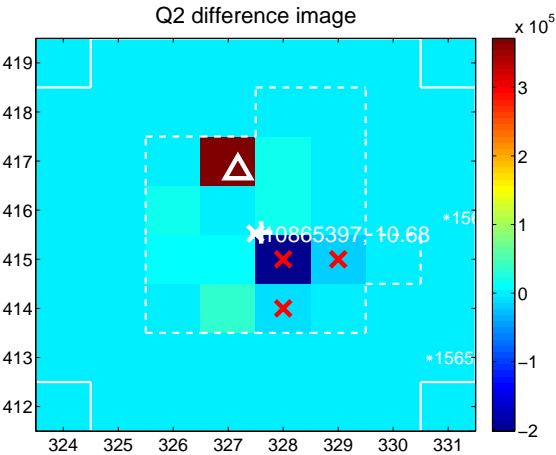
Q1 no difference image



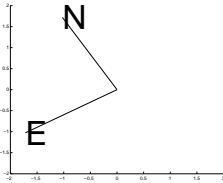
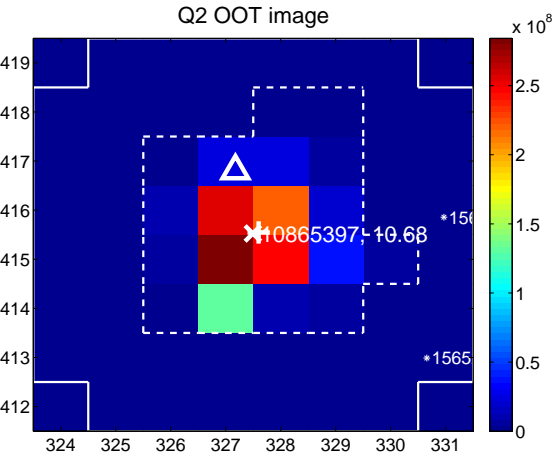
Q1 no OOT image



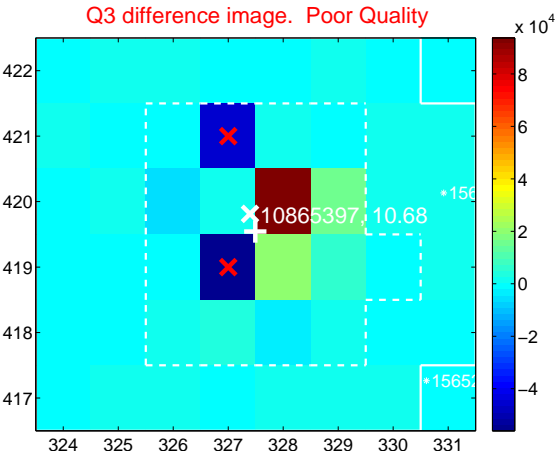
Q2 difference image



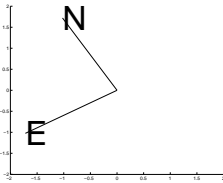
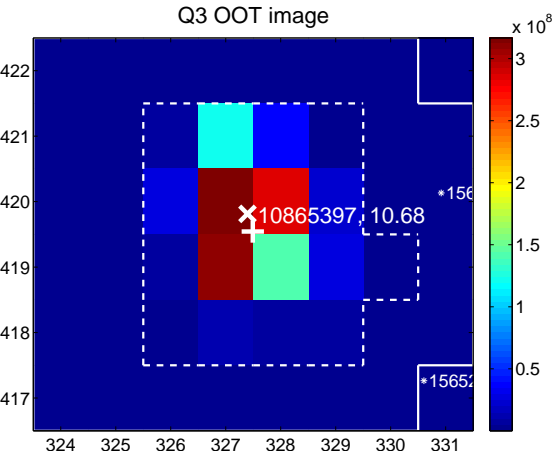
Q2 OOT image



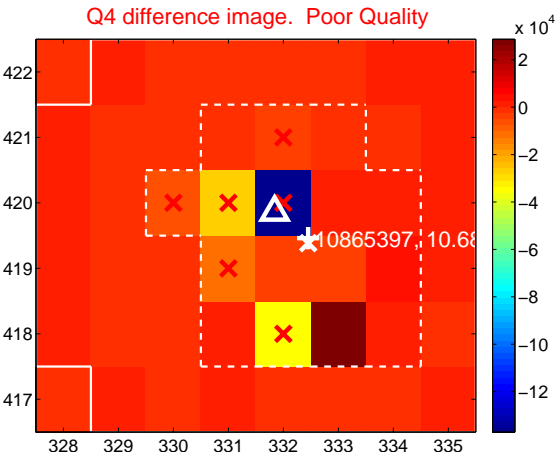
Q3 difference image. Poor Quality



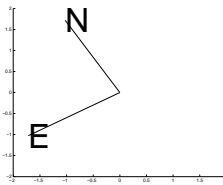
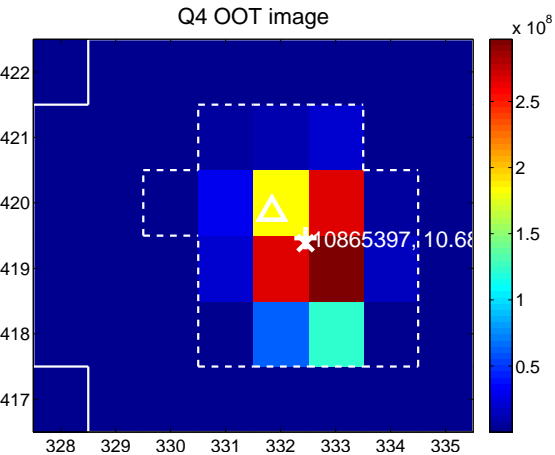
Q3 OOT image



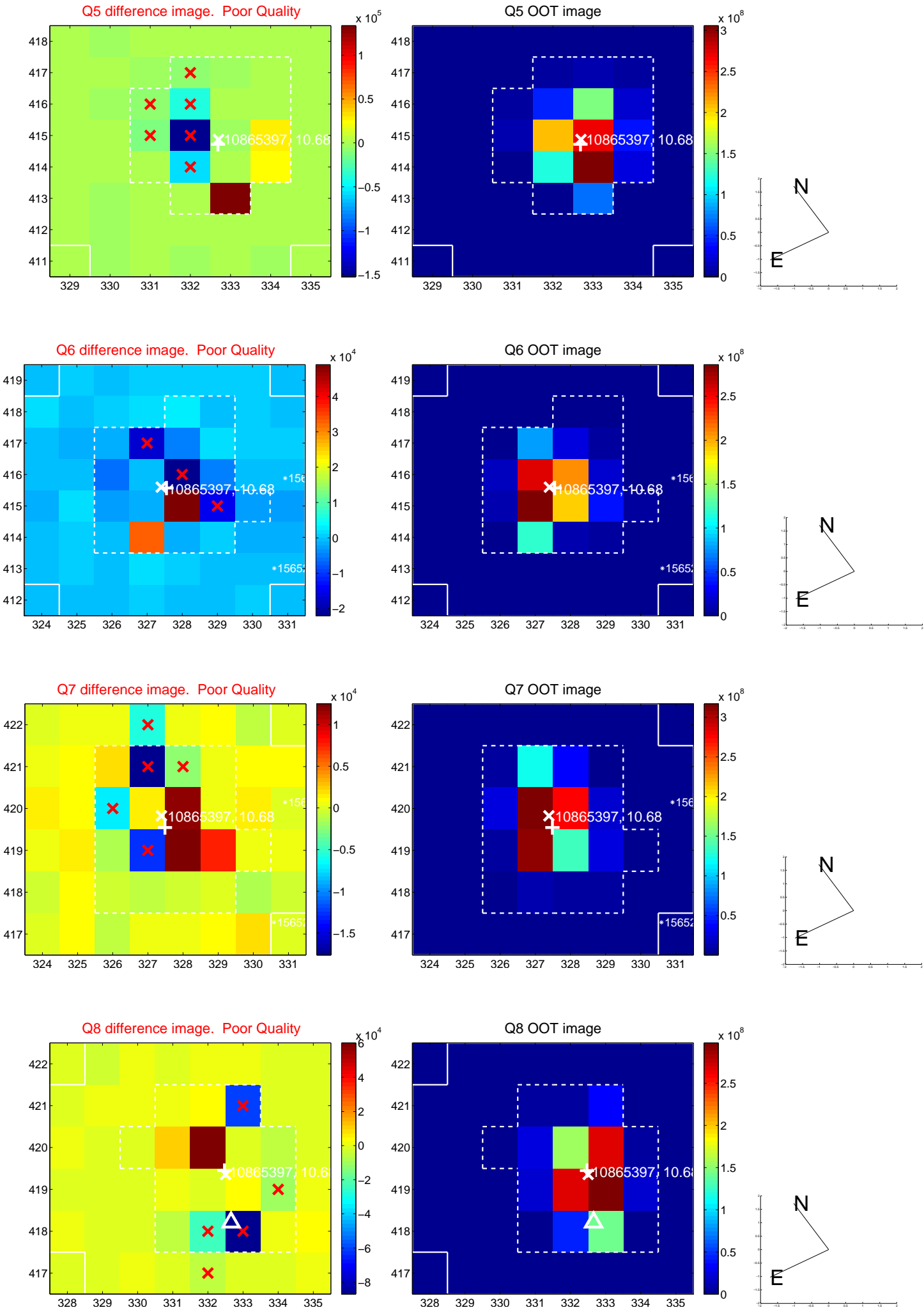
Q4 difference image. Poor Quality



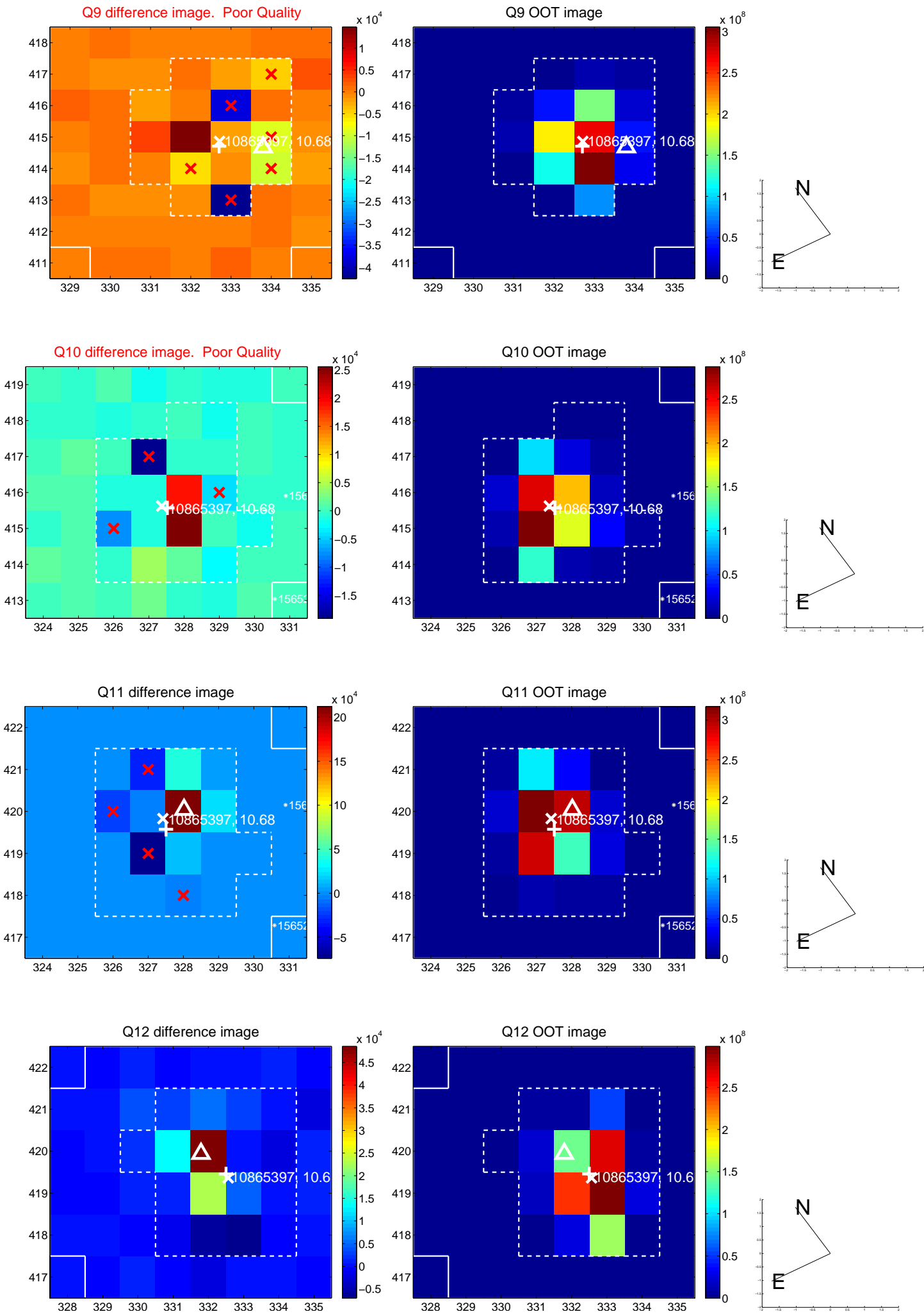
Q4 OOT image



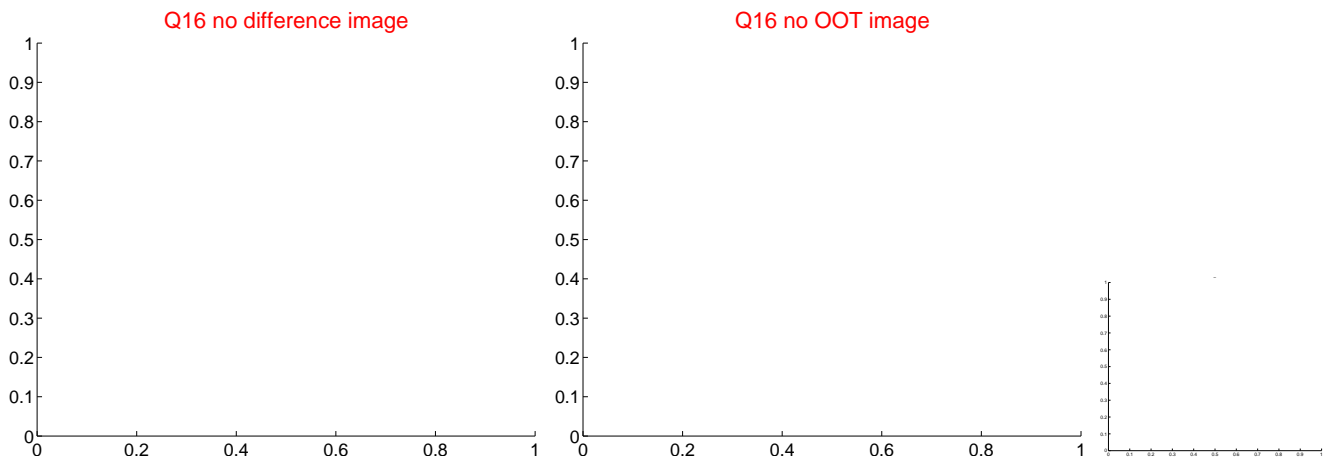
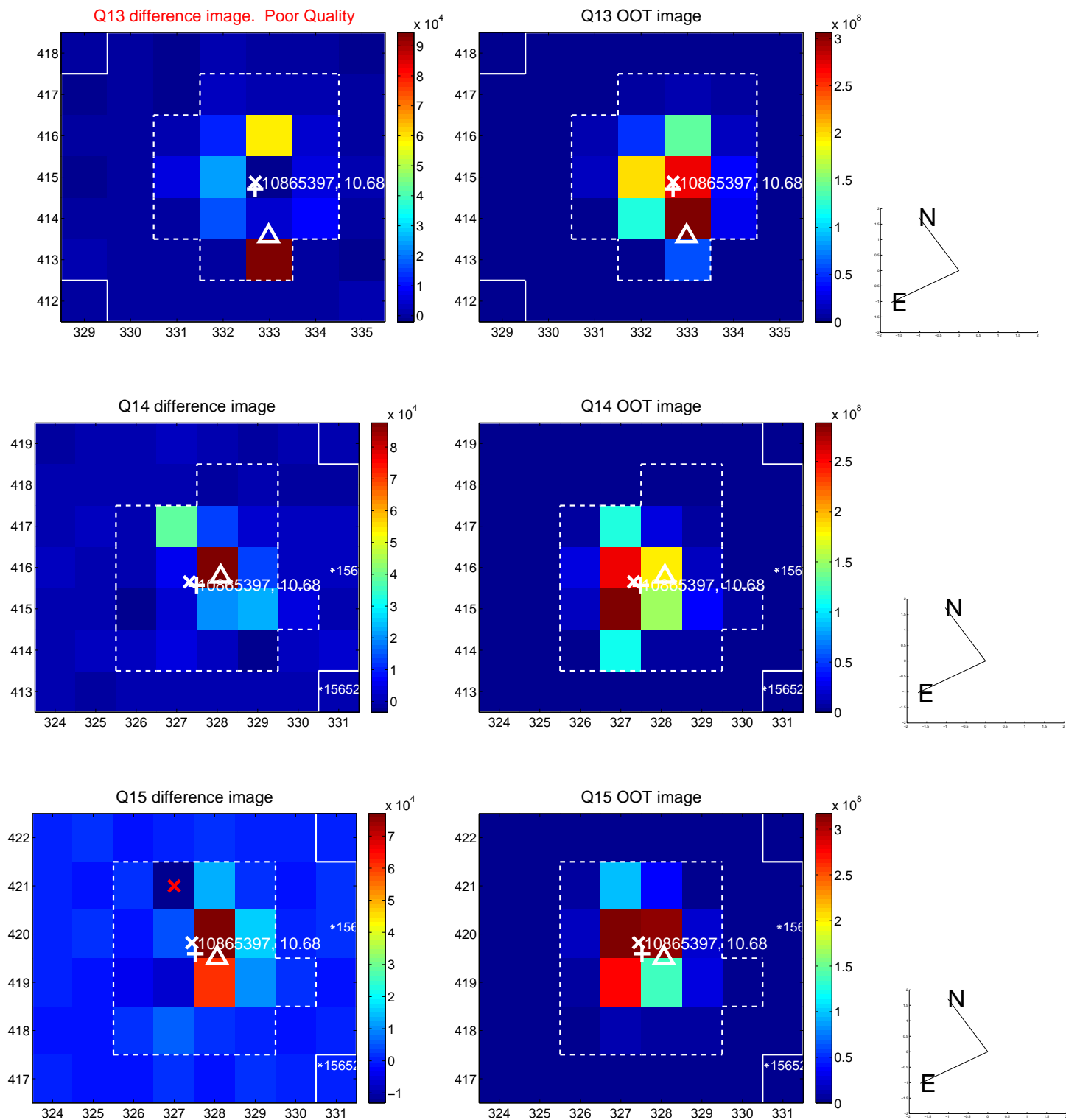
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



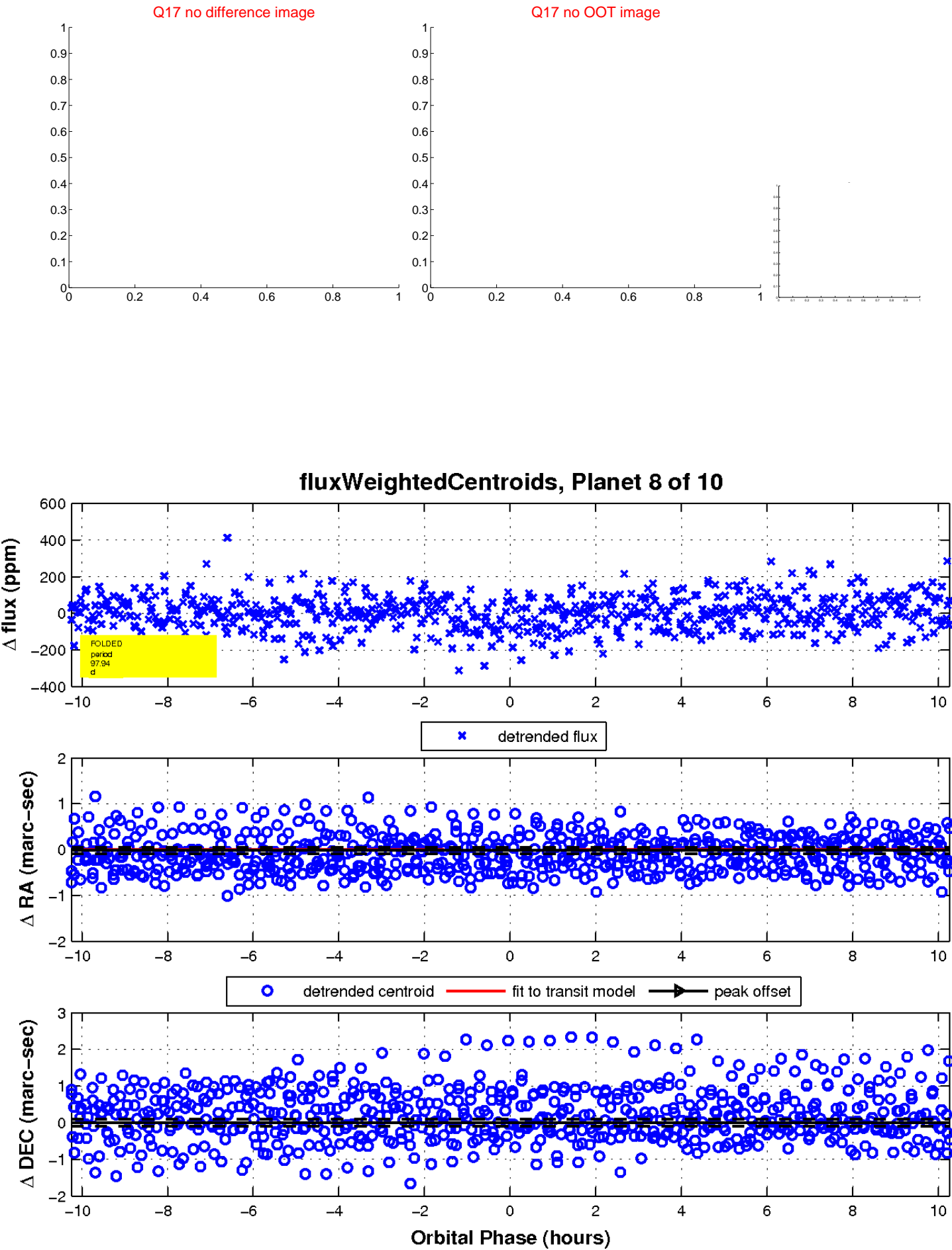
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

