

KIC 003337351

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})
003337351-01	OBS	0965.01	7.047118	132.748762	58966.5	2.978	1292.6	679.5	1.03	5730	39.20	197.15
003337351-02	OBS	No	1.409415	132.094900	155.2	4.659	11.9	9.5	1.03	5730	1.31	1685.60
003337351-03	OBS	No	307.480082	149.869407	2913.8	19.488	9.8	7.1	1.03	5730	5.51	1.28
003337351-04	OBS	No	323.320158	140.975138	1926.5	5.000	10.4	-1.0	1.03	5730	4.48	1.20
003337351-05	OBS	No	289.385951	160.802072	3047.2	6.817	9.0	11.4	1.03	5730	10.80	1.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337351-01	OBS	FP	0.00	0	1	1	1	DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
003337351-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET
003337351-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003337351-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
003337351-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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 003337351-01

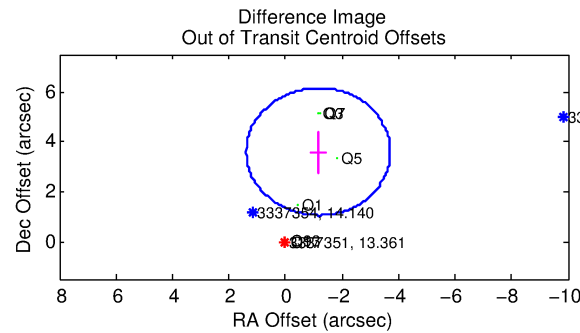
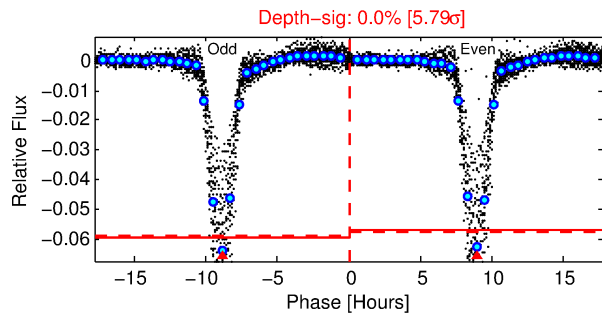
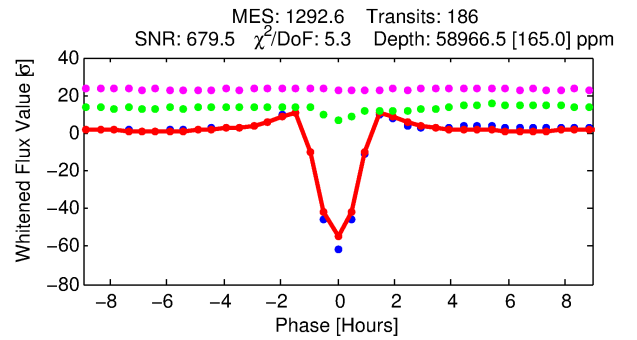
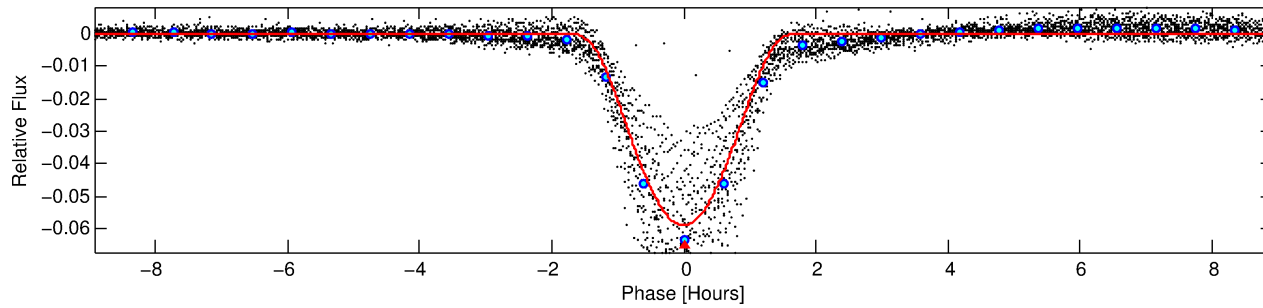
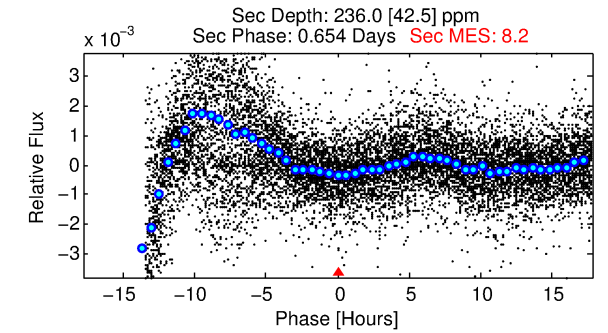
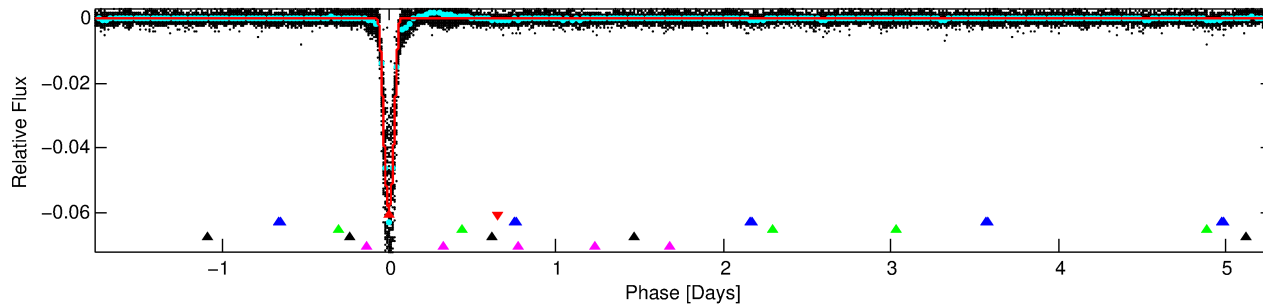
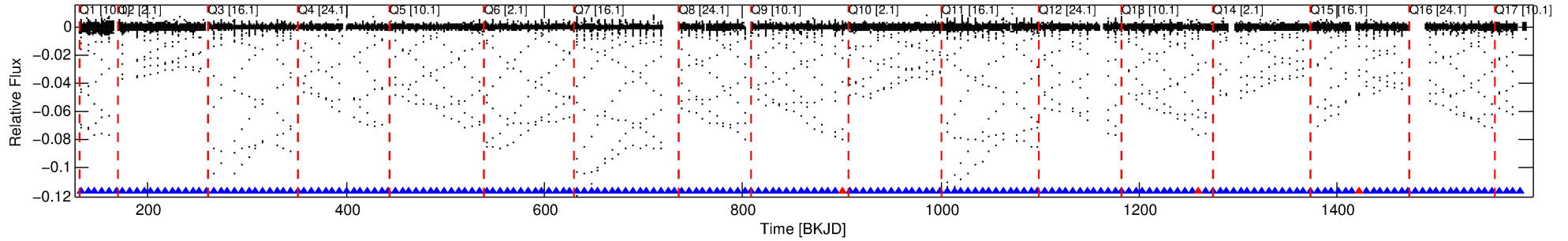
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (μ)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
003337351-01	3337351	6311.01	3230227	1:1	17.8	-2	4	9.00	13.36	1.19	Direct-PRF	0	0.07	0.05

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3337351 Candidate: 1 of 5 Period: 7.047 d
KOI: K00965.01 Corr: 0.979

Kp: 13.36 R*: 1.03 Rs Teff: 5730.0 K Logg: 4.42 Fe/H: 0.180



DV Fit Results:

Period = 7.04712 [0.00000] d
Epoch = 132.7488 [0.0001] BKJD
Rp/R* = 0.3470 [0.0529]
a/R* = 17.37 [0.08]
b = 0.95 [0.08]
Seff = 197.15 [76.24]
Teq = 955 [92] K
Rp = 39.20 [12.97] Re
a = 0.0724 [0.0179] AU
Ag = 0.44 [0.22] [-2.49σ]
Teffp = 1206 [115] K [1.69σ]

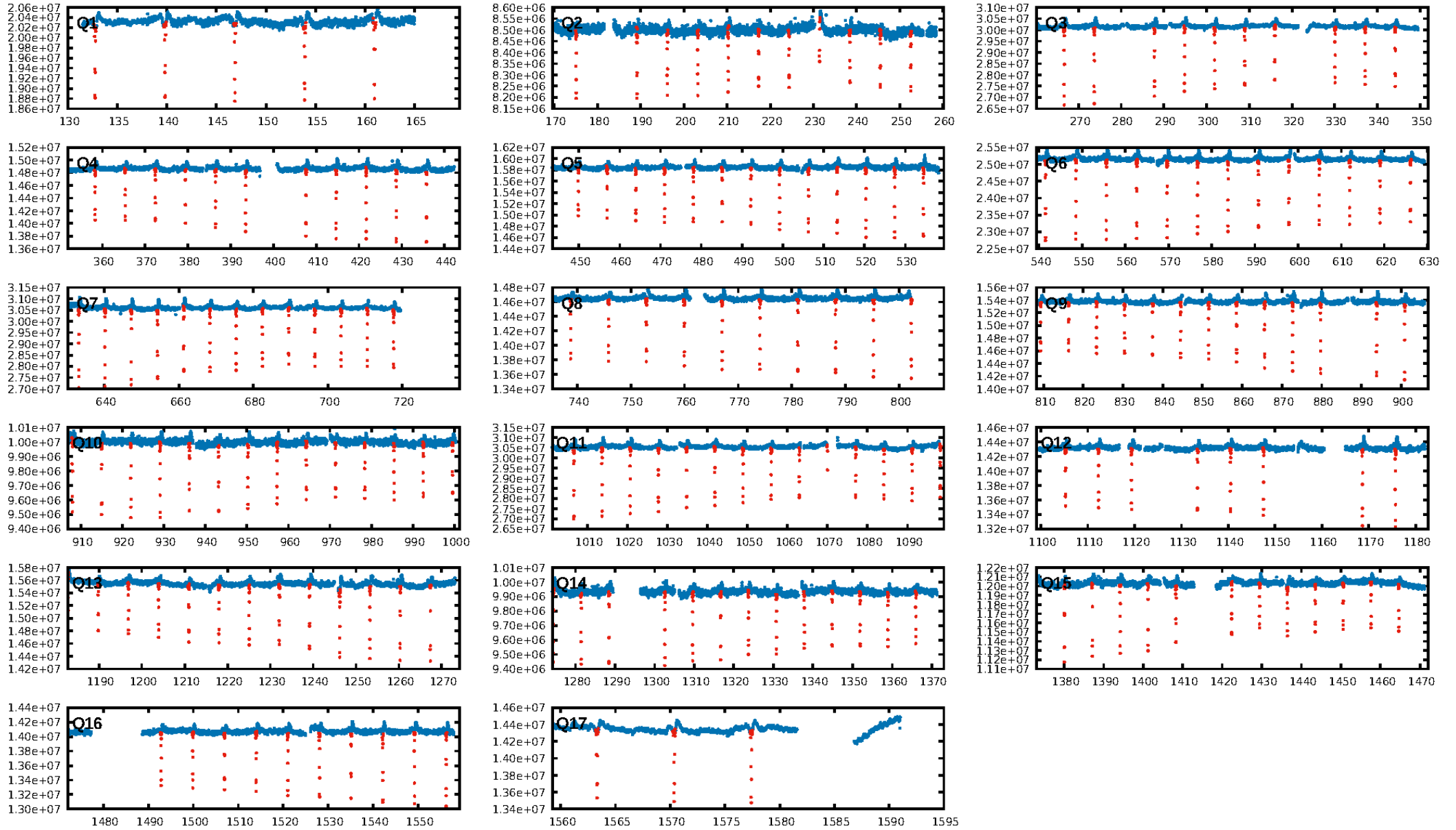
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.47σ]
LongPeriod-sig: 100.0% [910.94σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [175/178]
GhostDiagnostic-chr: -0.5046
Centroid-sig: 0.0%
Centroid-so: 4.902 arcsec [2615.09σ]
OotOffset-rm: 3.780 arcsec [4.45σ]
KicOffset-rm: 11.240 arcsec [12.64σ]
OotOffset-st: 0/2/0/5 [7]
KicOffset-st: 0/2/0/5 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 1.00 [17/17]

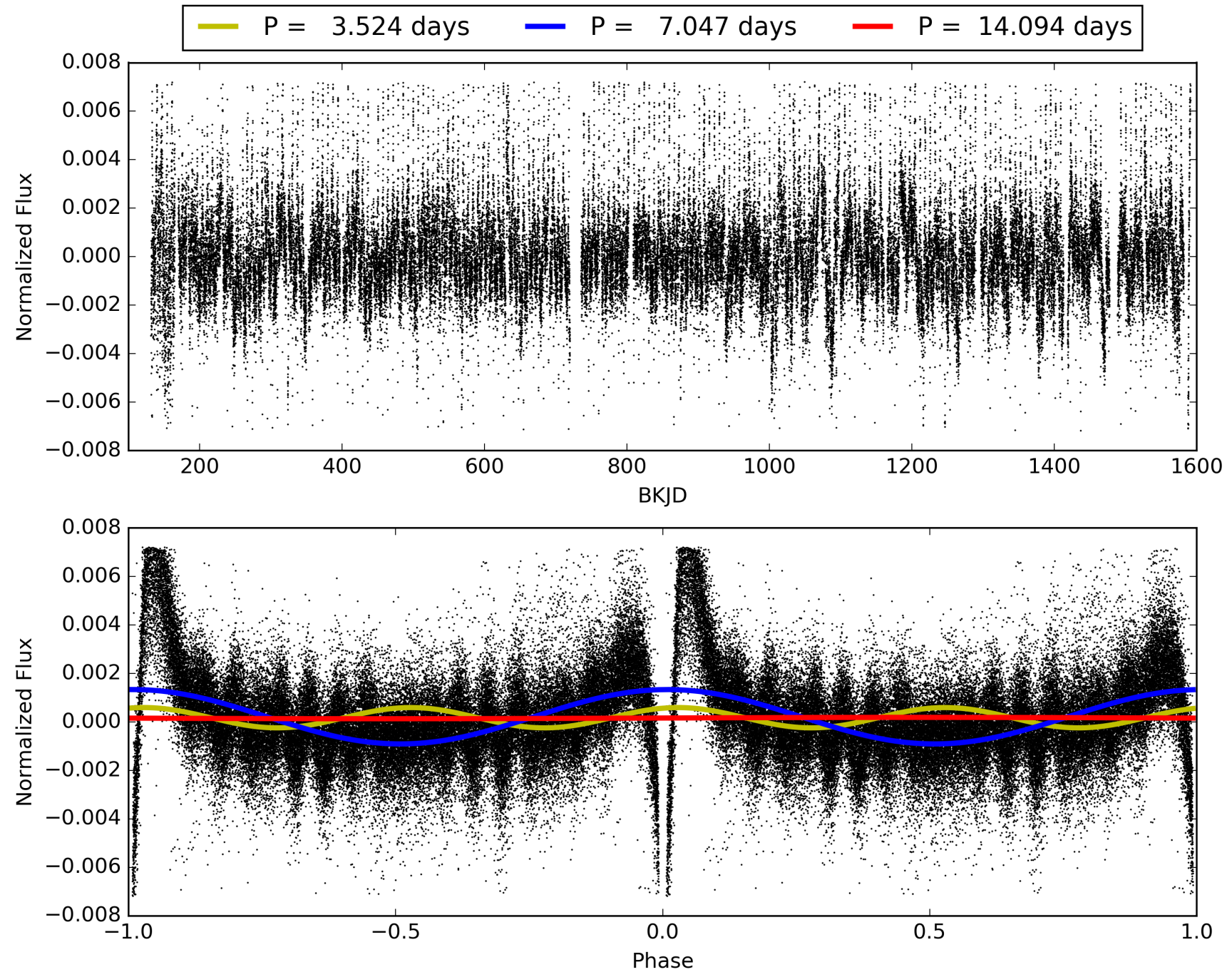
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:01:29 Z