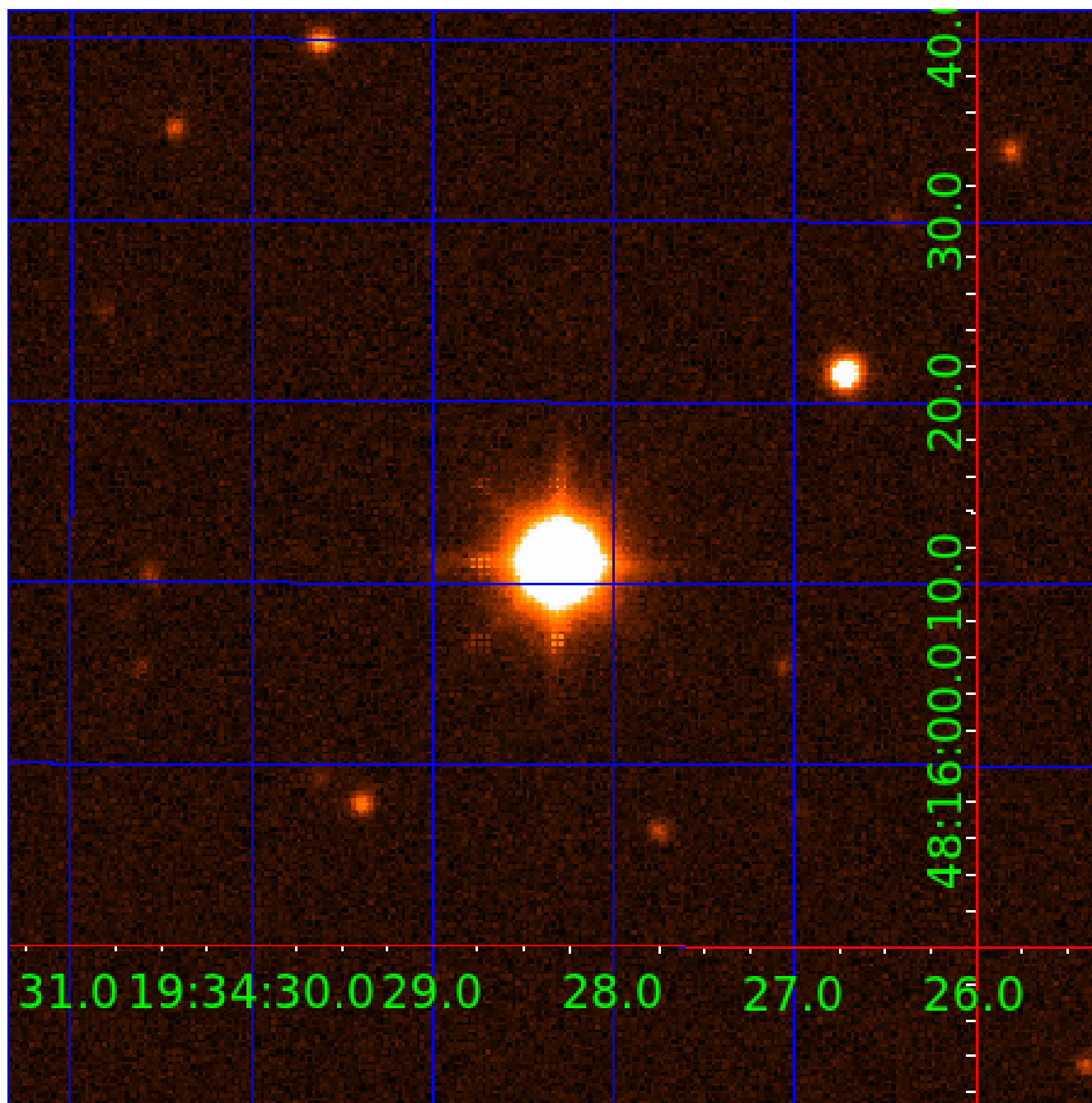


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

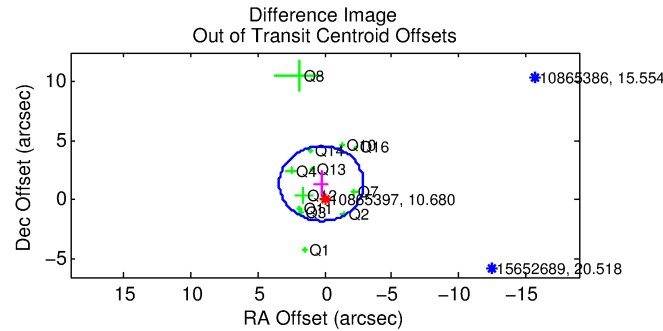
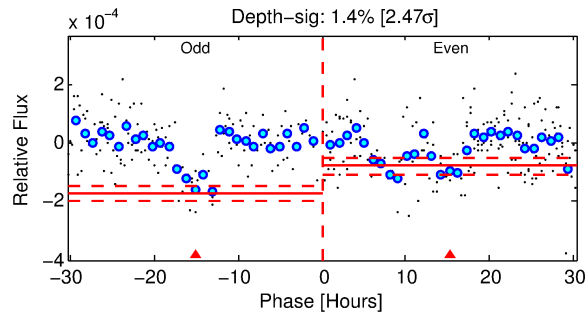
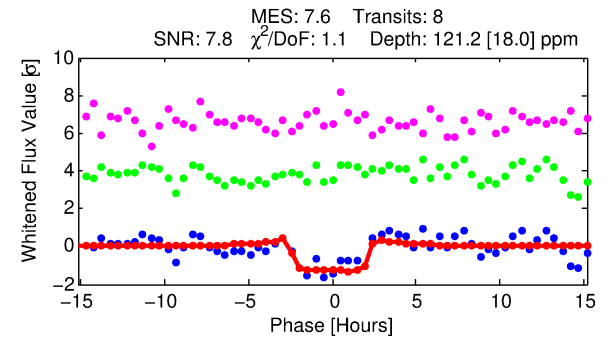
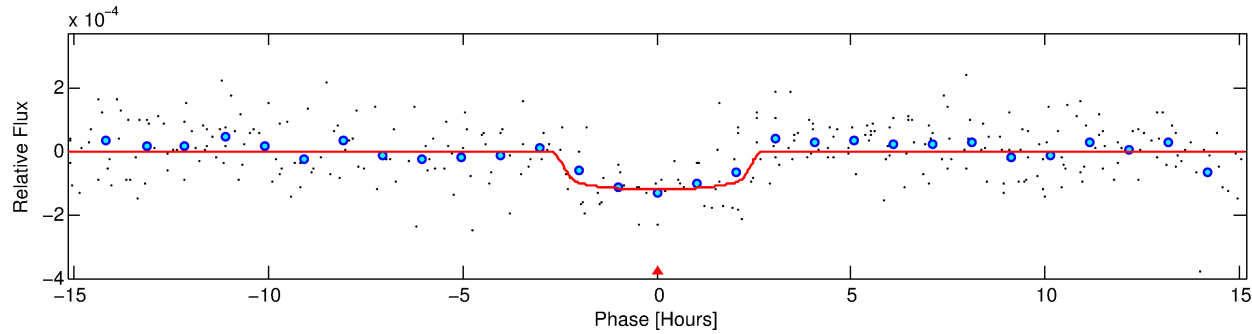
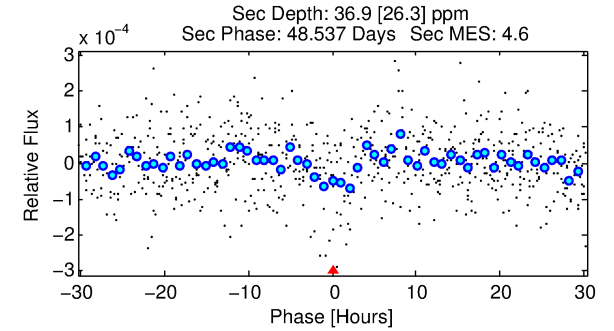
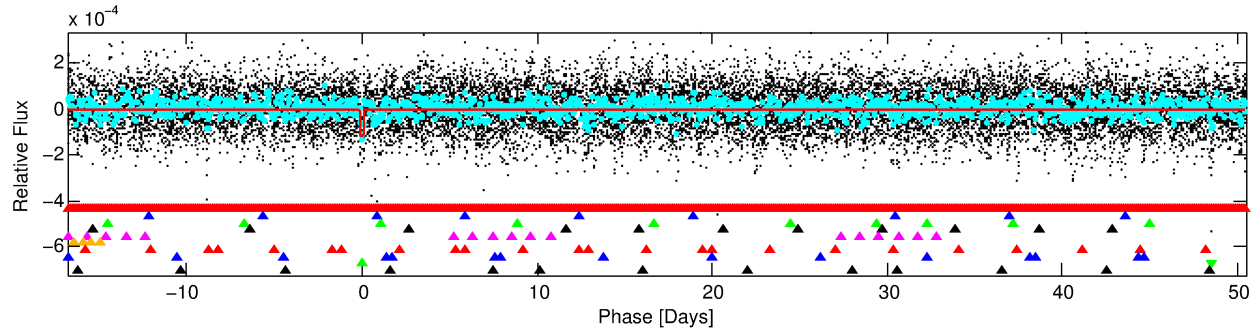
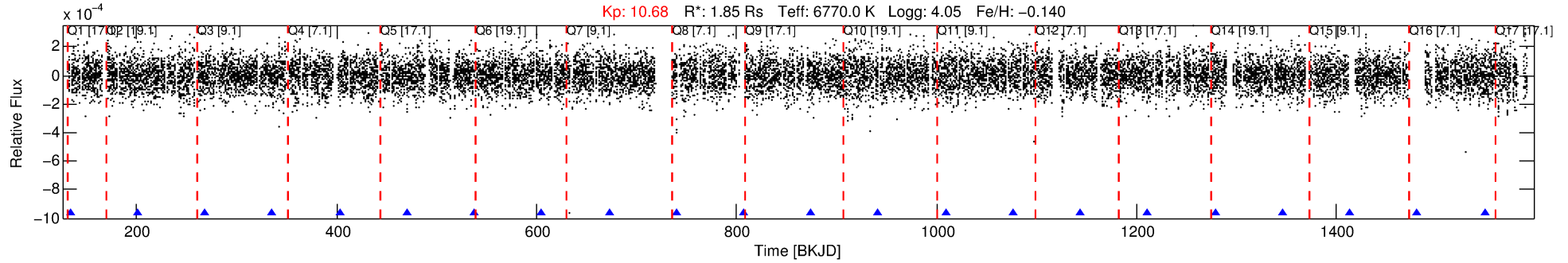
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-09

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 9 of 10 Period: 67.353 d



DV Fit Results:

Period = 67.35302 [0.00088] d
Epoch = 133.6097 [0.0106] BKJD
Rp/R* = 0.0114 [0.0074]
a/R* = 56.60 [217.28]
b = 0.84 [1.32]
Seff = 49.04 [13.82]
Teq = 675 [48] K
Rp = 2.29 [1.57] Re
a = 0.3628 [0.0648] AU
Ag = 508.12 [770.68] [0.66σ]
Teffp = 4953 [1847] K [2.32σ]

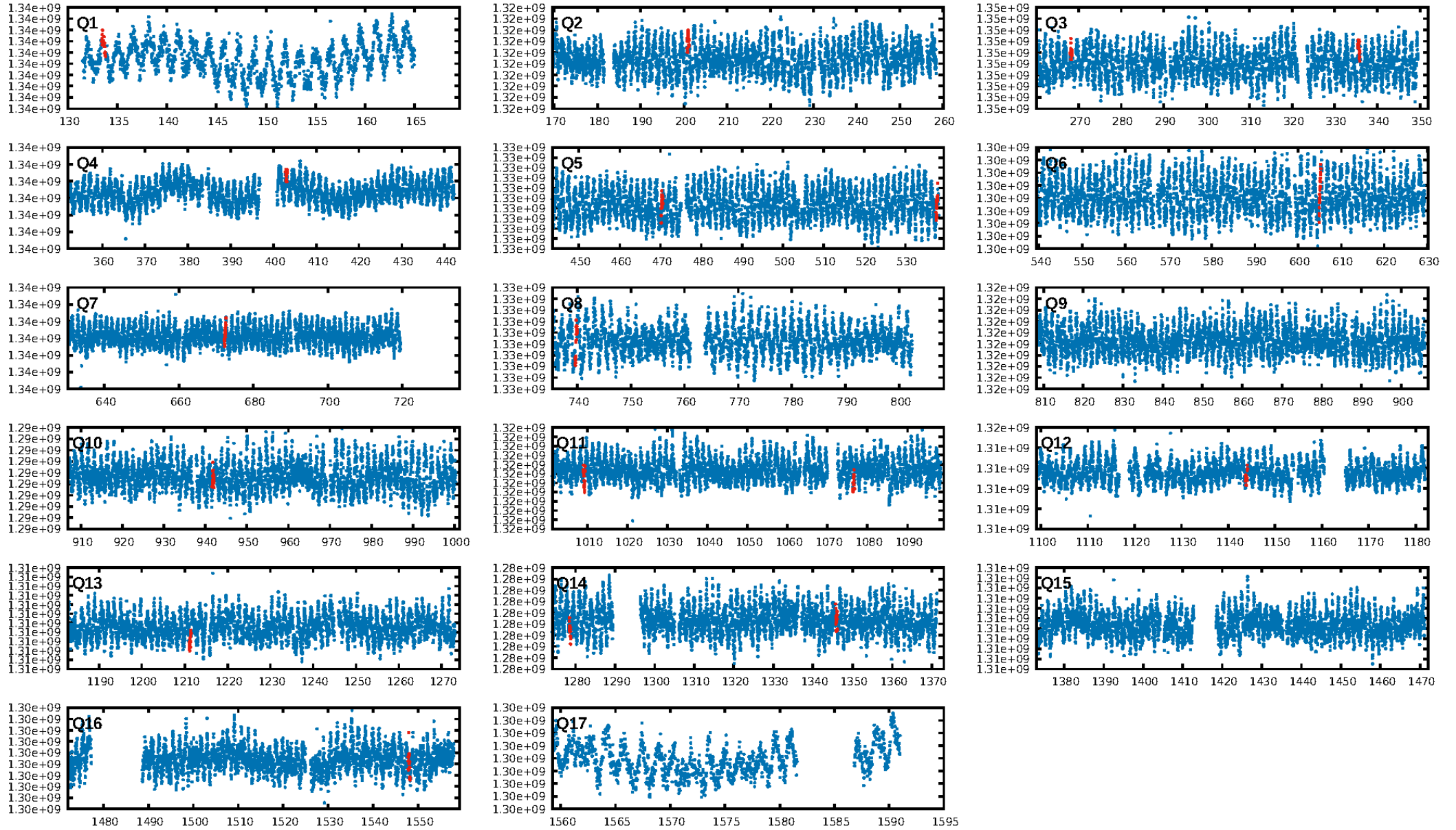
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.89σ]
LongPeriod-sig: 100.0% [51.18σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.01e-07
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -1.061
Centroid-sig: 11.4%
Centroid-so: 1.200 arcsec [1.84σ]
OotOffset-rm: 1.422 arcsec [1.35σ]
KicOffset-rm: 0.897 arcsec [0.86σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 0.21 [3/14]

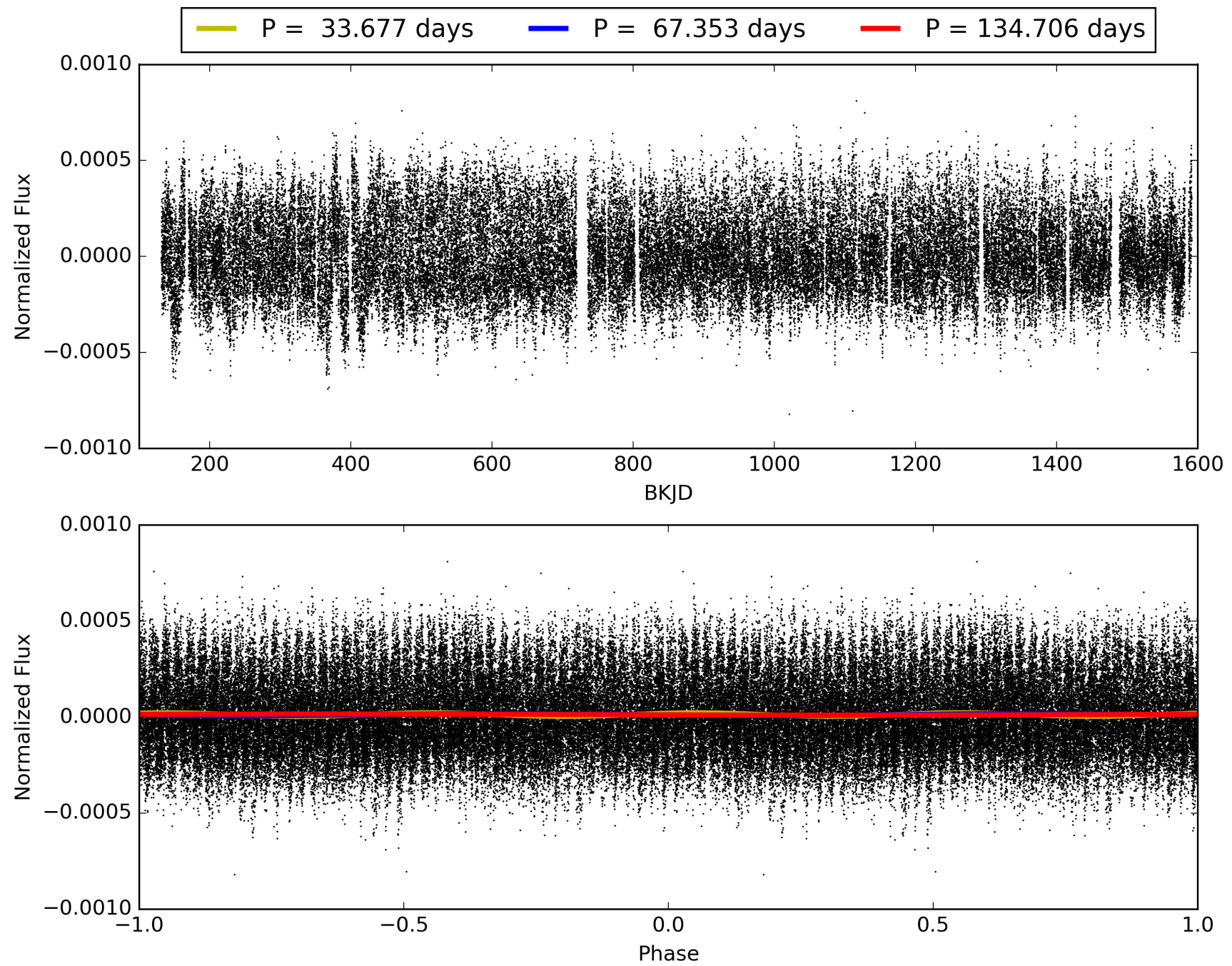
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:40 Z