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

TCE 003337351-01, PDC Light Curves

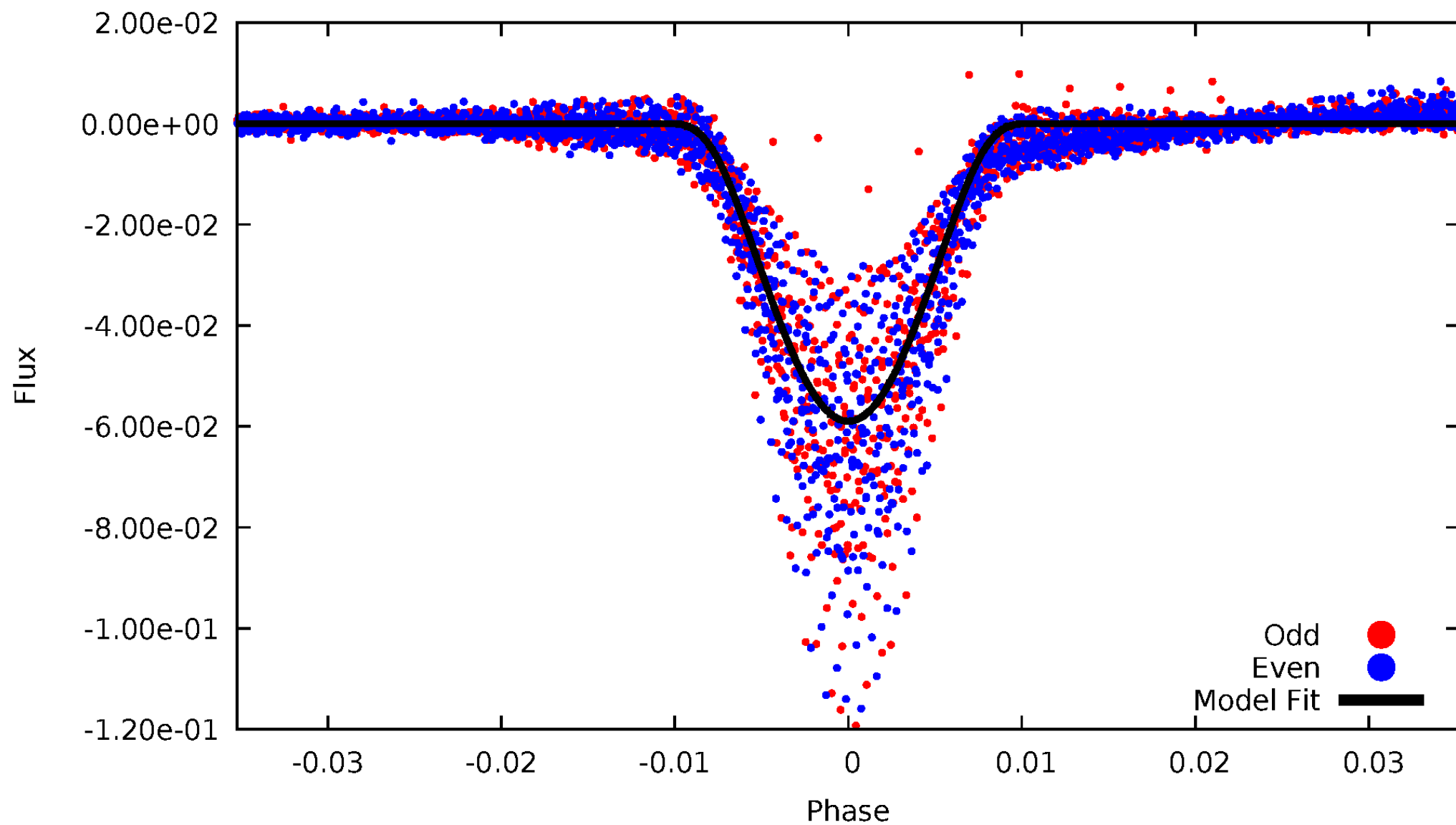


TCE 003337351-01



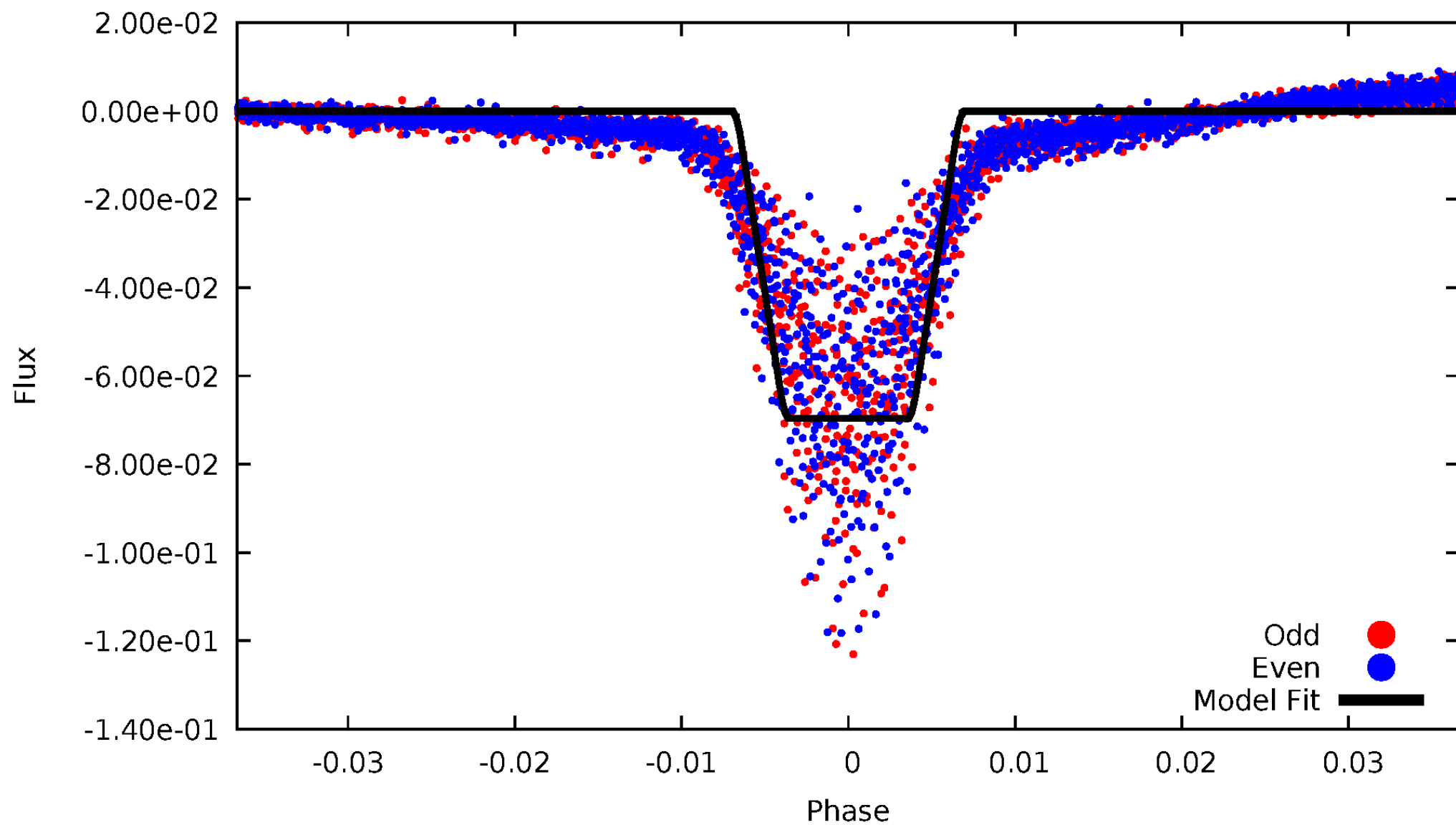
DV Odd/Even

TCE 003337351-01



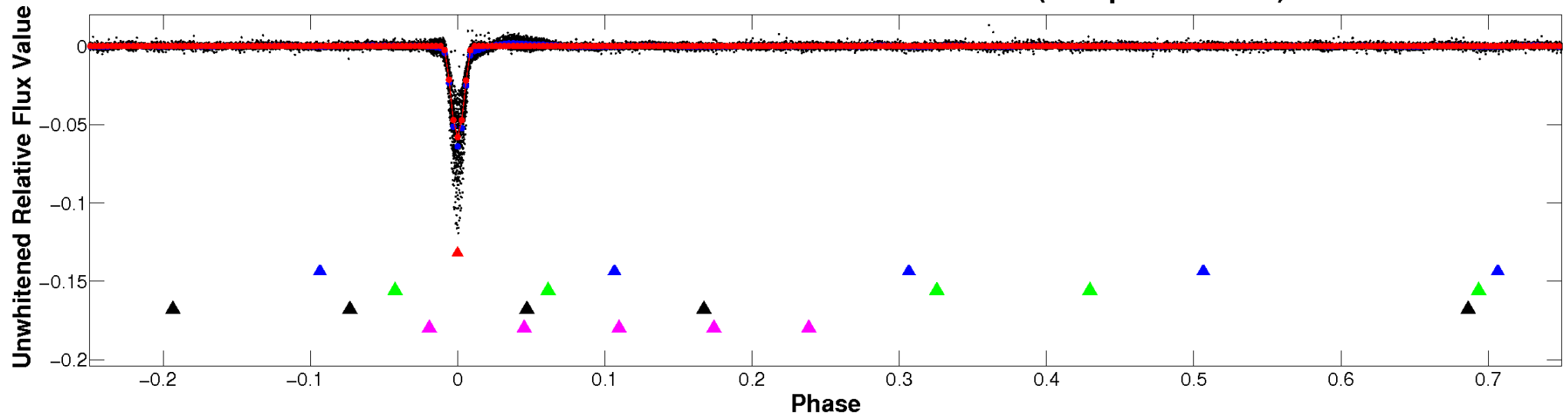
ALT Odd/Even

TCE 003337351-01

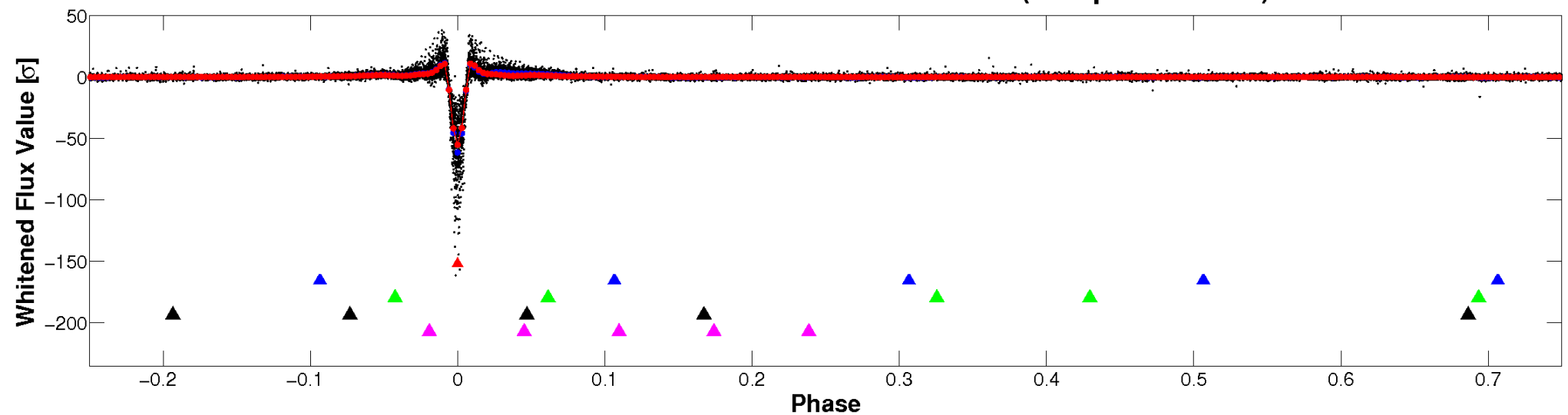


Non-Whitened Vs. Whitened Light Curve

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

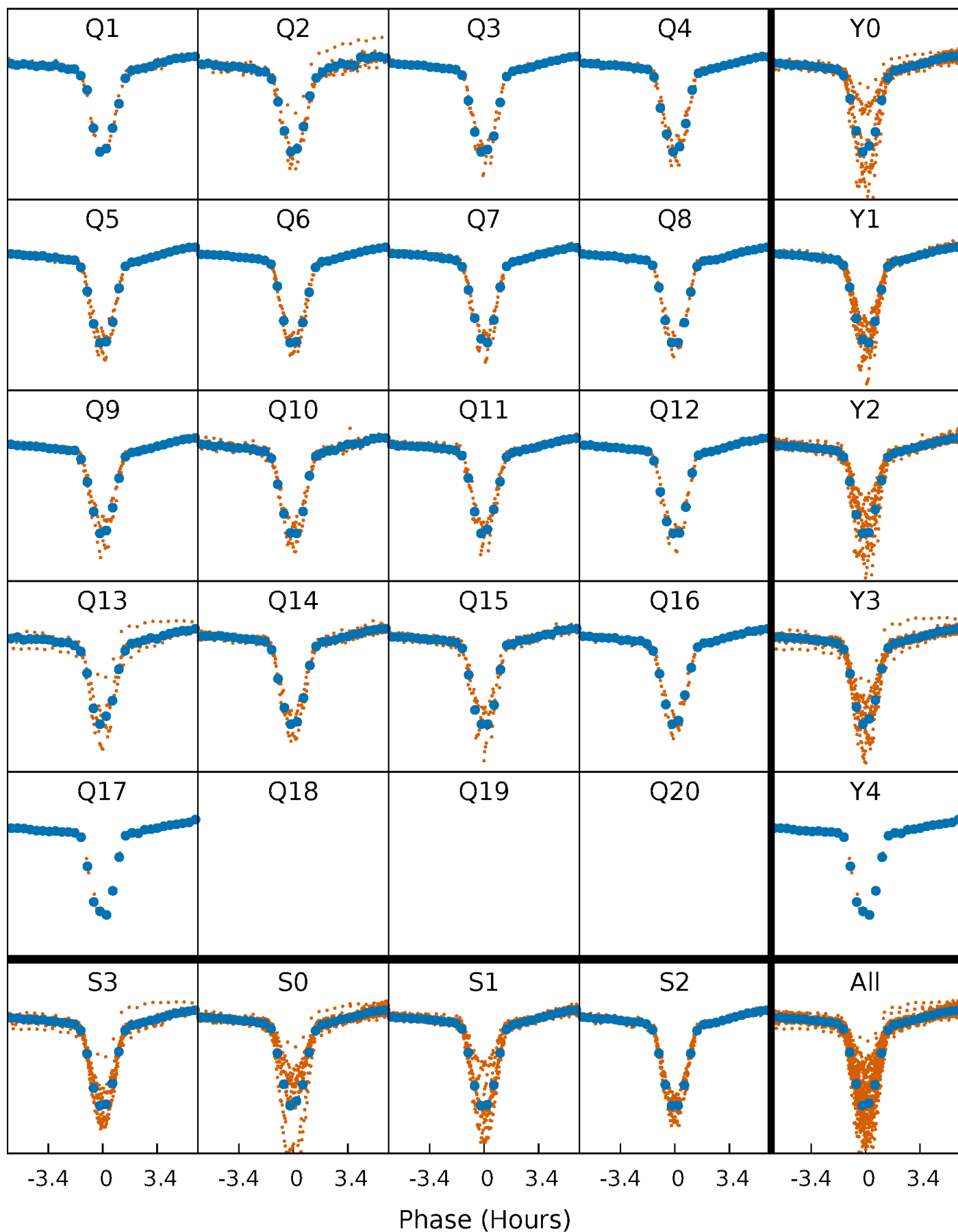


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



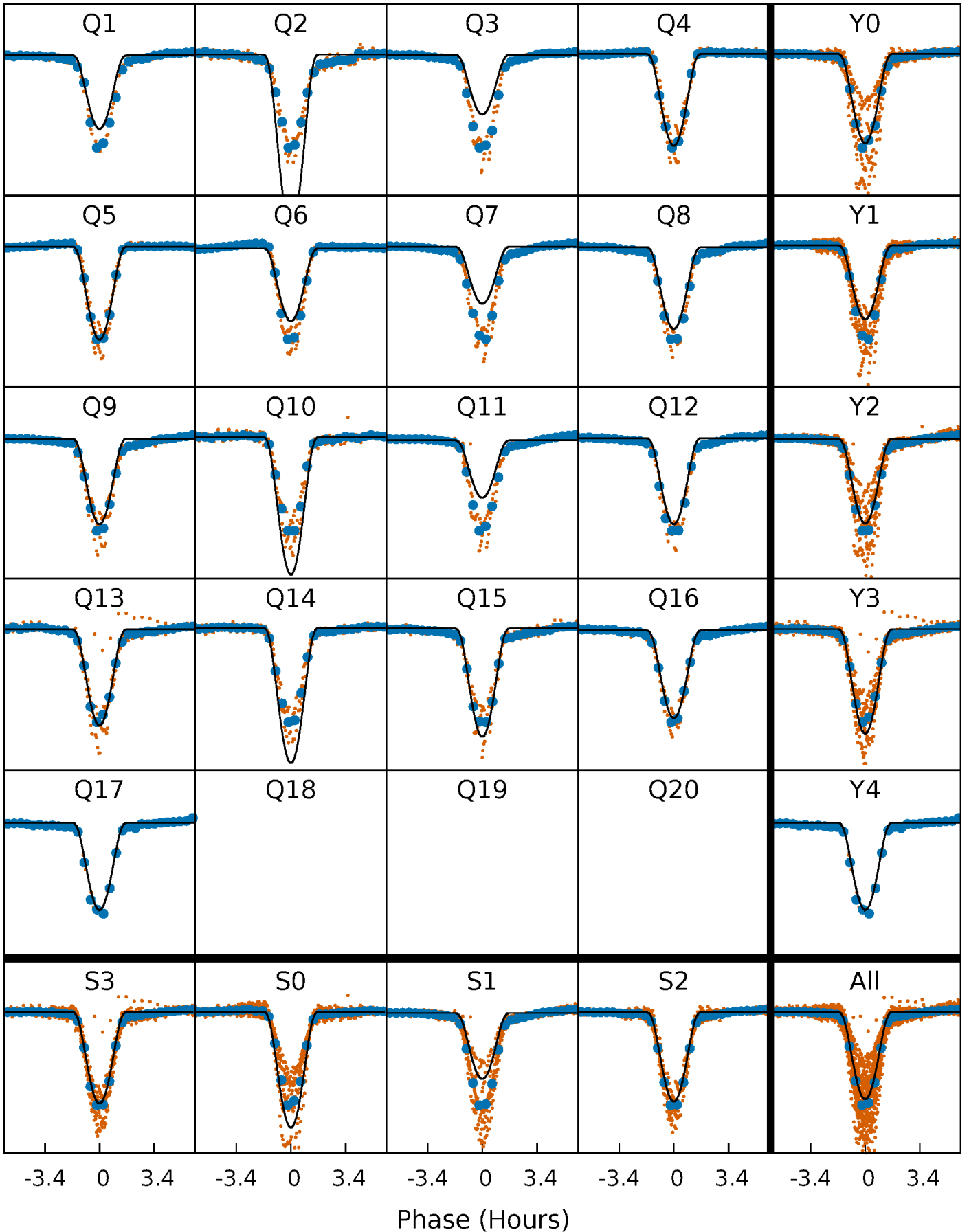
PDC Quarter-Phased Transit Curves

TCE 003337351-01 P= 7.047118 Days $T_0=132.748762$ (BKJD)



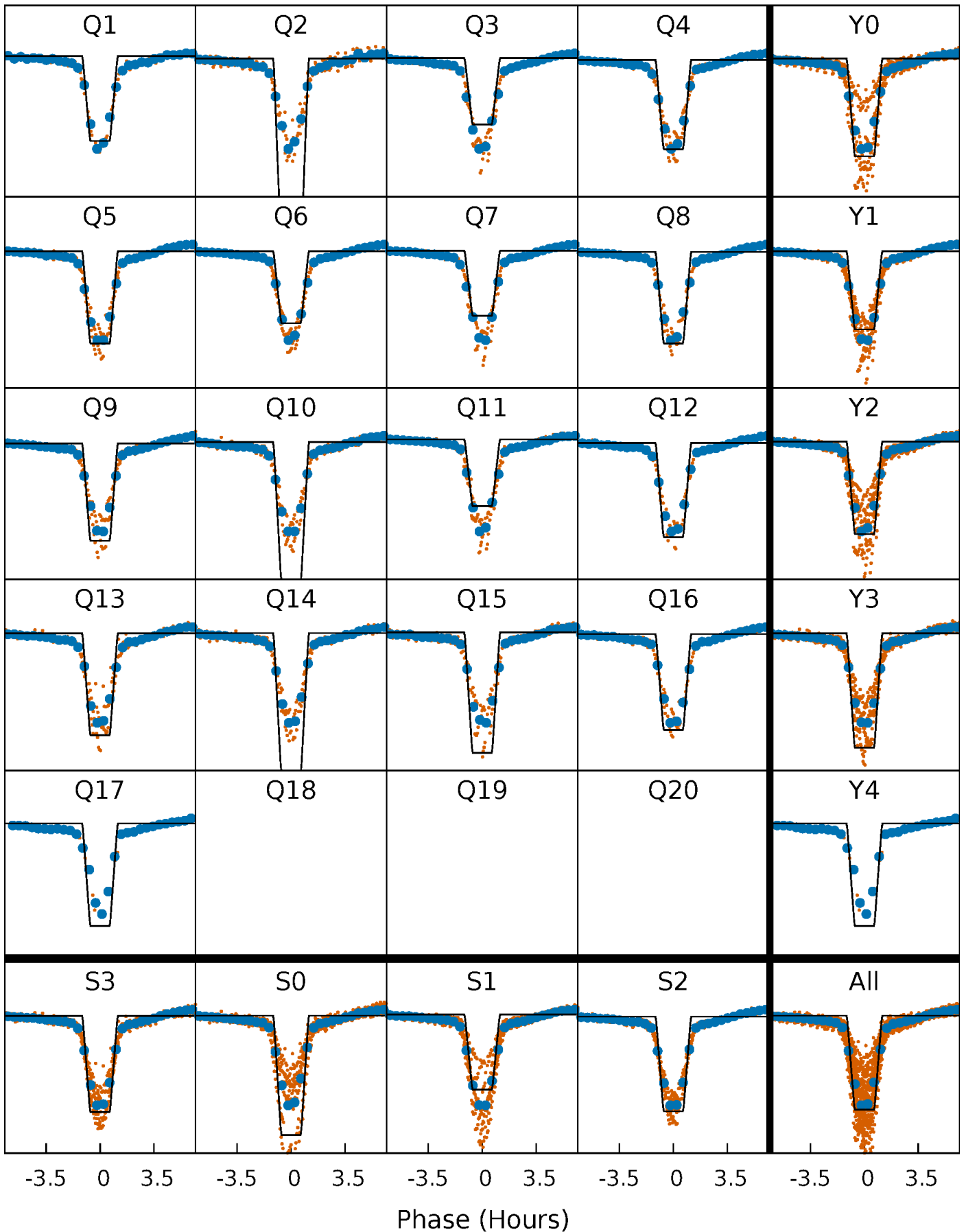
DV Quarter-Phased Transit Curves

TCE 003337351-01 P= 7.047118 Days $T_0=132.748762$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

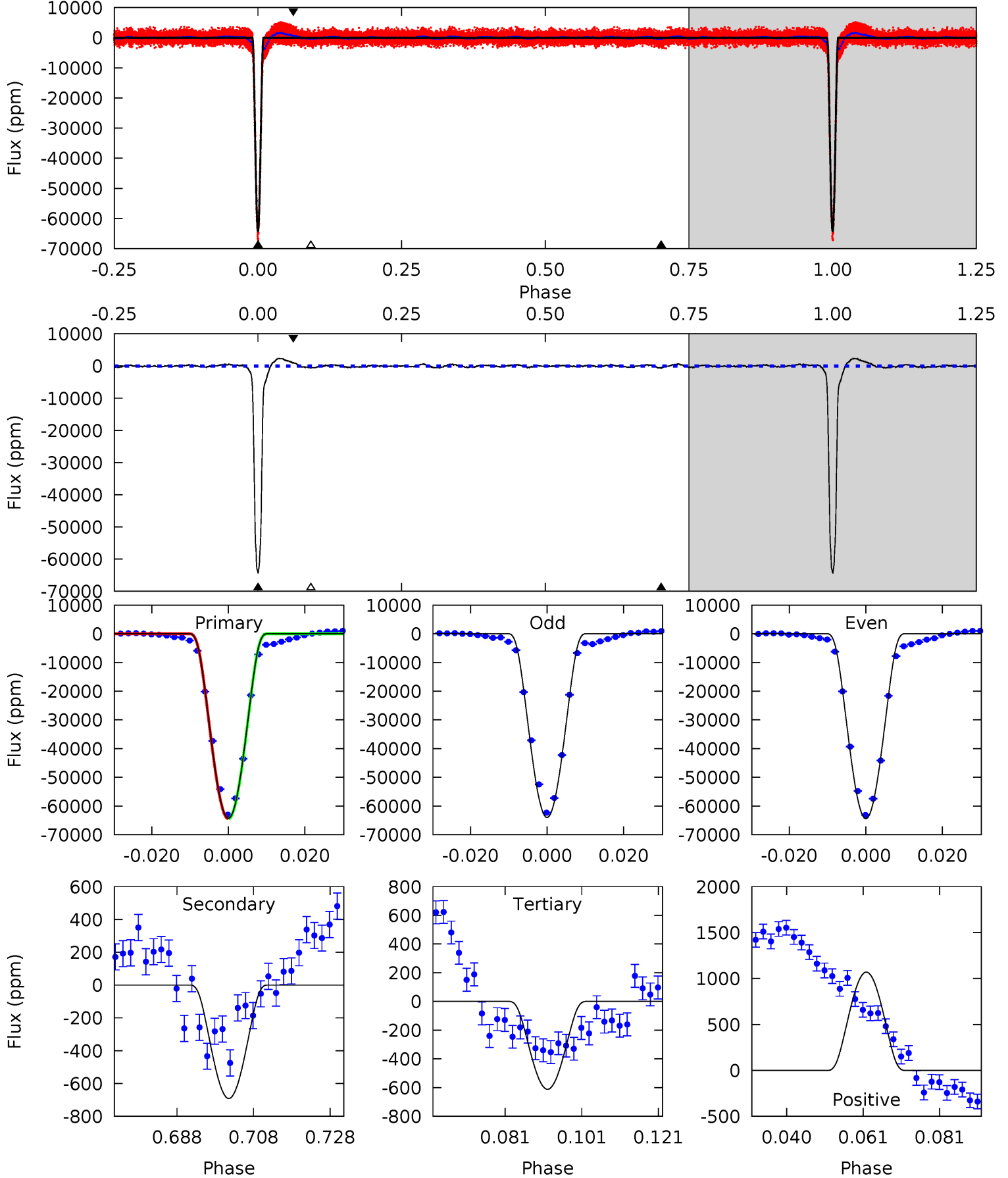
TCE 003337351-01 P= 7.047098 Days $T_0=132.751134$ (BKJD)



DV Model-Shift Uniqueness Test

003337351-01, P = 7.047118 Days, E = 125.701644 Days

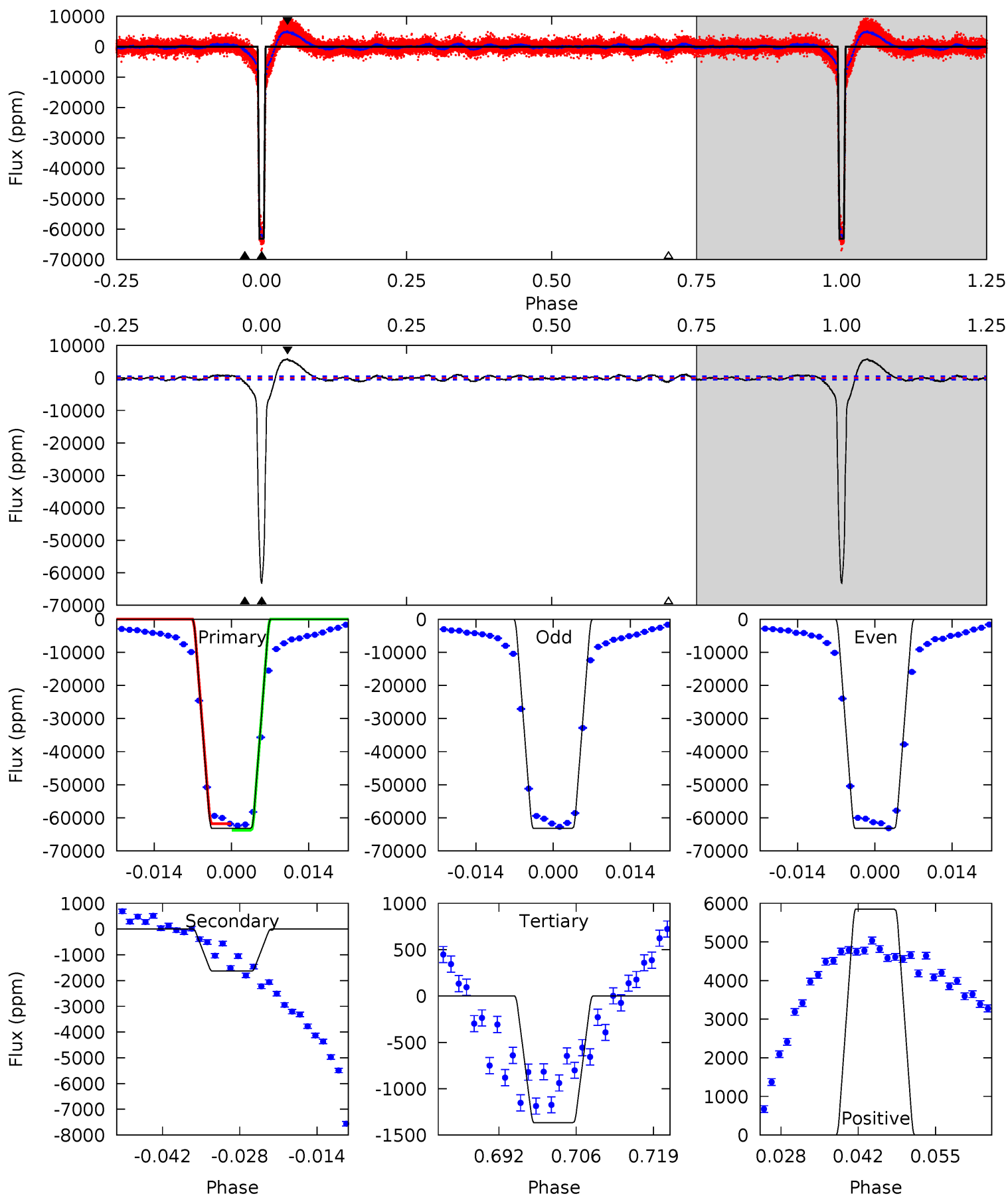
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1496	16.1	14.2	24.9	4.89	2.32	9.69	1481	1471	1.85	-8.81	4.91	1.03	0.04	0



Alt Model-Shift Uniqueness Test

003337351-01, P = 7.047098 Days, E = 125.704036 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
632.8	16.4	13.7	58.6	4.96	2.46	11.9	619.1	574.2	2.68	-42.2	0.13	1.02	0.08	0



Stellar Parameters For KIC 003337351

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5730^{+171}_{-206}	$4.417^{+0.084}_{-0.196}$	$0.180^{+0.200}_{-0.300}$	$1.035^{+0.304}_{-0.130}$	$1.018^{+0.122}_{-0.111}$	$1.295^{+0.563}_{-0.631}$
	+3%/-4%	+2%/-4%	+111%/-167%	+29%/-13%	+12%/-11%	+43%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003337351-01 / KOI 0965.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-691 ± 43	$40.58^{+8.51}_{-6.85}$	1355^{+100}_{-77}	2363^{+126}_{-119}	$1.210^{+0.529}_{-0.386}$
Alt.	-1633 ± 100	$30.70^{+7.58}_{-6.83}$	1347^{+98}_{-74}	2904^{+216}_{-167}	$4.960^{+3.120}_{-1.712}$

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

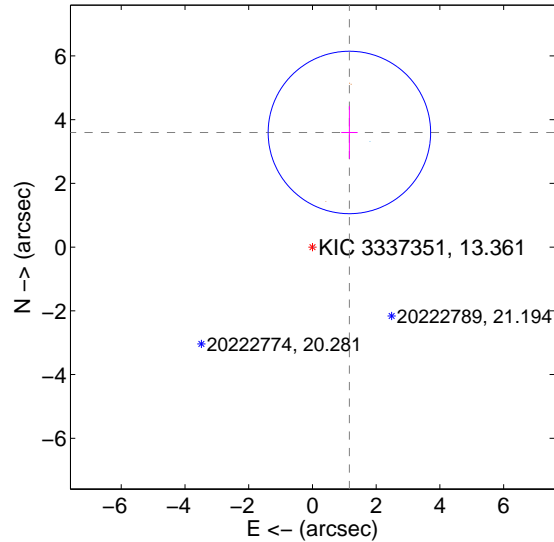
Supplemental centroid analysis for 003337351-01. Kepler magnitude: 13.36. Transit SNR 679.55

There are 4 quarters with good PRF difference image offsets

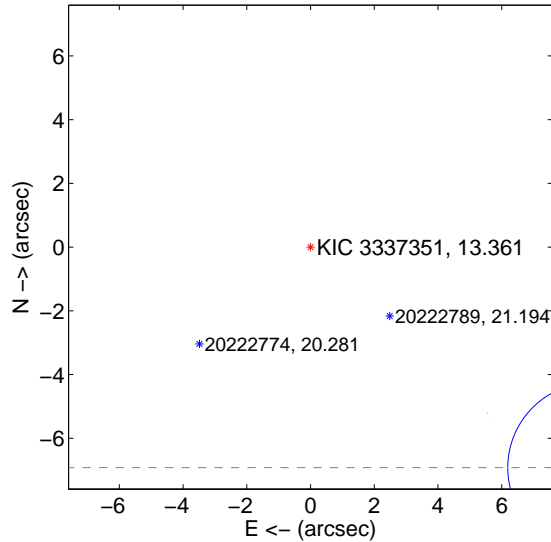
The OOT PRF centroid is offset from the target star catalog position by about 7.67 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.780 ± 0.850	4.45	-1.160 ± 0.256	3.597 ± 0.824
PRF-fit source offset from KIC position	11.240 ± 0.889	12.64	-8.856 ± 0.806	-6.922 ± 0.485
photometric centroid source offset	4.90 ± 0.00	2615.10	-3.46 ± 0.00	-3.48 ± 0.00

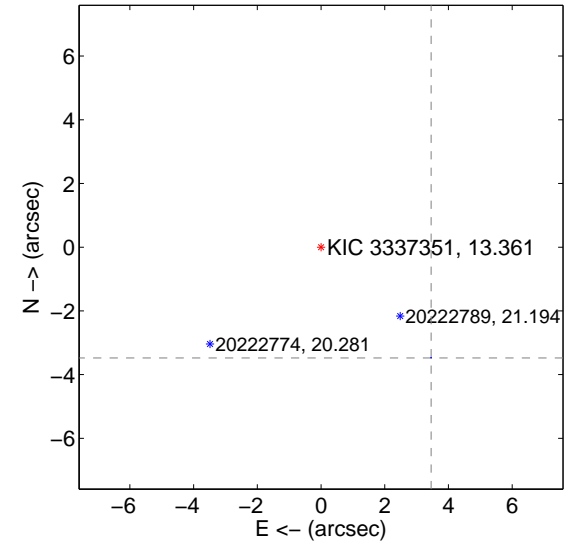
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

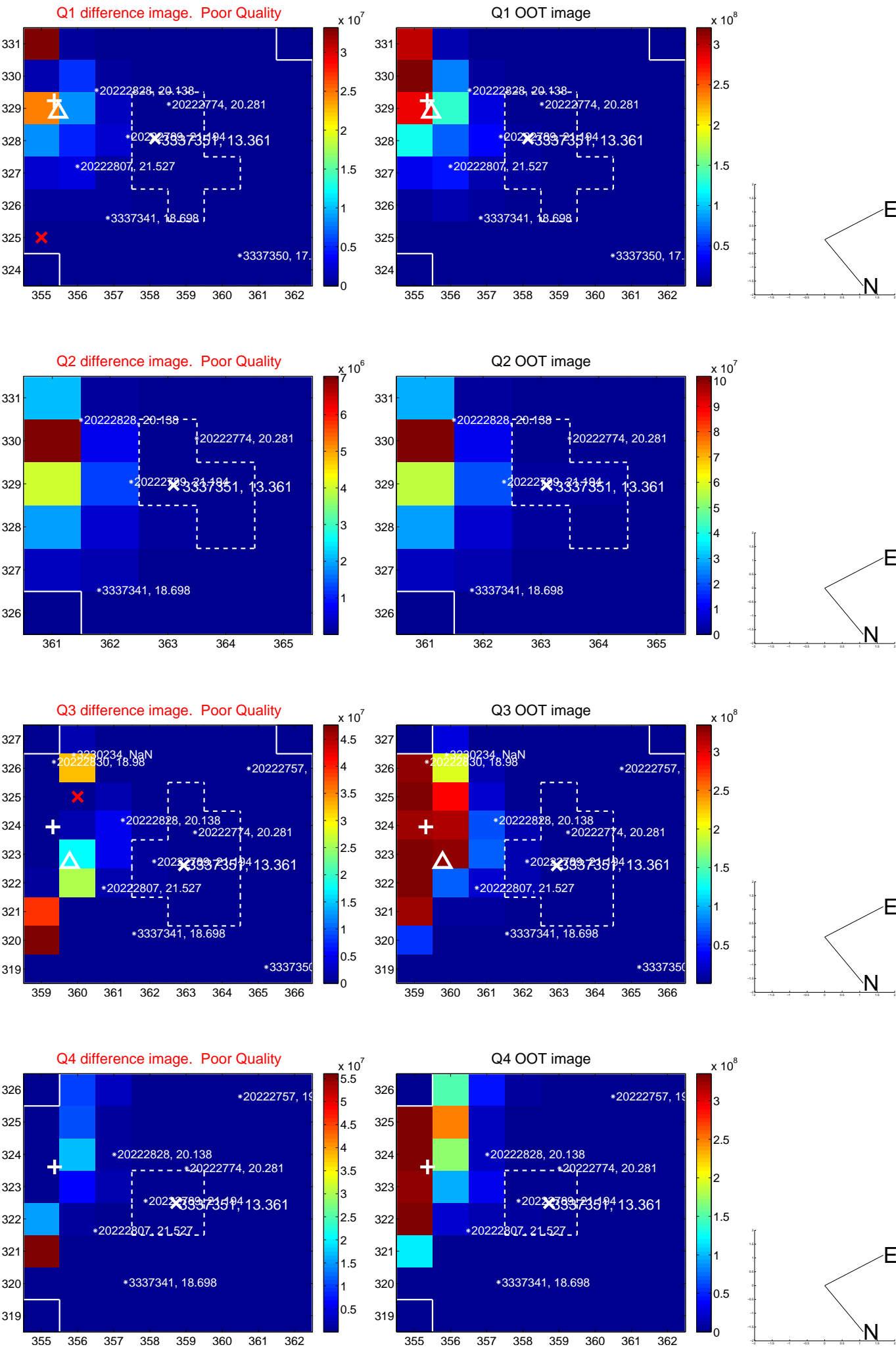


offset from photometric centroids

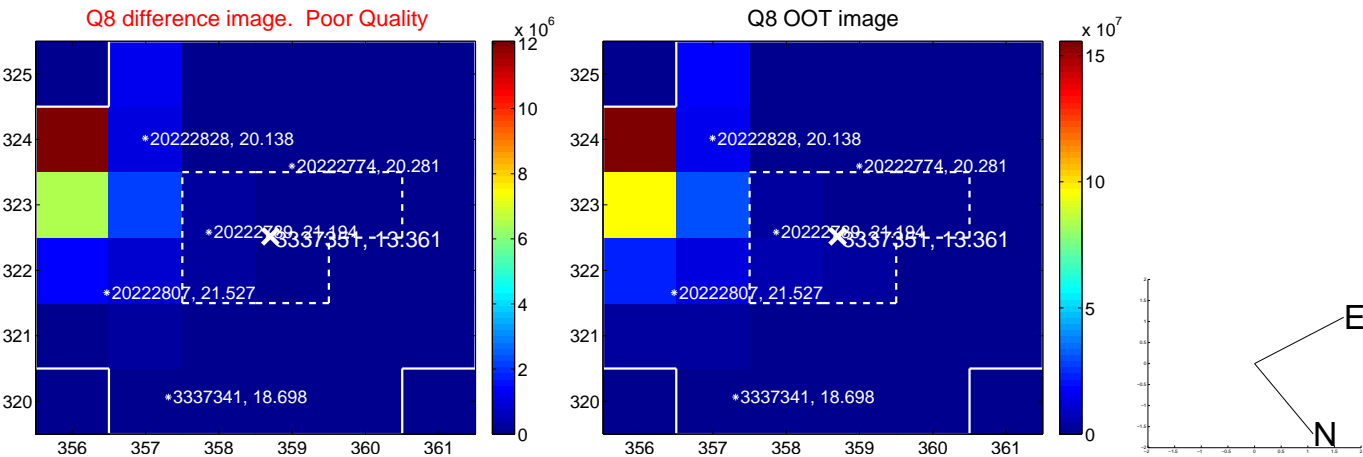
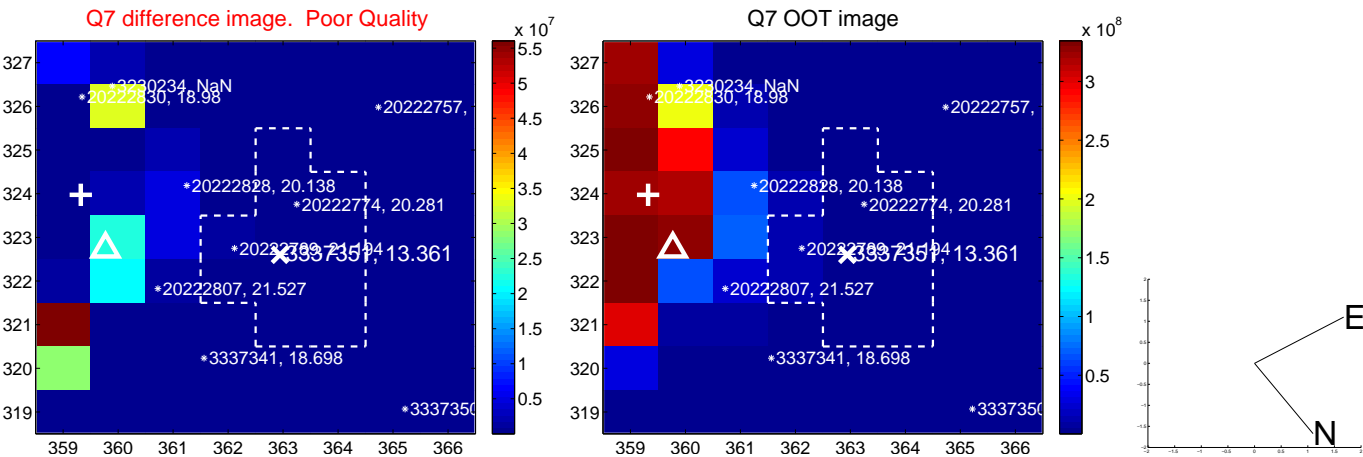
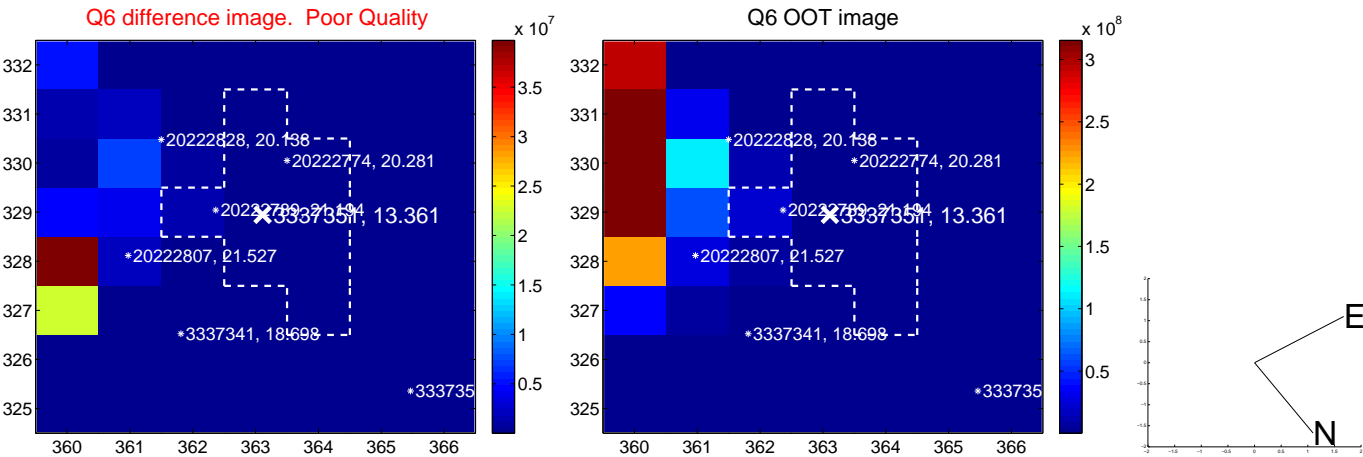
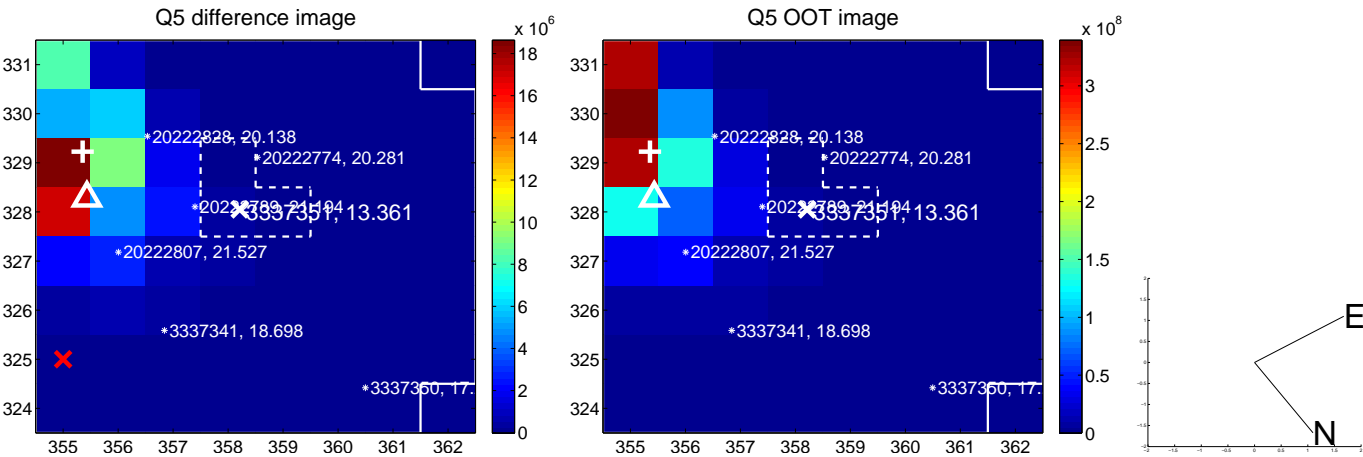