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

TCE 010865397-09, PDC Light Curves

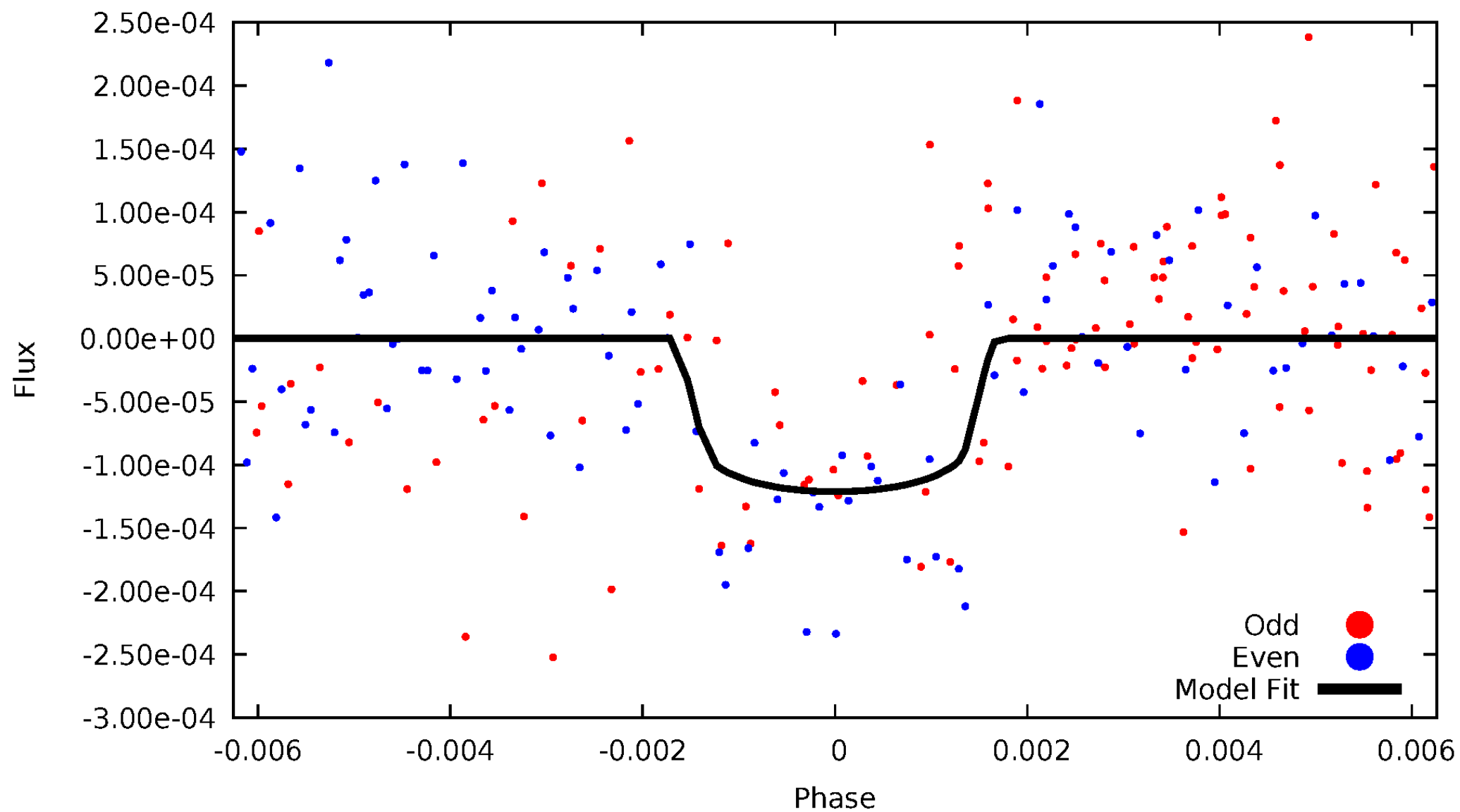


TCE 010865397-09



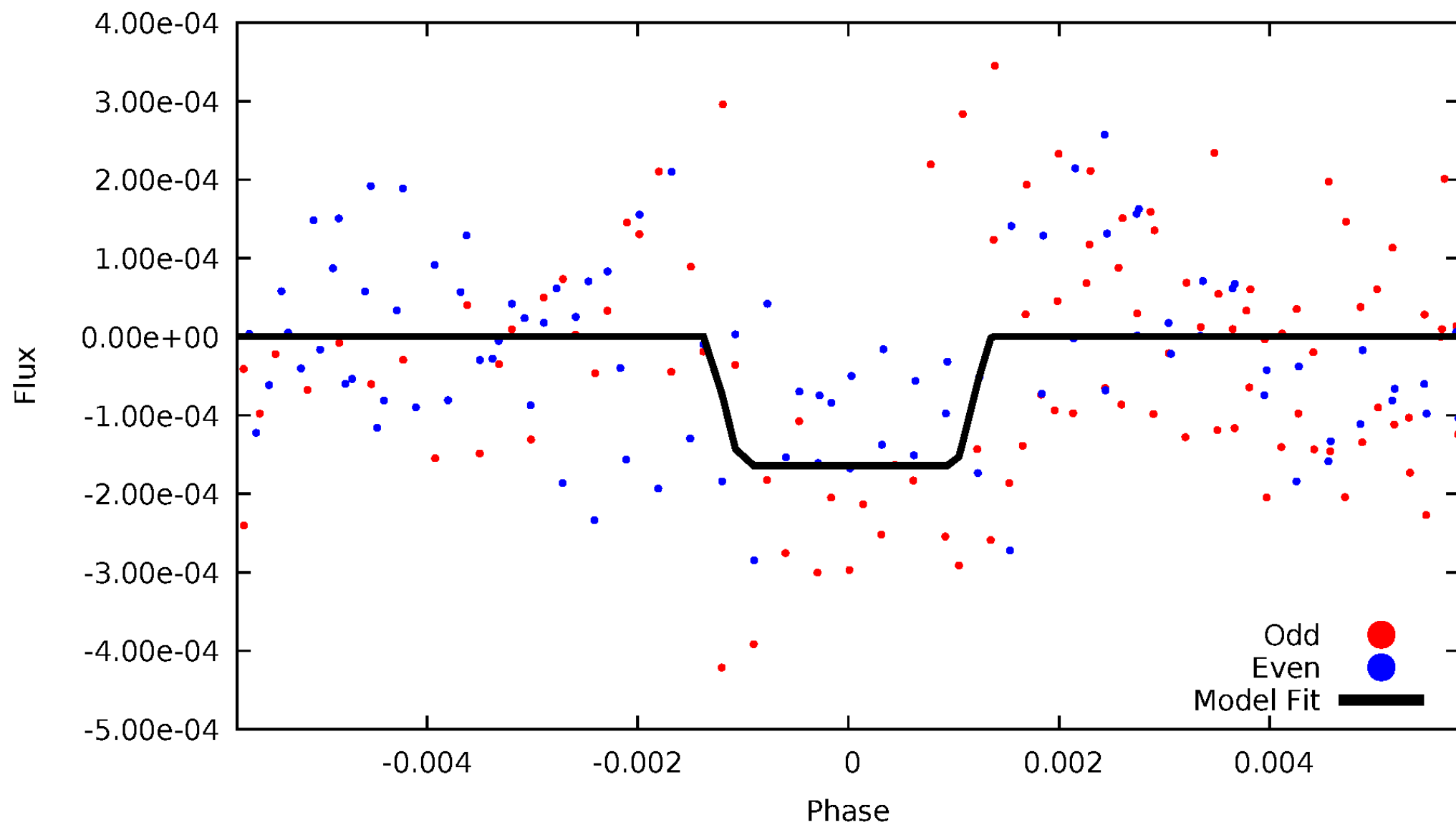
DV Odd/Even

TCE 010865397-09



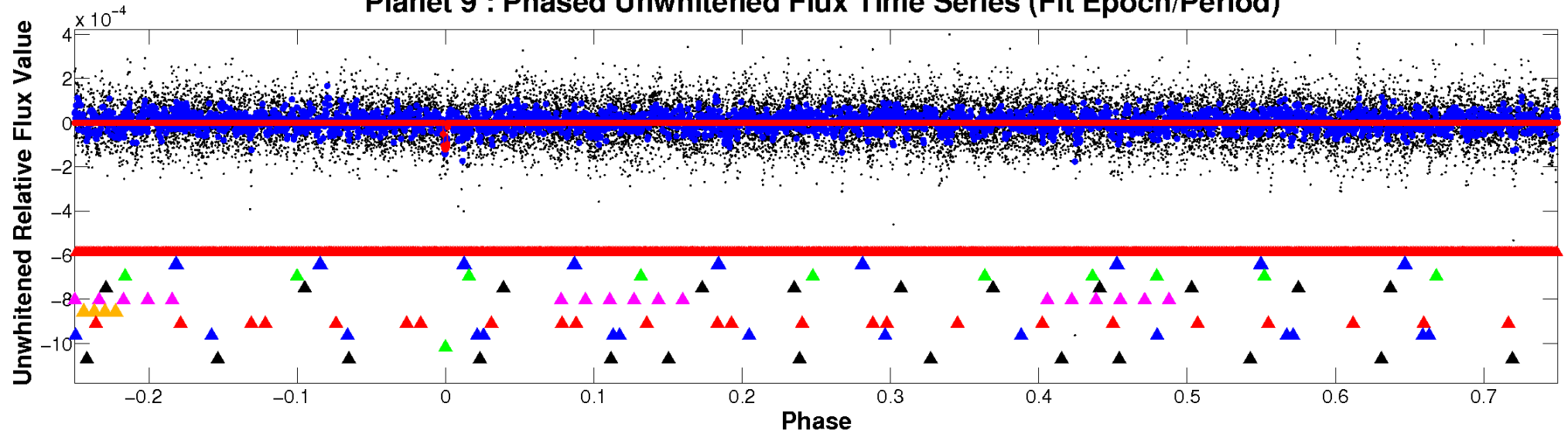
ALT Odd/Even

TCE 010865397-09

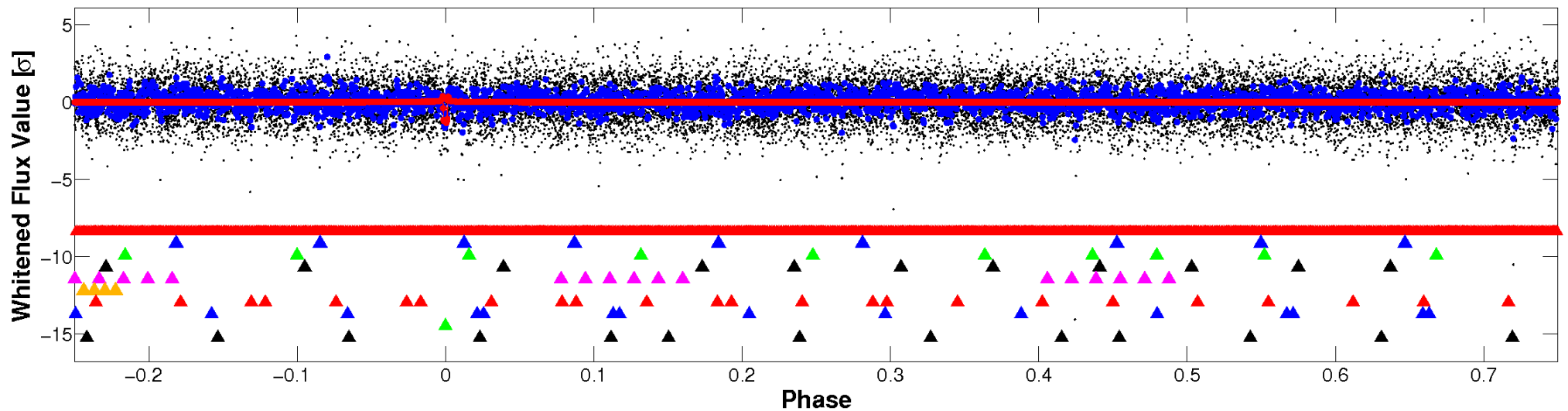


Non-Whitened Vs. Whitened Light Curve

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

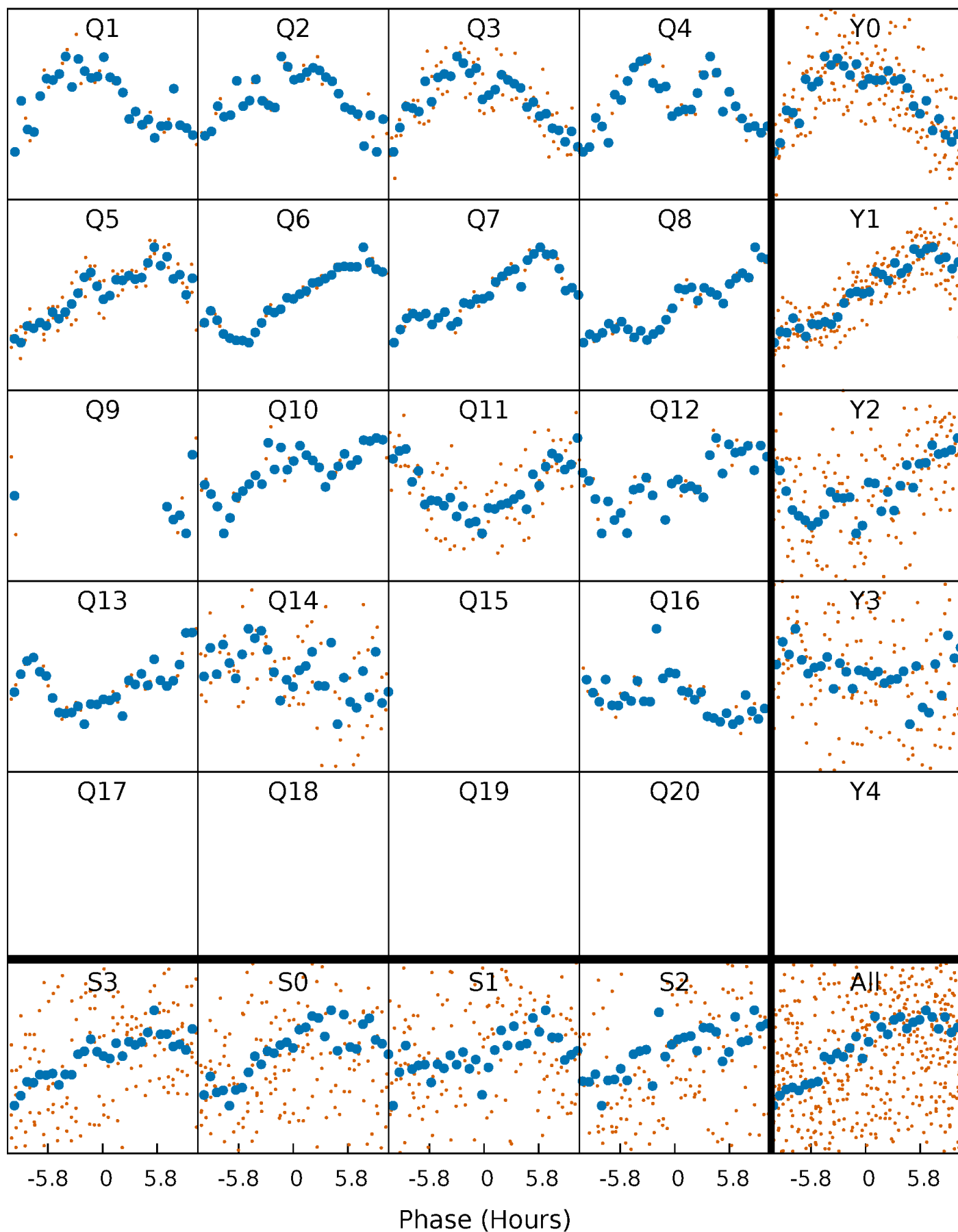


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



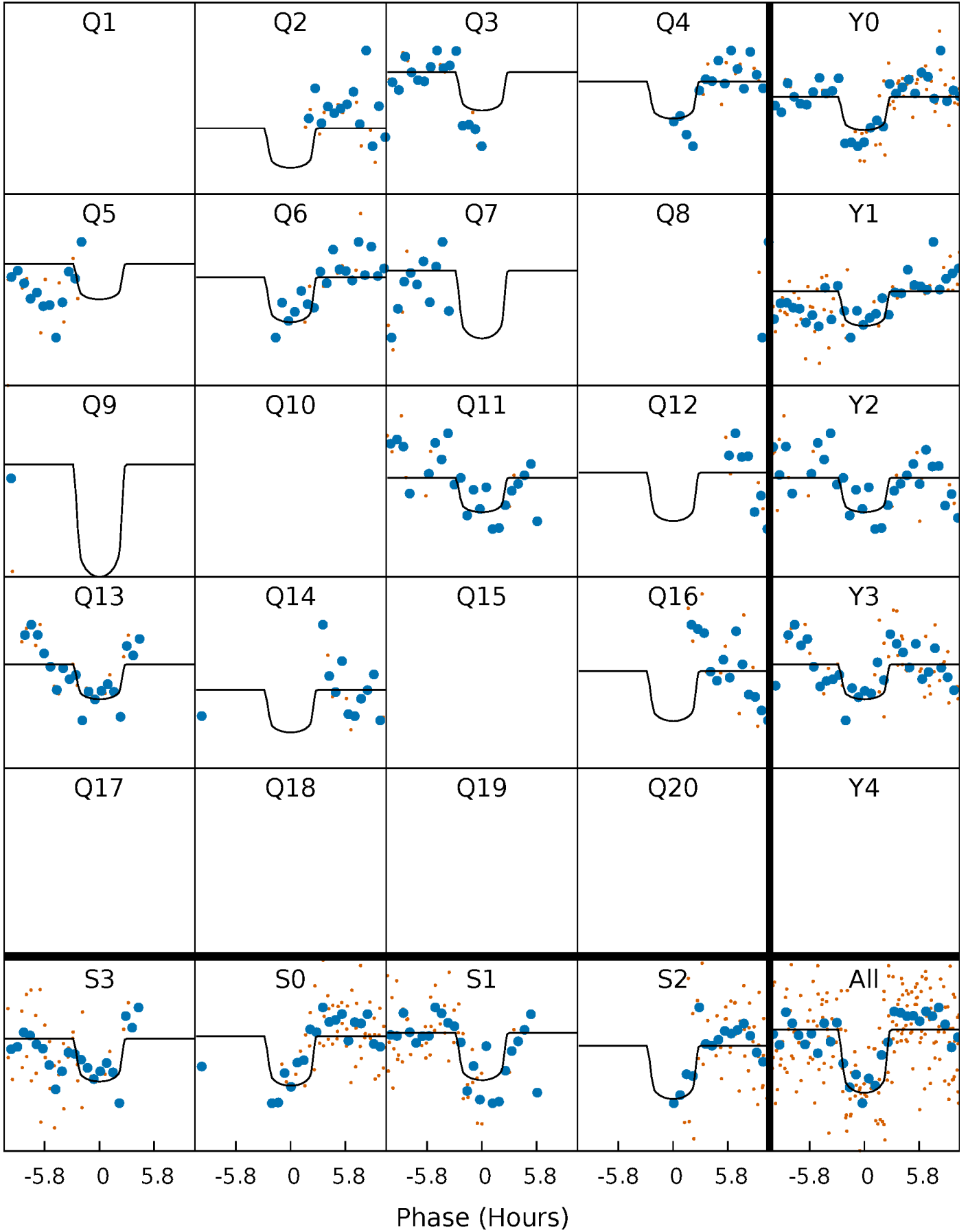
PDC Quarter-Phased Transit Curves

TCE 010865397-09 $P = 67.353017$ Days $T_0 = 133.609704$ (BKJD)



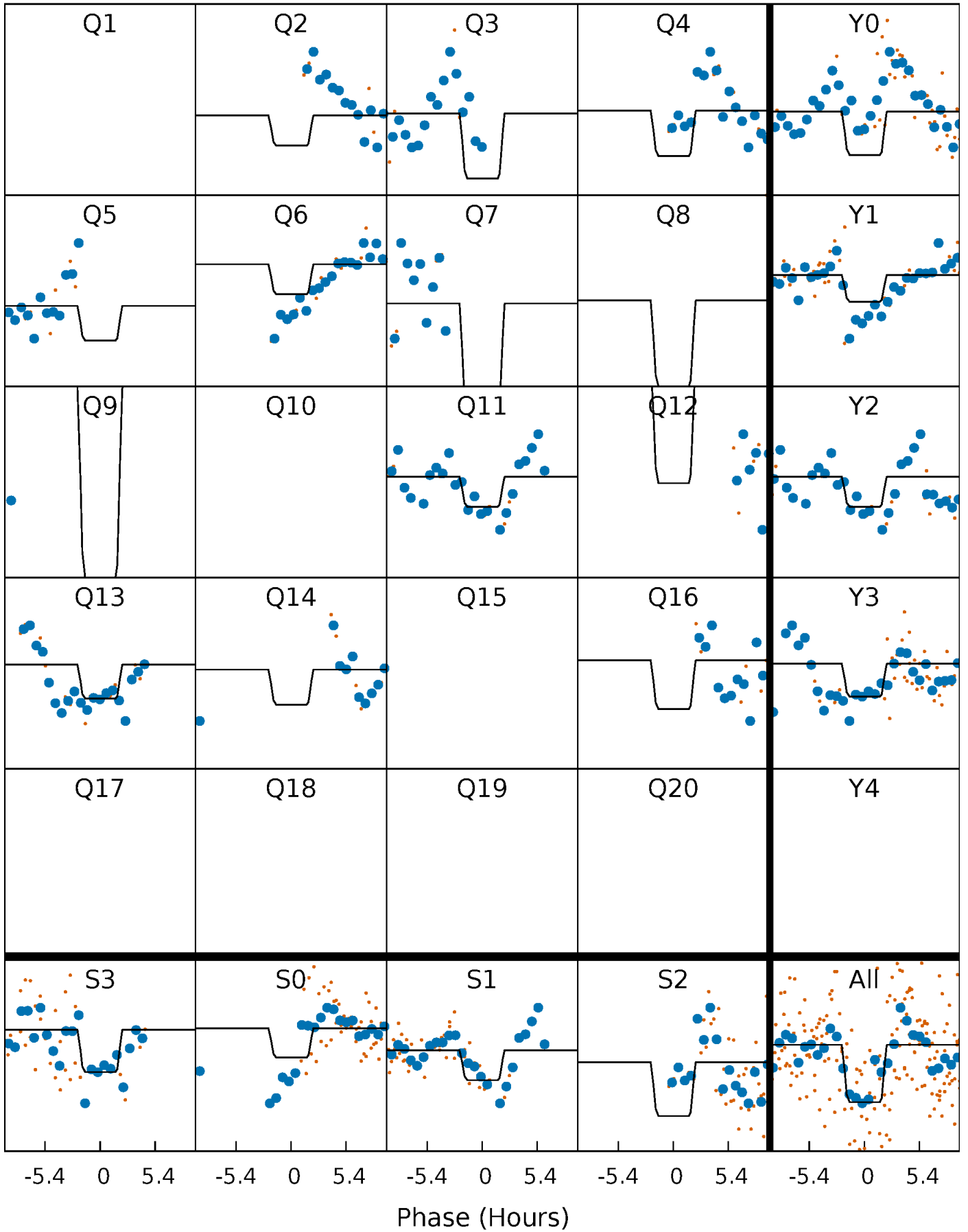
DV Quarter-Phased Transit Curves

TCE 010865397-09 $P = 67.353017$ Days $T_0 = 133.609704$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

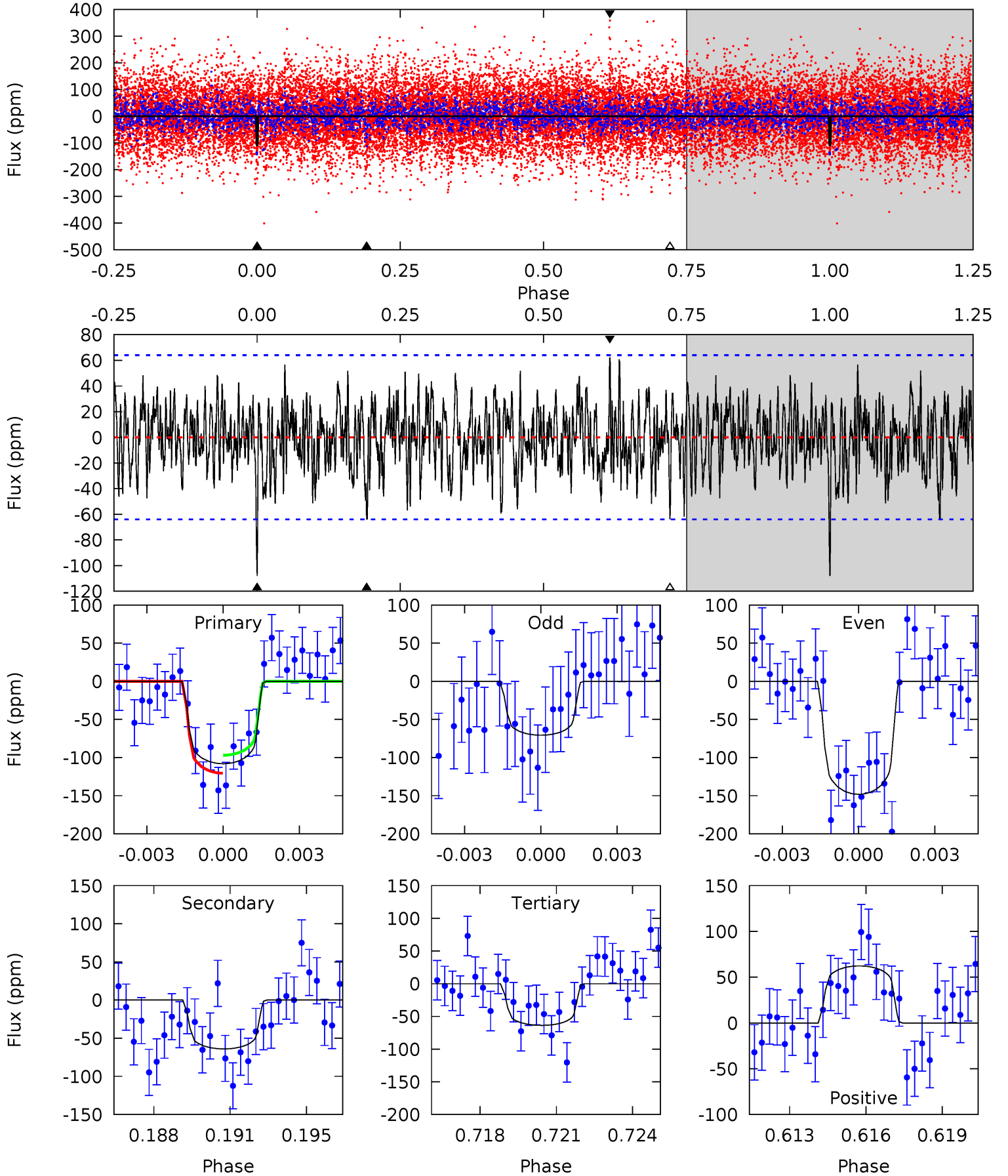
TCE 010865397-09 P= 67.351018 Days $T_0=133.625143$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-09, P = 67.353017 Days, E = 66.256687 Days

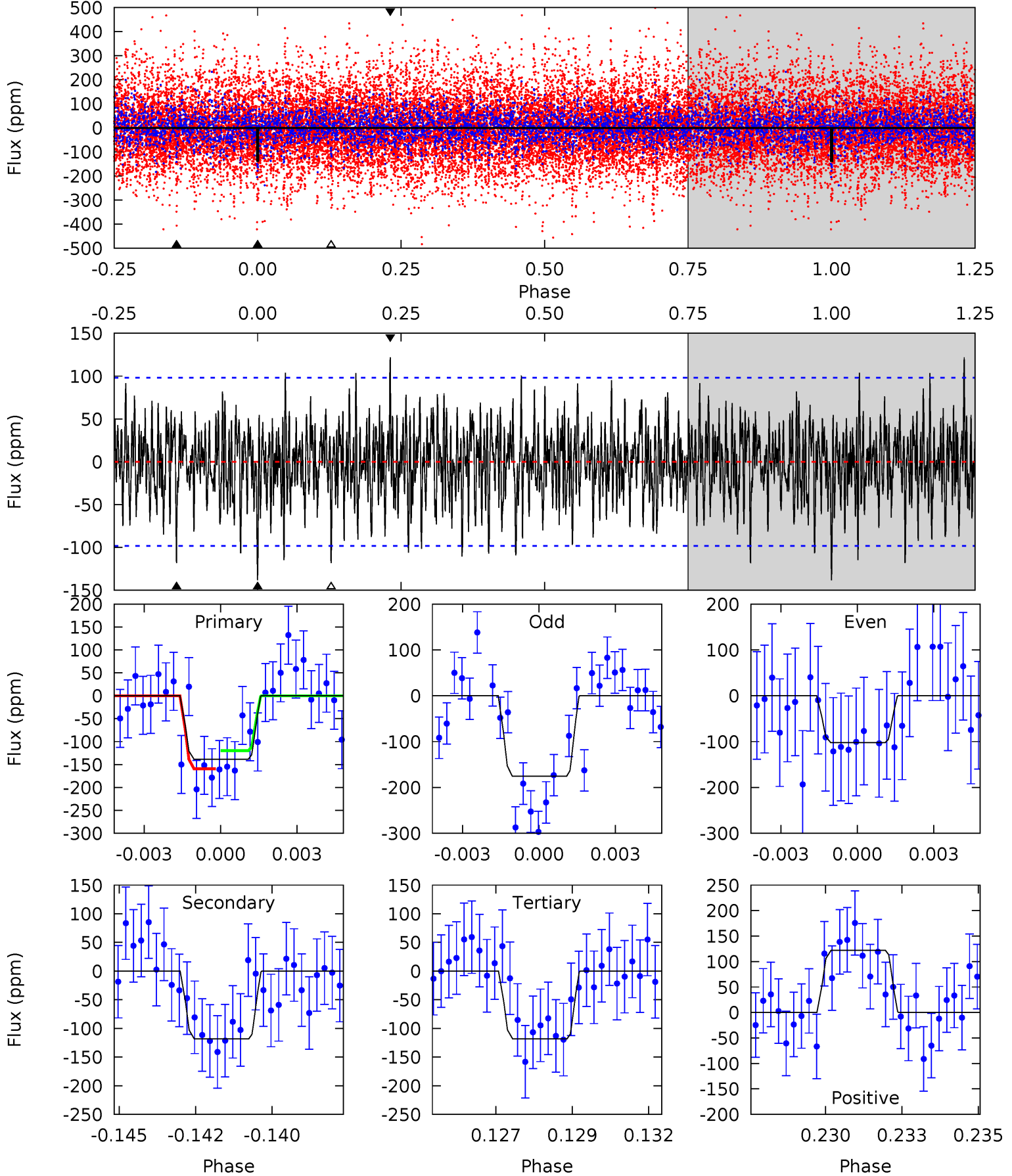
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.85	5.25	5.22	5.11	5.24	2.95	1.75	3.63	3.75	0.03	0.14	3.17	0.58	0.37	0.96



Alt Model-Shift Uniqueness Test

010865397-09, P = 67.351018 Days, E = 66.274125 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	6.36	6.35	6.55	5.28	3.01	1.96	1.09	0.89	0.01	-0.19	1.97	0.68	0.47	1.06



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-64 ± 12	$2.39^{+1.48}_{-1.30}$	941^{+45}_{-49}	5505^{+3096}_{-981}	834^{+3262}_{-542}
Alt.	-118 ± 19	$2.73^{+1.49}_{-1.48}$	940^{+44}_{-48}	6014^{+3325}_{-1075}	1141^{+4134}_{-675}

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 $A_{obs} \gg 1.0$

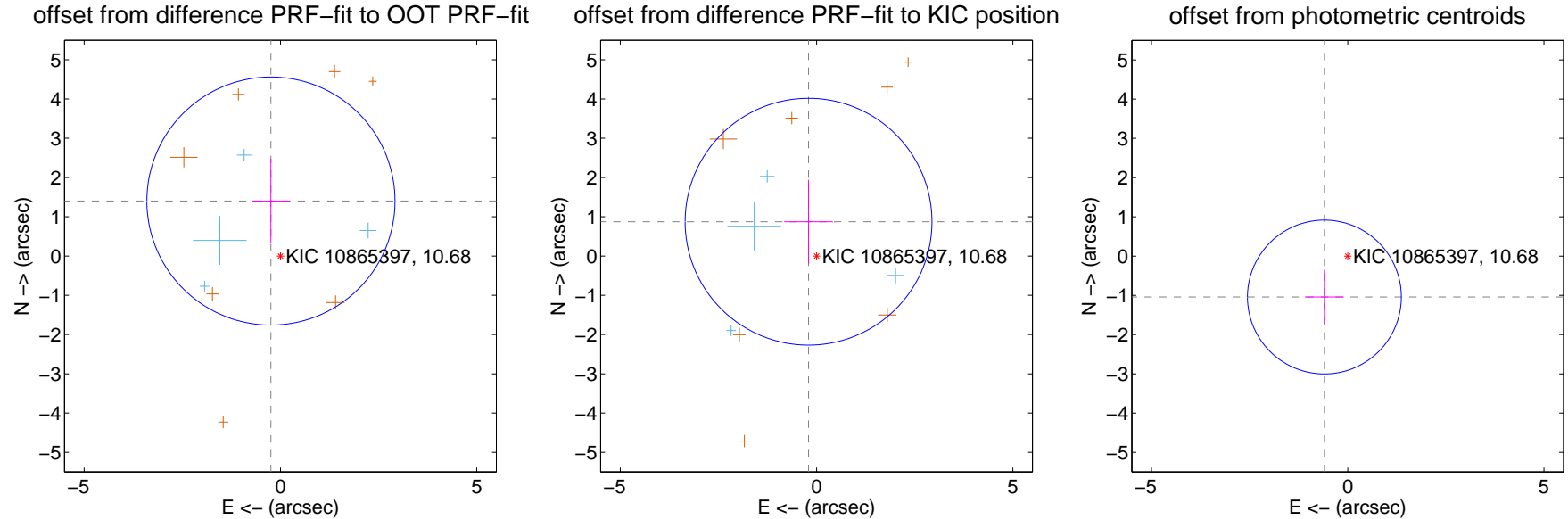
DV Centroid Data

Supplemental centroid analysis for 010865397-09. **Kepler magnitude: 10.68.** Transit SNR 7.82

There are 4 quarters with good PRF difference image offsets

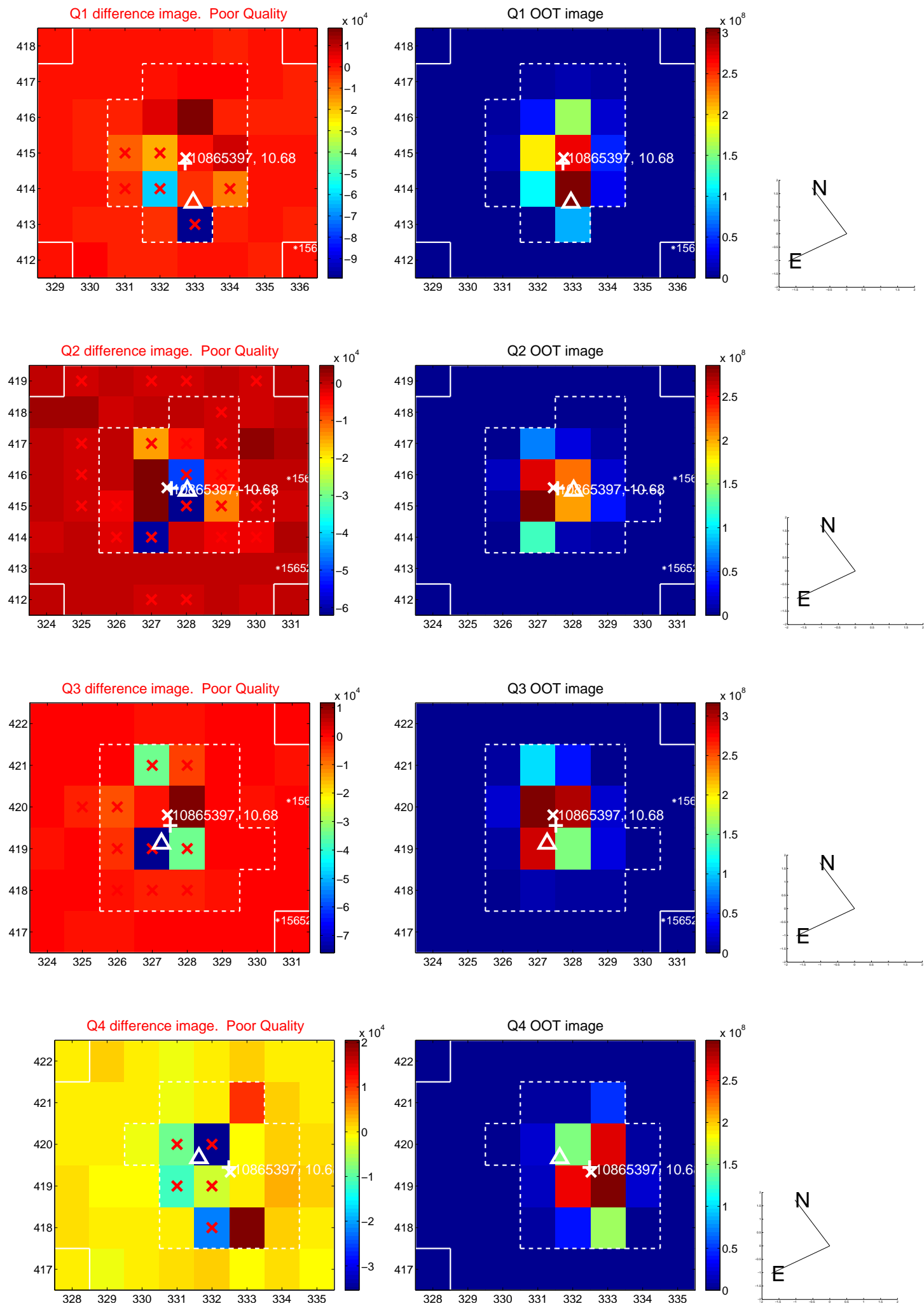
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.422 ± 1.053	1.35	0.243 ± 0.488	1.401 ± 1.079
PRF-fit source offset from KIC position	0.897 ± 1.048	0.86	0.205 ± 0.620	0.874 ± 1.066
photometric centroid source offset	1.20 ± 0.65	1.84	0.59 ± 0.49	-1.04 ± 0.70

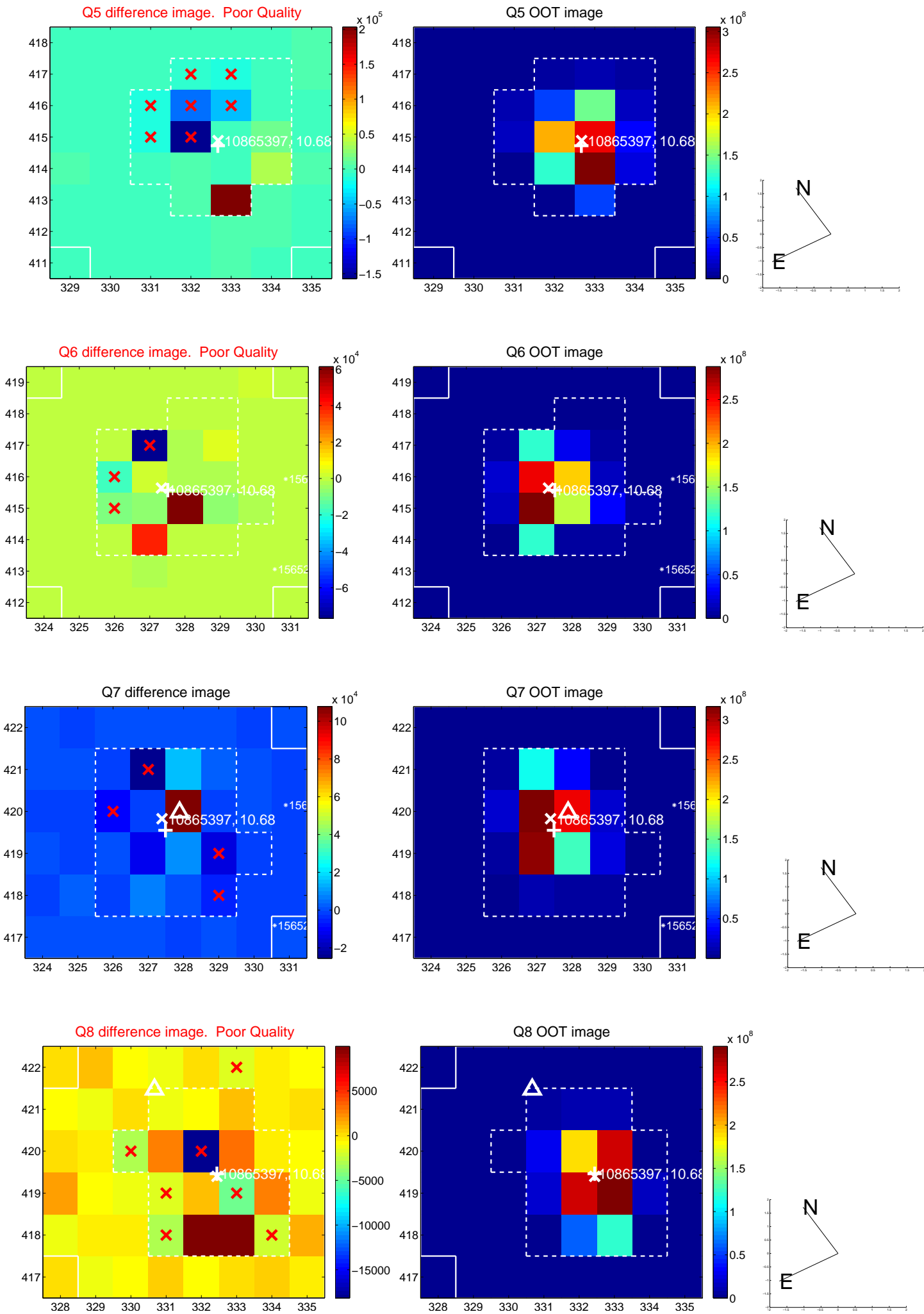


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

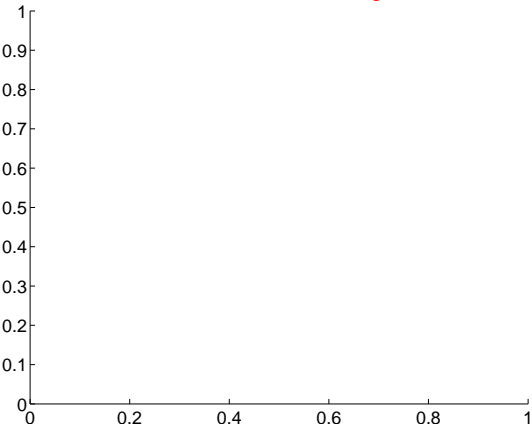


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

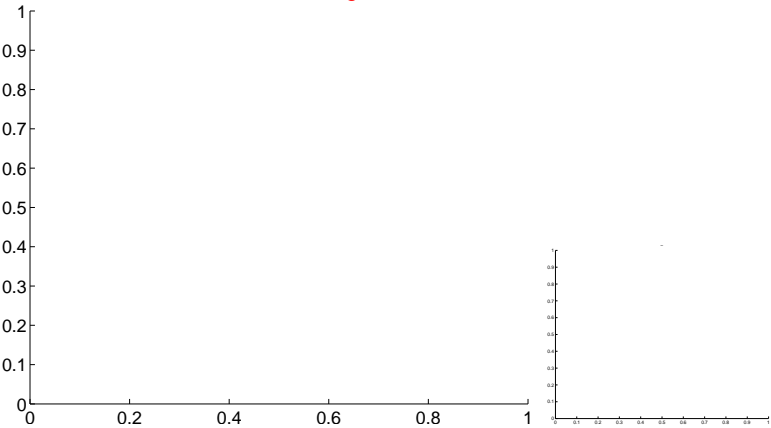


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

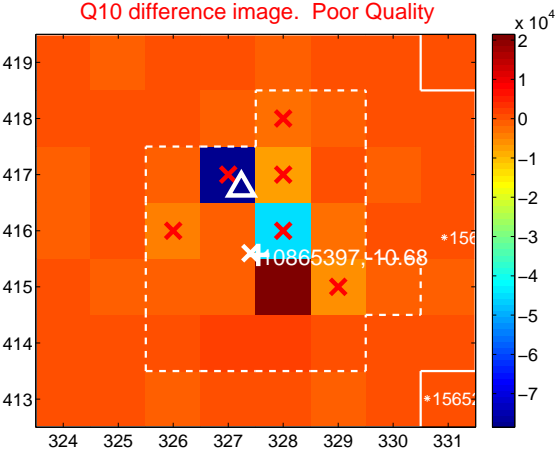
Q9 no difference image



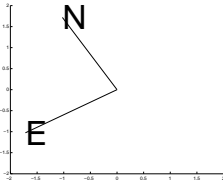
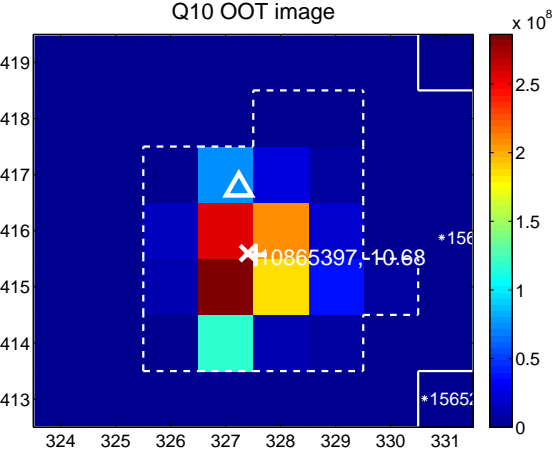
Q9 no OOT image



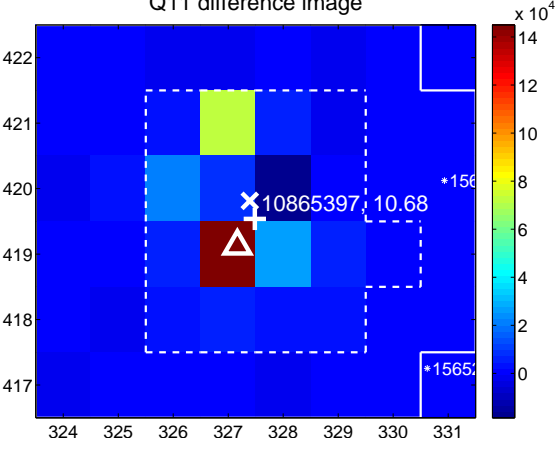
Q10 difference image. Poor Quality



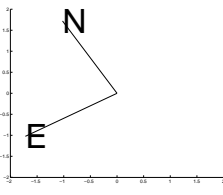
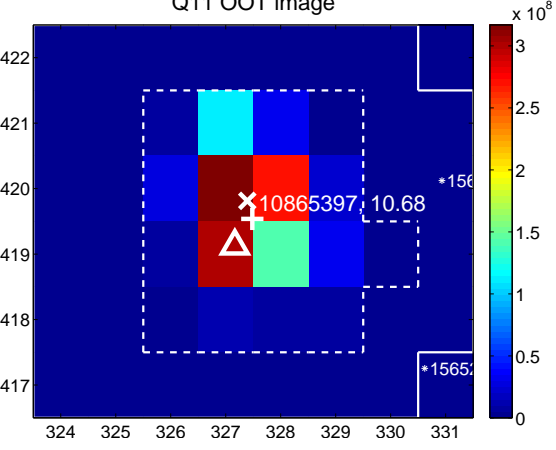
Q10 OOT image



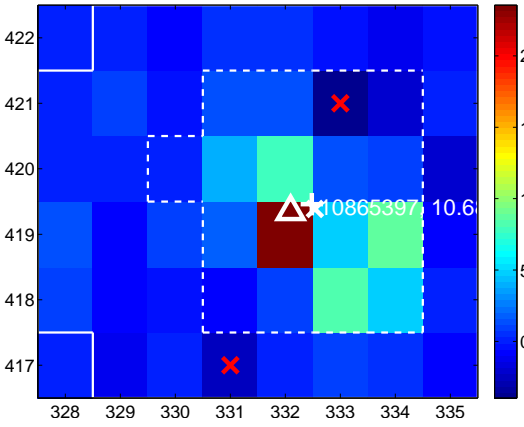
Q11 difference image



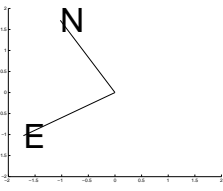
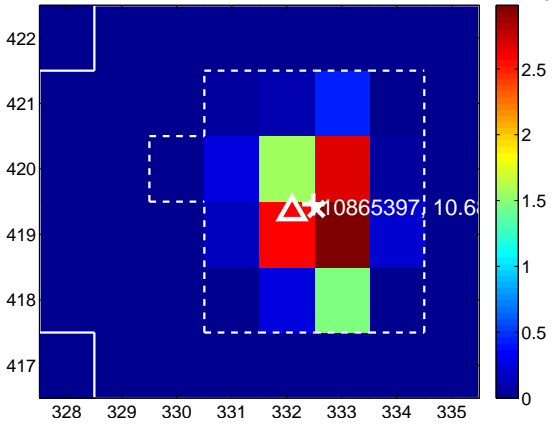
Q11 OOT image