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

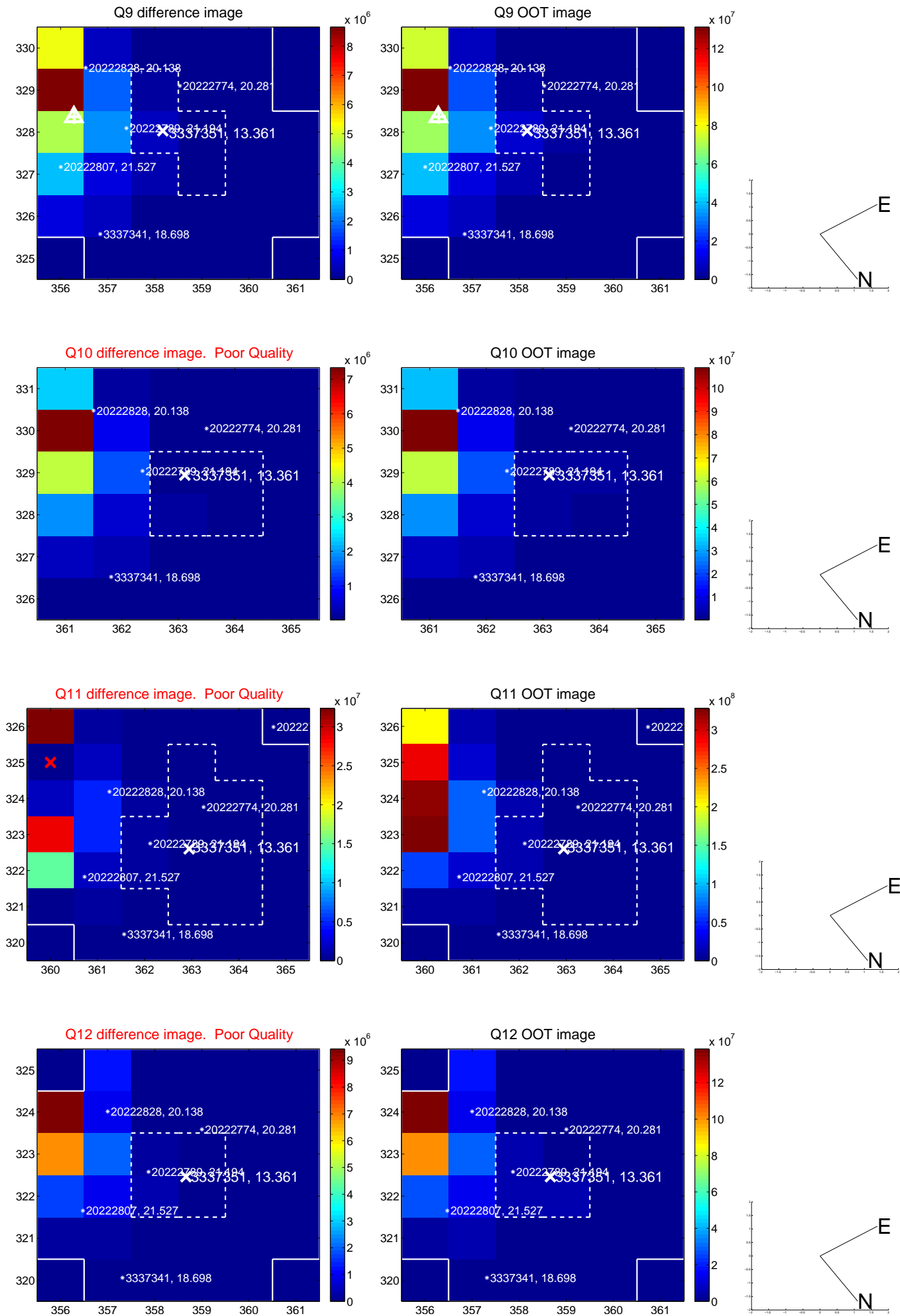
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



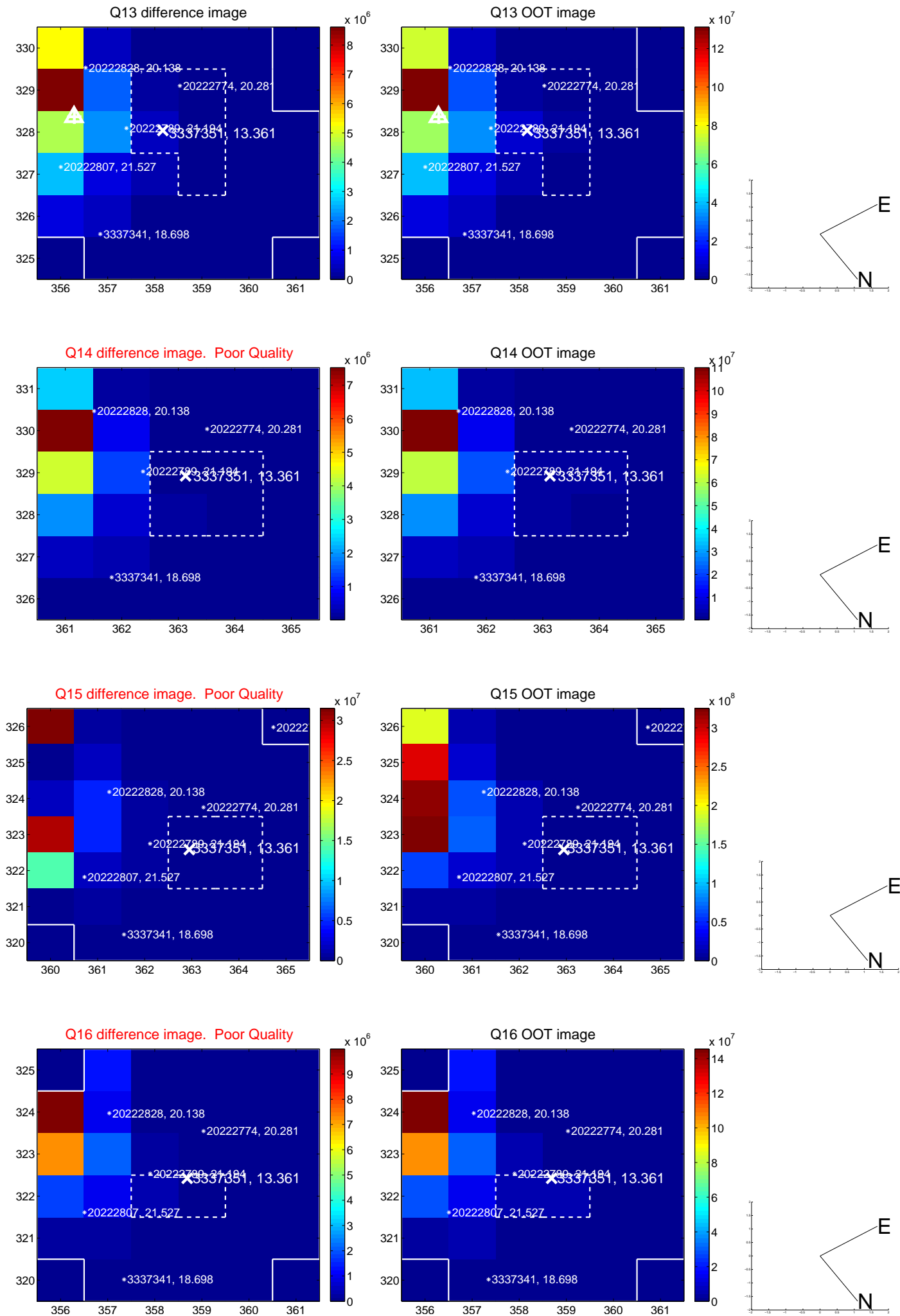
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



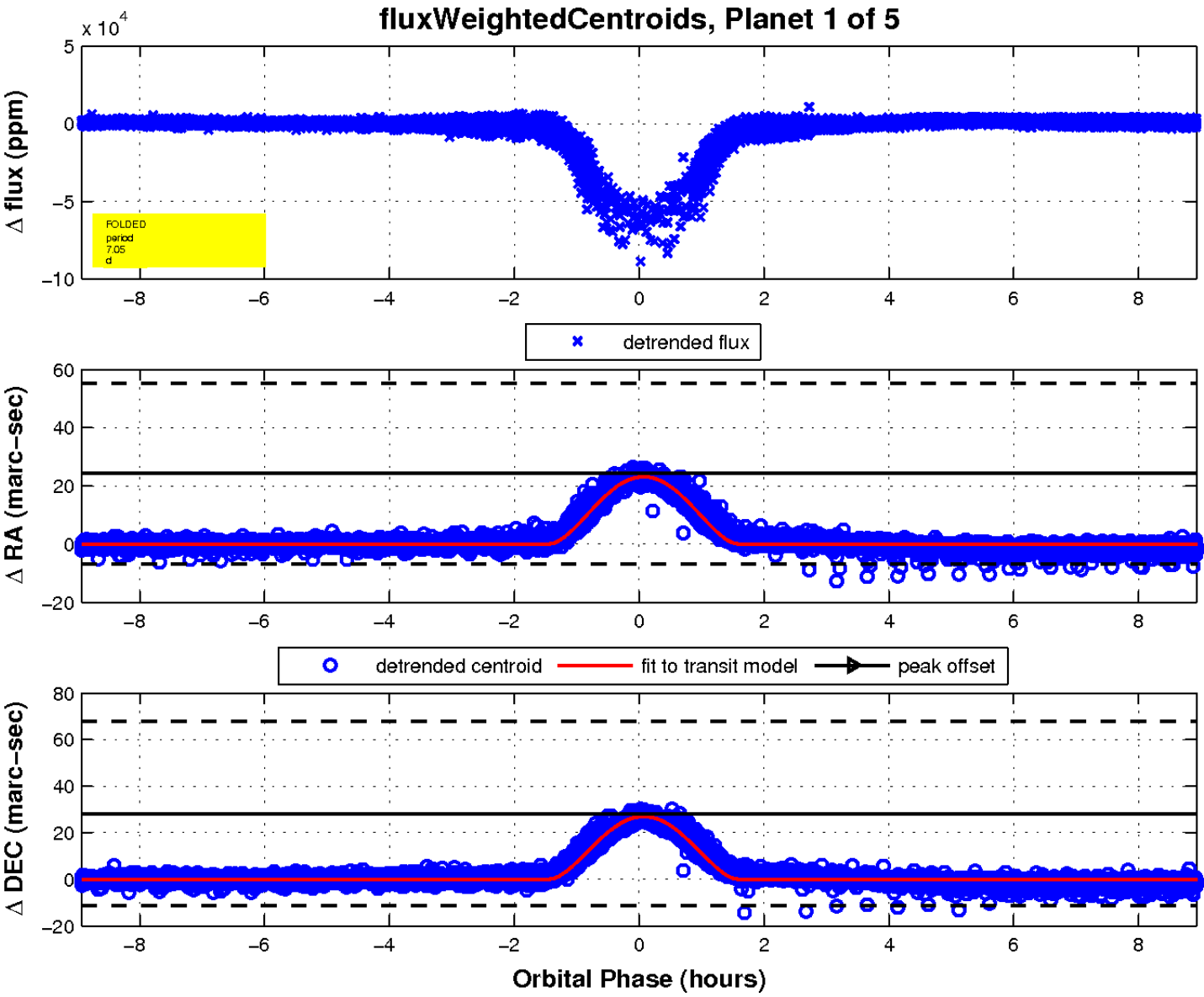
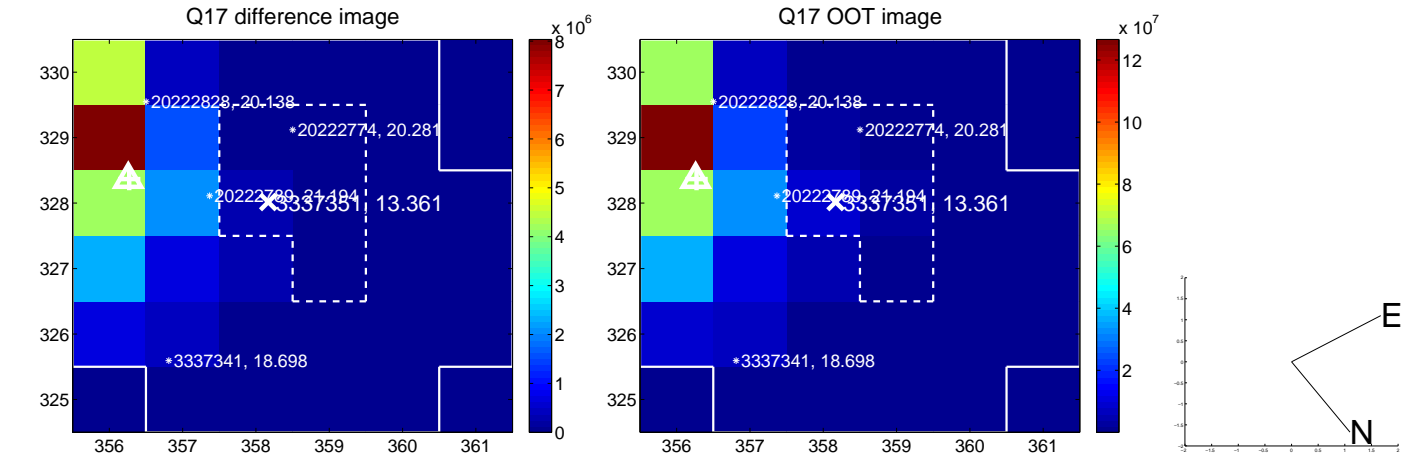
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



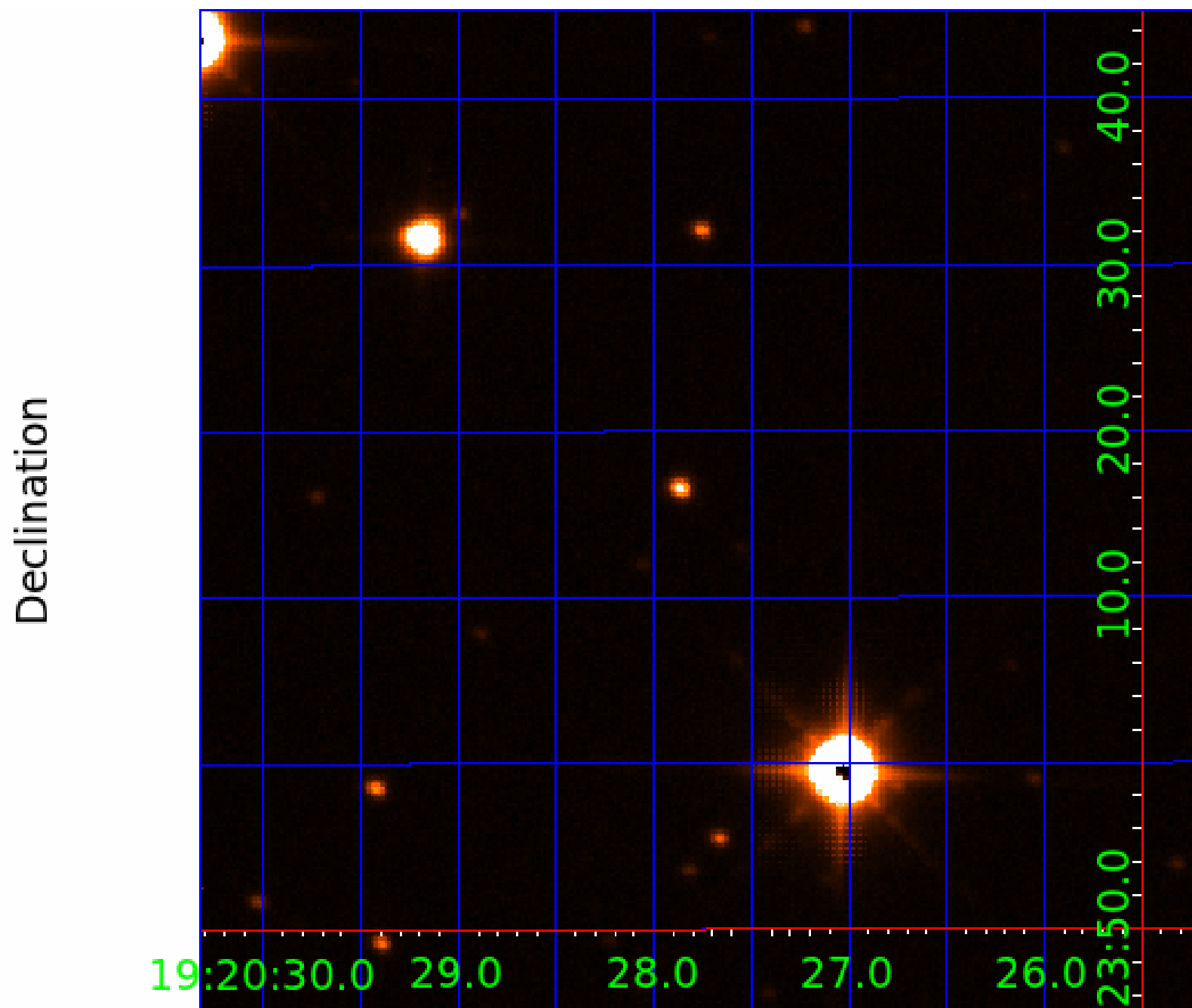
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003337351

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})
003337351-01	OBS	0965.01	7.047118	132.748762	58966.5	2.978	1292.6	679.5	1.03	5730	39.20	197.15
003337351-02	OBS	No	1.409415	132.094900	155.2	4.659	11.9	9.5	1.03	5730	1.31	1685.60
003337351-03	OBS	No	307.480082	149.869407	2913.8	19.488	9.8	7.1	1.03	5730	5.51	1.28
003337351-04	OBS	No	323.320158	140.975138	1926.5	5.000	10.4	-1.0	1.03	5730	4.48	1.20
003337351-05	OBS	No	289.385951	160.802072	3047.2	6.817	9.0	11.4	1.03	5730	10.80	1.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337351-01	OBS	FP	0.00	0	1	1	1	DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
003337351-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET
003337351-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003337351-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_NOFITS
003337351-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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.

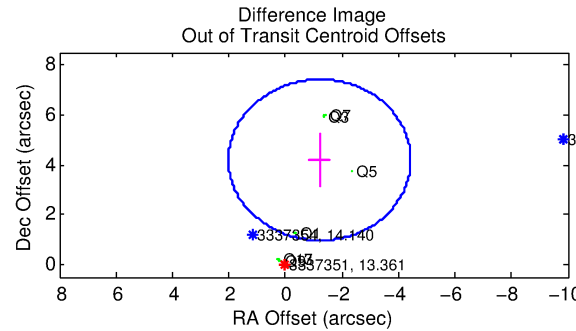
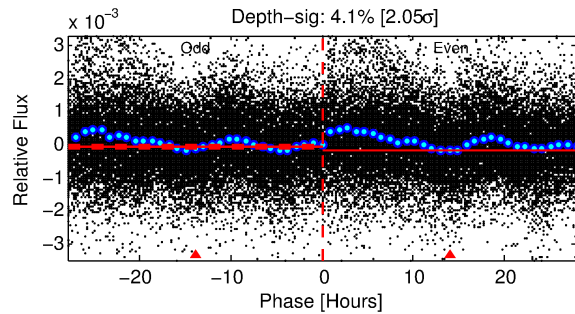
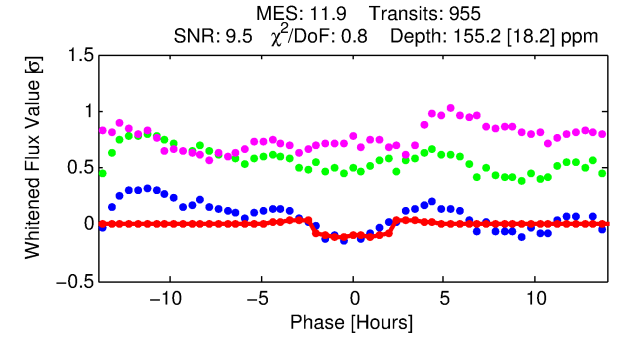
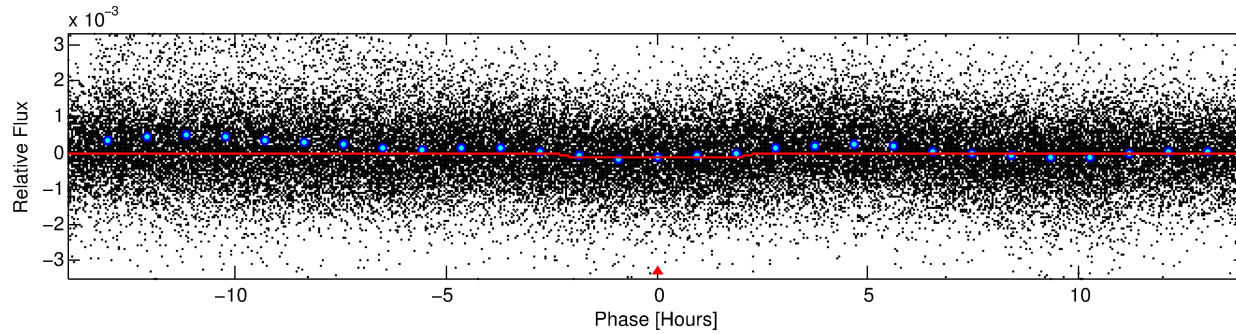
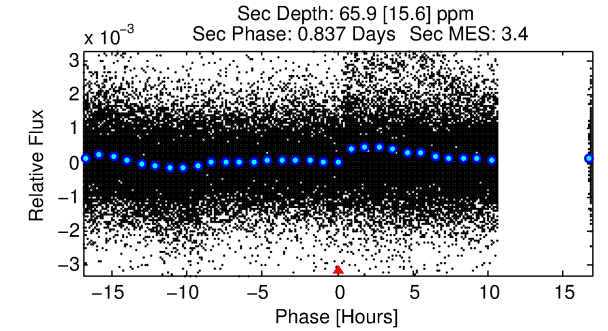
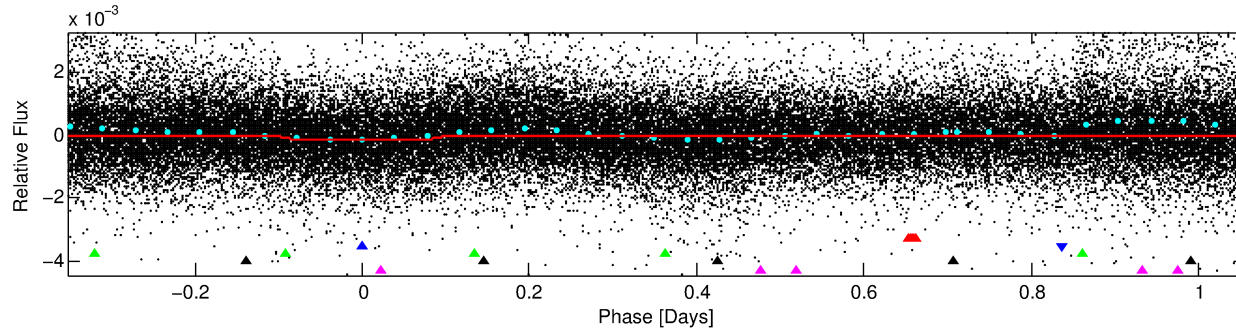
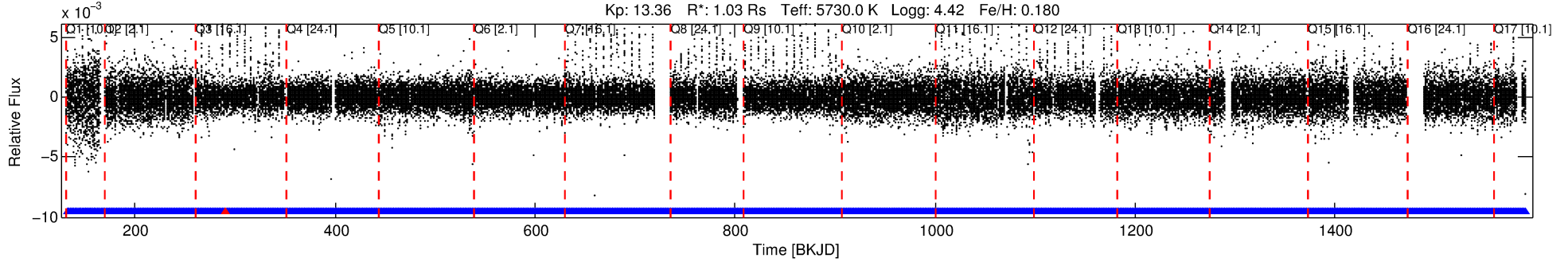
Ephemeris Match Information For 003337351-02

No Significant Match Found

DV One-Page Summary

KIC: 3337351 Candidate: 2 of 5 Period: 1.409 d
KOI: K00965 Corr: No Ephemeris Match

Kp: 13.36 R*: 1.03 Rs Teff: 5730.0 K Logg: 4.42 Fe/H: 0.180



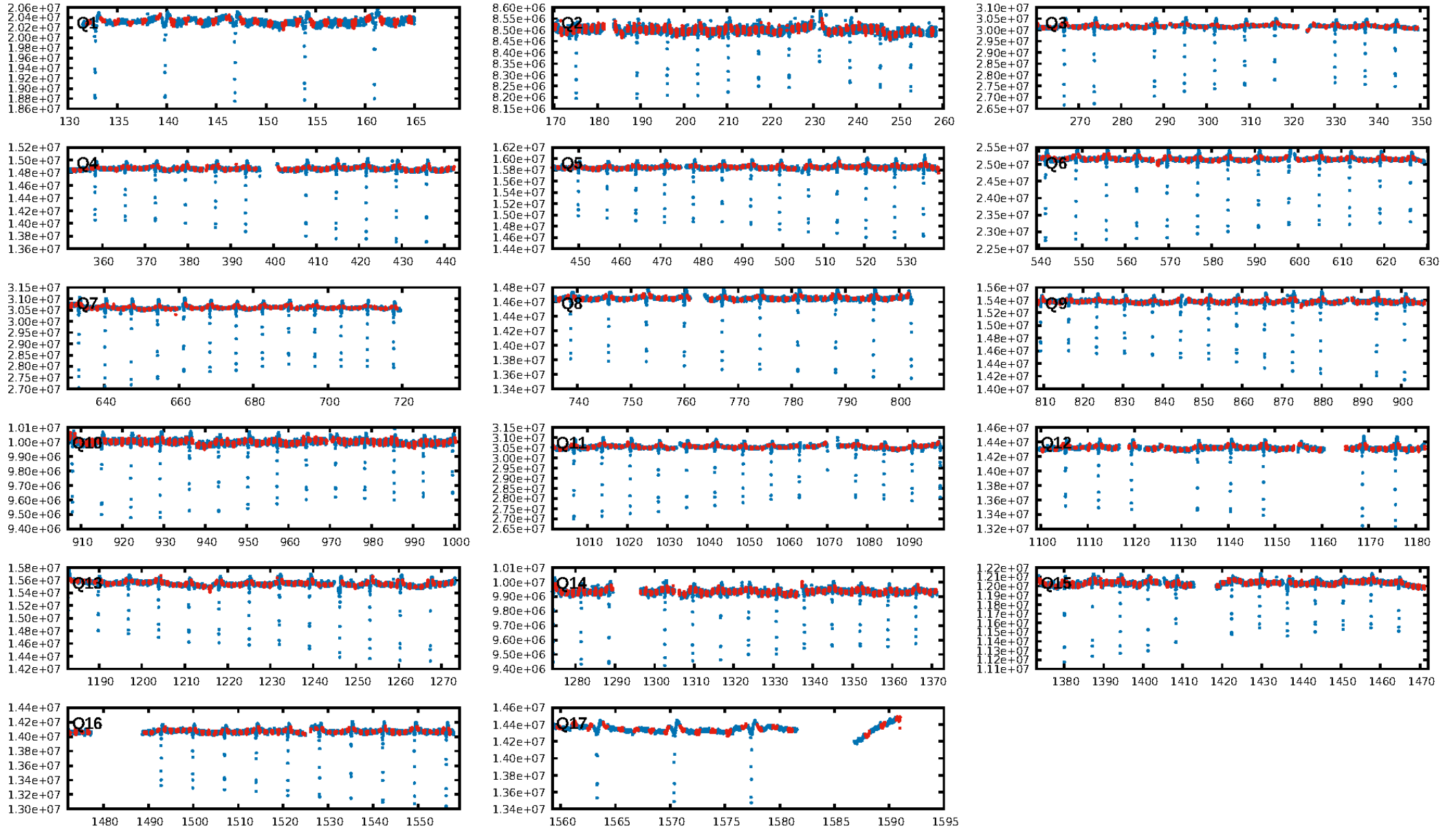
DV Fit Results:

Period = 1.40941 [0.00001] d
Epoch = 132.0949 [0.0036] BKJD
Rp/R* = 0.0116 [0.0121]
b/R* = 2.20 [7.67]
b = 0.45 [7.79]
Seff = 1685.60 [651.84]
Teq = 1634 [158] K
Rp = 1.31 [1.42] Re
a = 0.0248 [0.0061] AU
Ag = 13.05 [27.80] [0.43σ]
Teff = 4801 [2527] K [1.25σ]

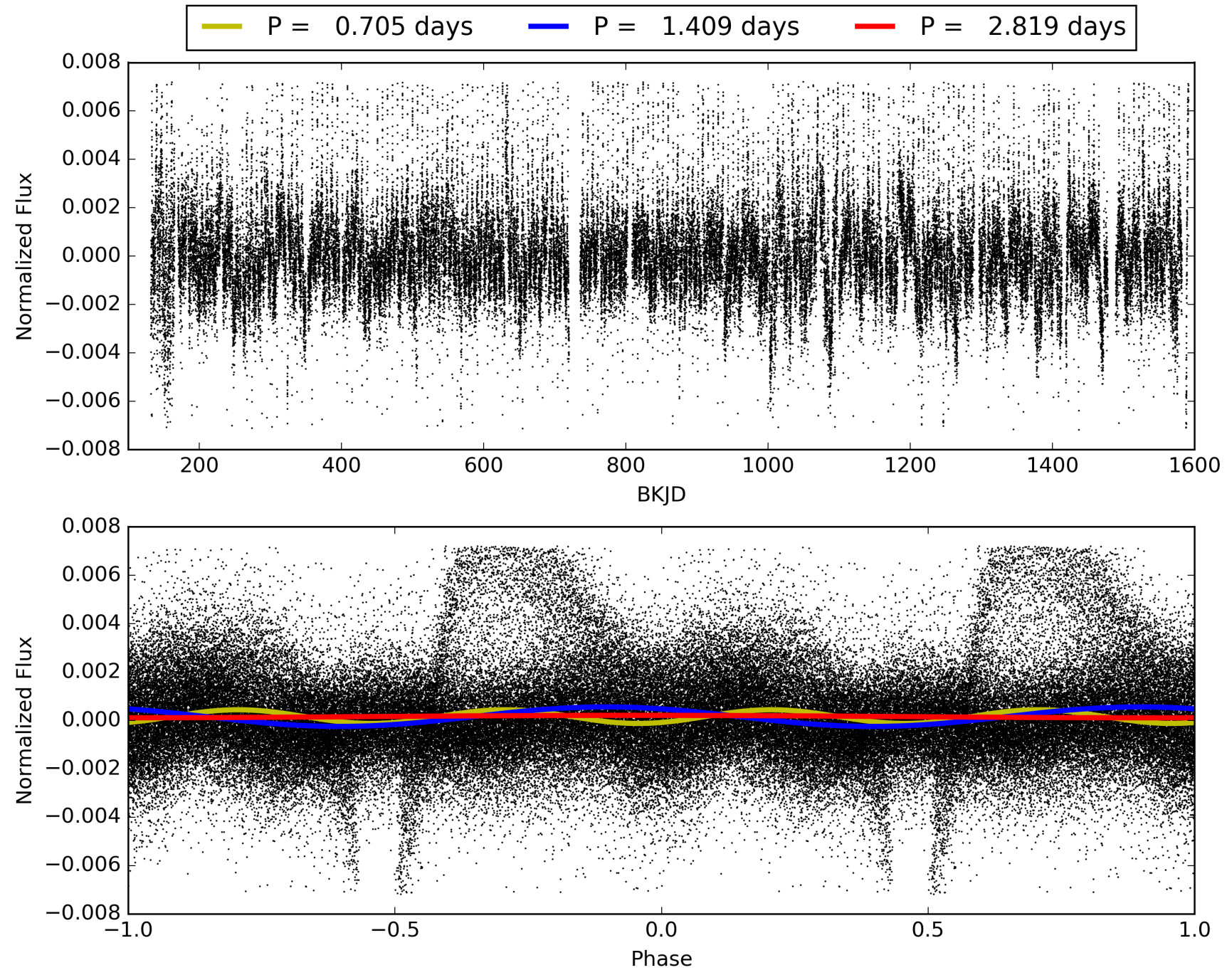
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [24.47σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [911/912]
GhostDiagnostic-chr: -0.7512
Centroid-sig: 0.0%
Centroid-so: 4.932 arcsec [23.10σ]
OotOffset-rm: 4.360 arcsec [4.06σ]
KicOffset-rm: 11.064 arcsec [13.89σ]
OotOffset-st: 0/2/0/5 [7]
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DiffImageOverlap-fno: 1.00 [17/17]

TCE 003337351-02, PDC Light Curves

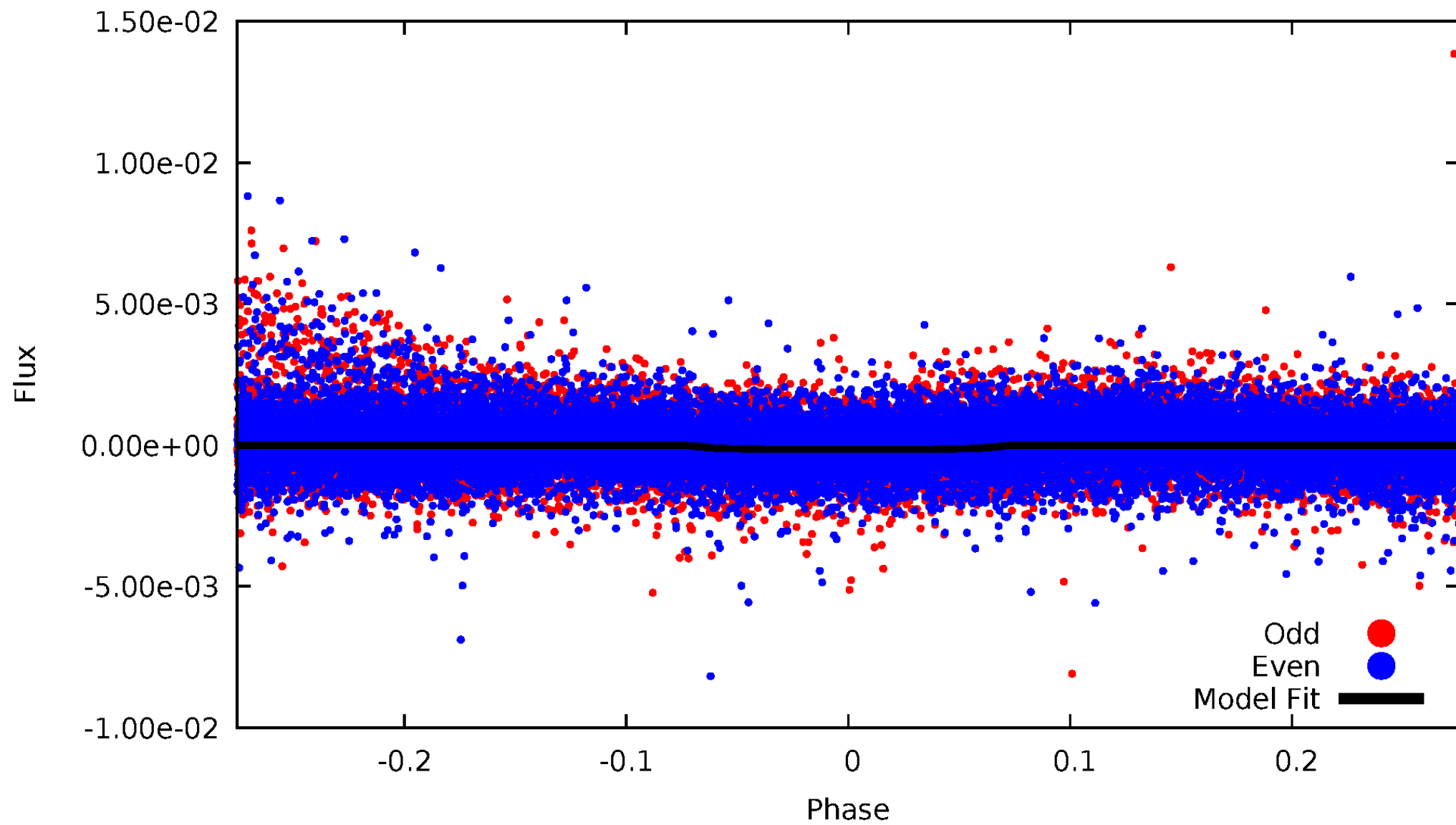


TCE 003337351-02



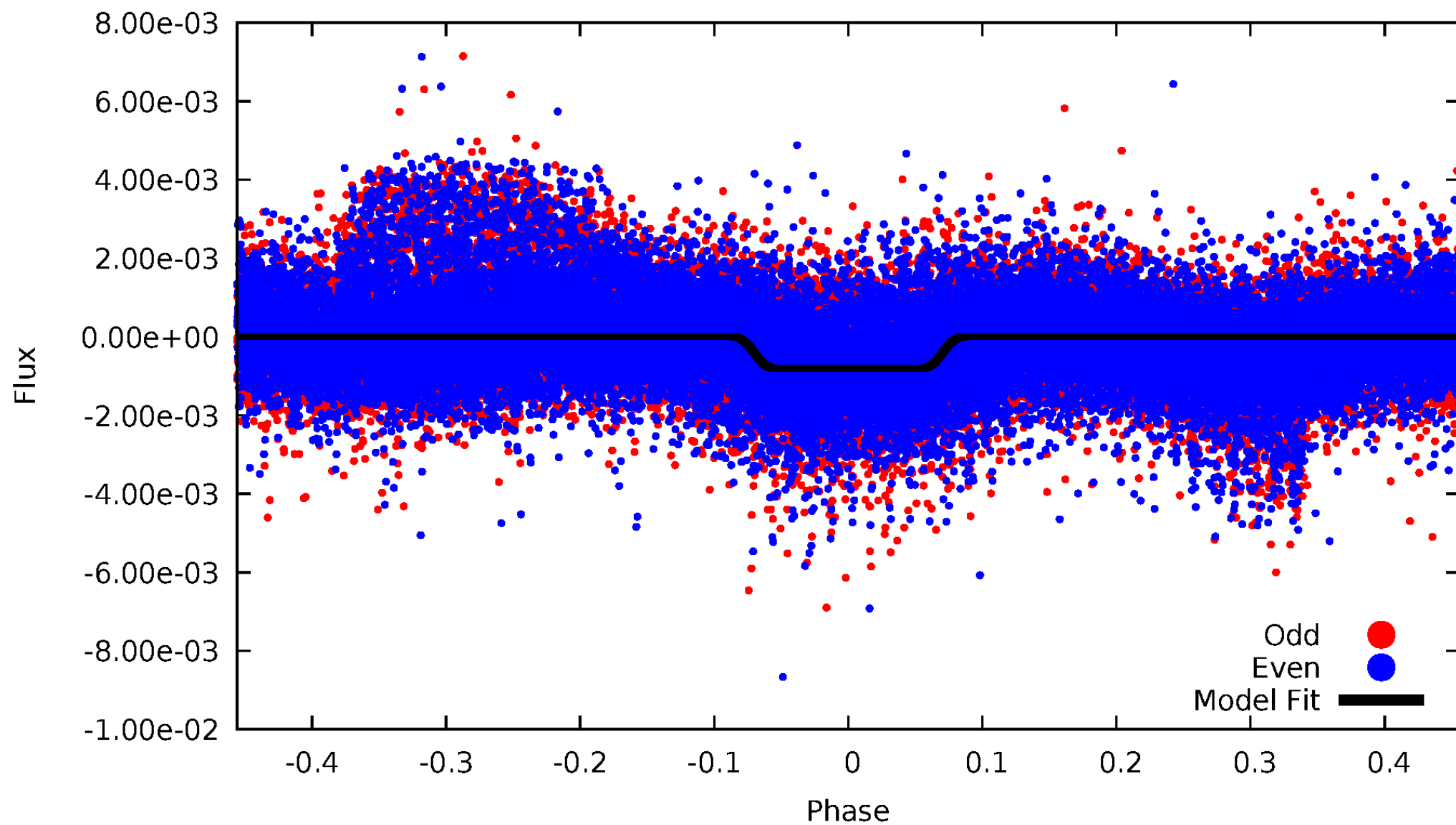
DV Odd/Even

TCE 003337351-02



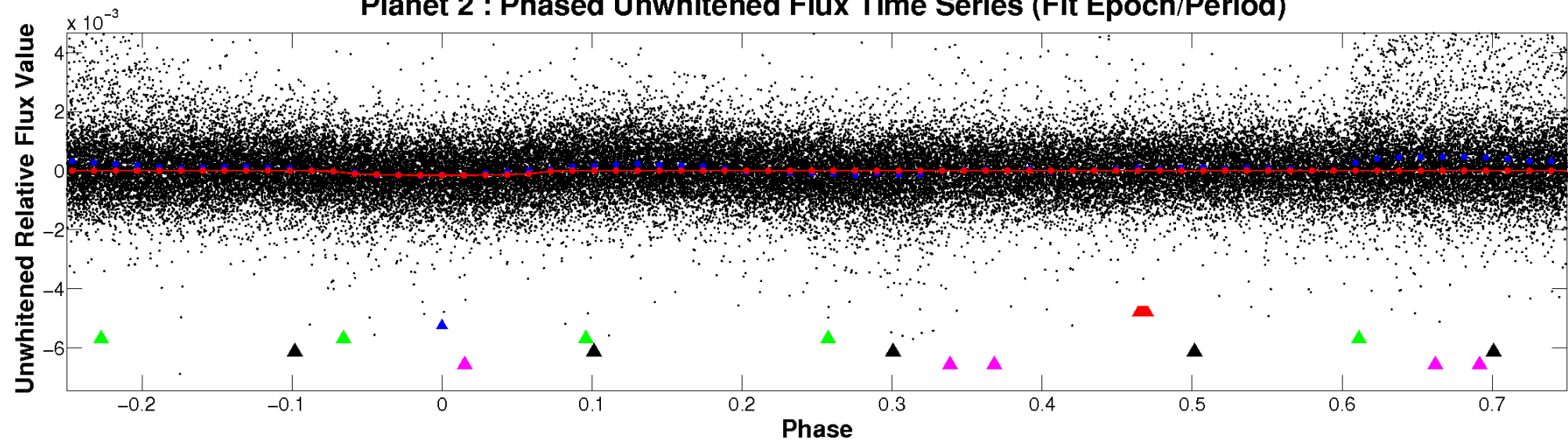
ALT Odd/Even

TCE 003337351-02

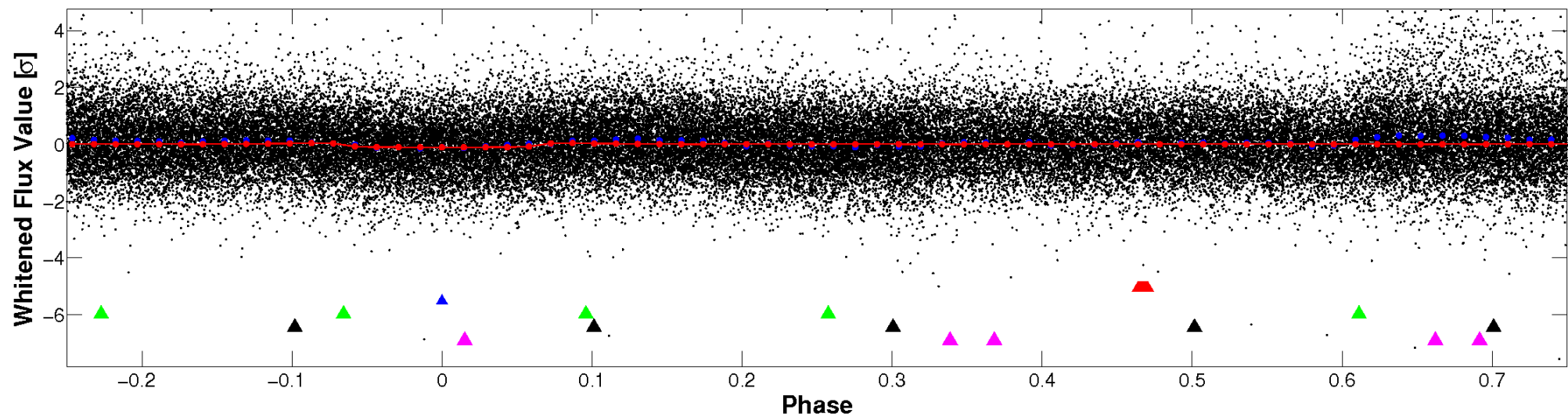


Non-Whitened Vs. Whitened Light Curve

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

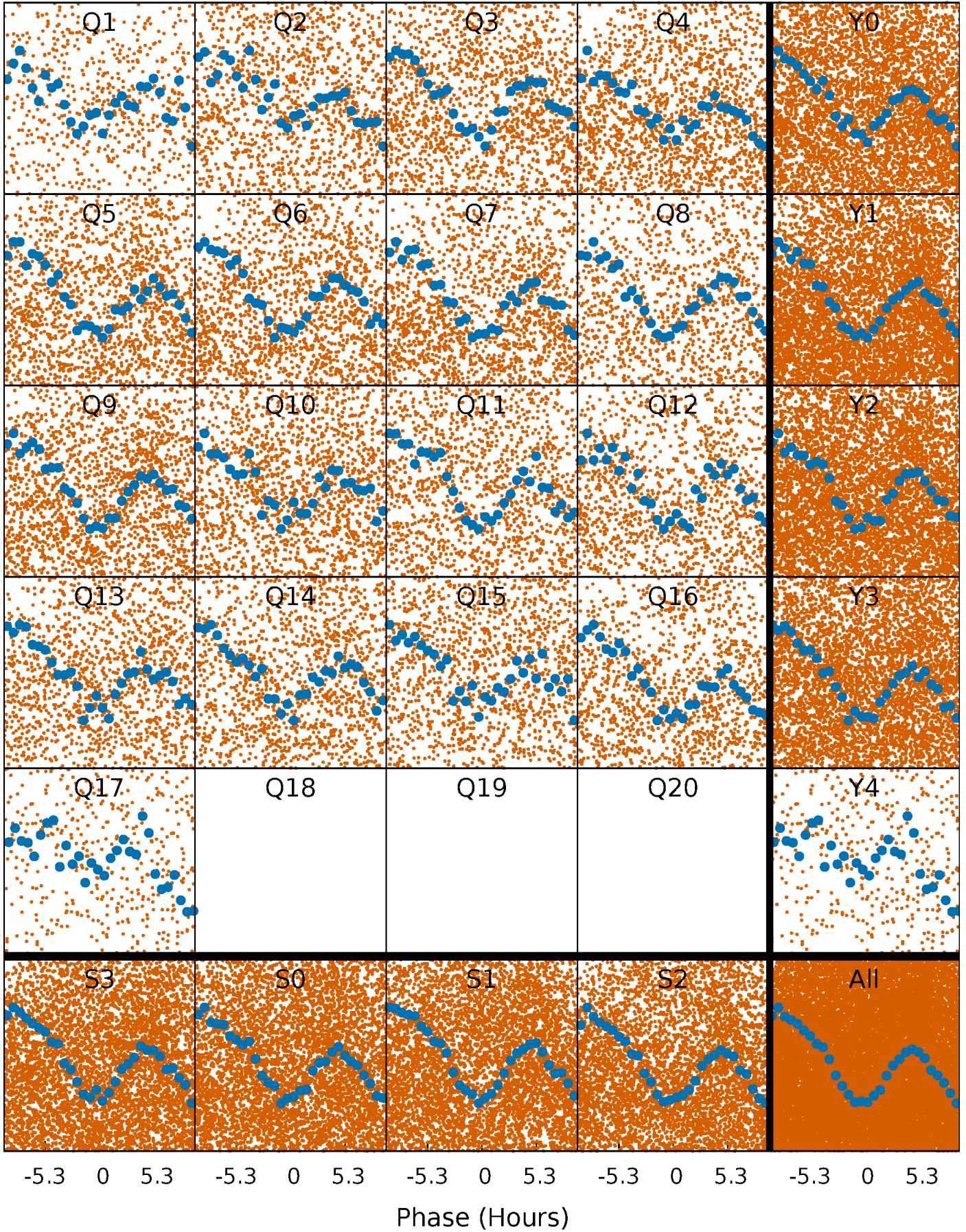


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



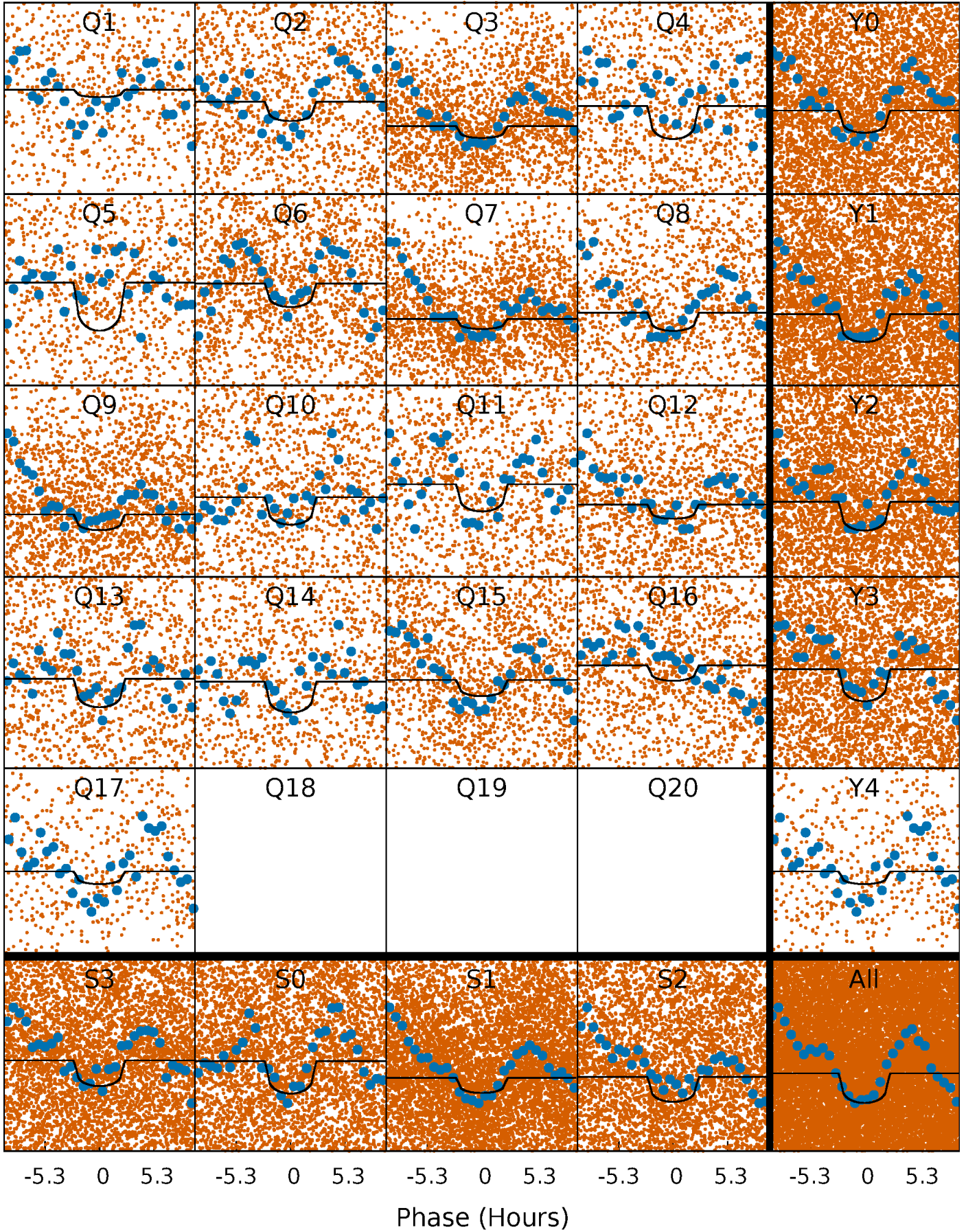
PDC Quarter-Phased Transit Curves

TCE 003337351-02 P= 1.409415 Days $T_0=132.094900$ (BKJD)



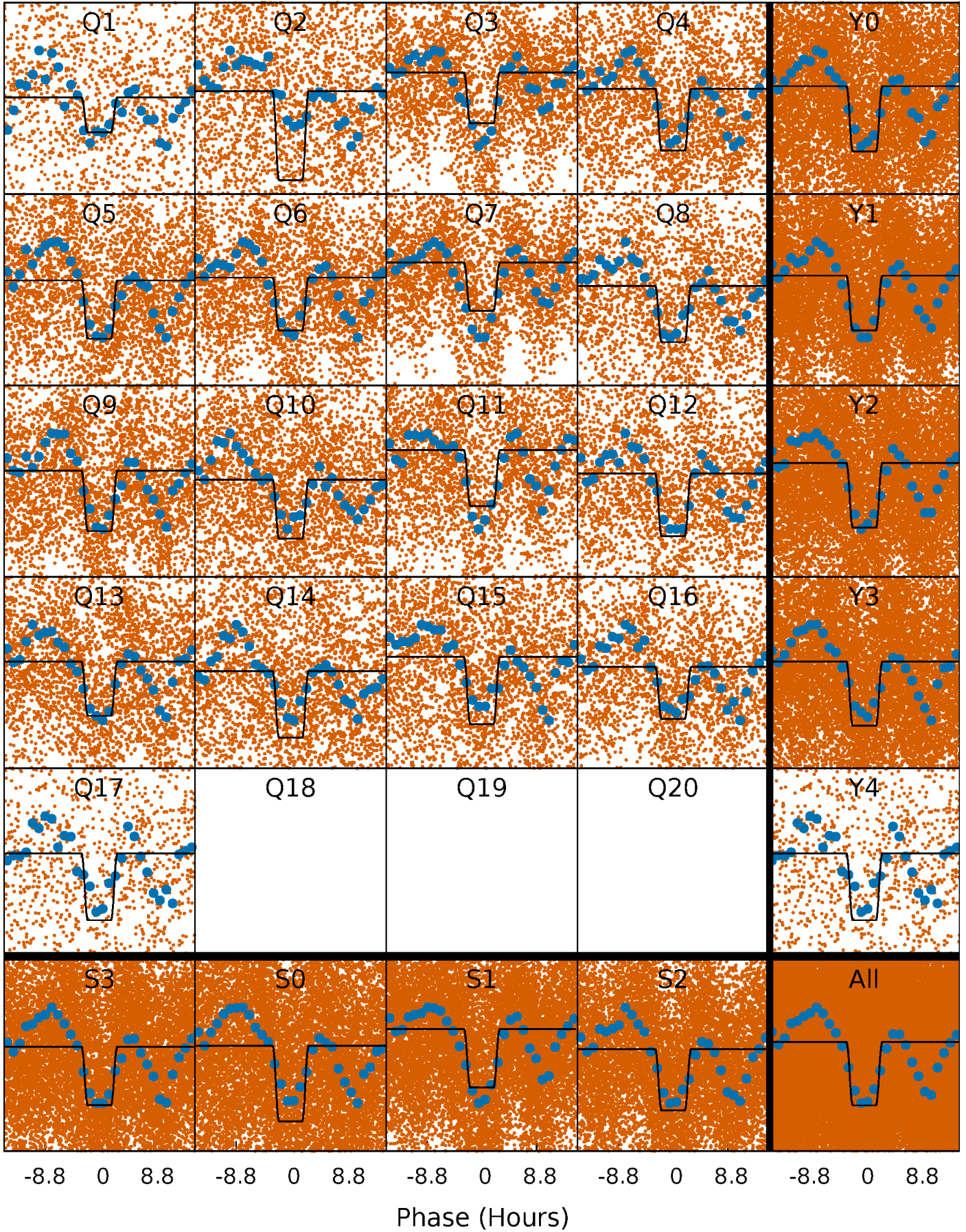
DV Quarter-Phased Transit Curves

TCE 003337351-02 P= 1.409415 Days $T_0=132.094900$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