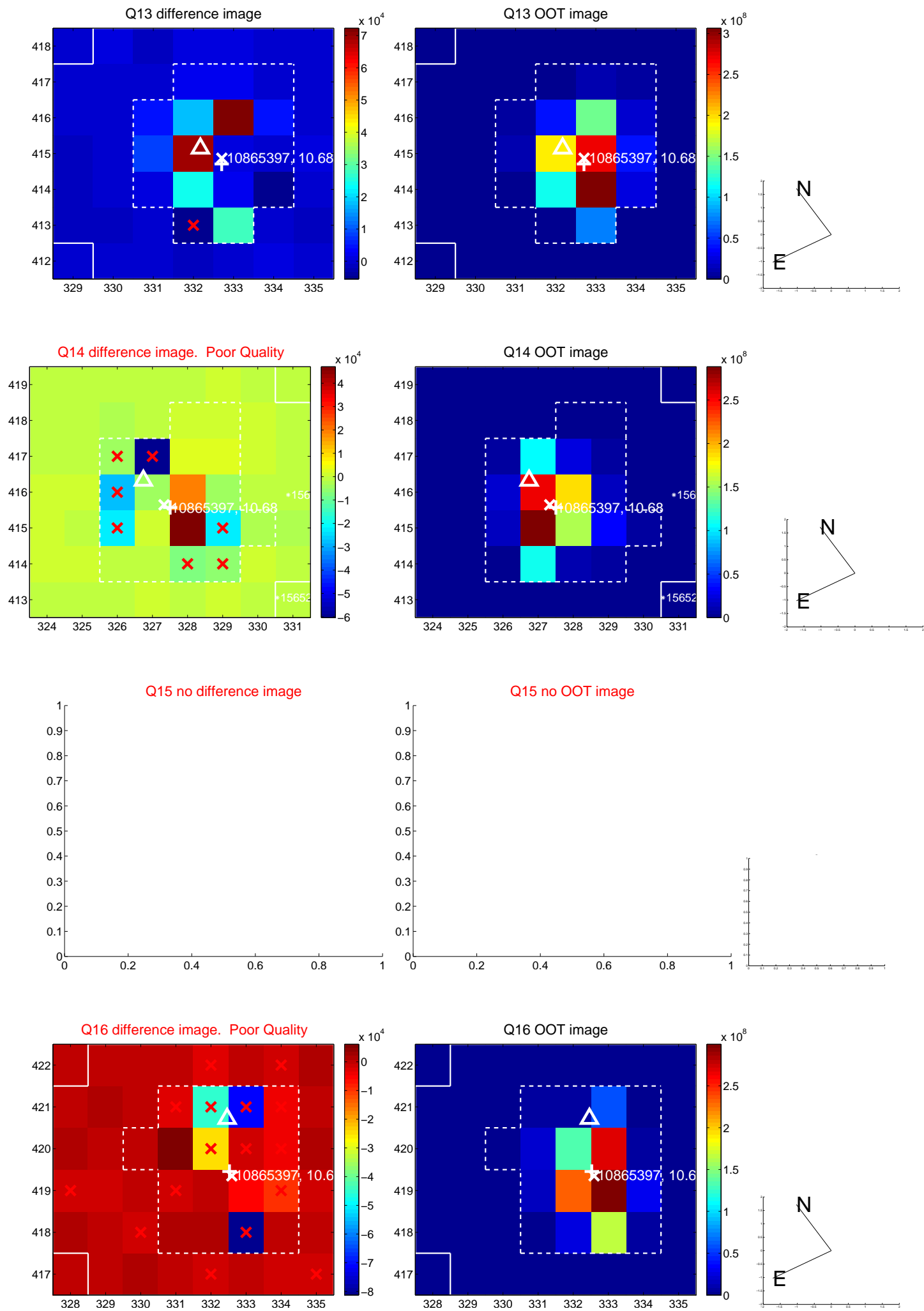
Q12 difference image



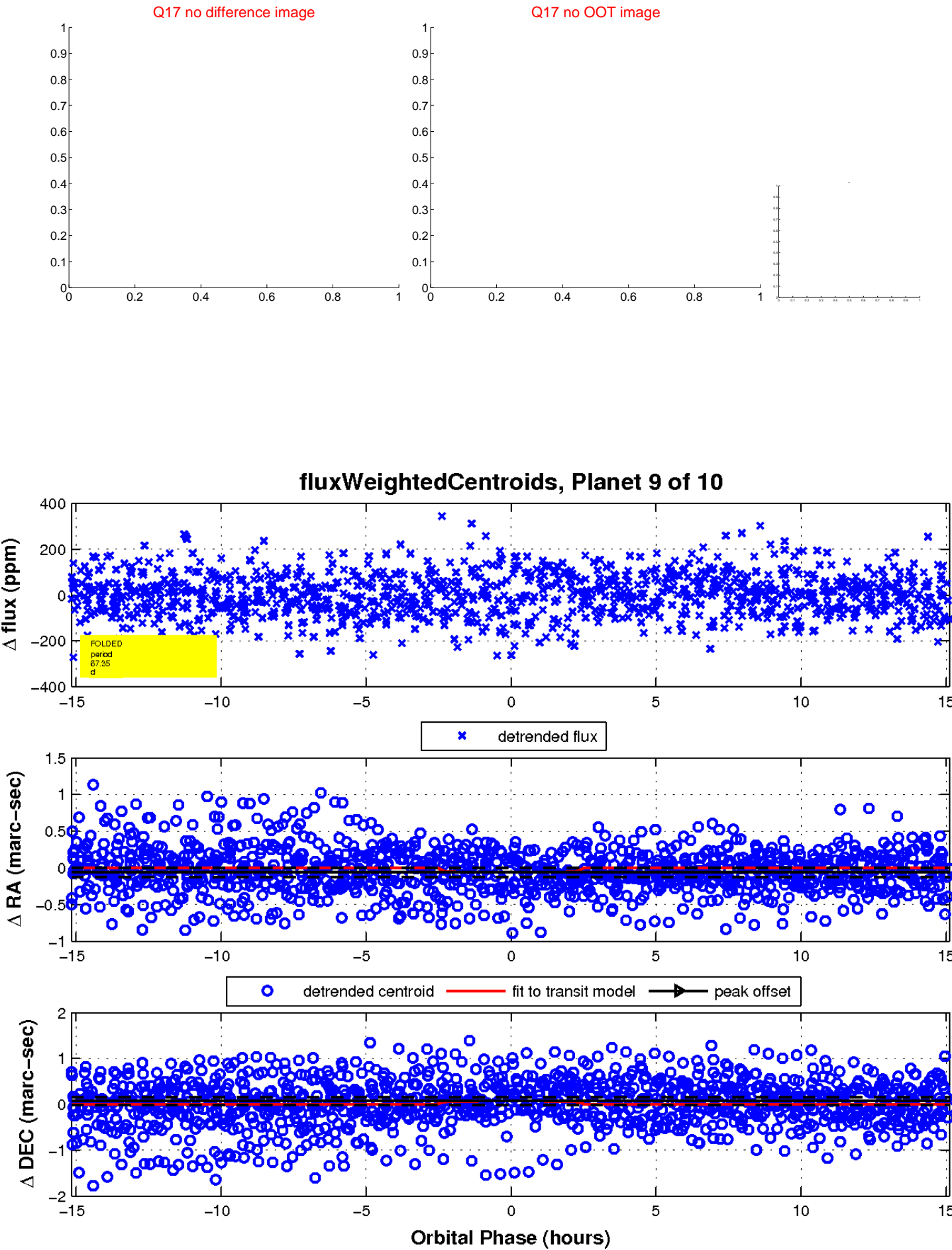
Q12 OOT image



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

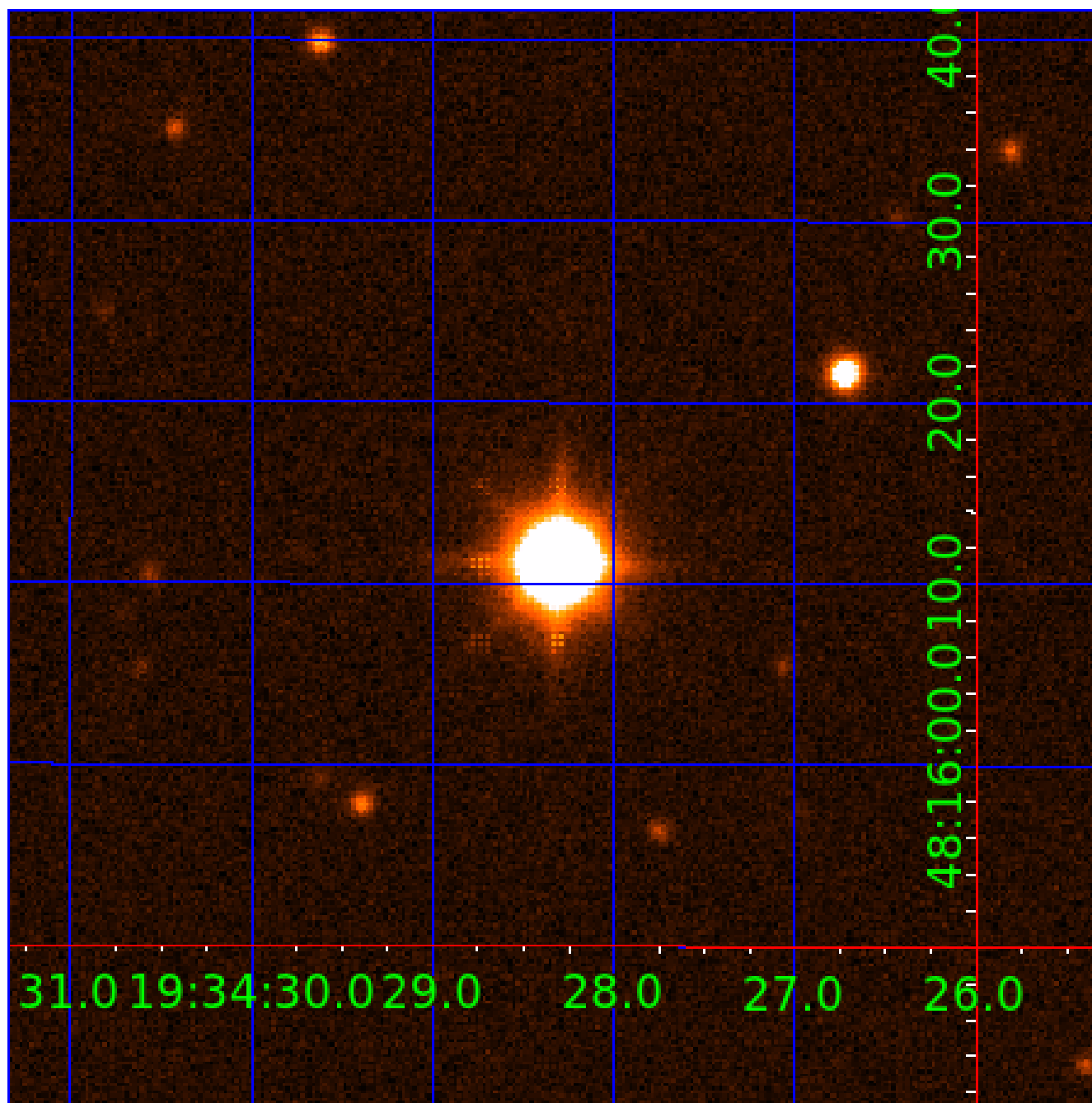


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
010865397-01	OBS	No	1.590379	132.099932	11.0	8.450	8.4	7.4	1.85	6770	0.63	7238.95
010865397-02	OBS	No	177.428032	134.457722	203.7	4.668	10.2	10.4	1.85	6770	3.02	13.48
010865397-03	OBS	No	142.513972	230.343522	124.6	17.401	9.5	8.2	1.85	6770	2.29	18.05
010865397-04	OBS	No	125.681260	239.694256	66.0	20.797	7.9	4.5	1.85	6770	1.75	21.35
010865397-05	OBS	No	89.435801	144.383309	70.3	9.036	8.5	5.3	1.85	6770	1.81	33.60
010865397-06	OBS	No	337.246691	453.947386	150.4	6.642	8.0	7.7	1.85	6770	2.60	5.72
010865397-07	OBS	No	60.296819	153.015956	123.5	2.967	8.6	8.6	1.85	6770	2.27	56.84
010865397-08	OBS	No	97.941680	178.278715	143.5	3.440	8.2	8.3	1.85	6770	2.58	29.77
010865397-09	OBS	No	67.353017	133.609704	121.2	5.057	7.6	7.8	1.85	6770	2.29	49.04
010865397-10	OBS	No	114.238514	184.675172	164.9	2.782	8.2	8.6	1.85	6770	3.04	24.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010865397-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010865397-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
010865397-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010865397-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010865397-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010865397-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

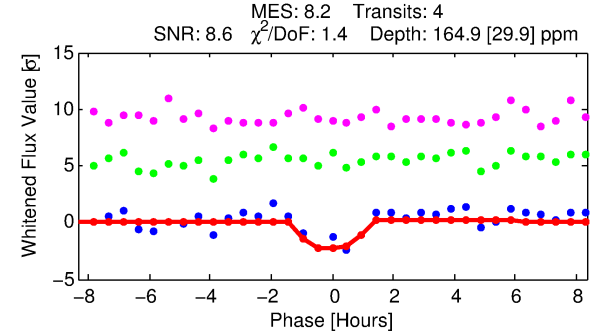
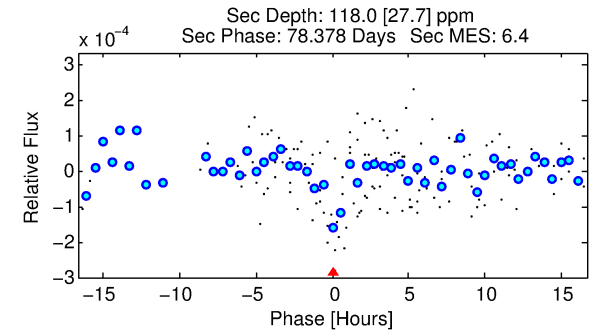
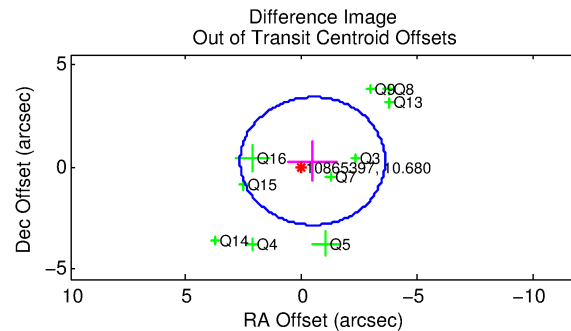
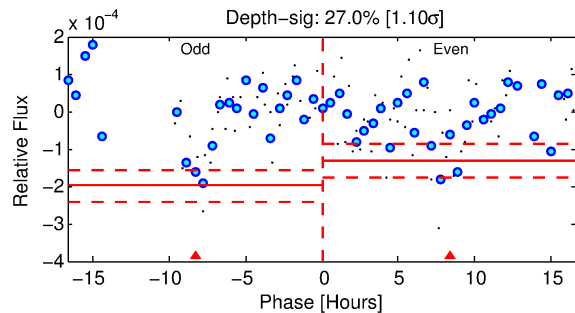
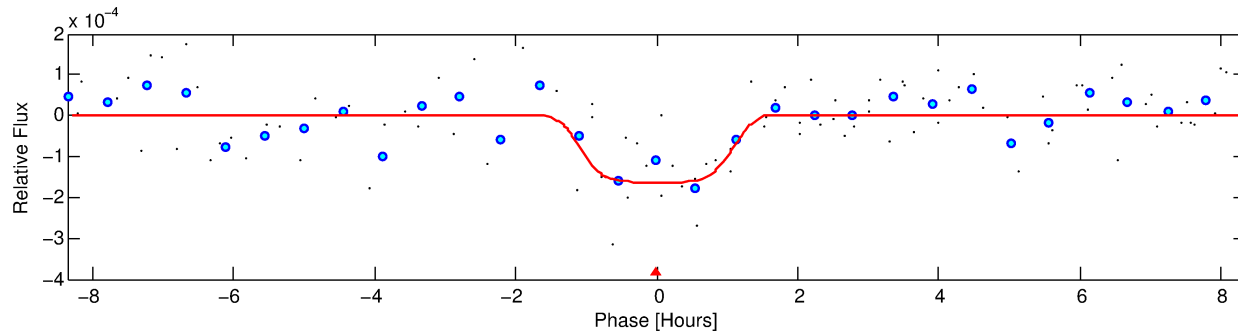
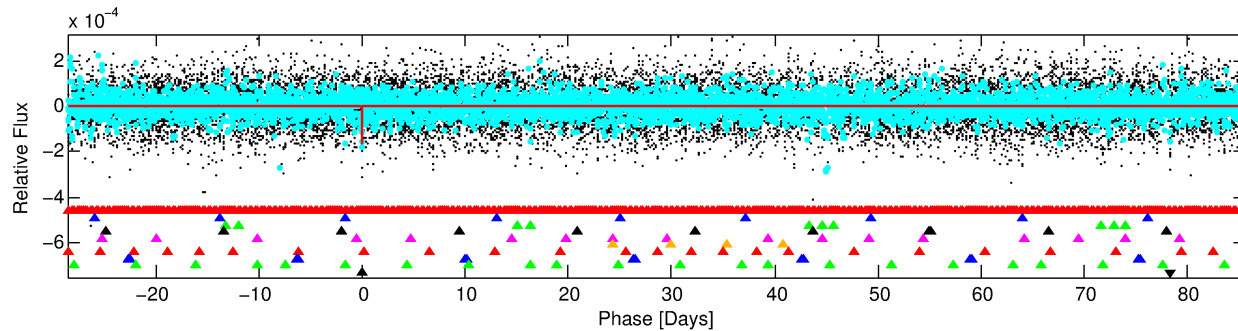
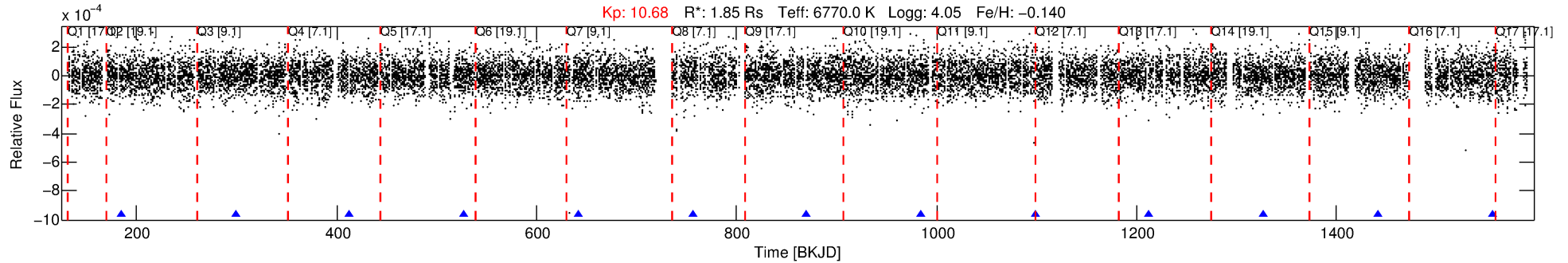
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010865397-10

No Significant Match Found

DV One-Page Summary

KIC: 10865397 Candidate: 10 of 10 Period: 114.239 d



DV Fit Results:

Period = 114.23851 [0.00167] d
Epoch = 184.6752 [0.0129] BKJD
 $R_p/R^* = 0.0150$ [0.0028]
 $a/R^* = 94.38$ [86.27]
 $b = 0.97$ [0.06]
 $S_{\text{eff}} = 24.24$ [6.83]
 $T_{\text{eq}} = 566$ [40] K
 $R_p = 3.04$ [0.82] R_e
 $a = 0.5160$ [0.0921] AU
 $A_g = 1876.36$ [978.50] [1.92 σ]
 $T_{\text{eff}} = 5758$ [639] K [8.11 σ]

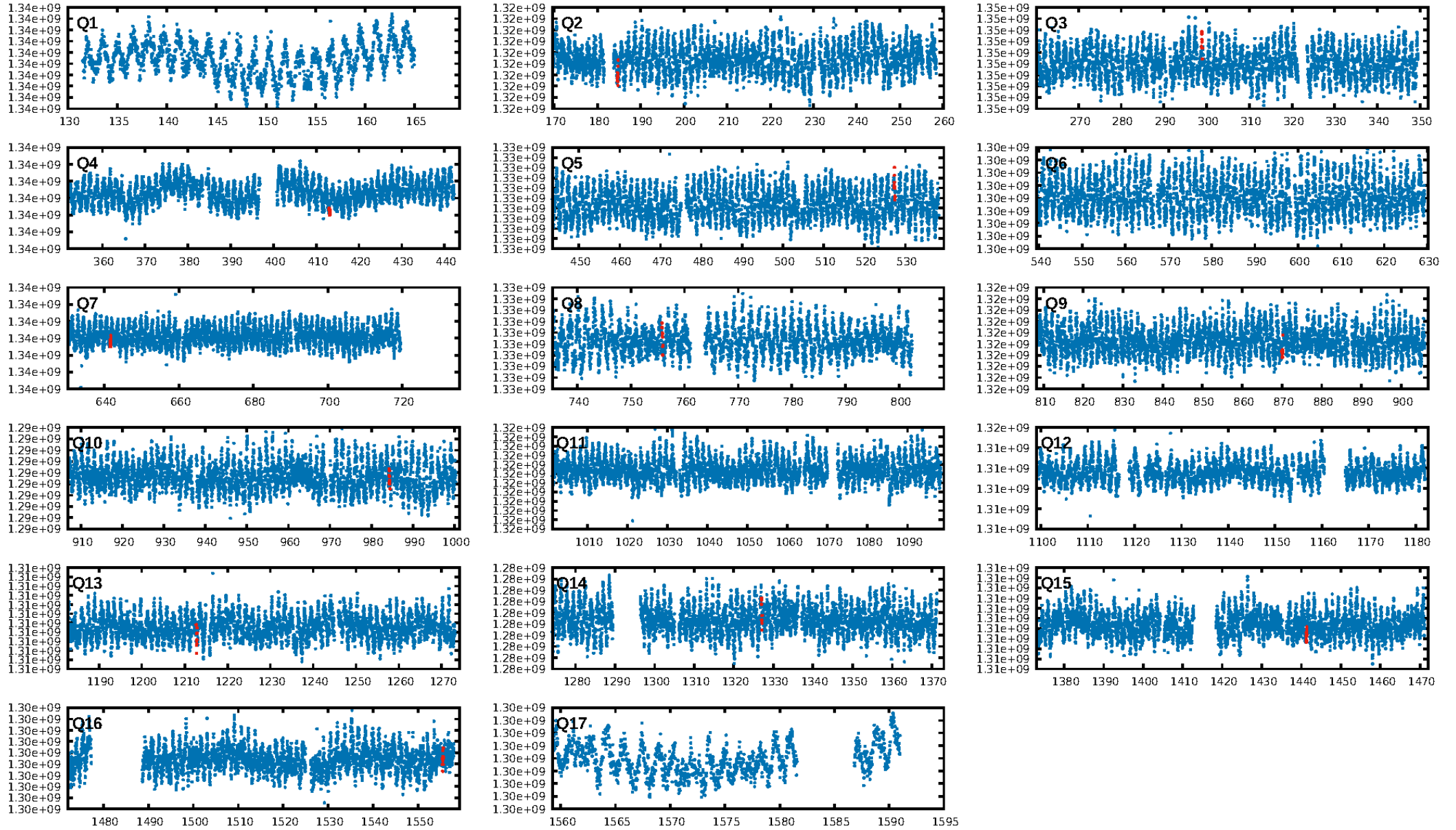
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [88.40 σ]
LongPeriod-sig: 100.0% [13.09 σ]
ModelChiSquare2-sig: 6.1%
ModelChiSquareGof-sig: 55.6%
Bootstrap-pfa: 1.24e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.592
Centroid-sig: 18.0%
Centroid-so: 1.047 arcsec [1.74 σ]
OotOffset-rm: 0.555 arcsec [0.53 σ]
KicOffset-rm: 0.598 arcsec [0.59 σ]
OotOffset-st: 1/3/3/3 [10]
KicOffset-st: 1/3/3/3 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 0.36 [4/11]