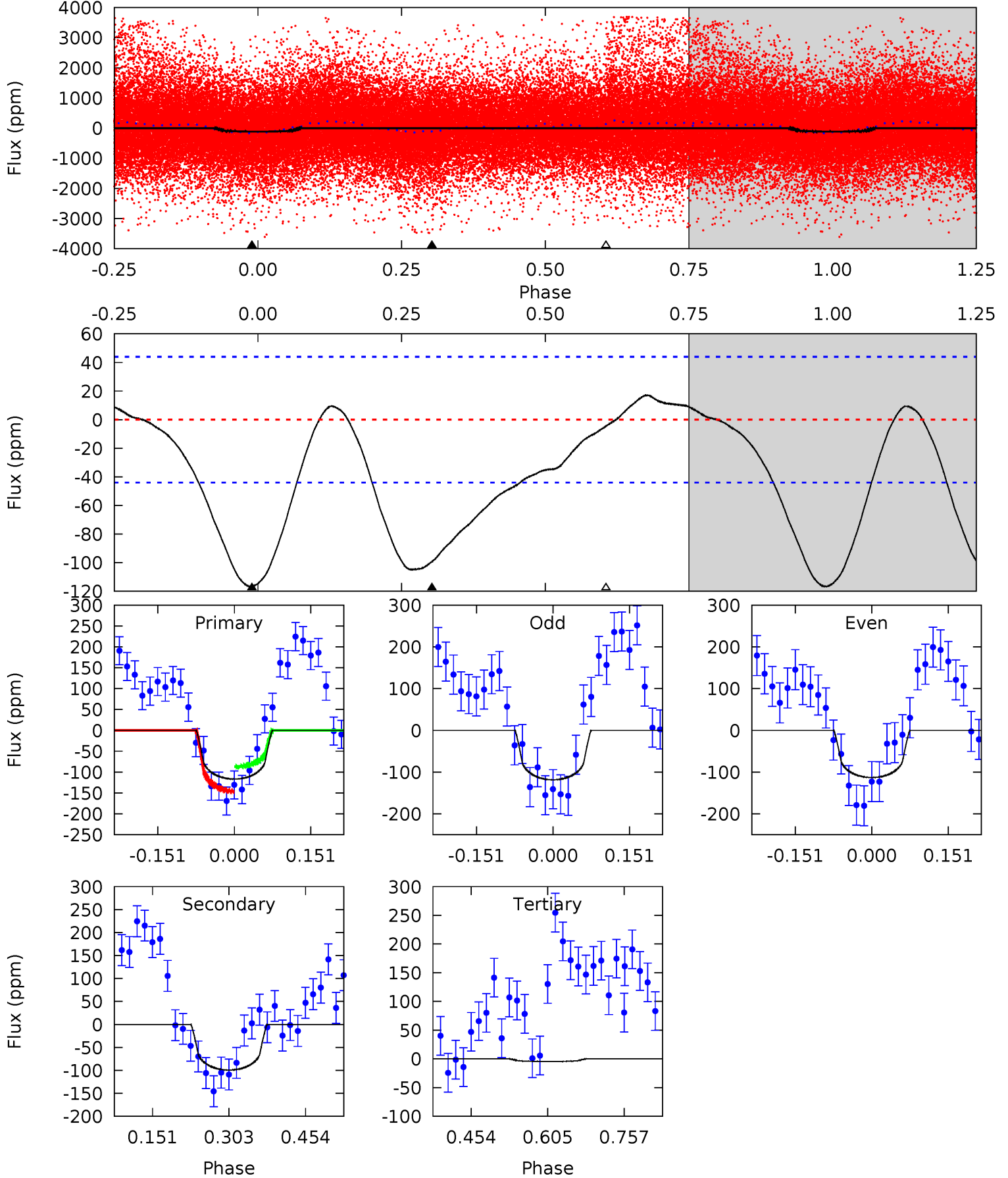
TCE 003337351-02 P= 1.409424 Days $T_0=132.072476$ (BKJD)



DV Model-Shift Uniqueness Test

003337351-02, P = 1.409415 Days, E = 130.685485 Days

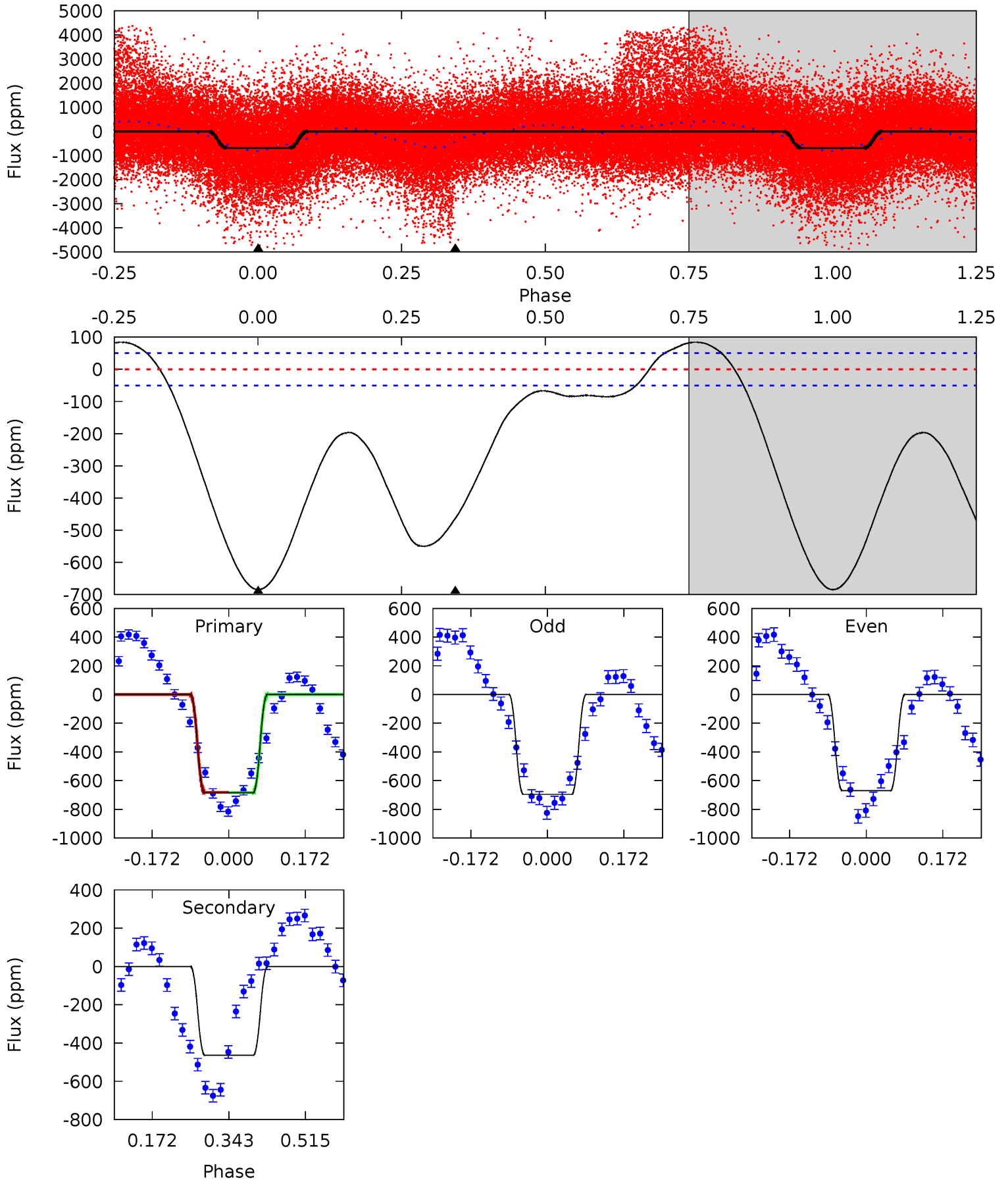
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	10.1	0.47	0	4.48	1.43	1.81	11.4	11.9	9.64	10.1	0.28	1.55	0.13	3.08



Alt Model-Shift Uniqueness Test

003337351-02, P = 1.409424 Days, E = 130.663052 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.7	41.1	0	0	4.45	1.37	6.03	60.7	60.7	41.1	41.1	1.15	1.10	0.11	0.06



Stellar Parameters For KIC 003337351

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5730^{+171}_{-206}	$4.417^{+0.084}_{-0.196}$	$0.180^{+0.200}_{-0.300}$	$1.035^{+0.304}_{-0.130}$	$1.018^{+0.122}_{-0.111}$	$1.295^{+0.563}_{-0.631}$
	+3%/-4%	+2%/-4%	+111%/-167%	+29%/-13%	+12%/-11%	+43%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003337351-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-99 ± 10	$1.67^{+1.19}_{-1.03}$	2305^{+160}_{-131}	4875^{+3023}_{-983}	12^{+67}_{-8}
Alt.	-464 ± 11	$3.46^{+1.40}_{-1.38}$	2312^{+178}_{-131}	4927^{+1343}_{-634}	13^{+23}_{-6}

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

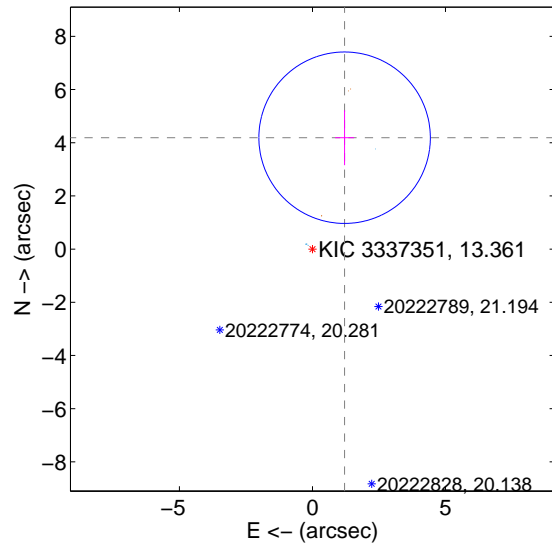
Supplemental centroid analysis for 003337351-02. Kepler magnitude: 13.36. Transit SNR 9.47

There are 4 quarters with good PRF difference image offsets

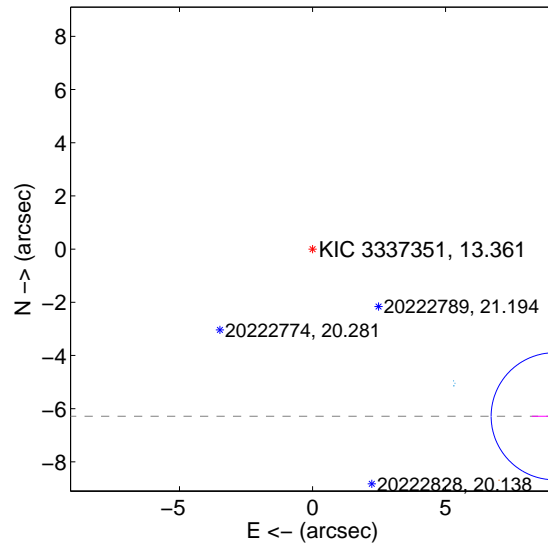
The OOT PRF centroid is offset from the target star catalog position by about 7.69 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.360 ± 1.074	4.06	-1.210 ± 0.356	4.188 ± 1.034
PRF-fit source offset from KIC position	11.064 ± 0.796	13.89	-9.106 ± 0.862	-6.285 ± 0.487
photometric centroid source offset	4.93 ± 0.21	23.10	-3.66 ± 0.20	-3.31 ± 0.23

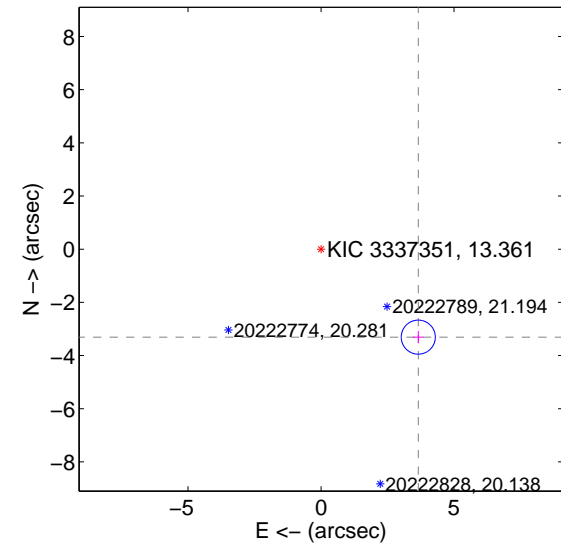
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

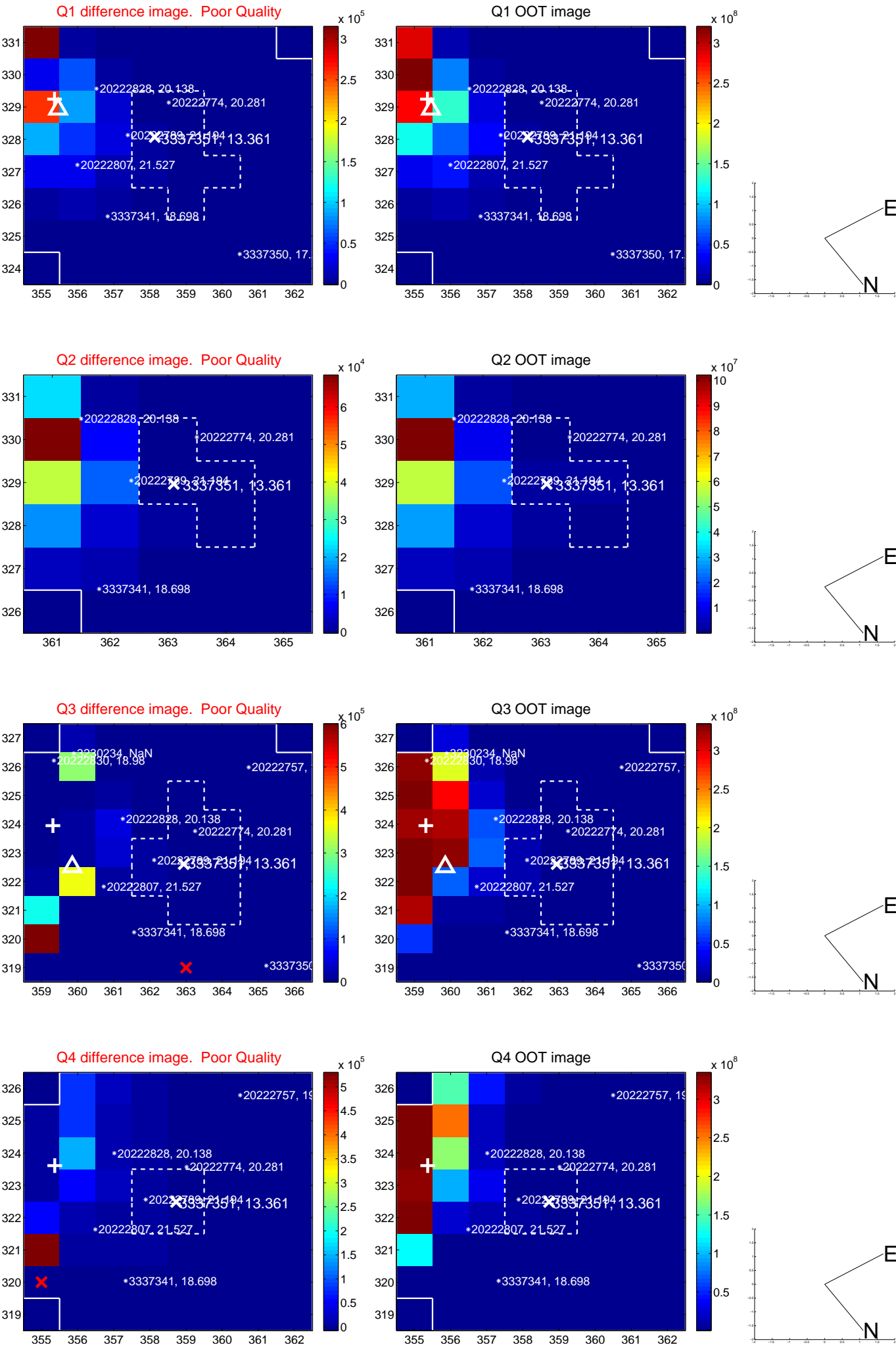


offset from photometric centroids

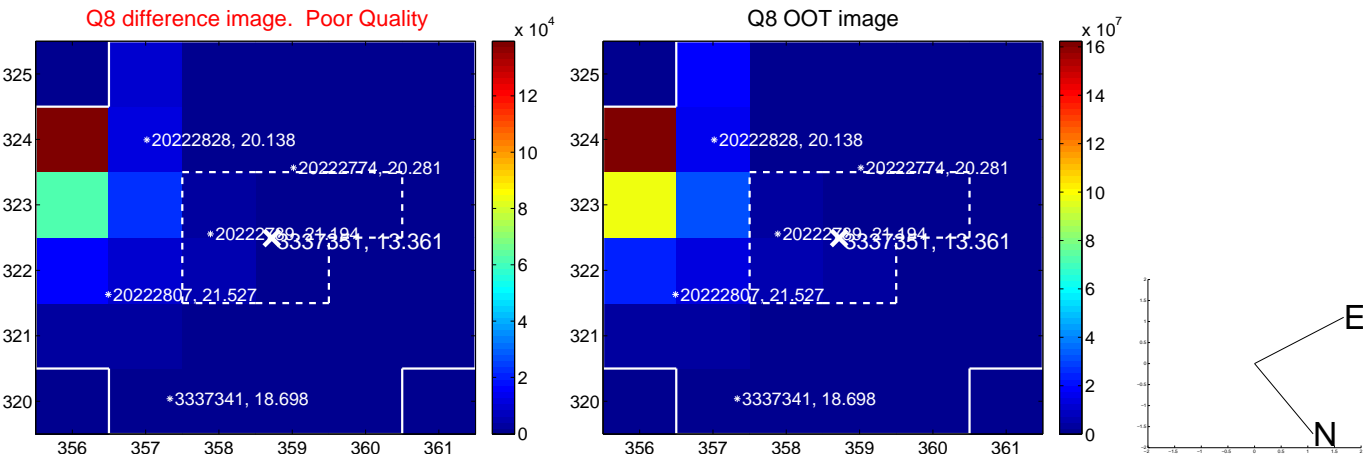
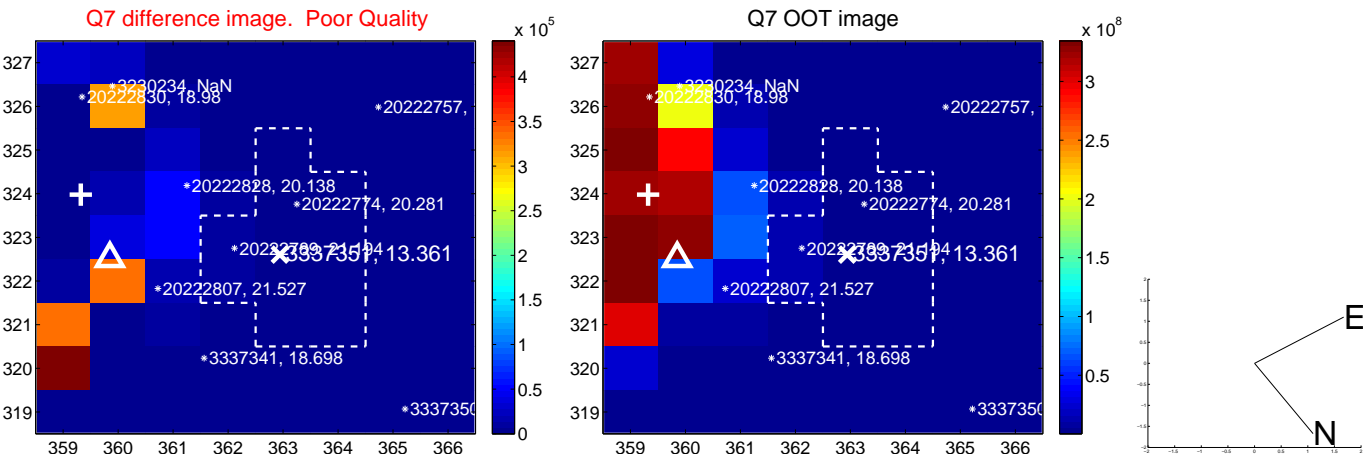
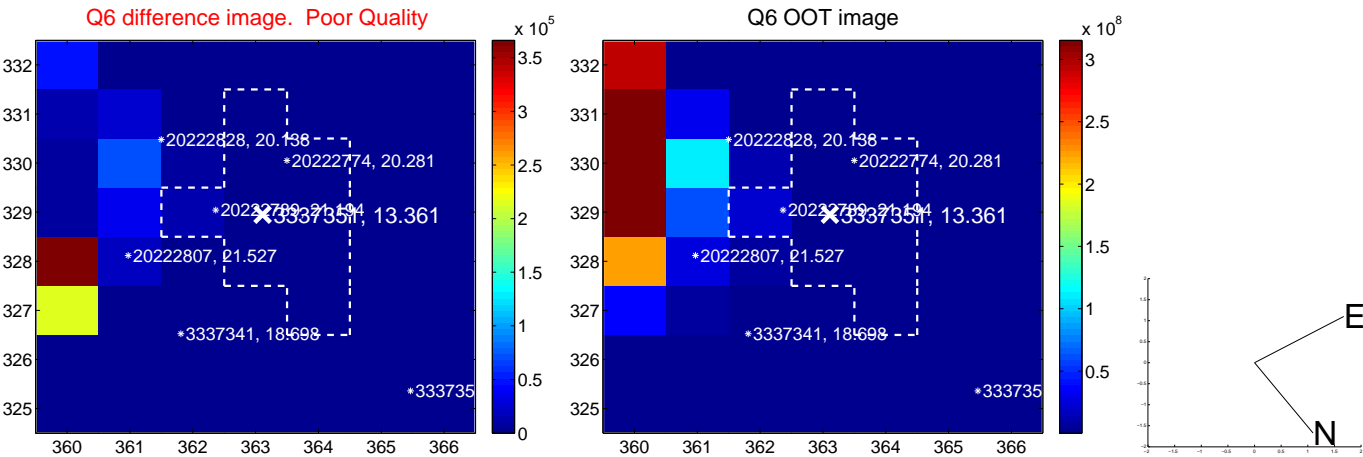
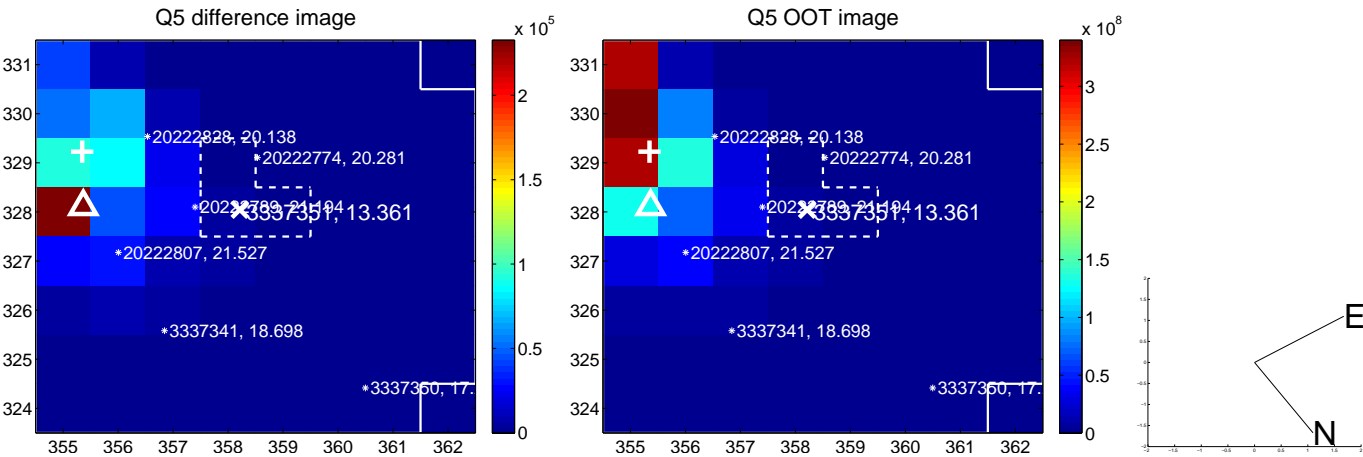


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

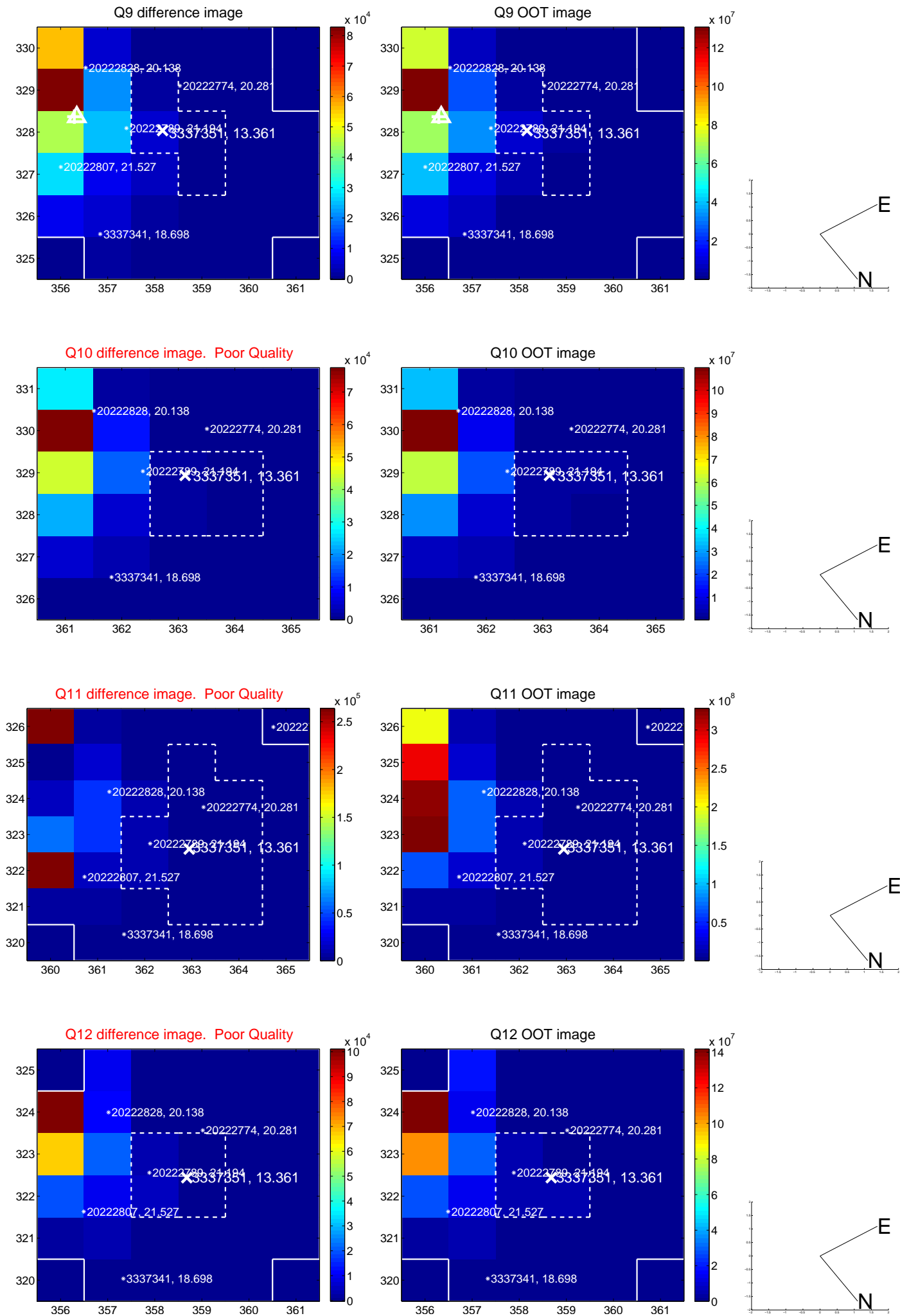
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



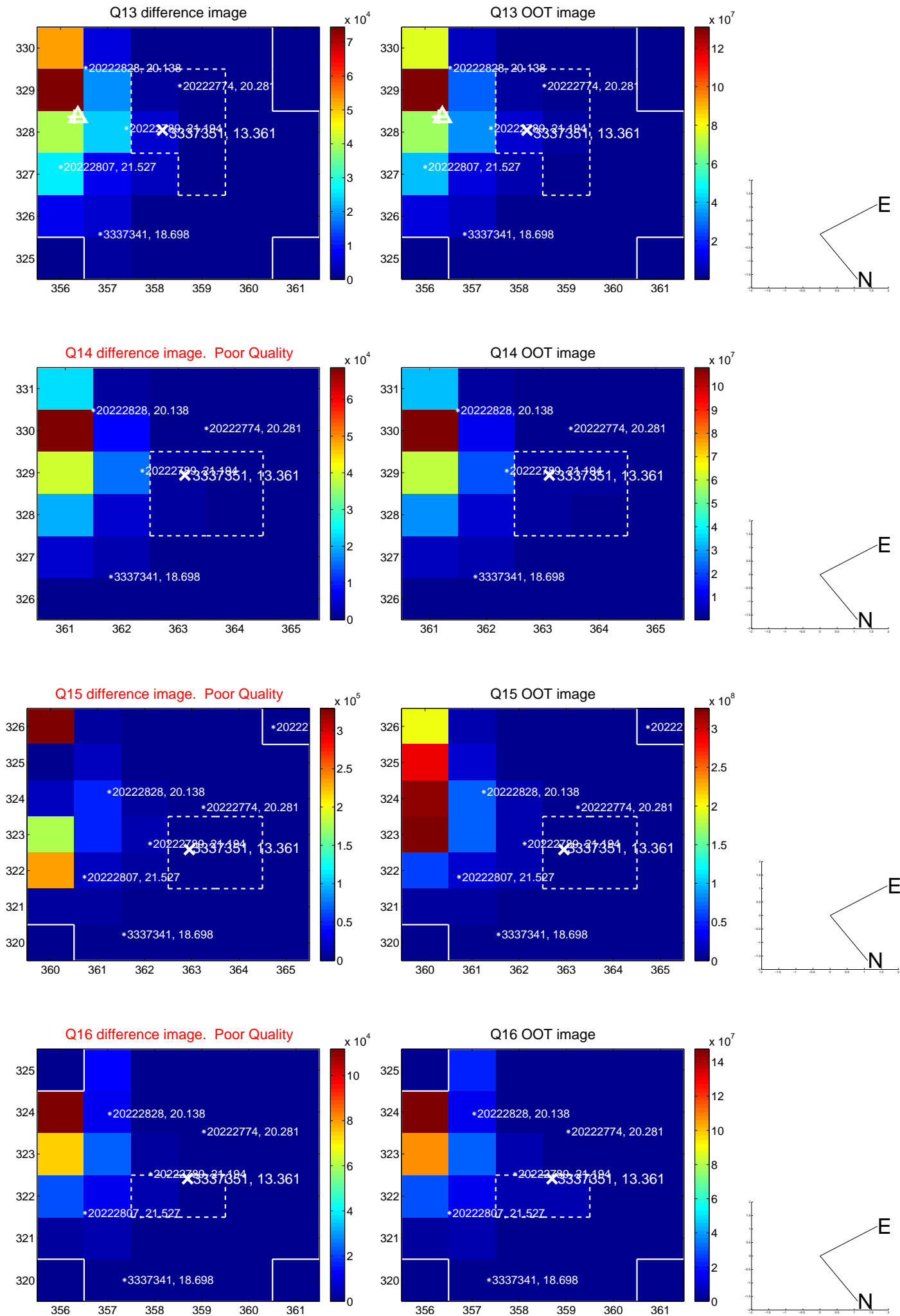
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