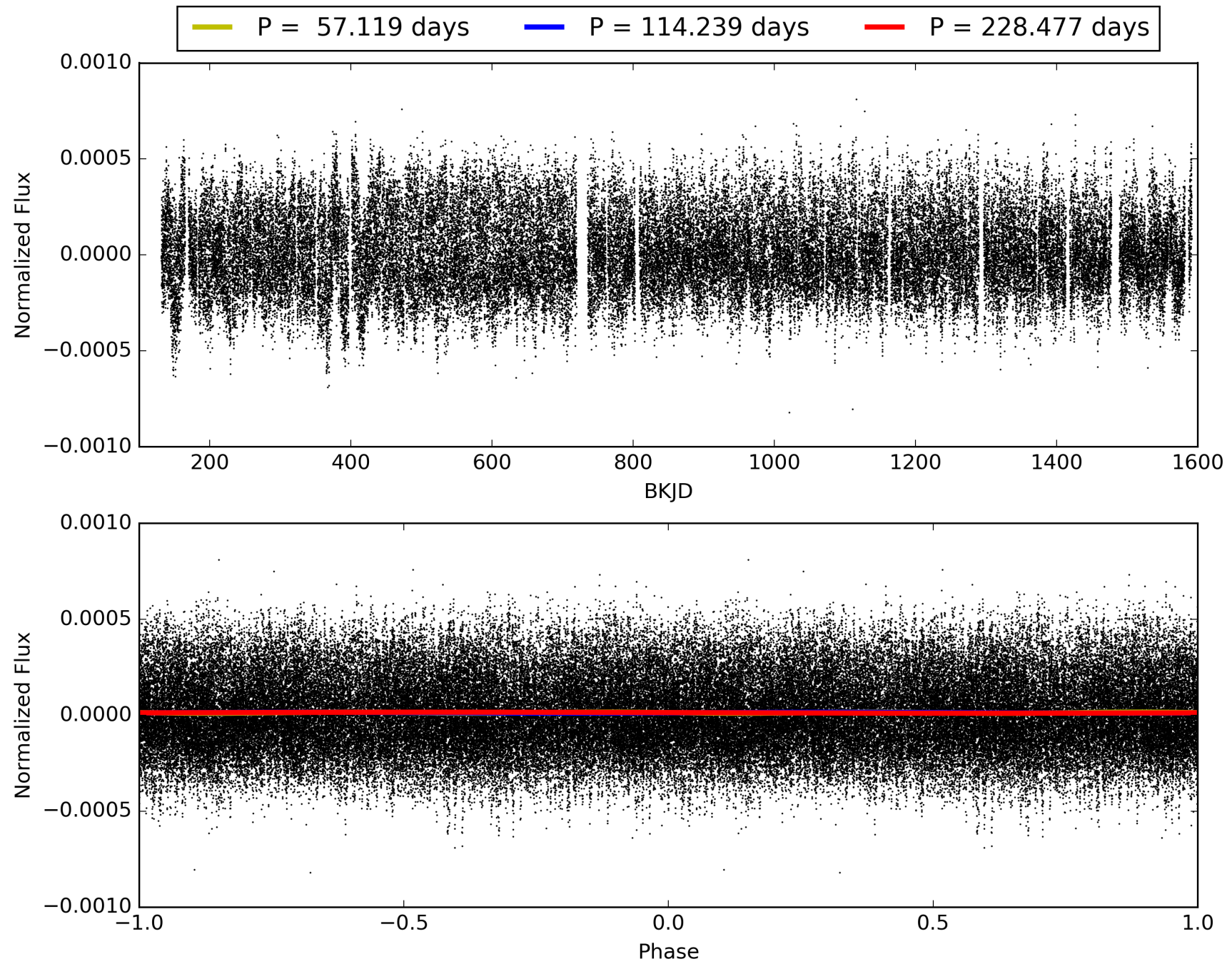
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:45 Z

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

TCE 010865397-10, PDC Light Curves

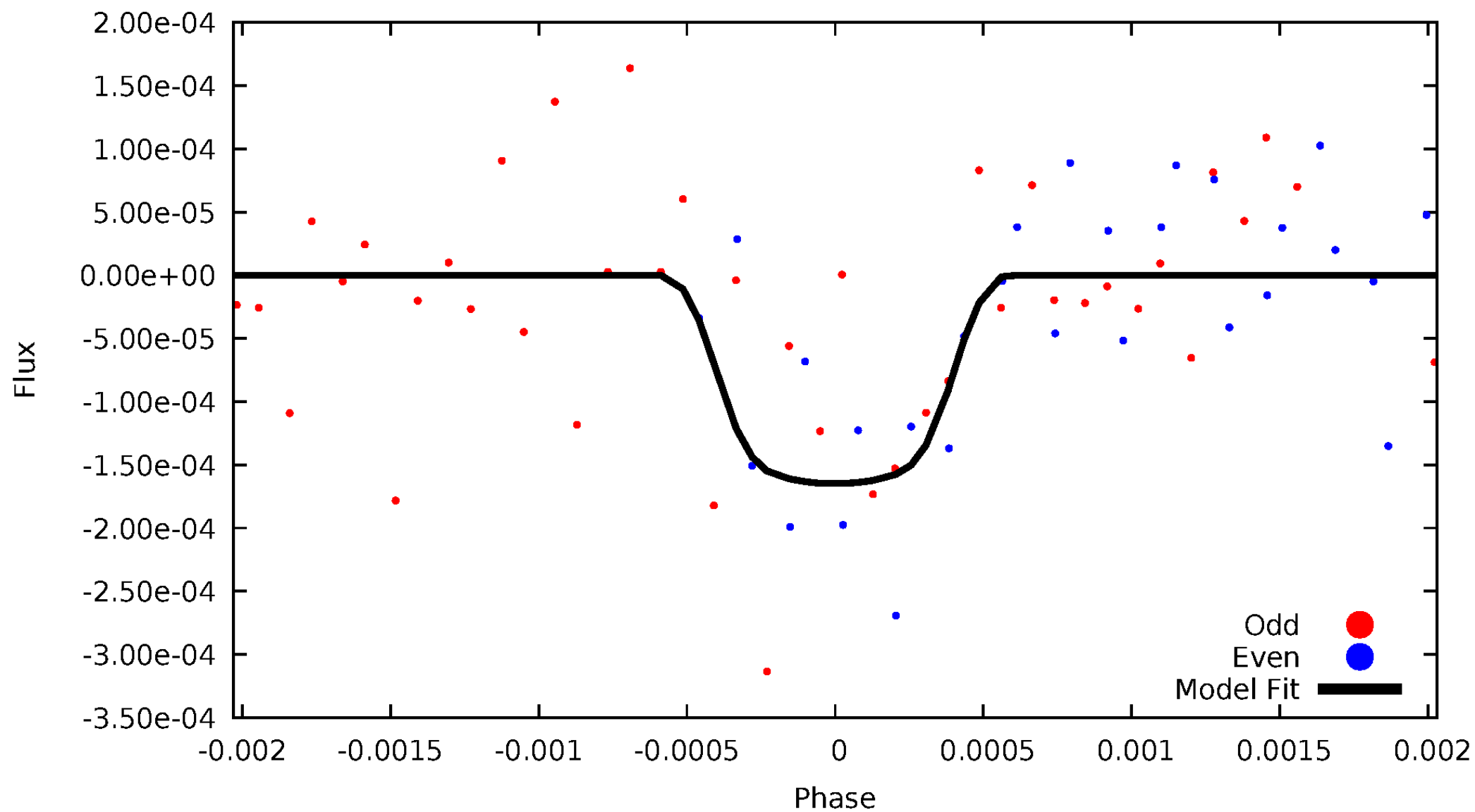


TCE 010865397-10



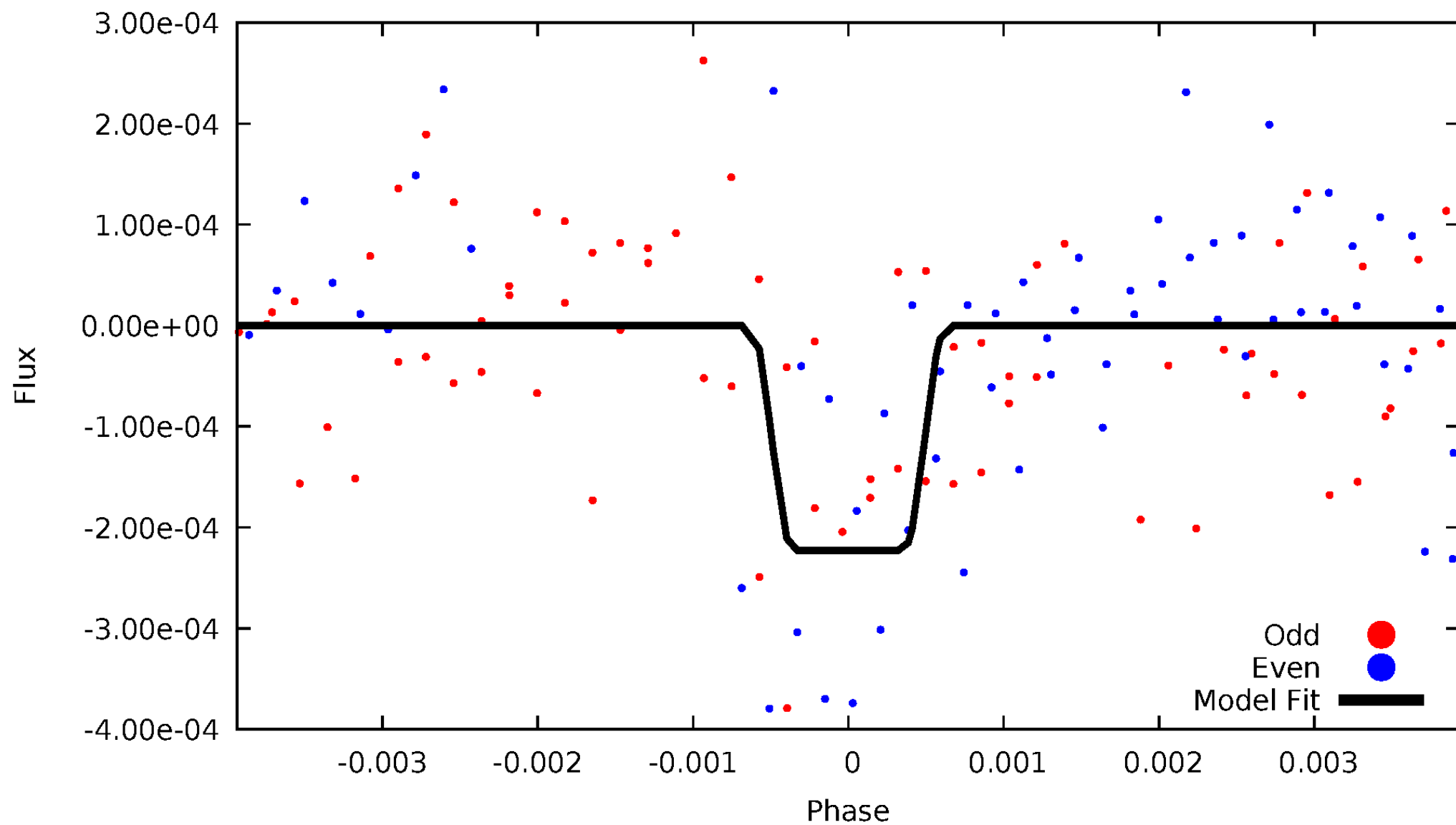
DV Odd/Even

TCE 010865397-10



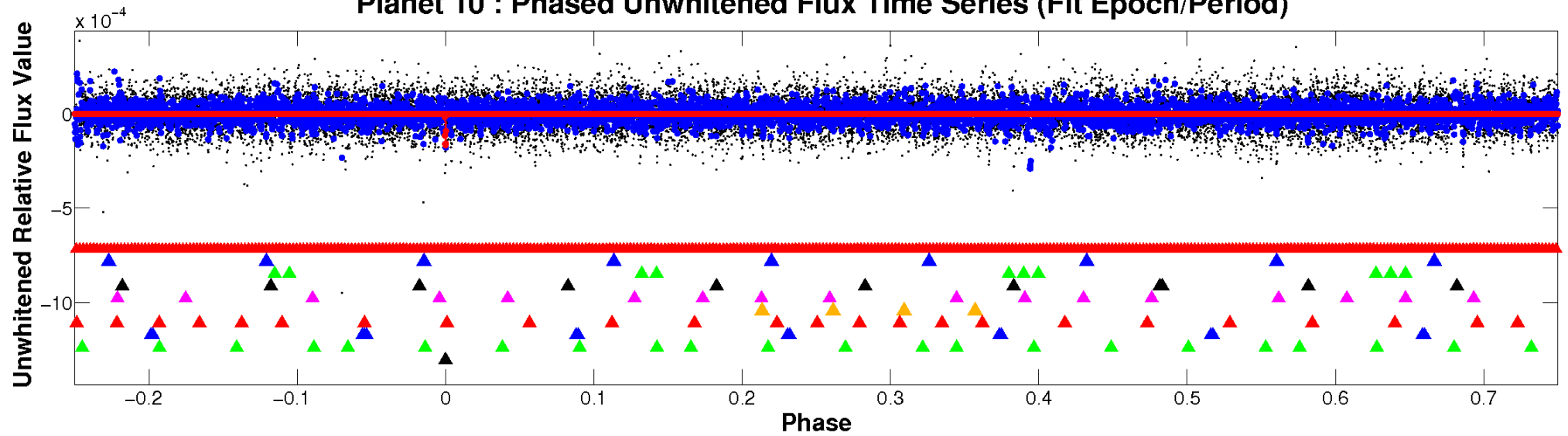
ALT Odd/Even

TCE 010865397-10

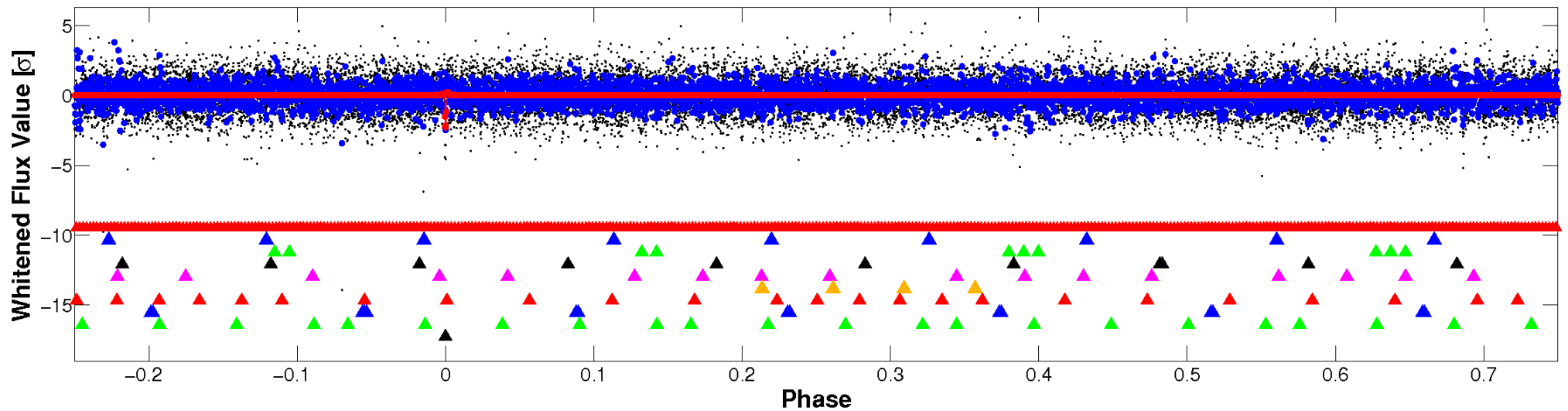


Non-Whitened Vs. Whitened Light Curve

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

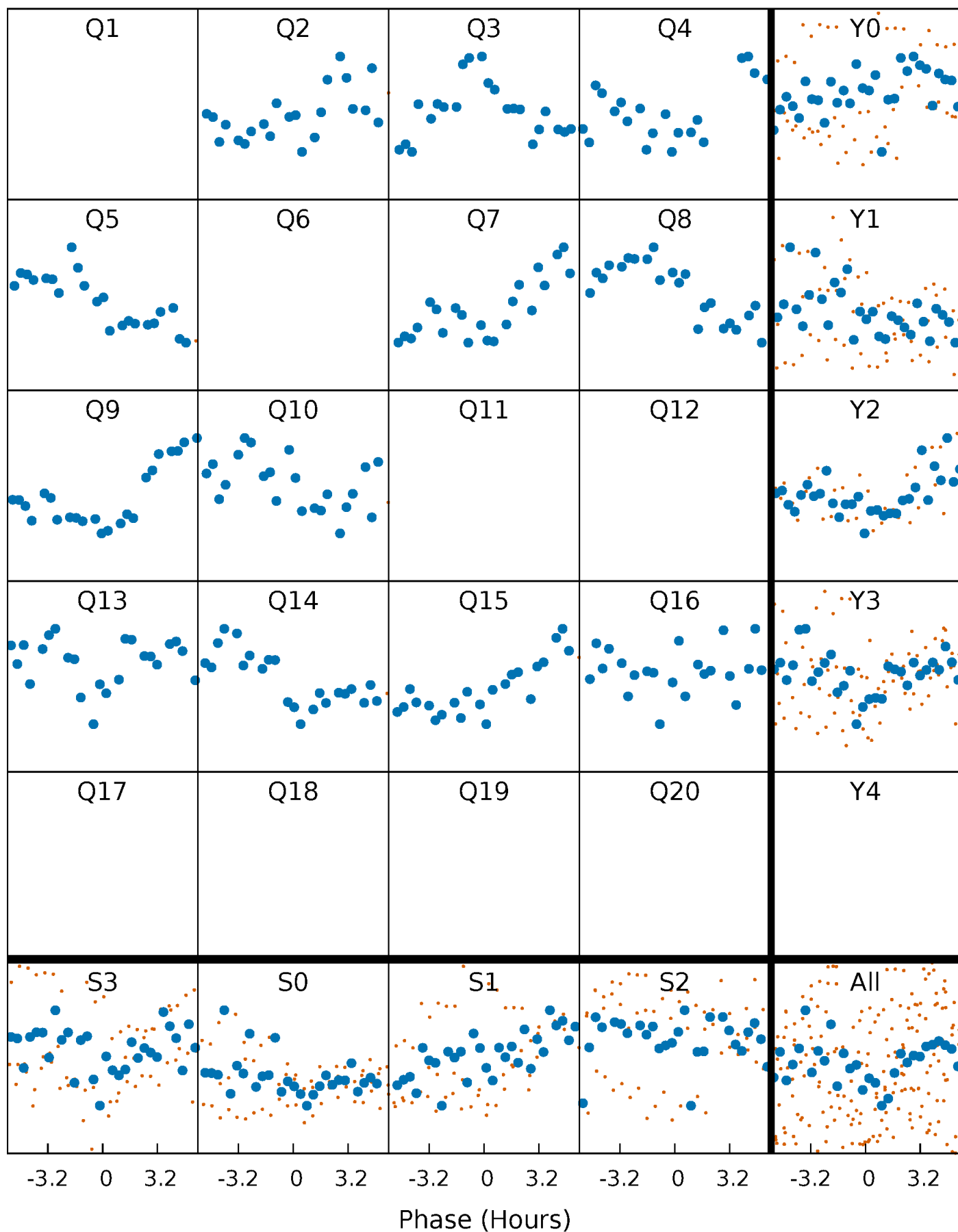


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



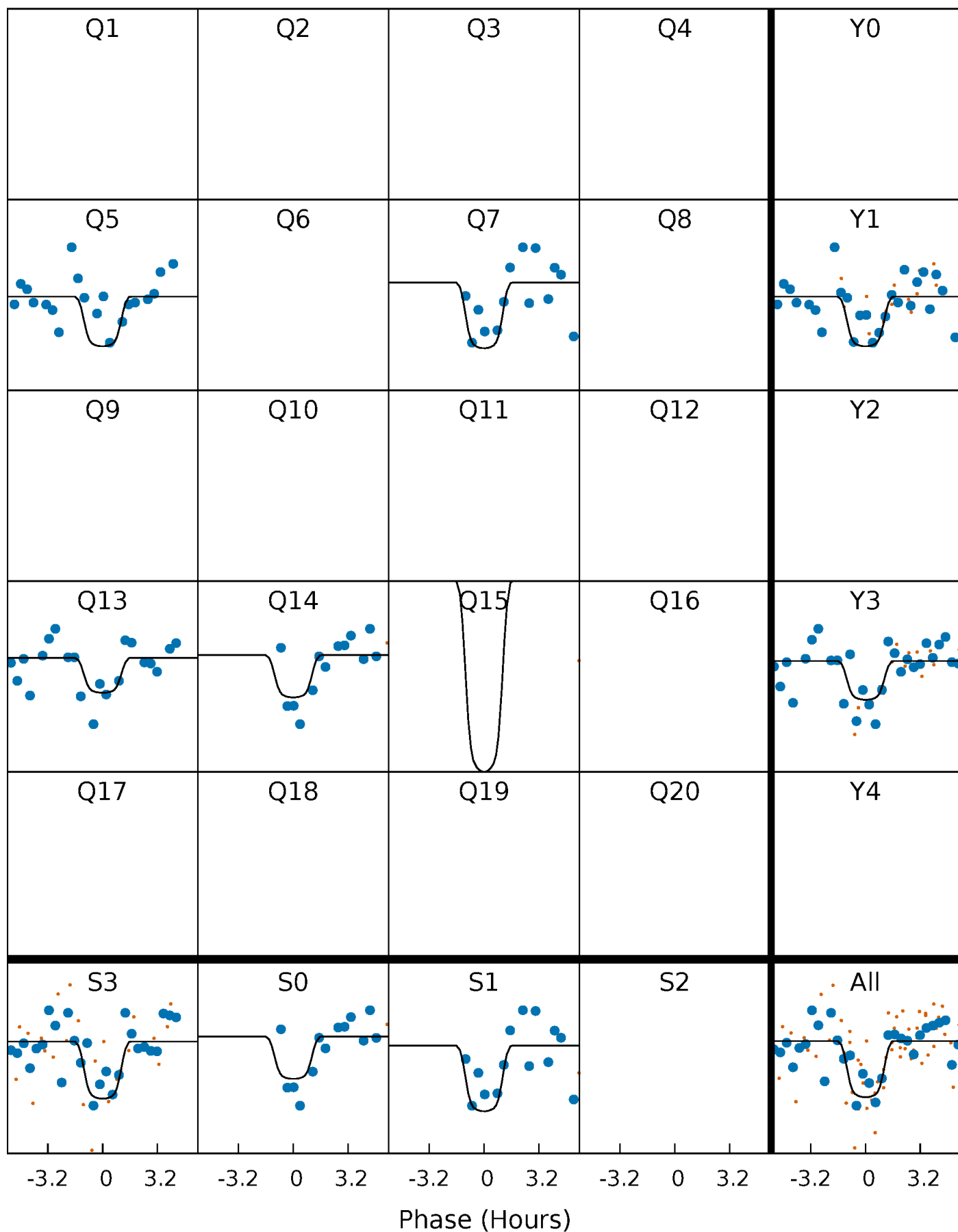
PDC Quarter-Phased Transit Curves

TCE 010865397-10 $P=114.238514$ Days $T_0=184.675172$ (BKJD)