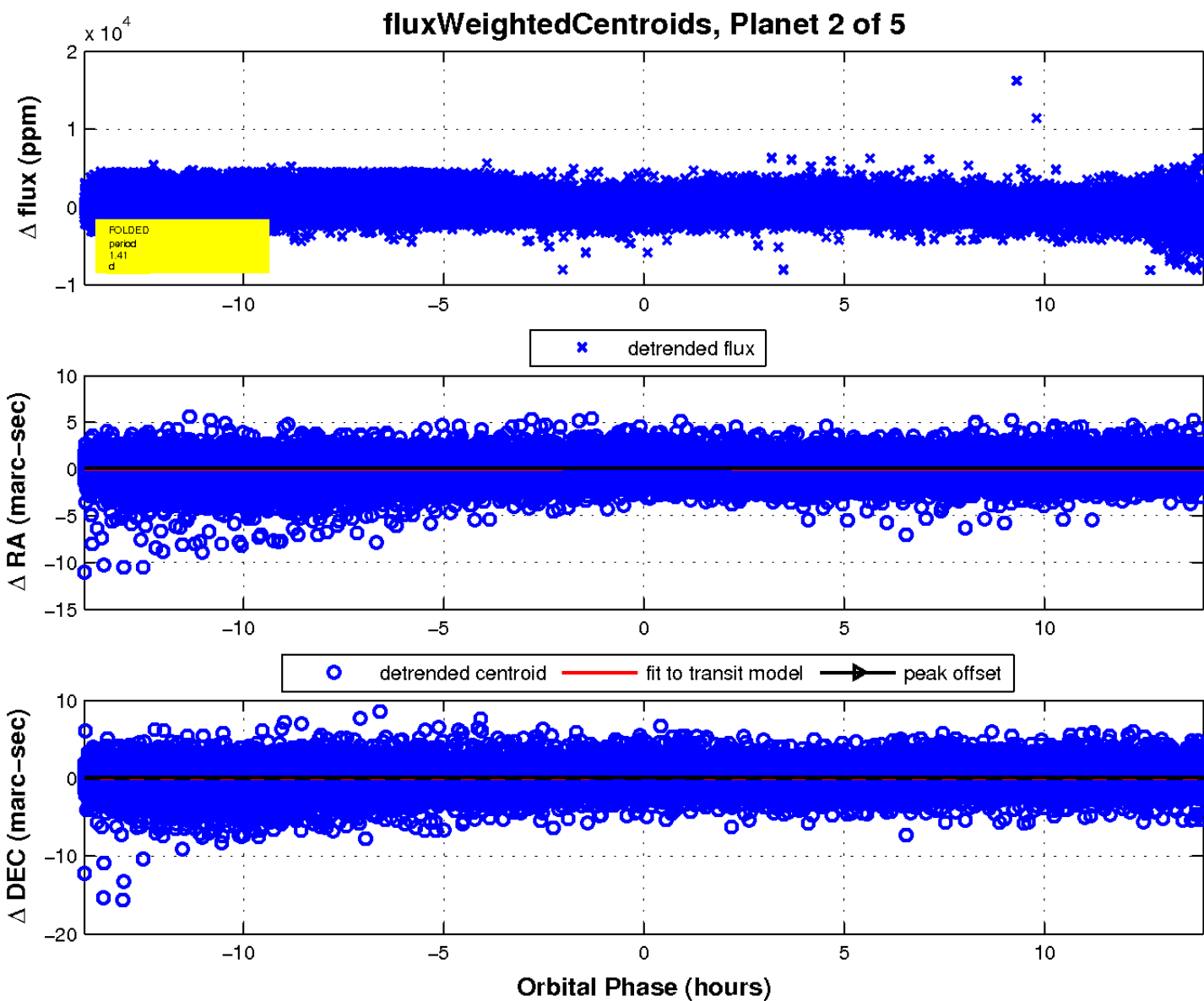
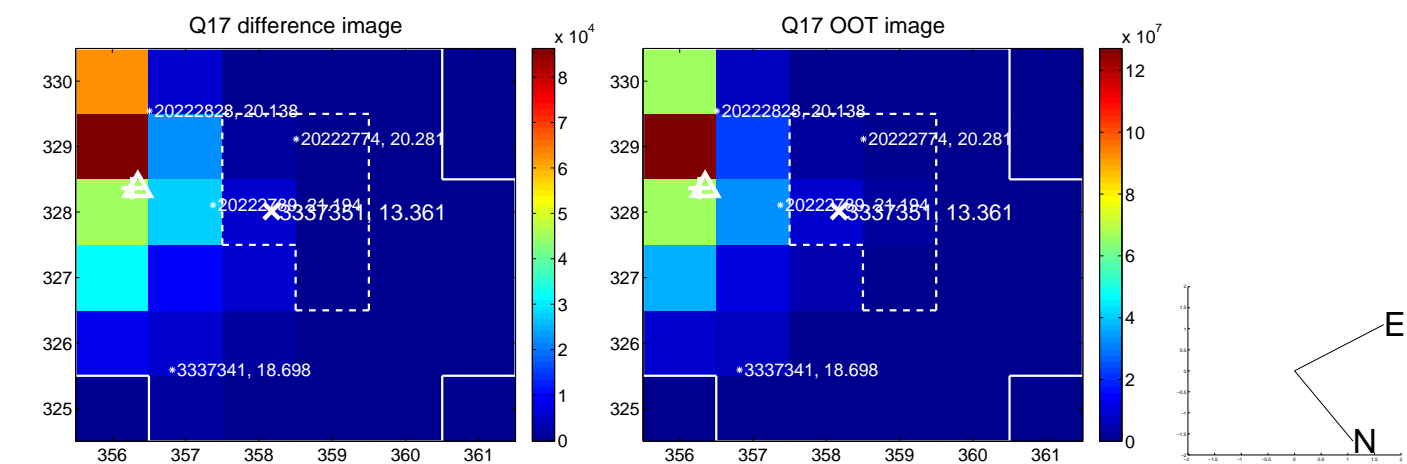
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



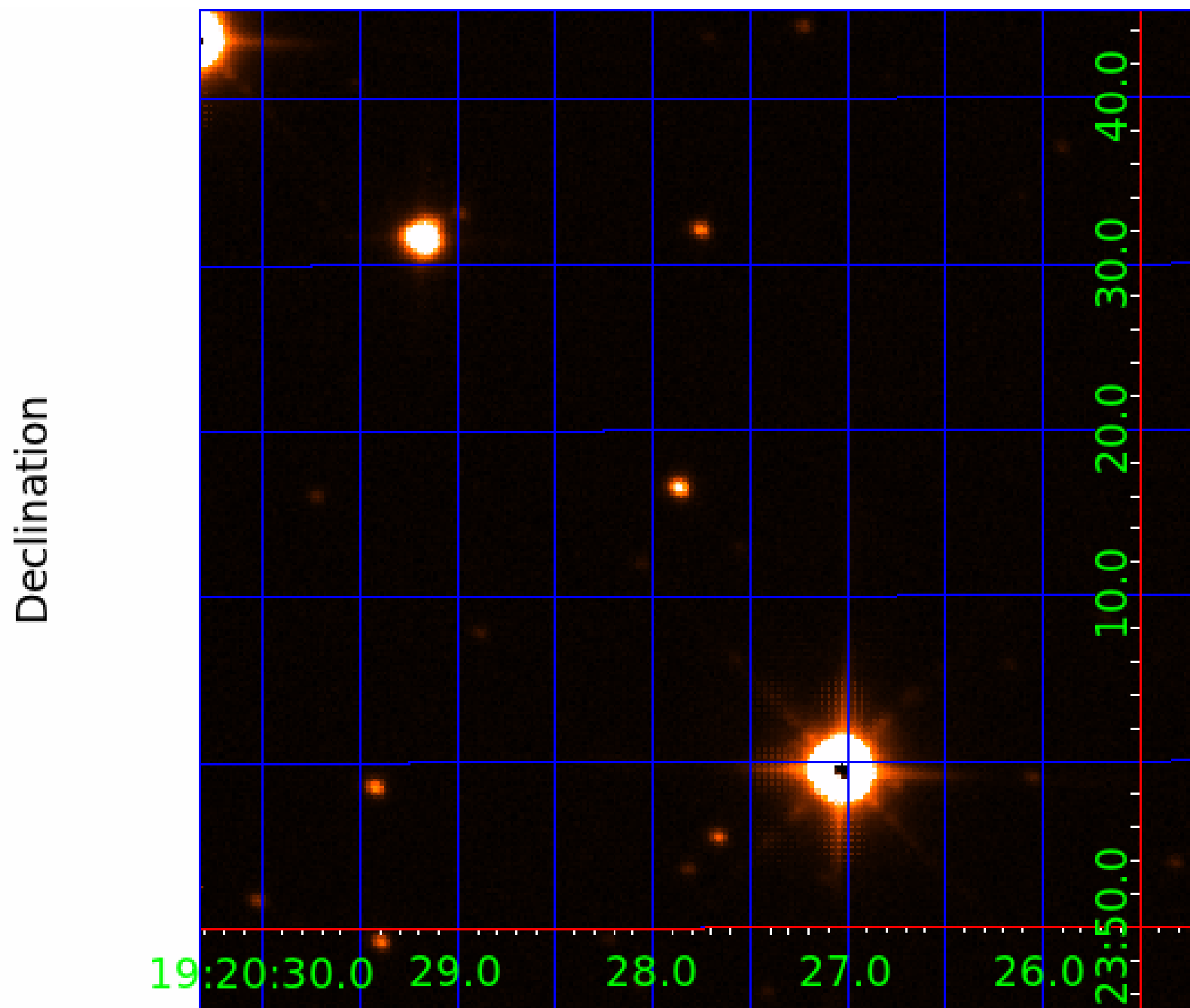
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003337351

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})
003337351-01	OBS	0965.01	7.047118	132.748762	58966.5	2.978	1292.6	679.5	1.03	5730	39.20	197.15
003337351-02	OBS	No	1.409415	132.094900	155.2	4.659	11.9	9.5	1.03	5730	1.31	1685.60
003337351-03	OBS	No	307.480082	149.869407	2913.8	19.488	9.8	7.1	1.03	5730	5.51	1.28
003337351-04	OBS	No	323.320158	140.975138	1926.5	5.000	10.4	-1.0	1.03	5730	4.48	1.20
003337351-05	OBS	No	289.385951	160.802072	3047.2	6.817	9.0	11.4	1.03	5730	10.80	1.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337351-01	OBS	FP	0.00	0	1	1	1	DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
003337351-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET
003337351-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003337351-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
003337351-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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 003337351-03

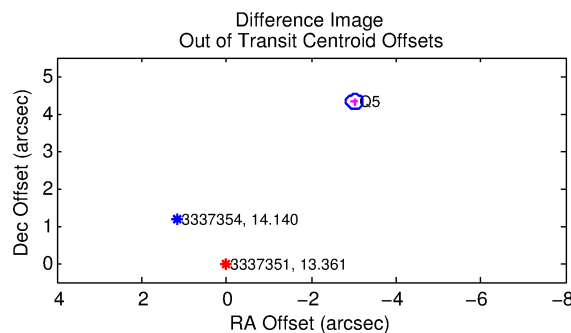
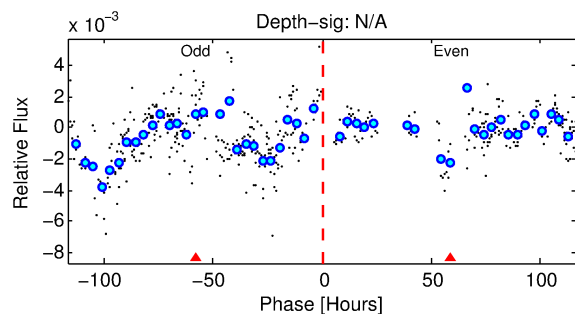
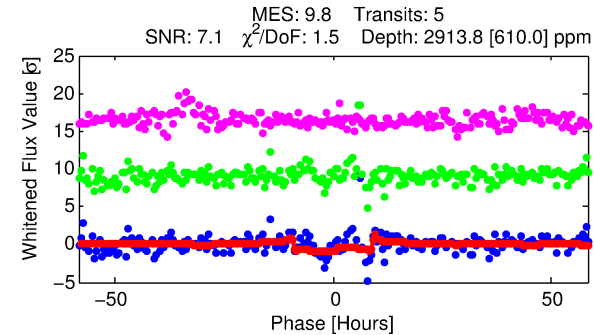
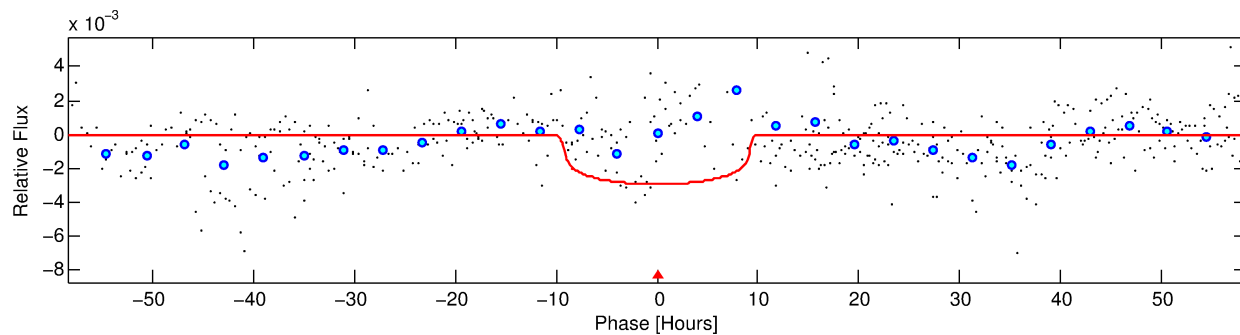
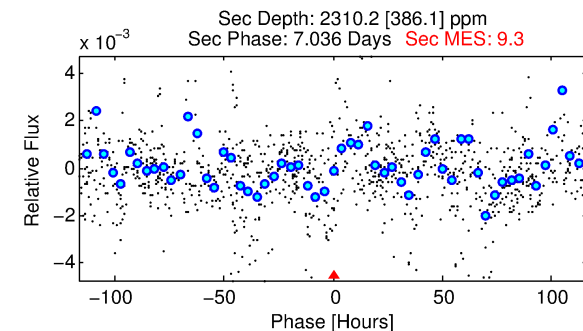
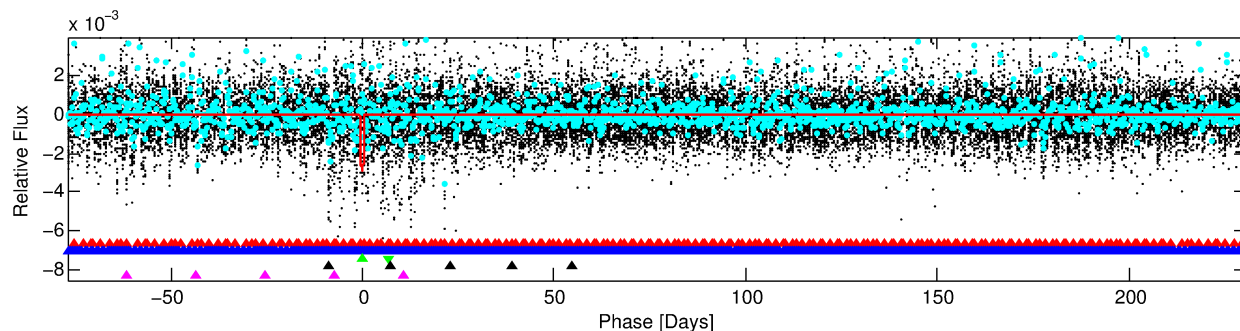
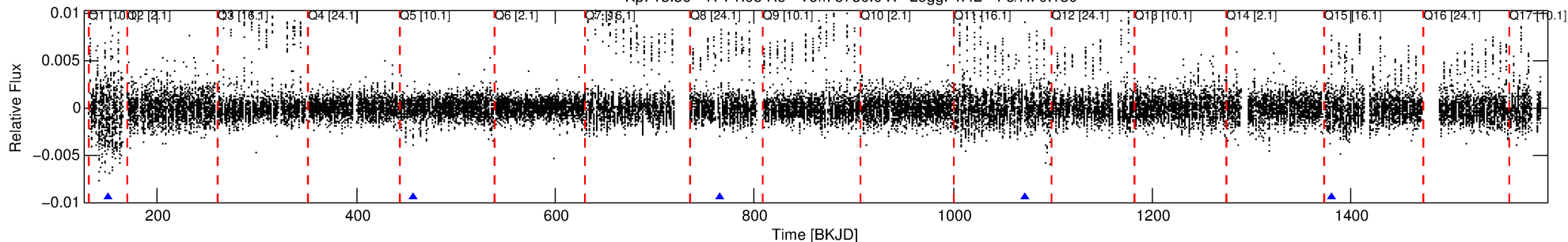
No Significant Match Found

DV One-Page Summary

KIC: 3337351 Candidate: 3 of 5 Period: 307.480 d

KOI: K00965 Corr: No Ephemeris Match

Kp: 13.36 R*: 1.03 Rs Teff: 5730.0 K Logg: 4.42 Fe/H: 0.180



DV Fit Results:

Period = 307.48008 [0.02176] d
Epoch = 149.8694 [0.0535] BKJD
Rp/R* = 0.0488 [0.0113]
a/R* = 125.97 [104.18]
b = 0.09 [9.58]
Seff = 1.28 [0.50]
Teq = 271 [26] K
Rp = 5.51 [2.06] Re
a = 0.8978 [0.2217] AU
Ag = 33732.62 [20531.68] [1.64σ]
Teffp = 5687 [728] K [7.43σ]

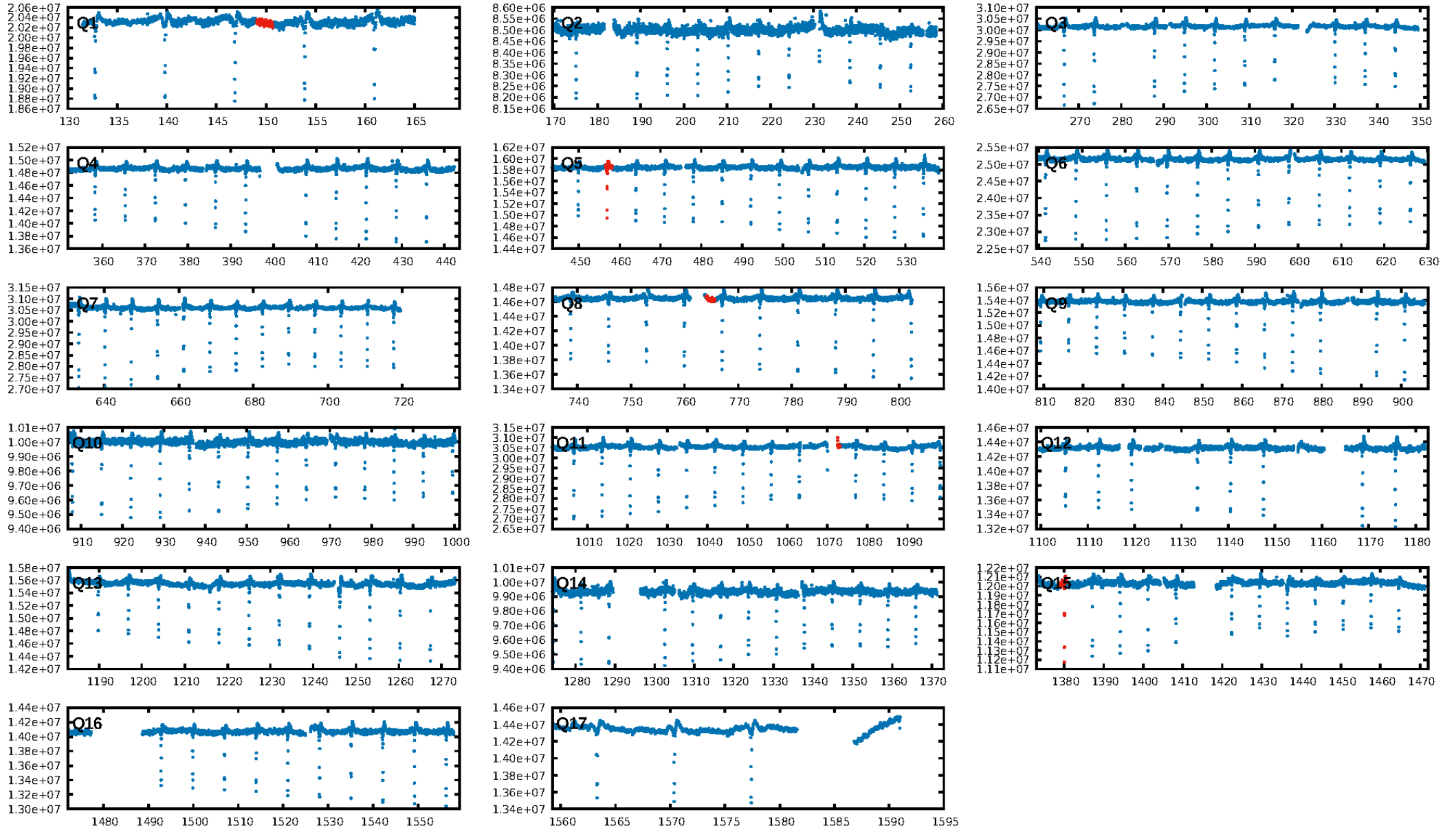
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.03σ]
LongPeriod-sig: 100.0% [18.90σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.032
Centroid-sig: 7.6%
Centroid-so: 4.146 arcsec [33.58σ]
OotOffset-rm: 5.263 arcsec [78.43σ]
KicOffset-rm: 11.850 arcsec [176.30σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/3]

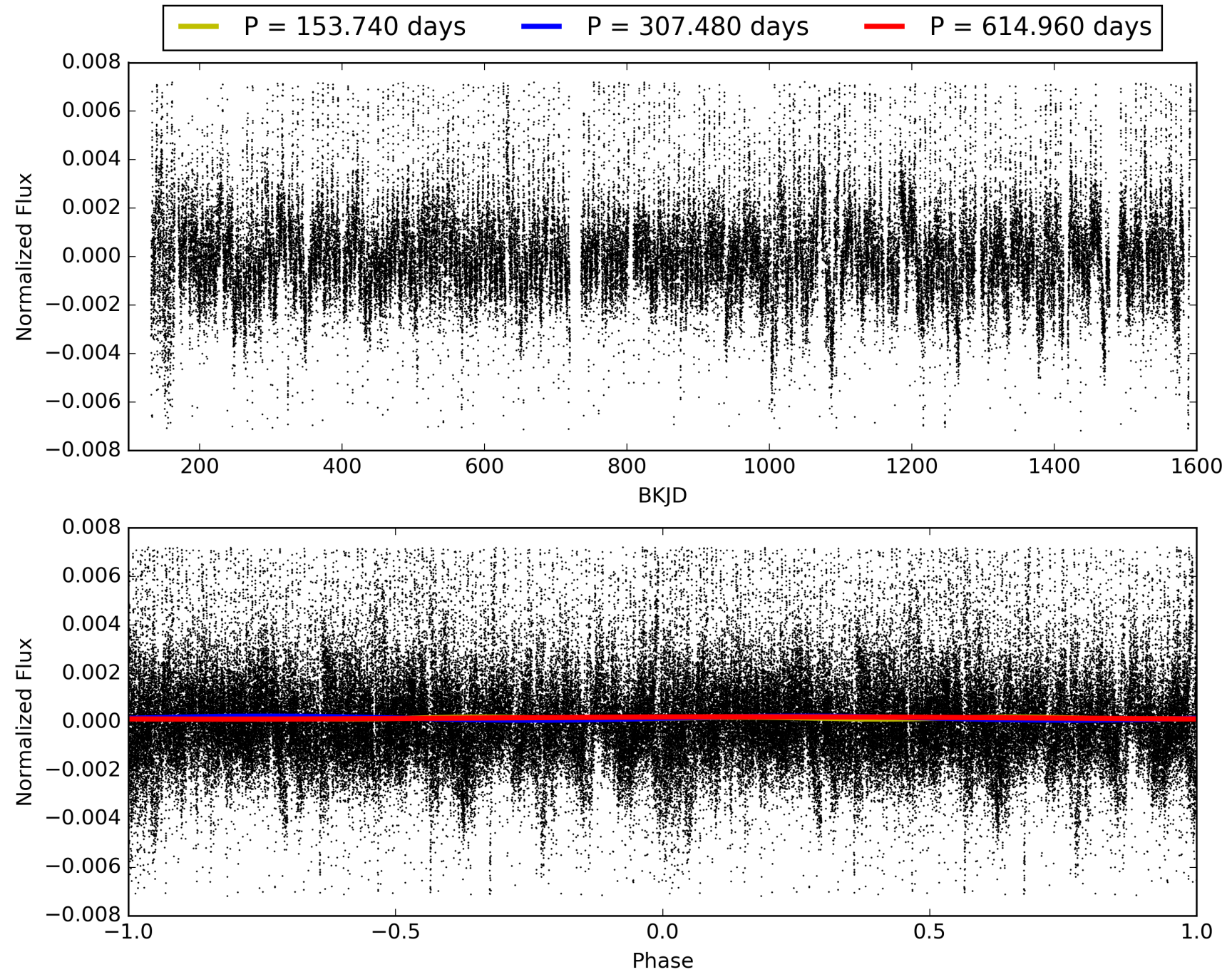
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:01:47 Z

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

TCE 003337351-03, PDC Light Curves

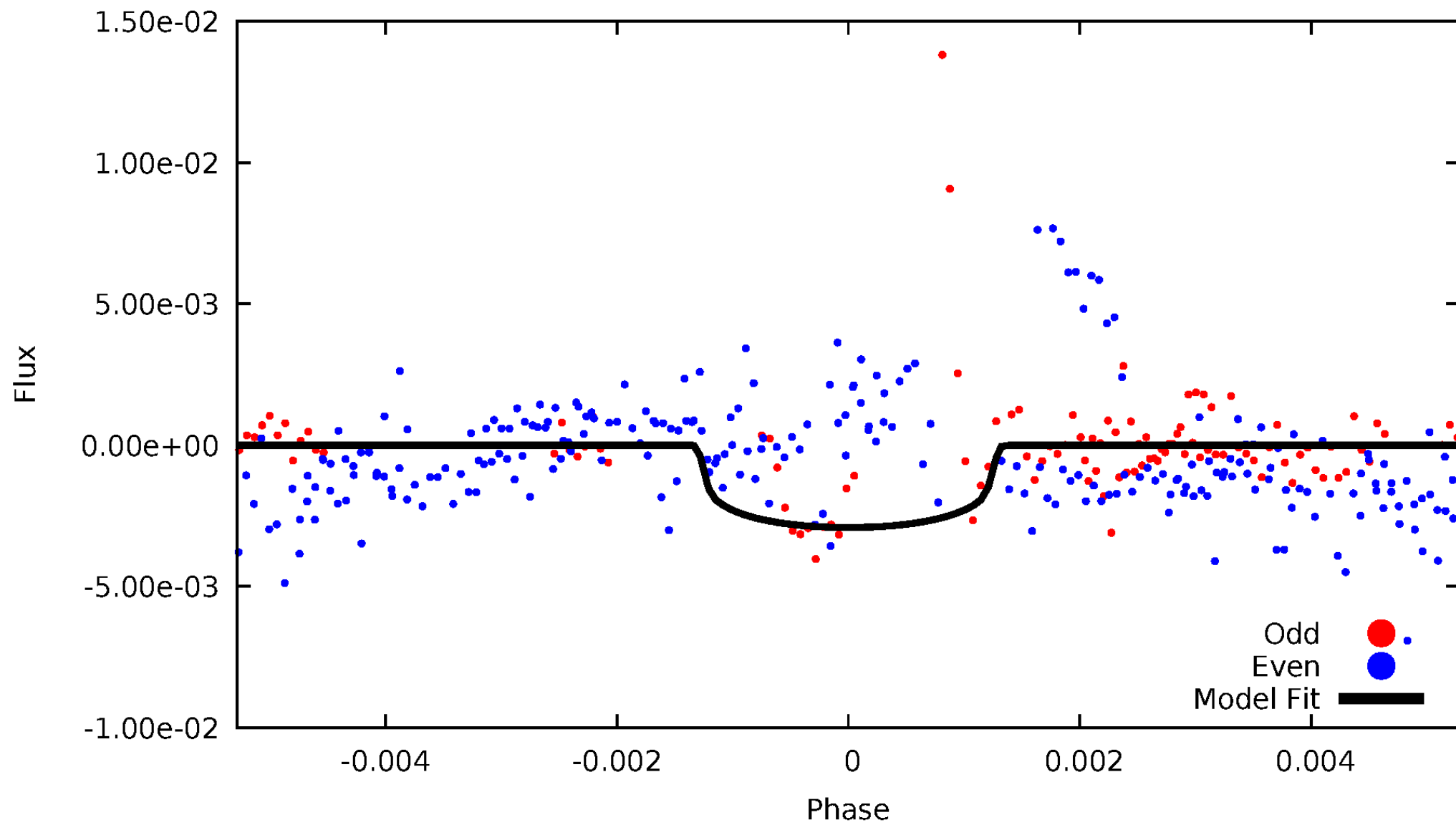


TCE 003337351-03



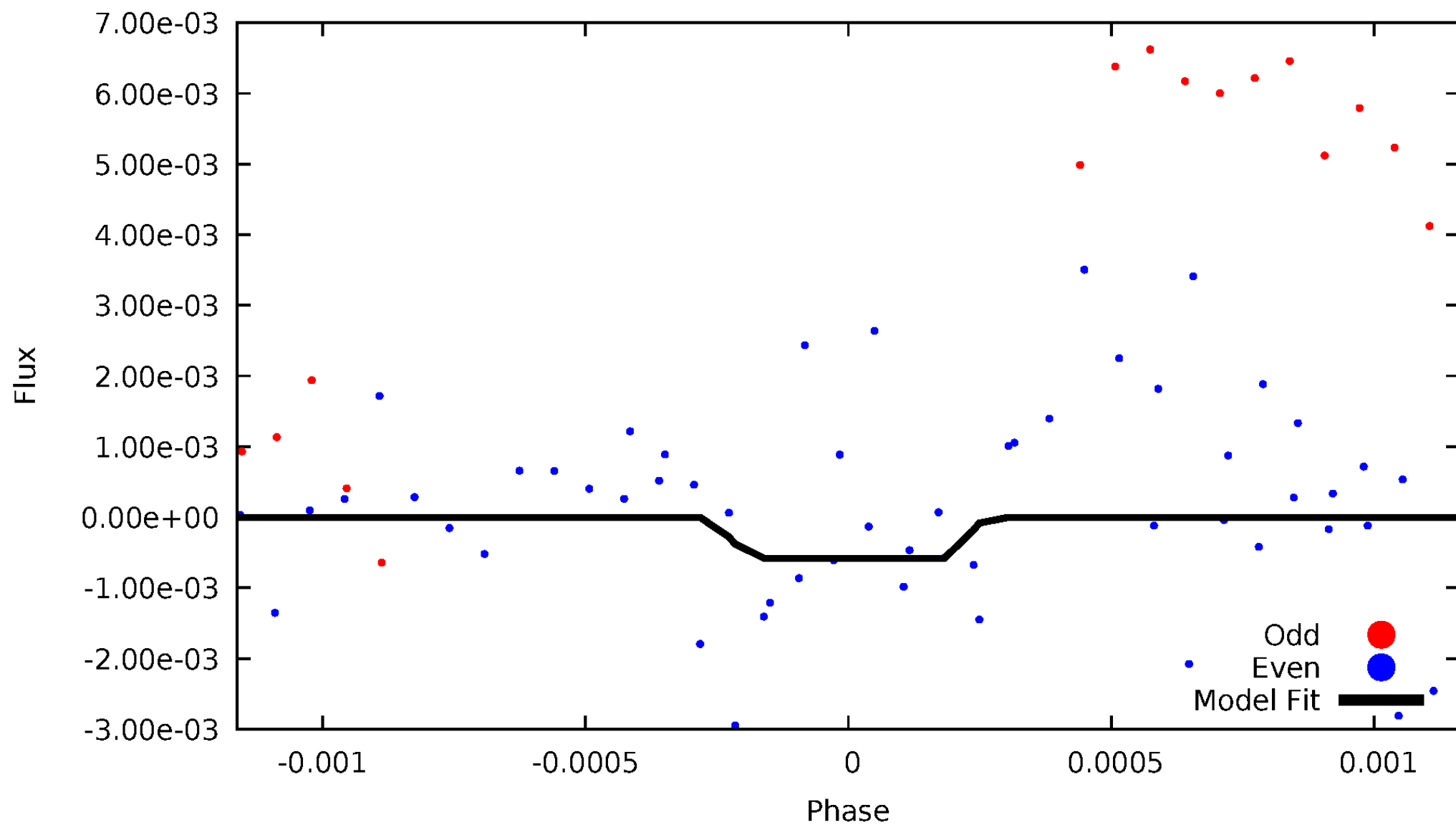
DV Odd/Even

TCE 003337351-03



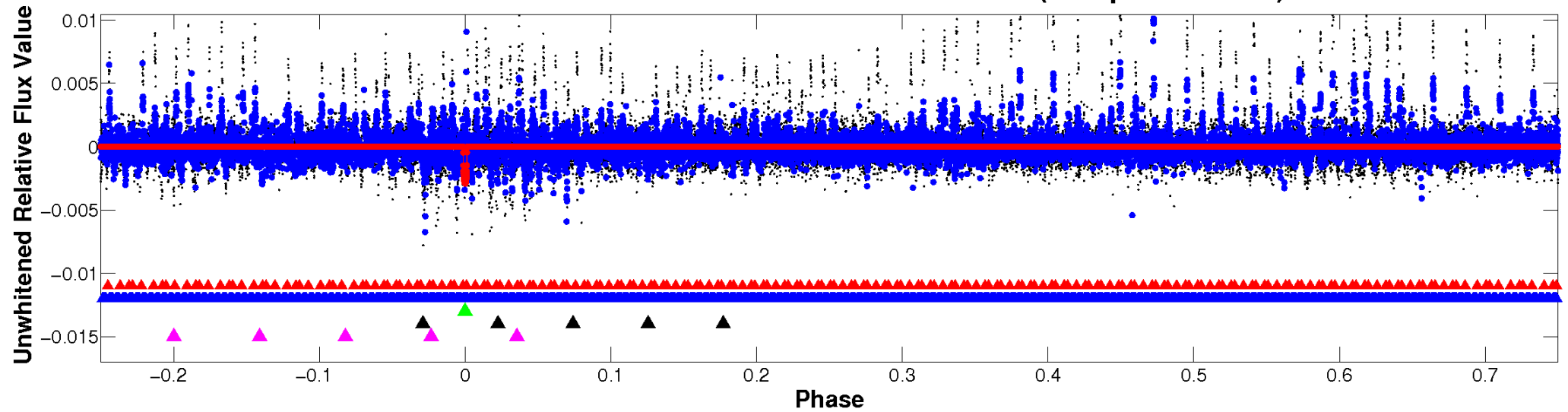
ALT Odd/Even

TCE 003337351-03

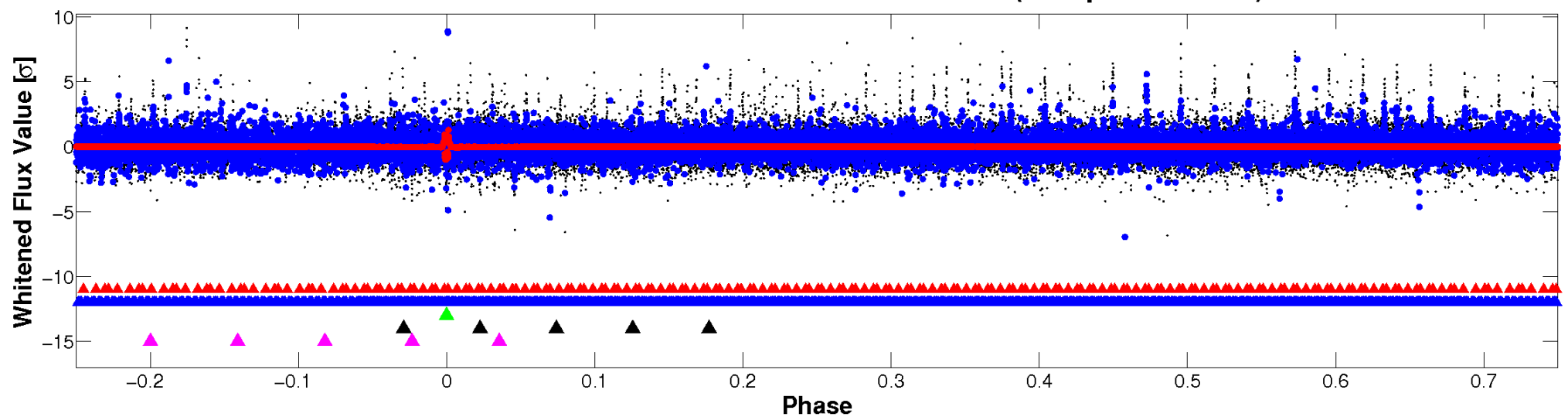


Non-Whitened Vs. Whitened Light Curve

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

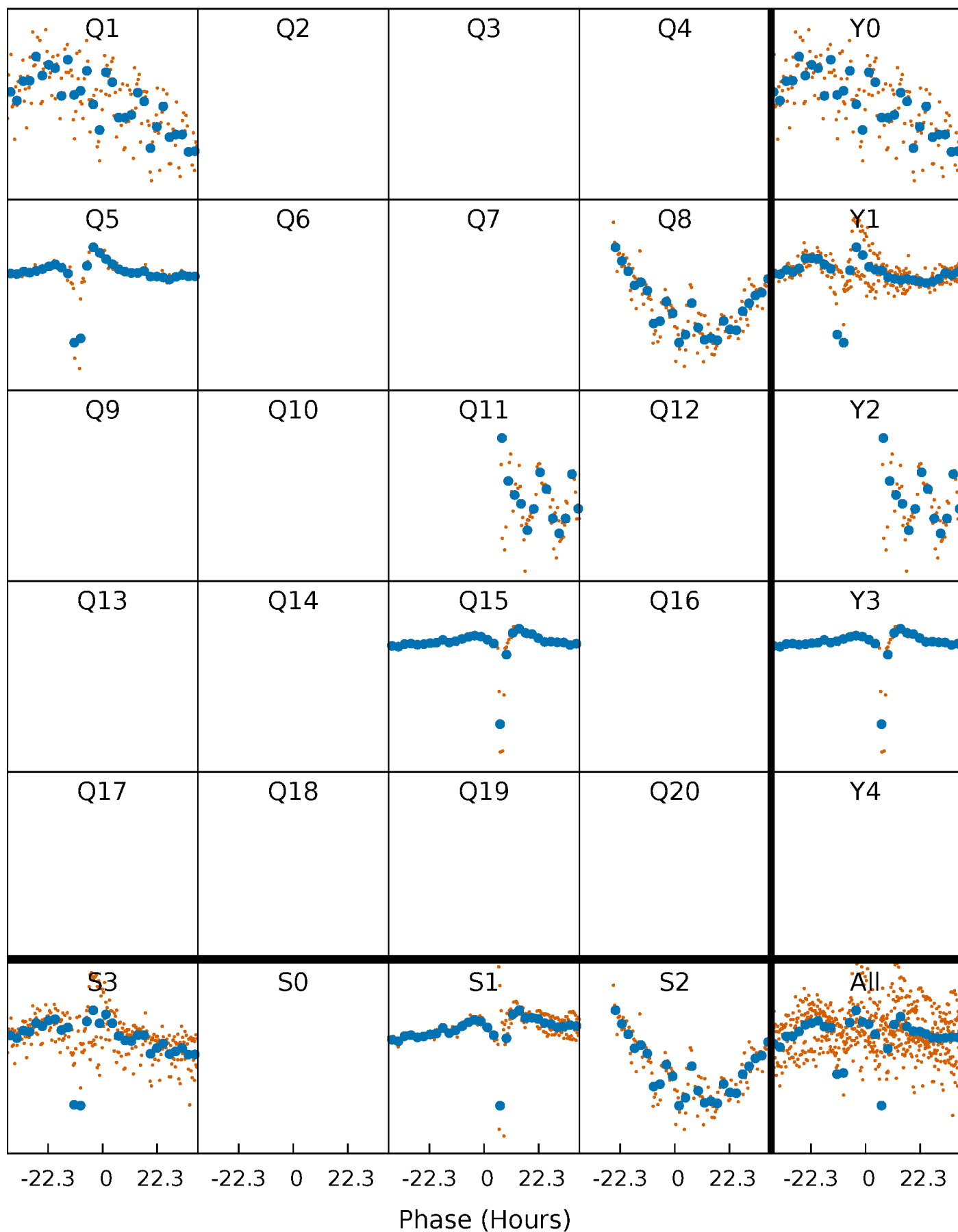


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



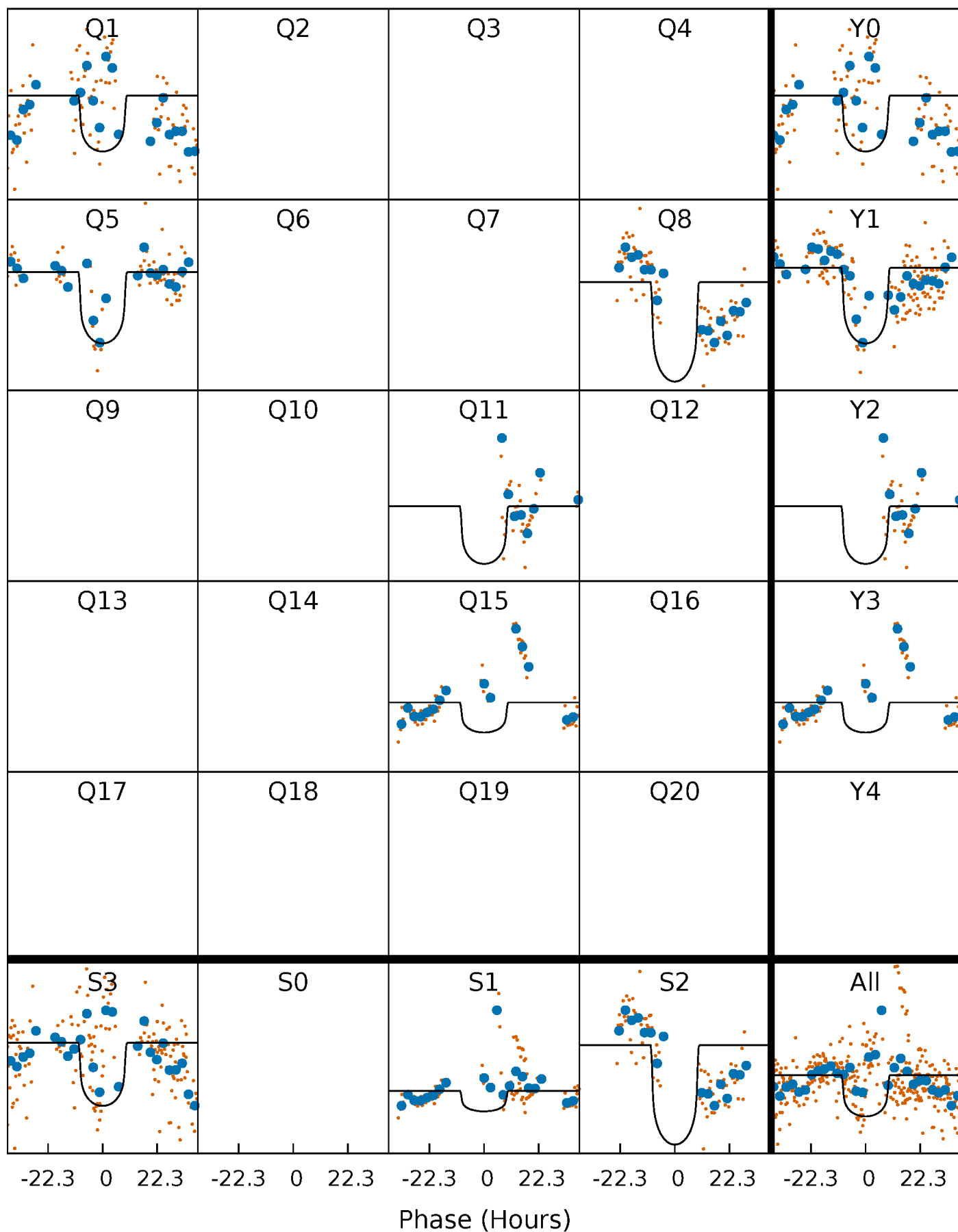
PDC Quarter-Phased Transit Curves

TCE 003337351-03 $P=307.480082$ Days $T_0=149.869407$ (BKJD)



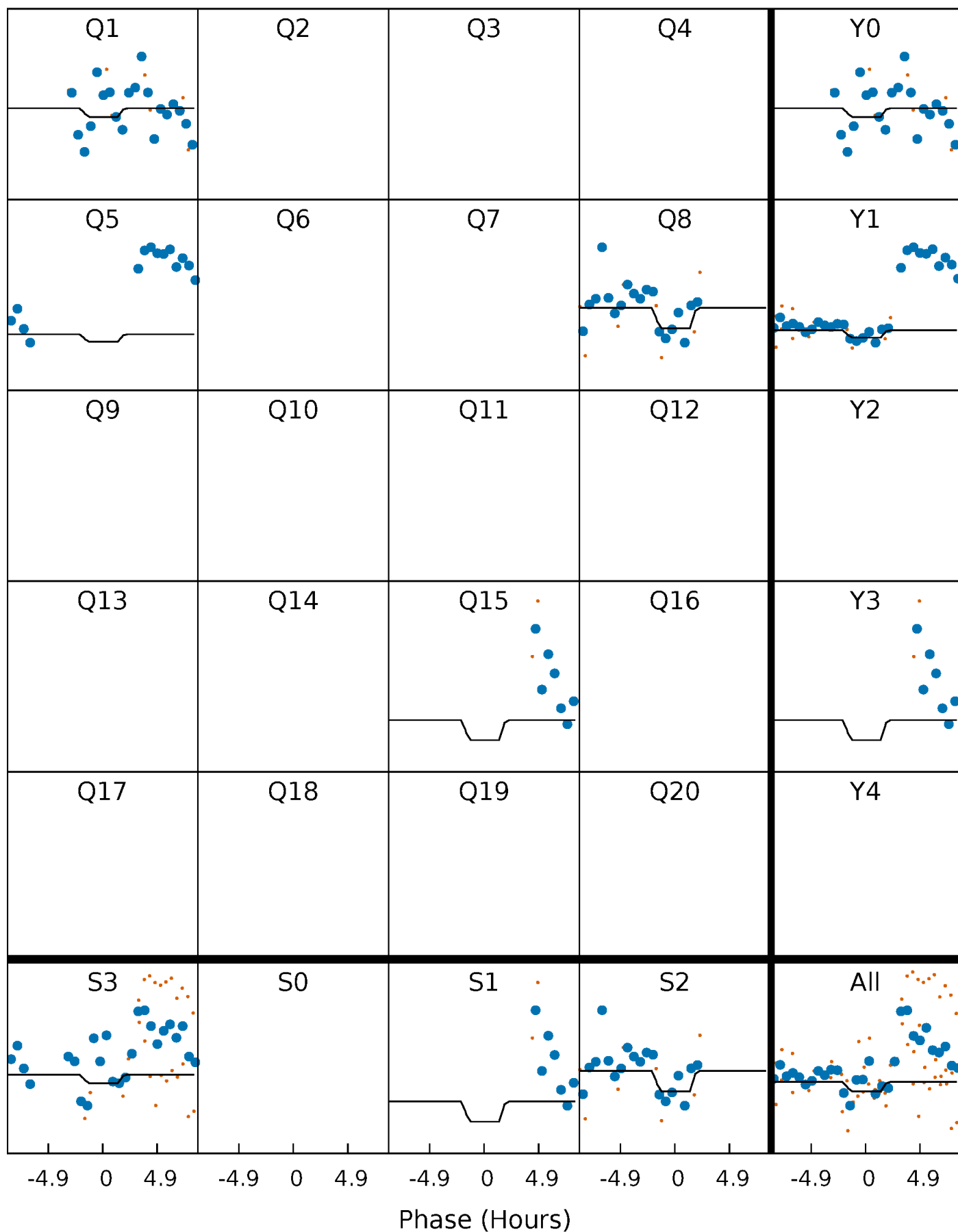
DV Quarter-Phased Transit Curves

TCE 003337351-03 $P=307.480082$ Days $T_0=149.869407$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

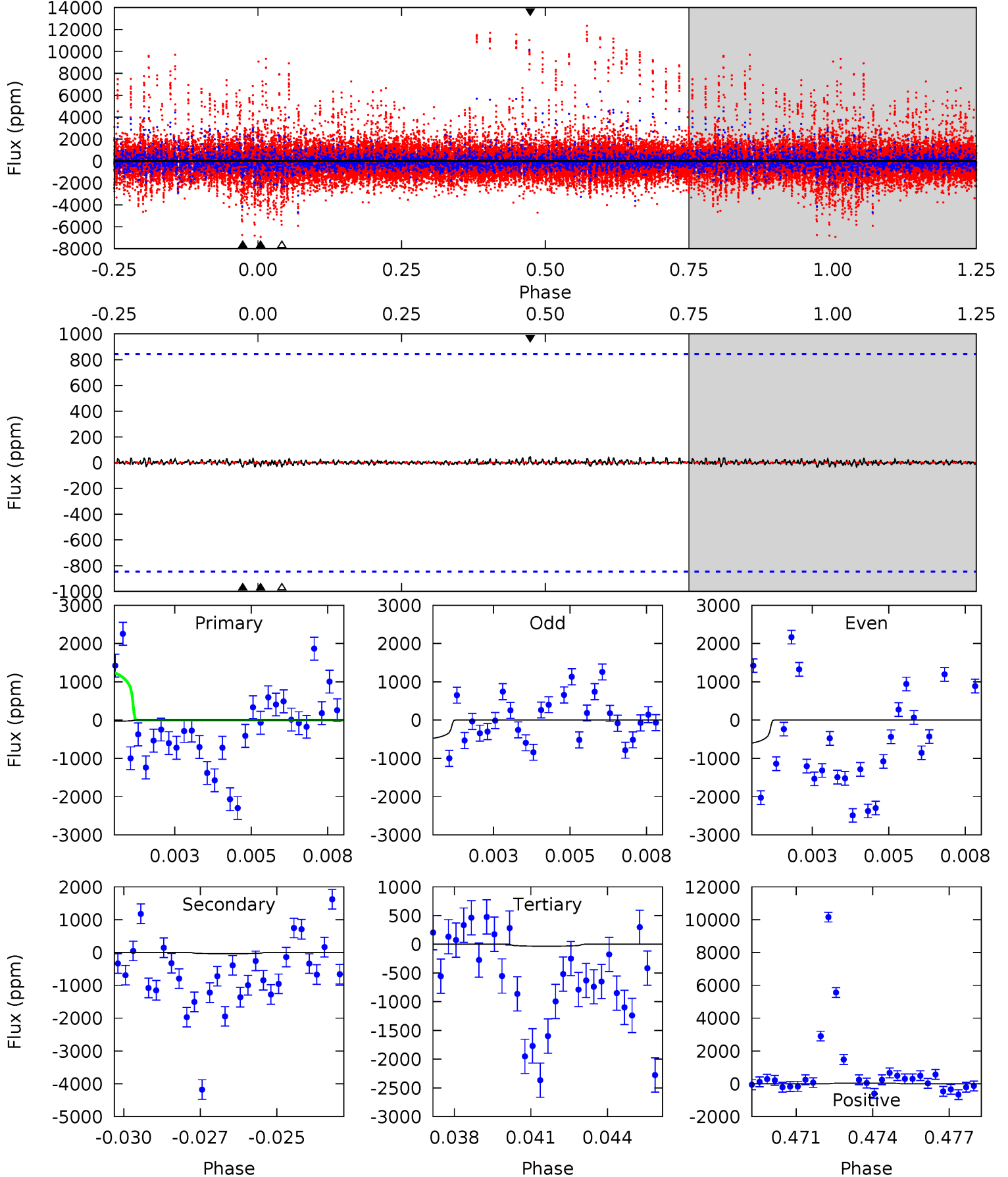
TCE 003337351-03 $P=307.525078$ Days $T_0=149.459215$ (BKJD)



DV Model-Shift Uniqueness Test

003337351-03, P = 307.480082 Days, E = 149.869407 Days

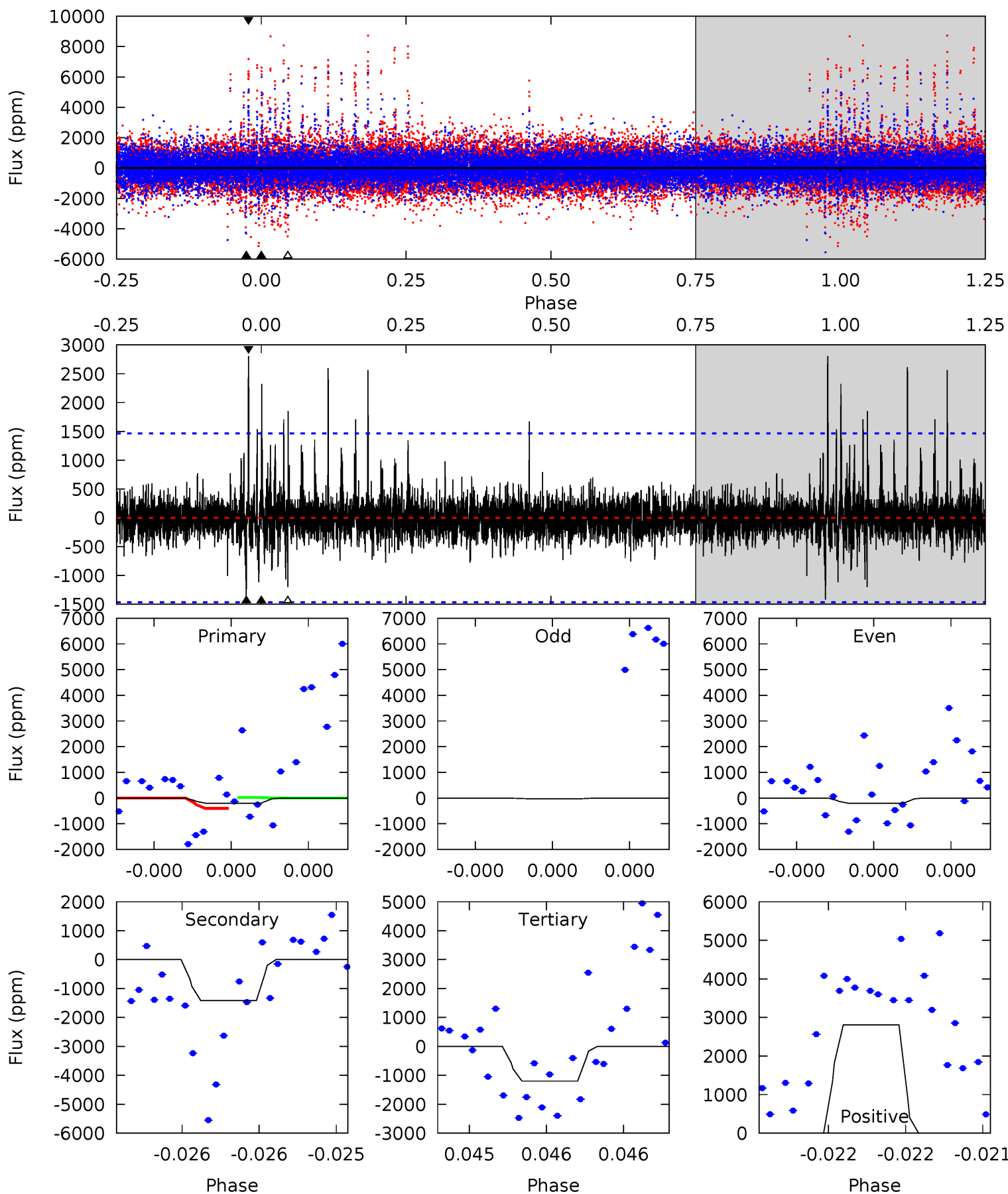
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.20	0.22	0.21	0.26	5.27	3.00	0.06	-0.01	-0.06	0.01	-0.04	0.35	1.68	0.54	1.44



Alt Model-Shift Uniqueness Test

003337351-03, P = 307.525078 Days, E = 149.459215 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.75	5.39	4.57	10.7	5.58	3.49	1.06	-3.82	-9.94	0.82	-5.30	0.36	1.00	0.66	0.72



Stellar Parameters For KIC 003337351

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5730^{+171}_{-206}	$4.417^{+0.084}_{-0.196}$	$0.180^{+0.200}_{-0.300}$	$1.035^{+0.304}_{-0.130}$	$1.018^{+0.122}_{-0.111}$	$1.295^{+0.563}_{-0.631}$
	+3%/-4%	+2%/-4%	+111%/-167%	+29%/-13%	+12%/-11%	+43%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003337351-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-35 ± 160	$5.81^{+1.61}_{-1.45}$	385^{+27}_{-23}	2689^{+852}_{-5987}	388^{+2286}_{-2031}
Alt.	-1416 ± 263	$2.82^{+1.39}_{-1.31}$	382^{+30}_{-19}	7195^{+3721}_{-1361}	$77963^{+193498}_{-43973}$

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 $A_{obs} \gg 1.0$

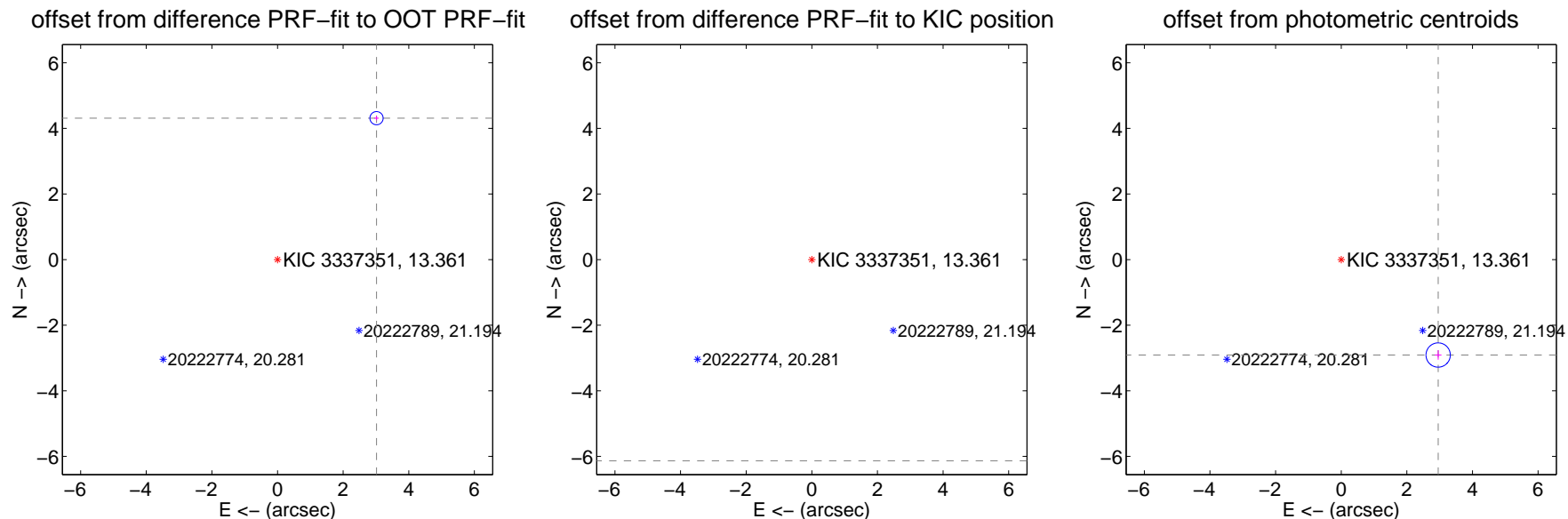
DV Centroid Data

Supplemental centroid analysis for 003337351-03. Kepler magnitude: 13.36. Transit SNR 7.13