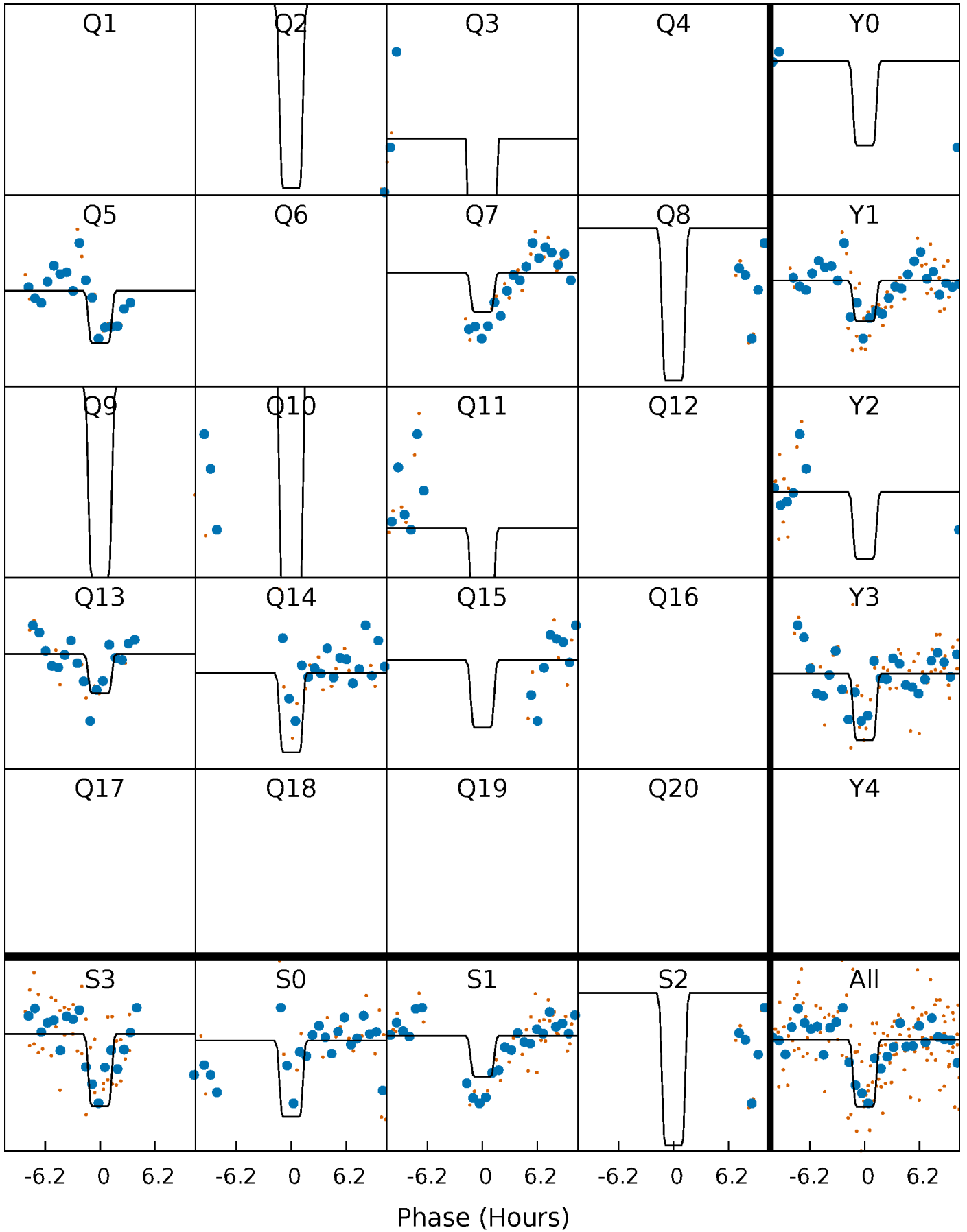
DV Quarter-Phased Transit Curves

TCE 010865397-10 P=114.238514 Days $T_0=184.675172$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

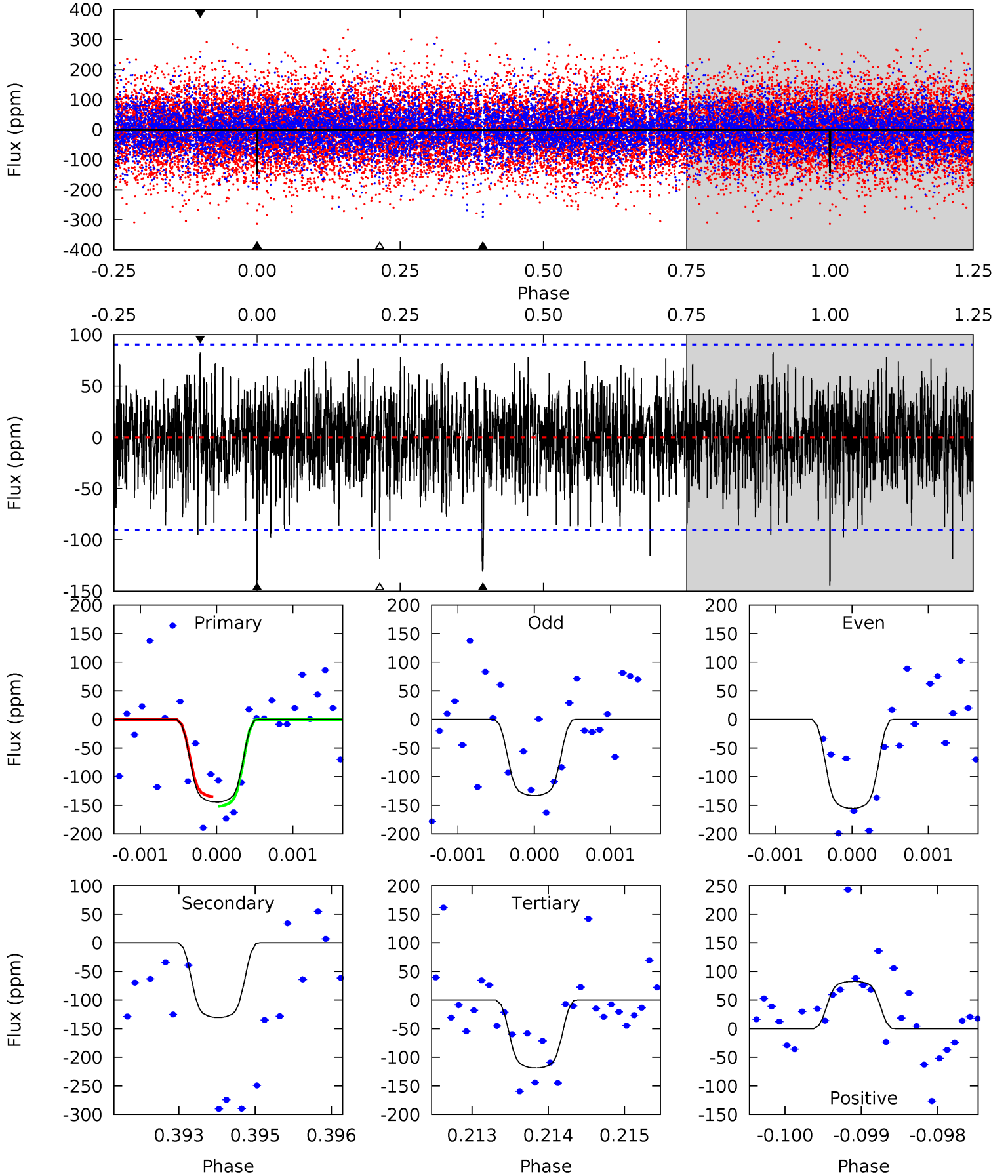
TCE 010865397-10 P=114.237065 Days $T_0=184.706996$ (BKJD)



DV Model-Shift Uniqueness Test

010865397-10, $P = 114.238514$ Days, $E = 70.436658$ Days

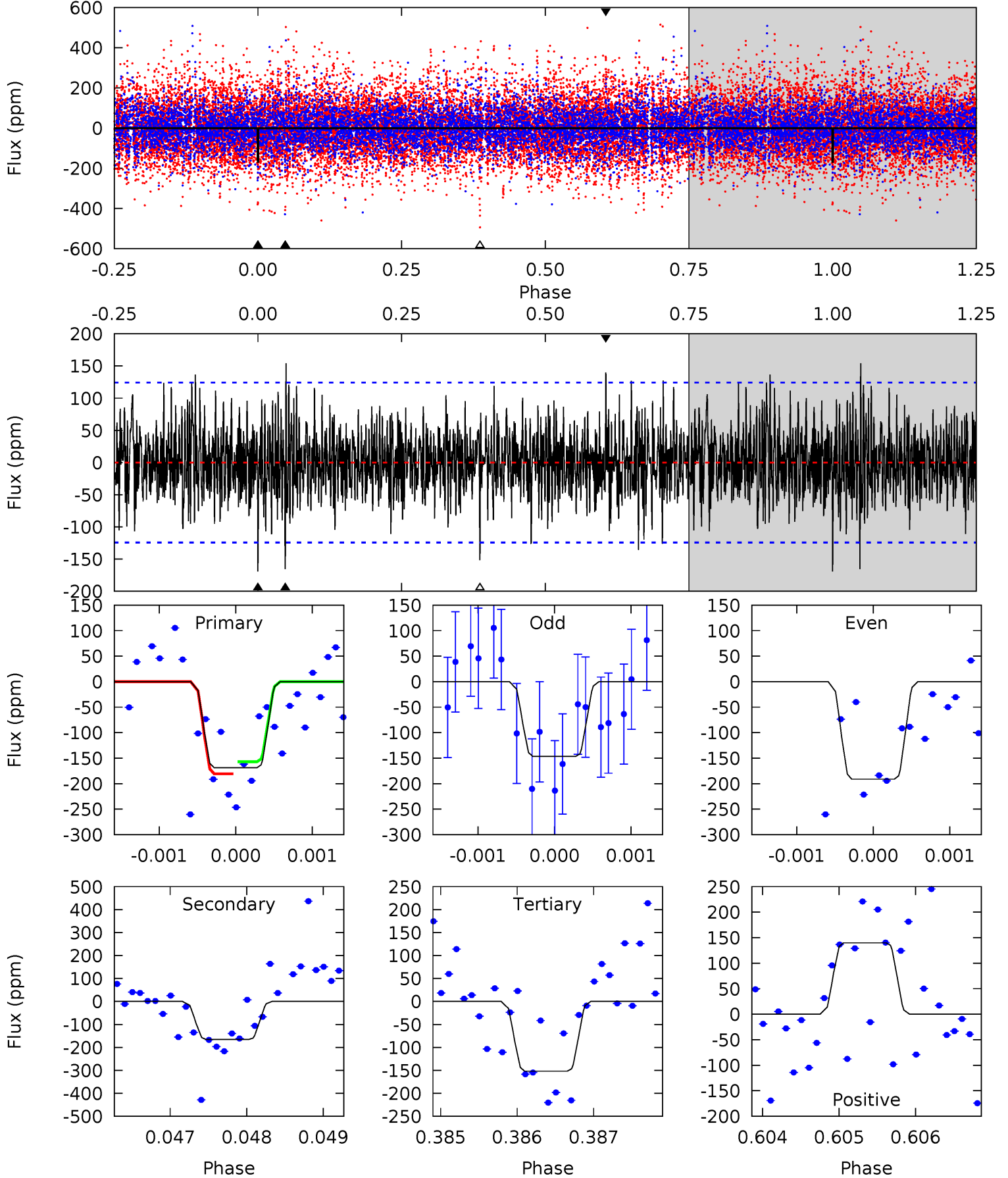
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.67	7.85	7.13	4.96	5.43	3.26	1.76	1.54	3.71	0.72	2.88	0.68	0.93	0.36	0.50



Alt Model-Shift Uniqueness Test

010865397-10, $P = 114.237065$ Days, $E = 70.469931$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.38	7.23	6.63	6.11	5.42	3.25	1.80	0.75	1.27	0.61	1.12	0.97	1.15	0.48	0.51



Stellar Parameters For KIC 010865397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+81}_{-81}	$4.050^{+0.160}_{-0.116}$	$-0.140^{+0.200}_{-0.150}$	$1.852^{+0.324}_{-0.360}$	$1.408^{+0.113}_{-0.113}$	$0.312^{+0.272}_{-0.107}$
	+1%/-1%	+4%/-3%	+143%/-107%	+17%/-19%	+8%/-8%	+87%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010865397-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-131±17	$2.96^{+0.69}_{-0.63}$	788^{+38}_{-41}	5924^{+696}_{-498}	2143^{+1407}_{-735}
Alt.	-166±23	$2.97^{+0.65}_{-0.62}$	788^{+37}_{-44}	6301^{+702}_{-582}	2741^{+1758}_{-966}

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

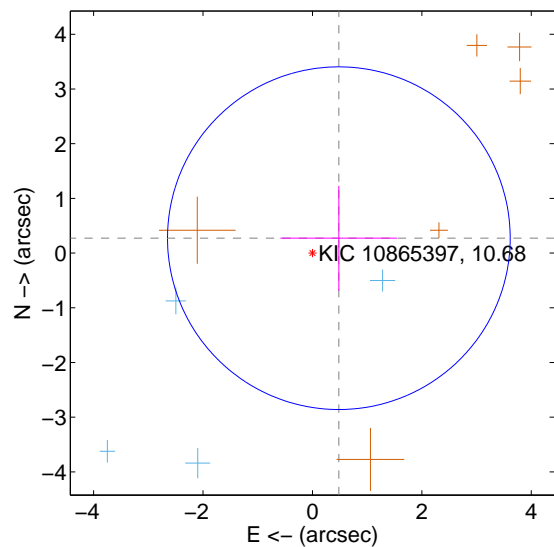
Supplemental centroid analysis for 010865397-10. **Kepler magnitude: 10.68.** Transit SNR 8.63

There are 4 quarters with good PRF difference image offsets

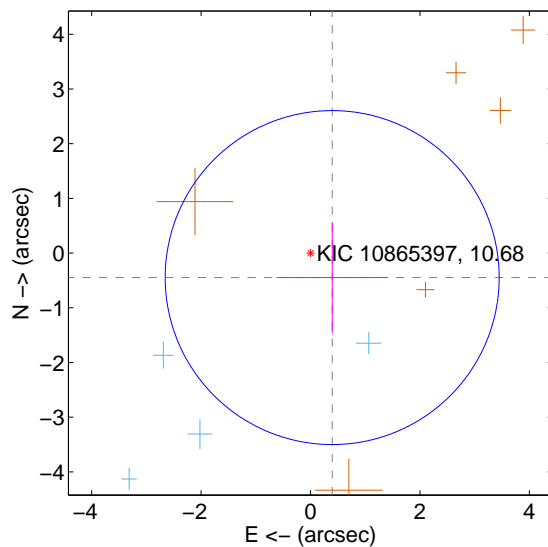
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.555 ± 1.044	0.53	-0.483 ± 1.070	0.272 ± 0.958
PRF-fit source offset from KIC position	0.598 ± 1.018	0.59	-0.396 ± 1.019	-0.448 ± 1.017
photometric centroid source offset	1.05 ± 0.60	1.74	0.70 ± 0.51	-0.77 ± 0.67

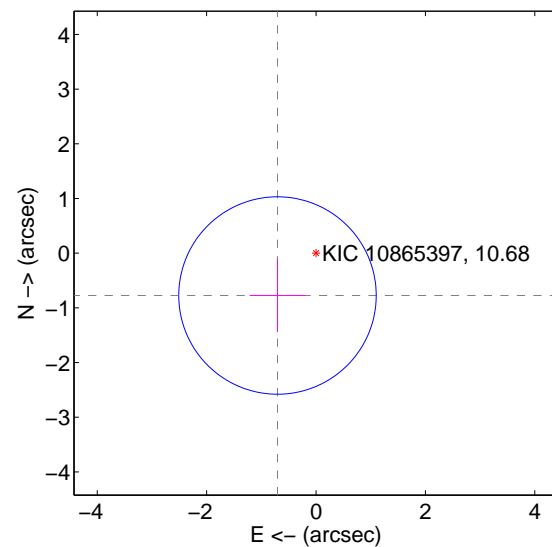
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



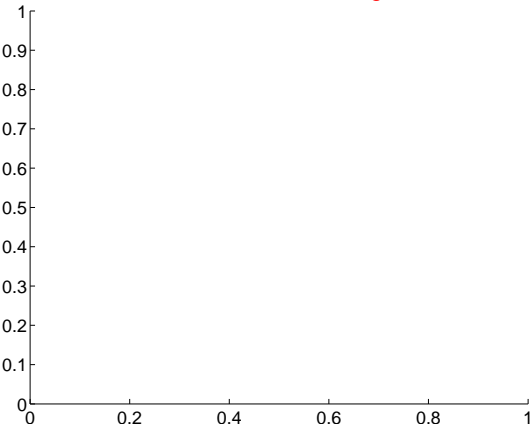
offset from photometric centroids



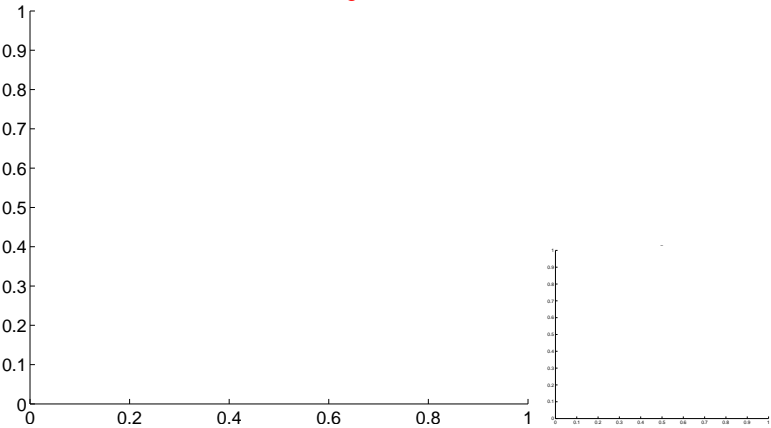
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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

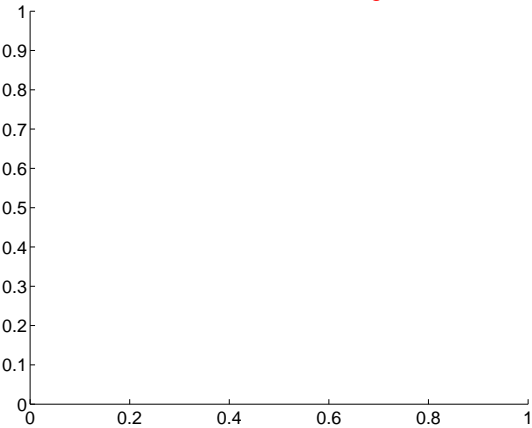
Q1 no difference image



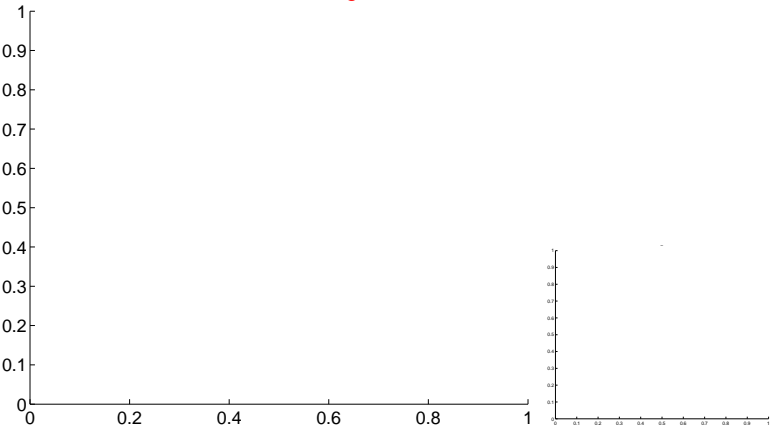
Q1 no OOT image



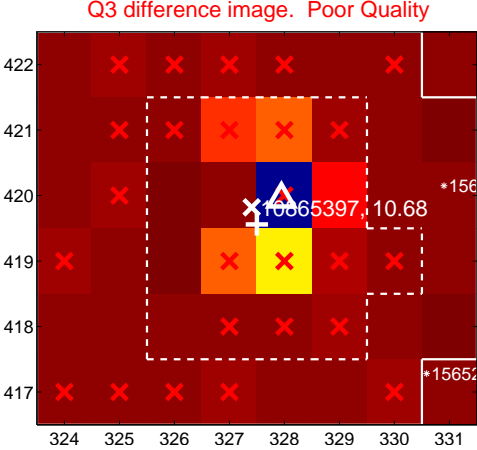
Q2 no difference image



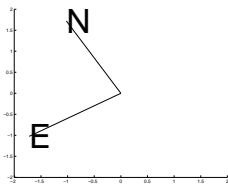
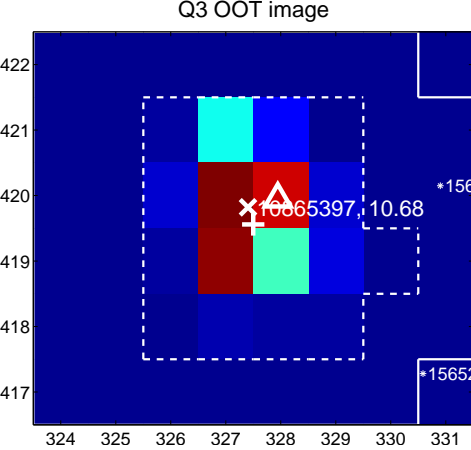
Q2 no OOT image



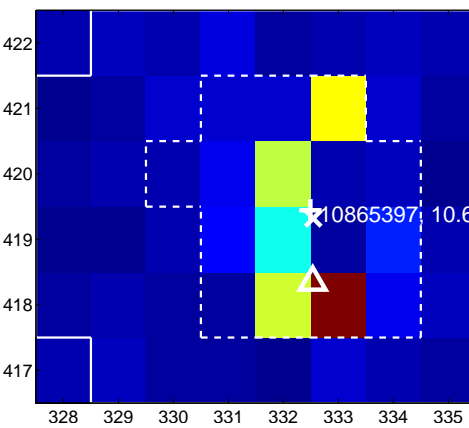
Q3 difference image. Poor Quality



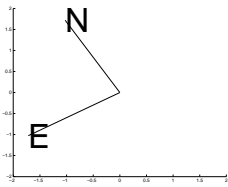
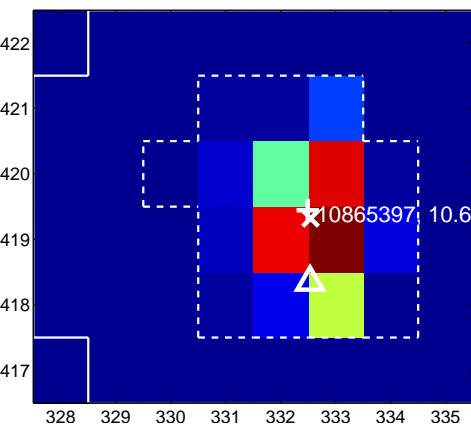
Q3 OOT image



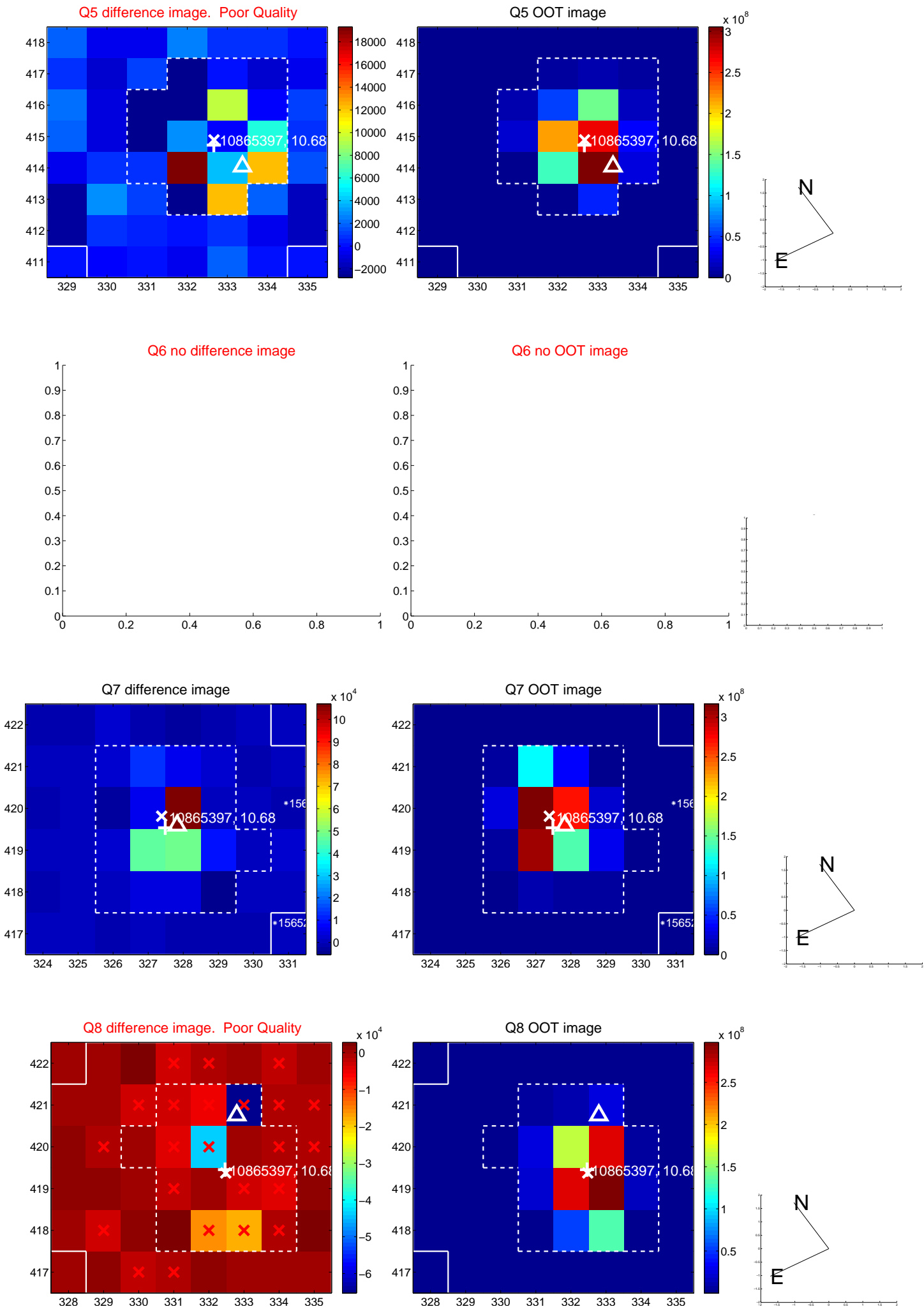
Q4 difference image



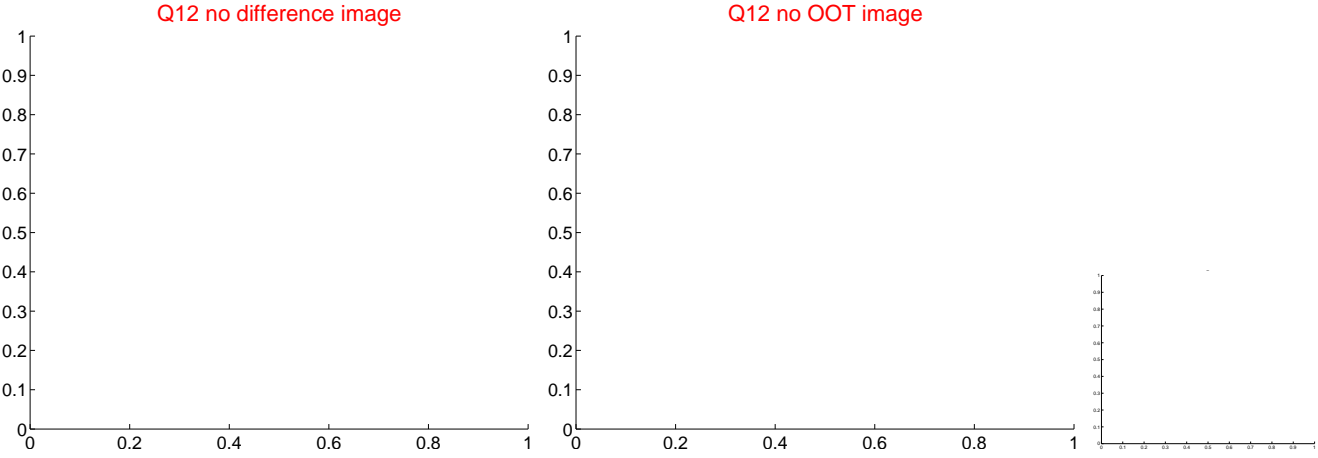
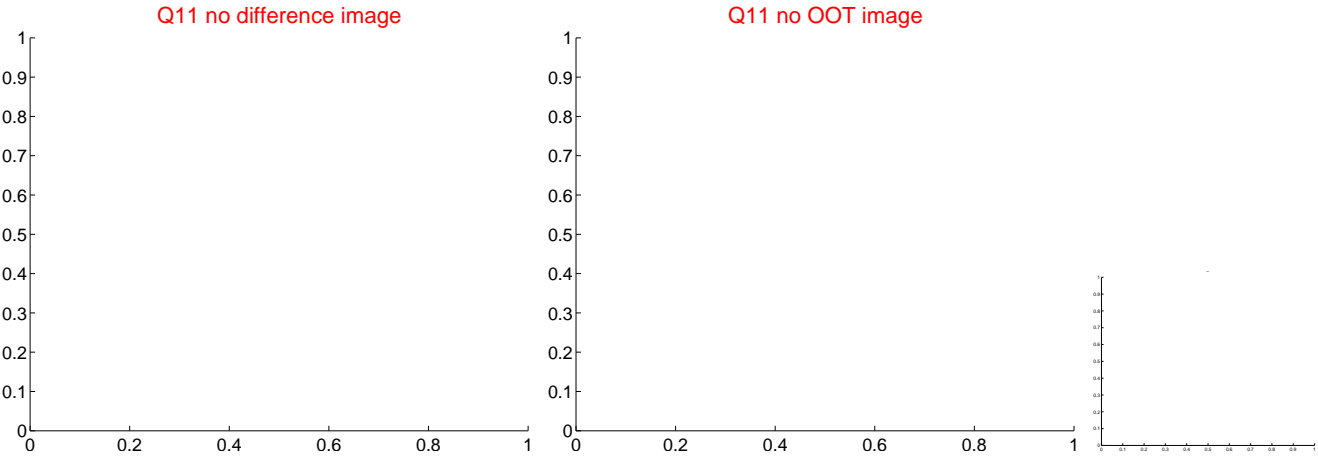
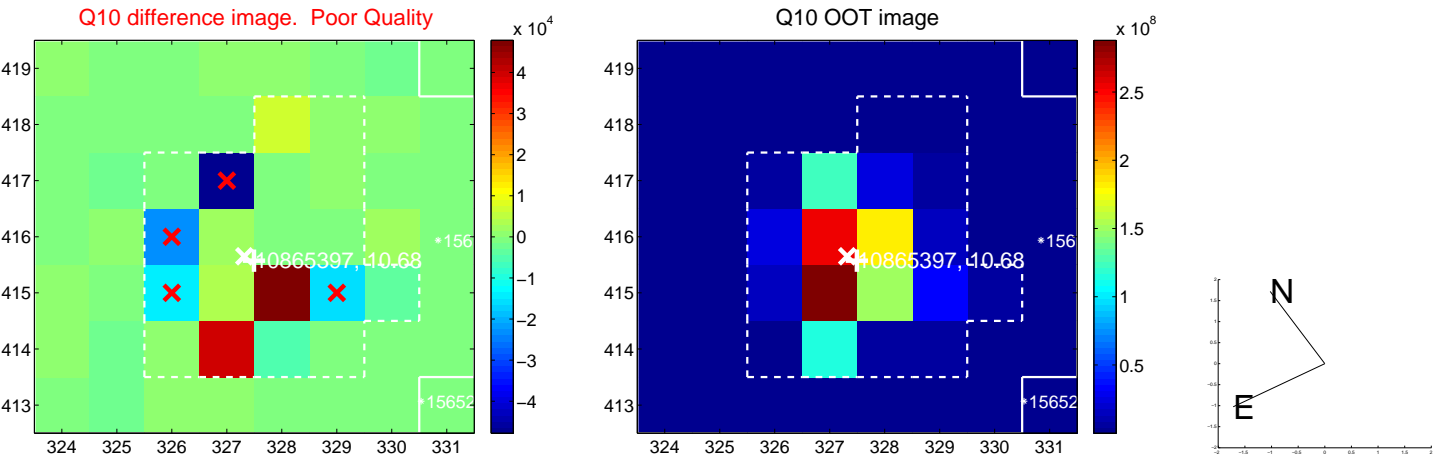
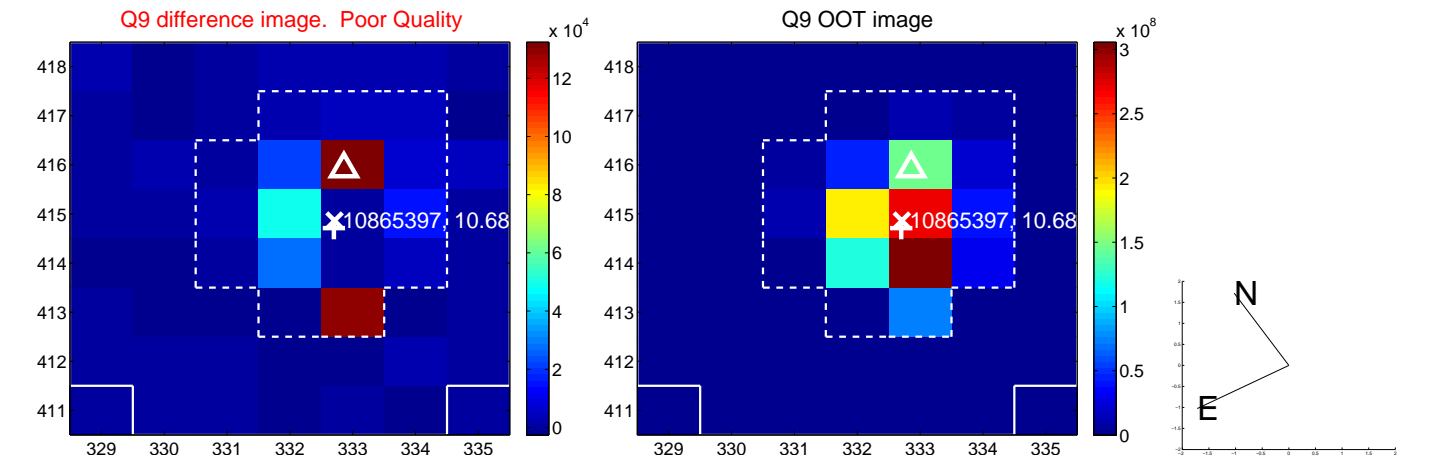
Q4 OOT image



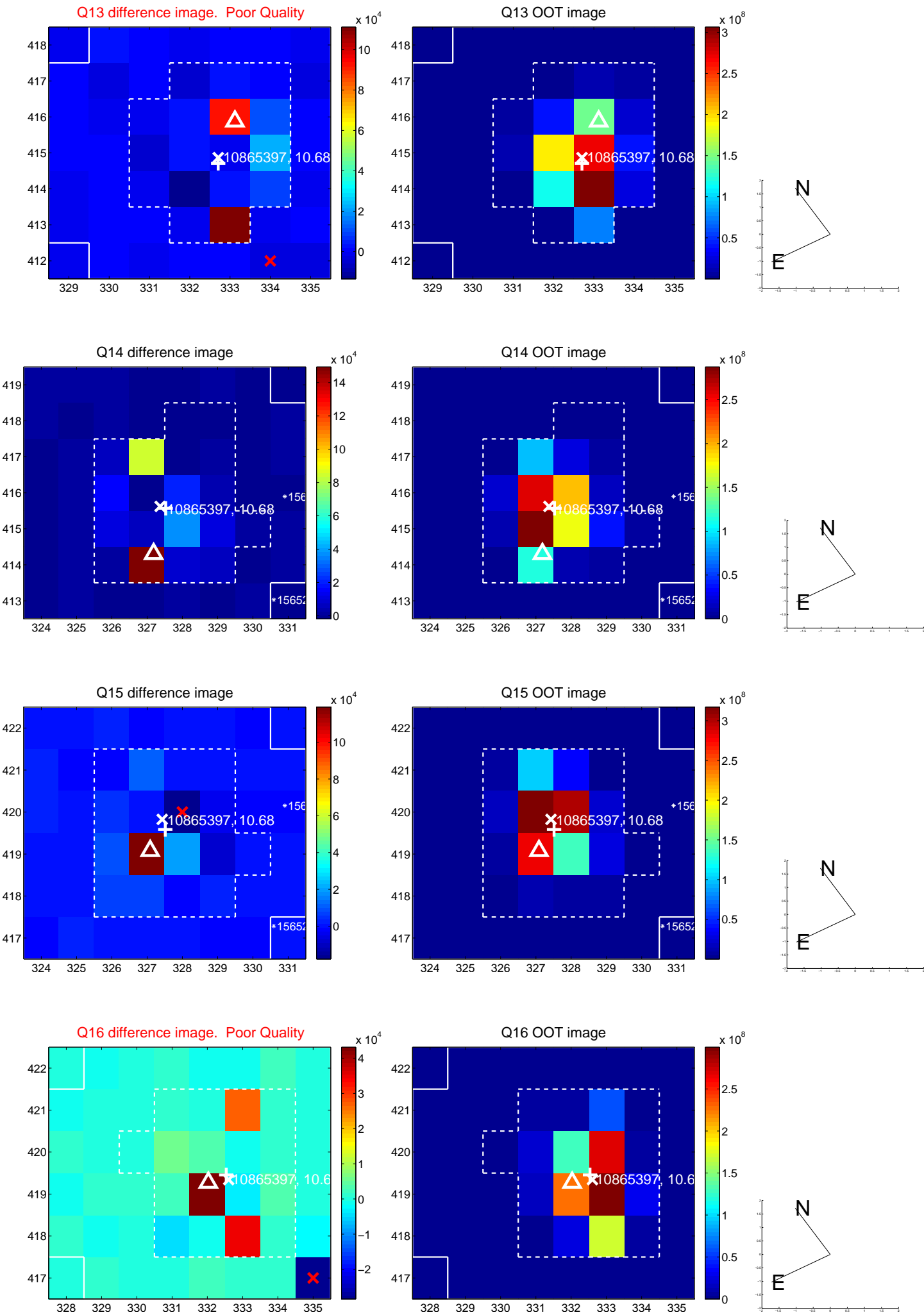
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



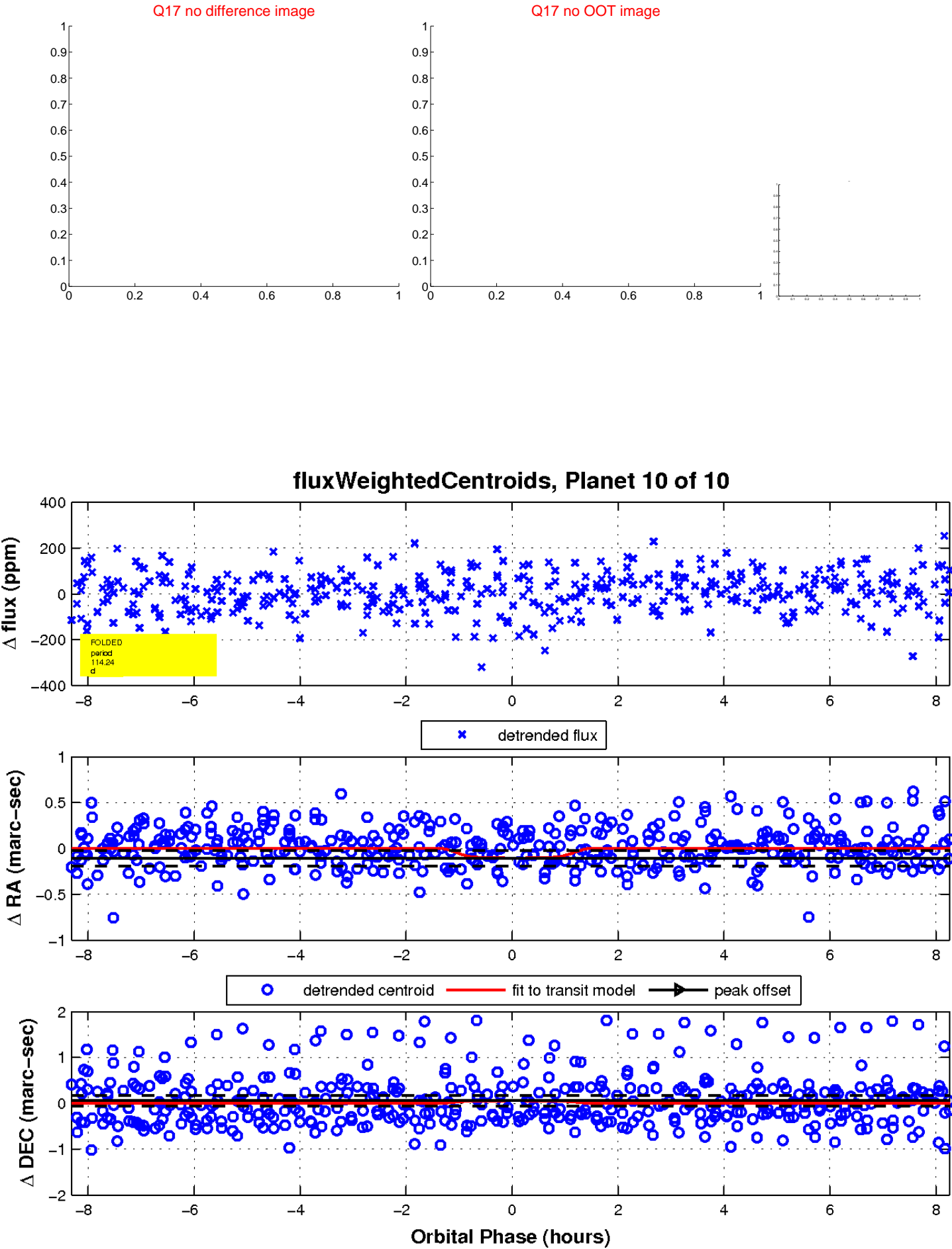
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