There are 0 quarters with good PRF difference image offsets

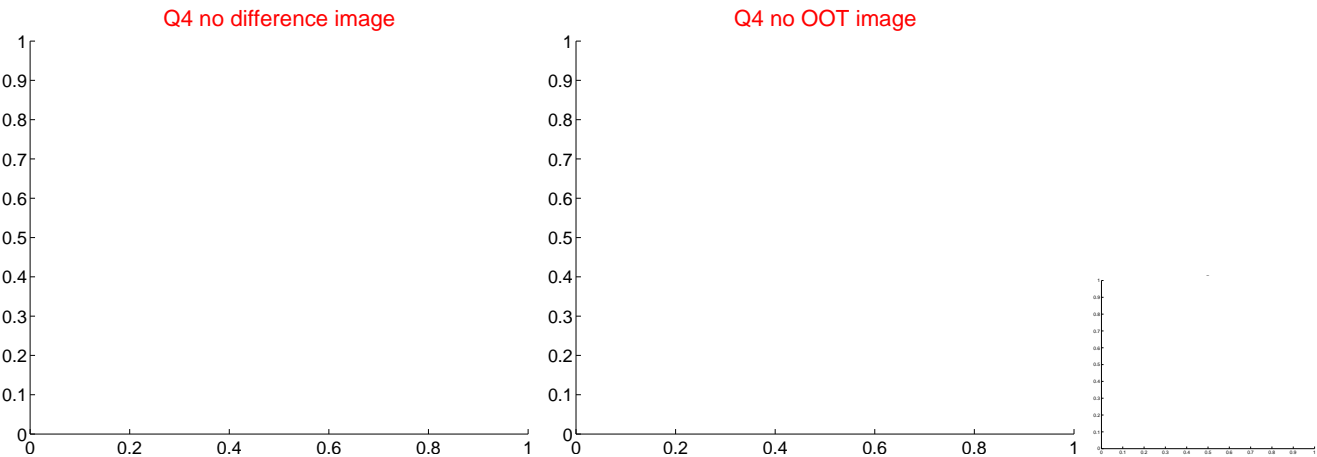
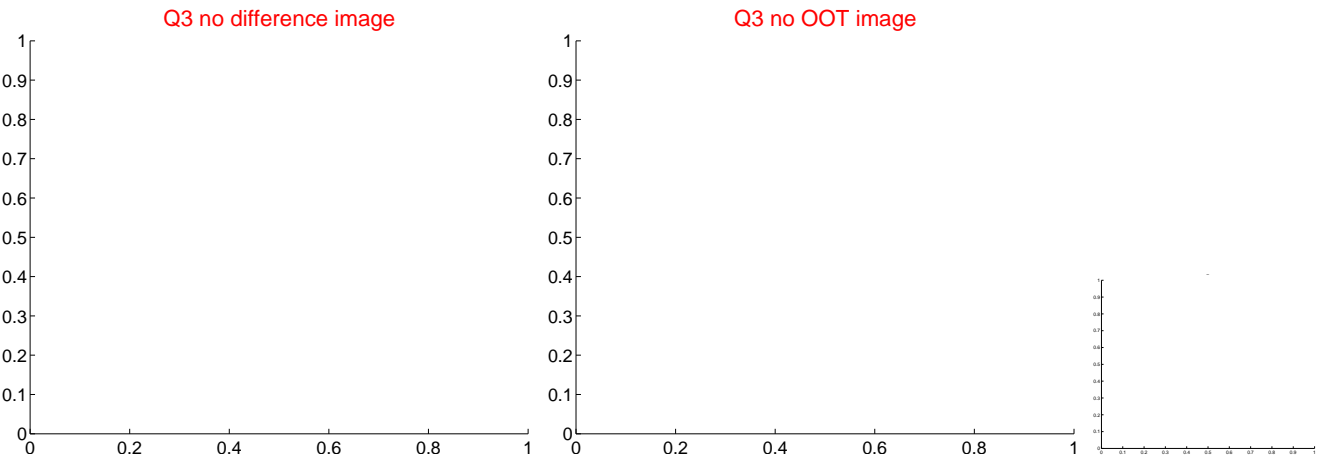
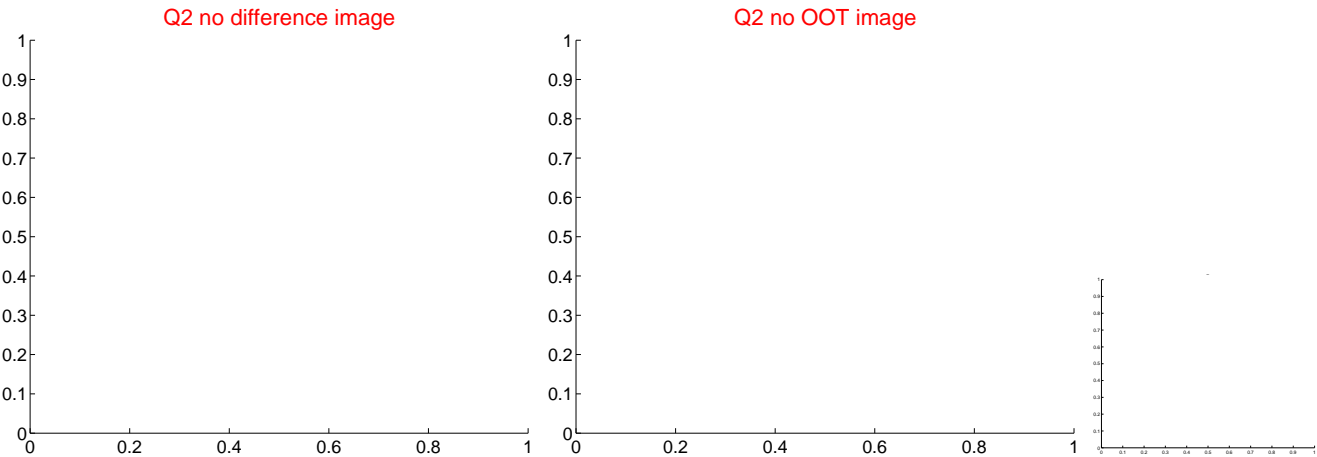
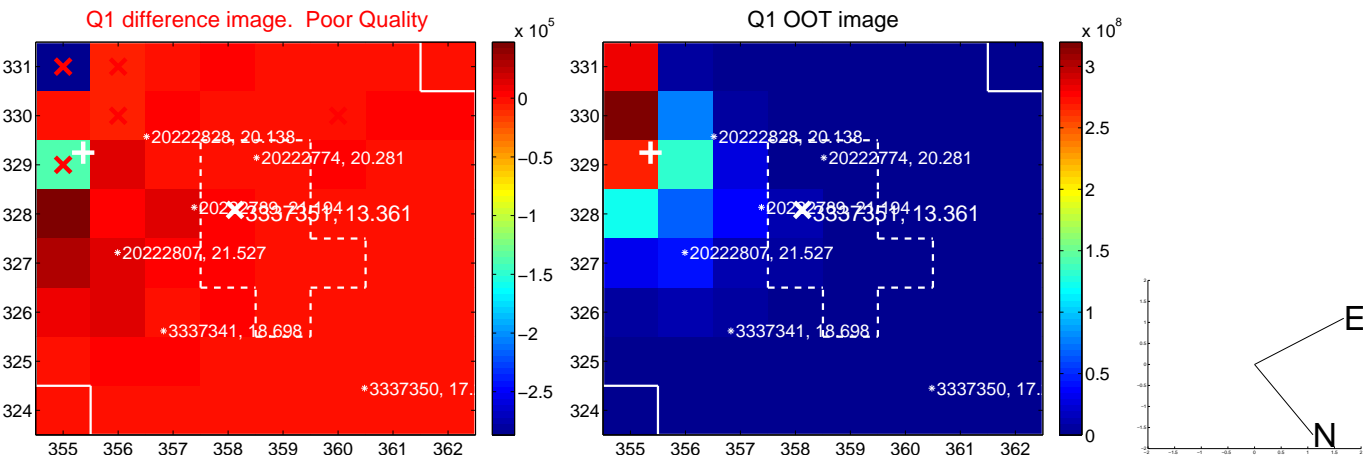
The OOT PRF centroid is offset from the target star catalog position by about 12.64 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.263 ± 0.067	78.43	-3.018 ± 0.067	4.312 ± 0.067
PRF-fit source offset from KIC position	11.850 ± 0.067	176.30	-10.137 ± 0.067	-6.137 ± 0.067
photometric centroid source offset	4.15 ± 0.12	33.58	-2.95 ± 0.10	-2.91 ± 0.14

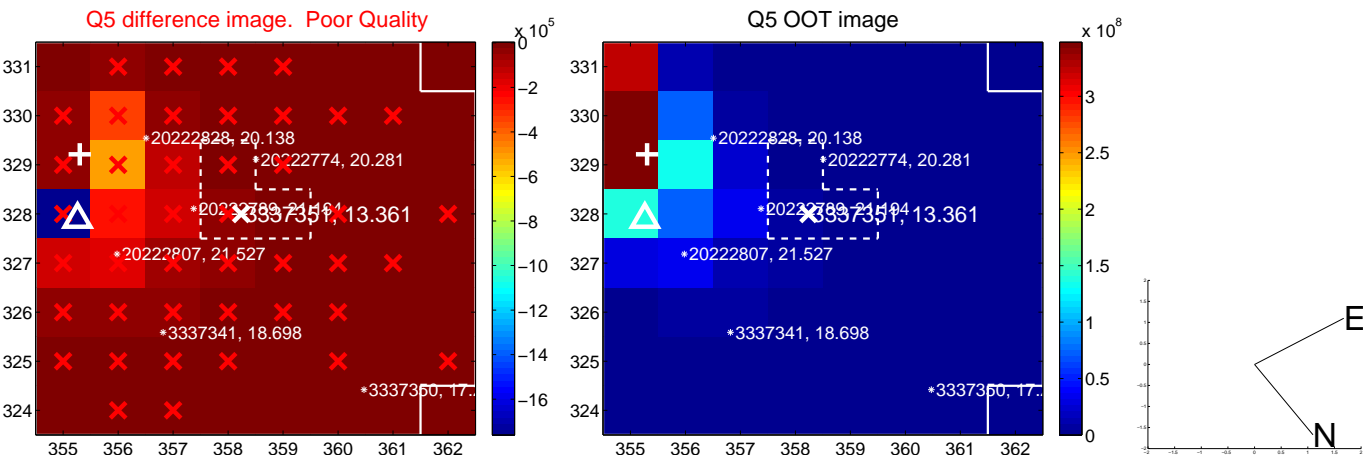


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



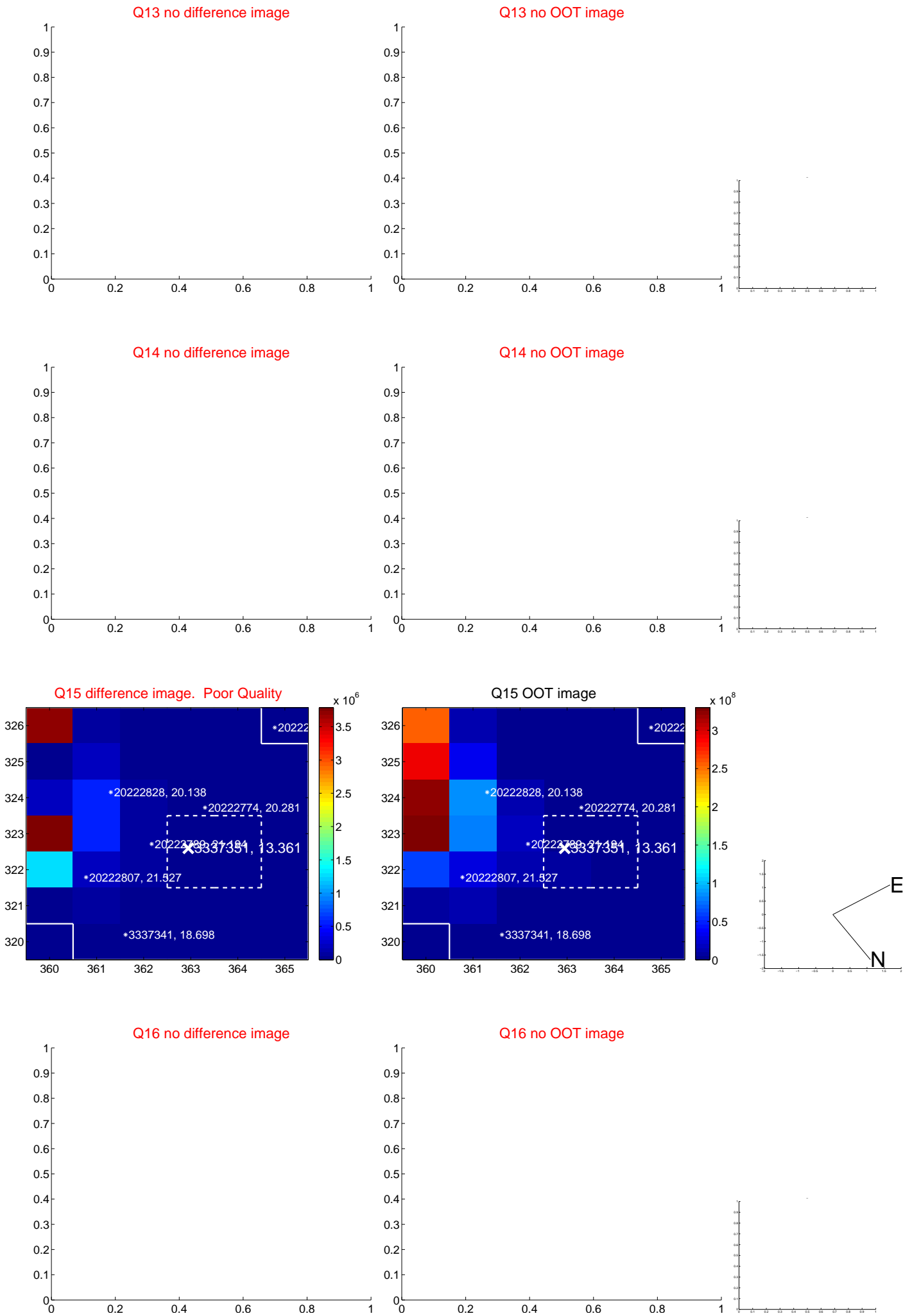
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



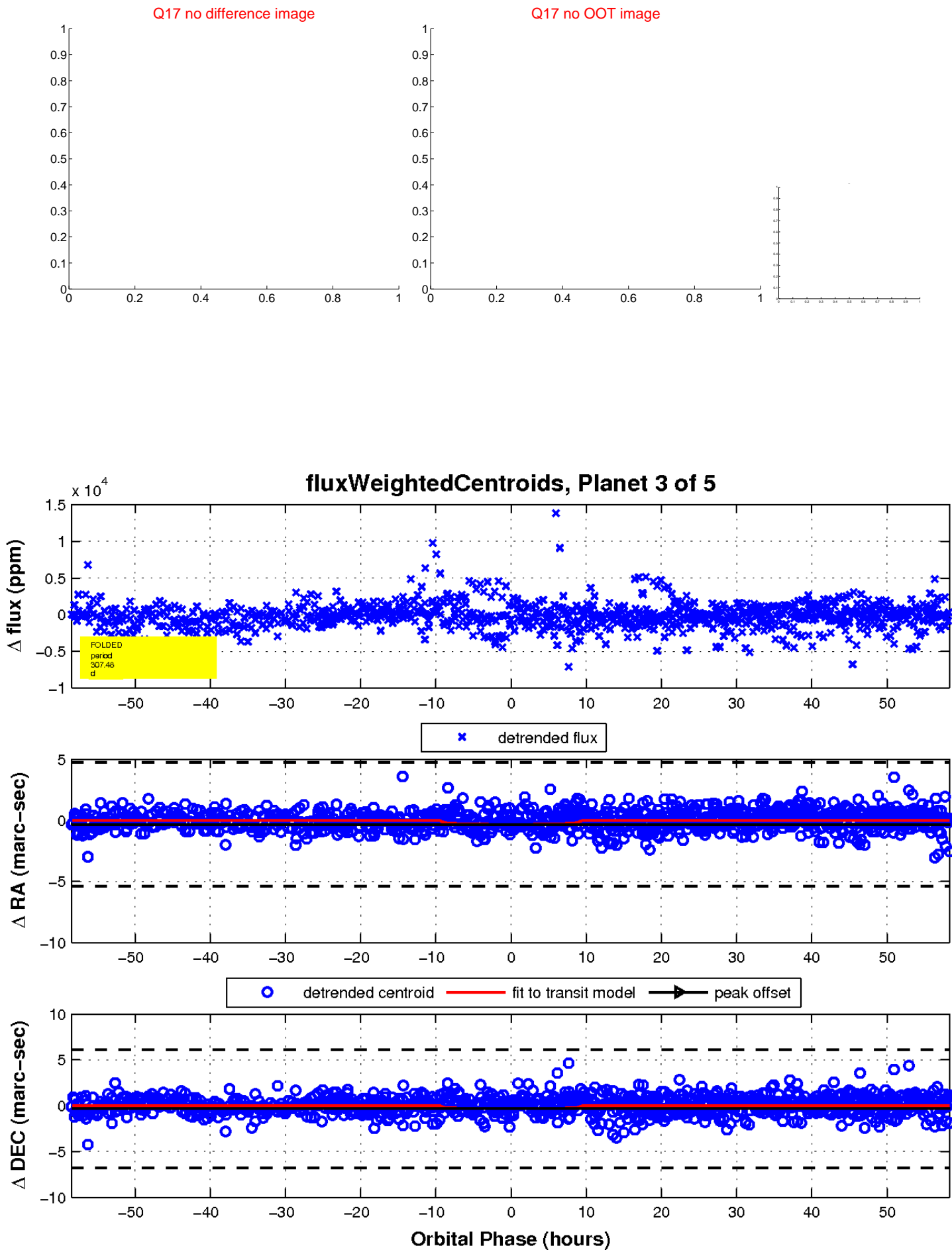
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



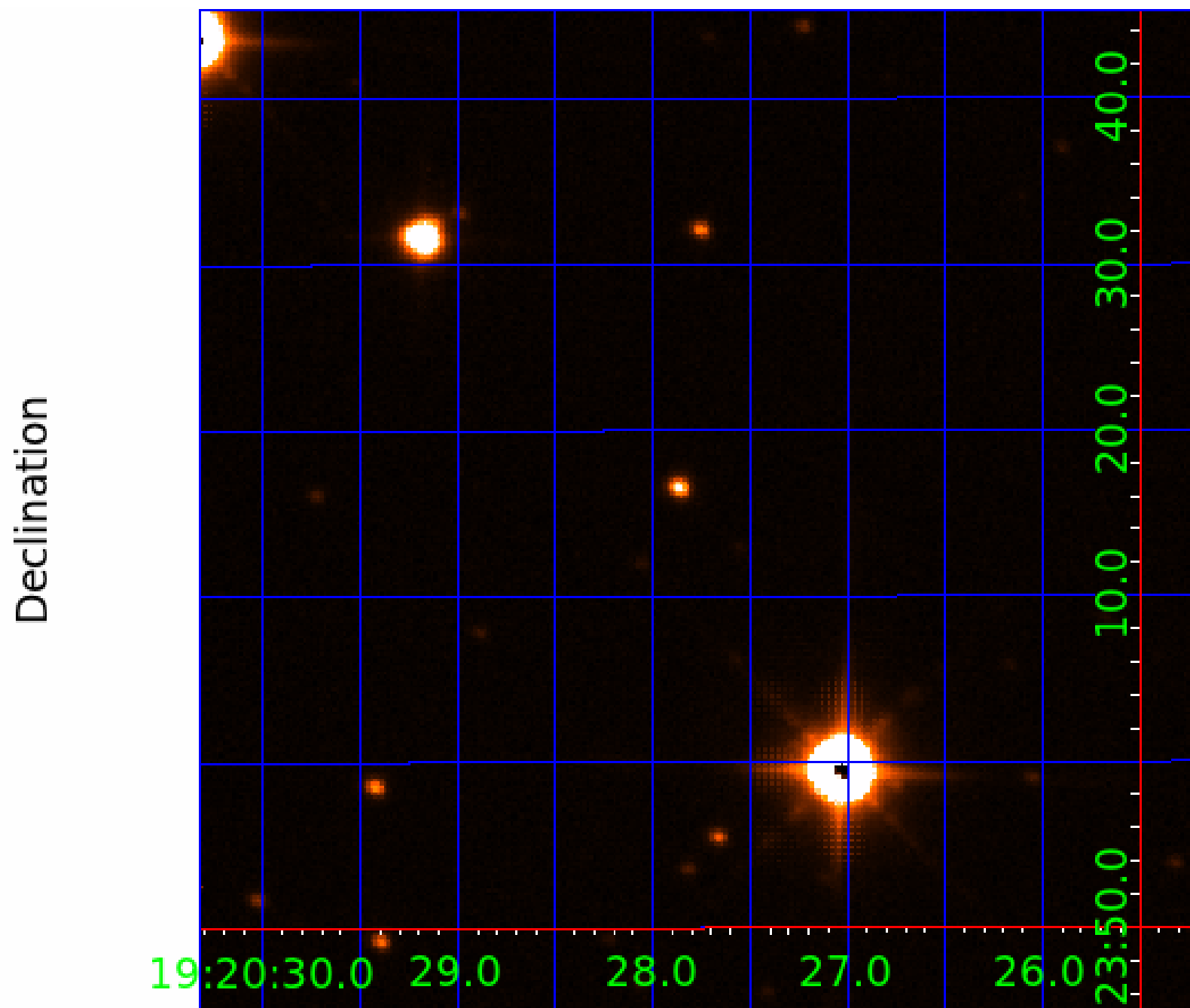
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003337351

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})
003337351-01	OBS	0965.01	7.047118	132.748762	58966.5	2.978	1292.6	679.5	1.03	5730	39.20	197.15
003337351-02	OBS	No	1.409415	132.094900	155.2	4.659	11.9	9.5	1.03	5730	1.31	1685.60
003337351-03	OBS	No	307.480082	149.869407	2913.8	19.488	9.8	7.1	1.03	5730	5.51	1.28
003337351-04	OBS	No	323.320158	140.975138	1926.5	5.000	10.4	-1.0	1.03	5730	4.48	1.20
003337351-05	OBS	No	289.385951	160.802072	3047.2	6.817	9.0	11.4	1.03	5730	10.80	1.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337351-01	OBS	FP	0.00	0	1	1	1	DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
003337351-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET
003337351-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003337351-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_NOFITS
003337351-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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 003337351-04

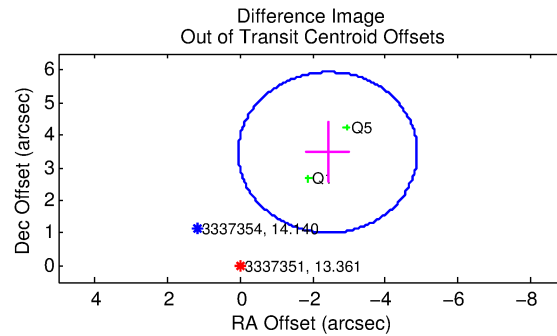
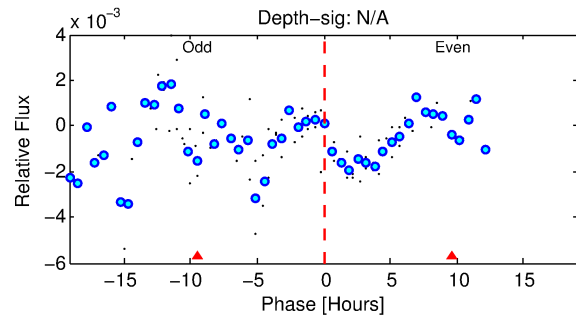
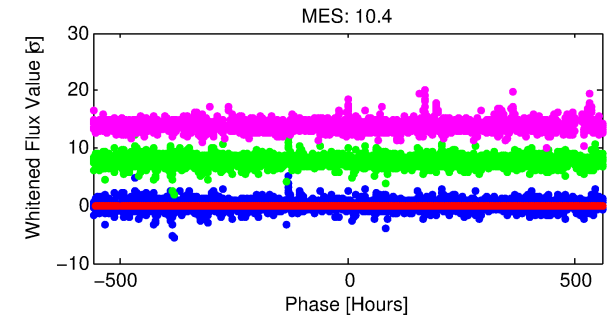
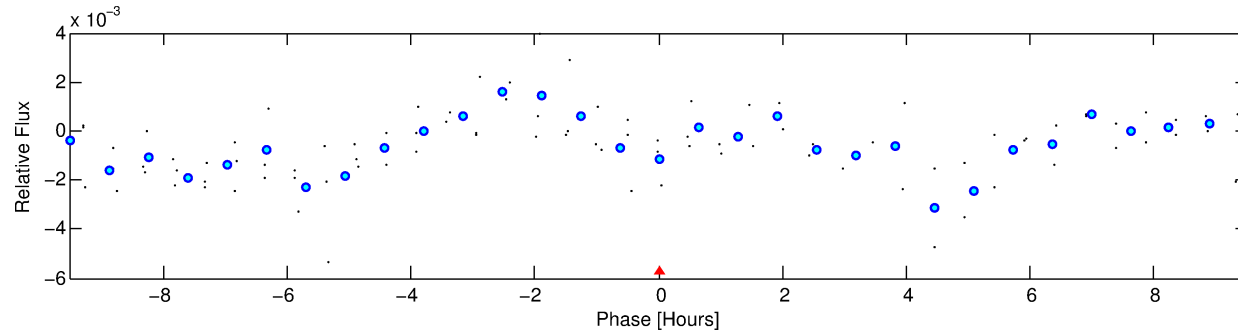
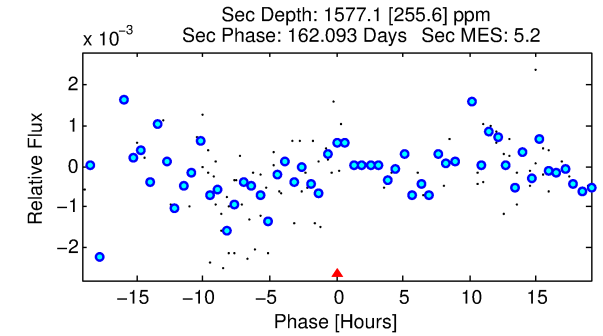
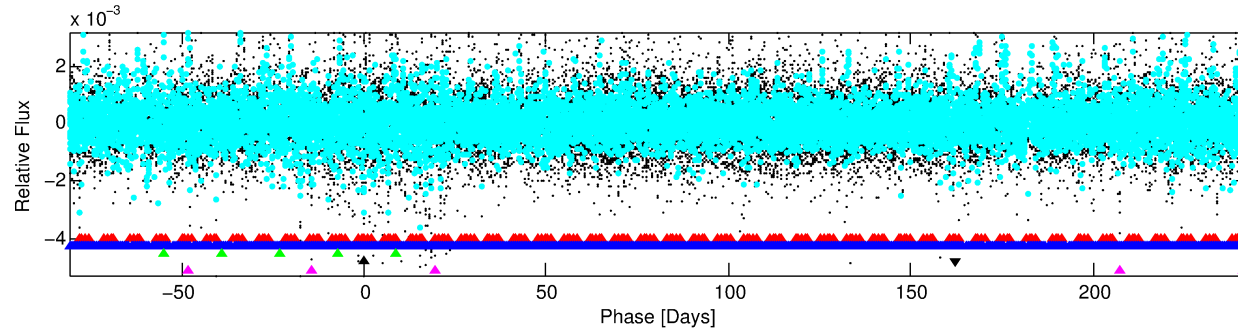
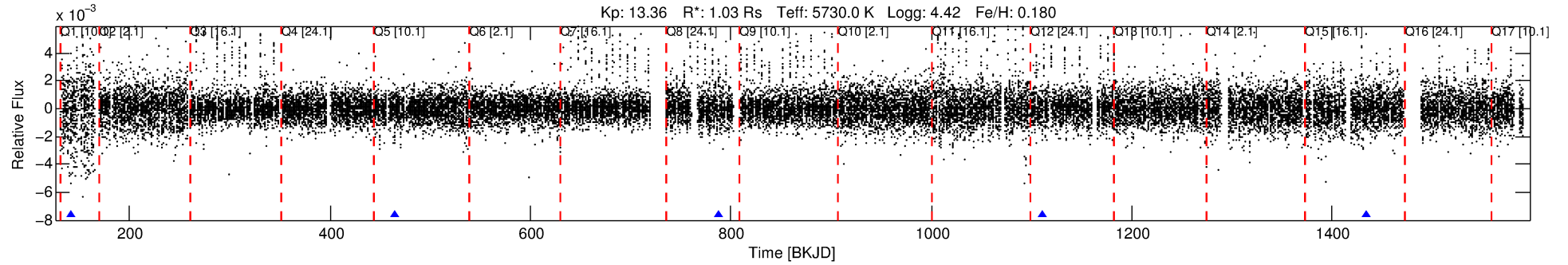
No Significant Match Found

DV One-Page Summary

KIC: 3337351 Candidate: 4 of 5 Period: 323.320 d

KOI: K00965 Corr: No Ephemeris Match

Kp: 13.36 R*: 1.03 Rs Teff: 5730.0 K Logg: 4.42 Fe/H: 0.180



TPS TCE Results:

Period = 323.32016 d
Epoch = 140.9751 BKJD

DV fit results are unavailable

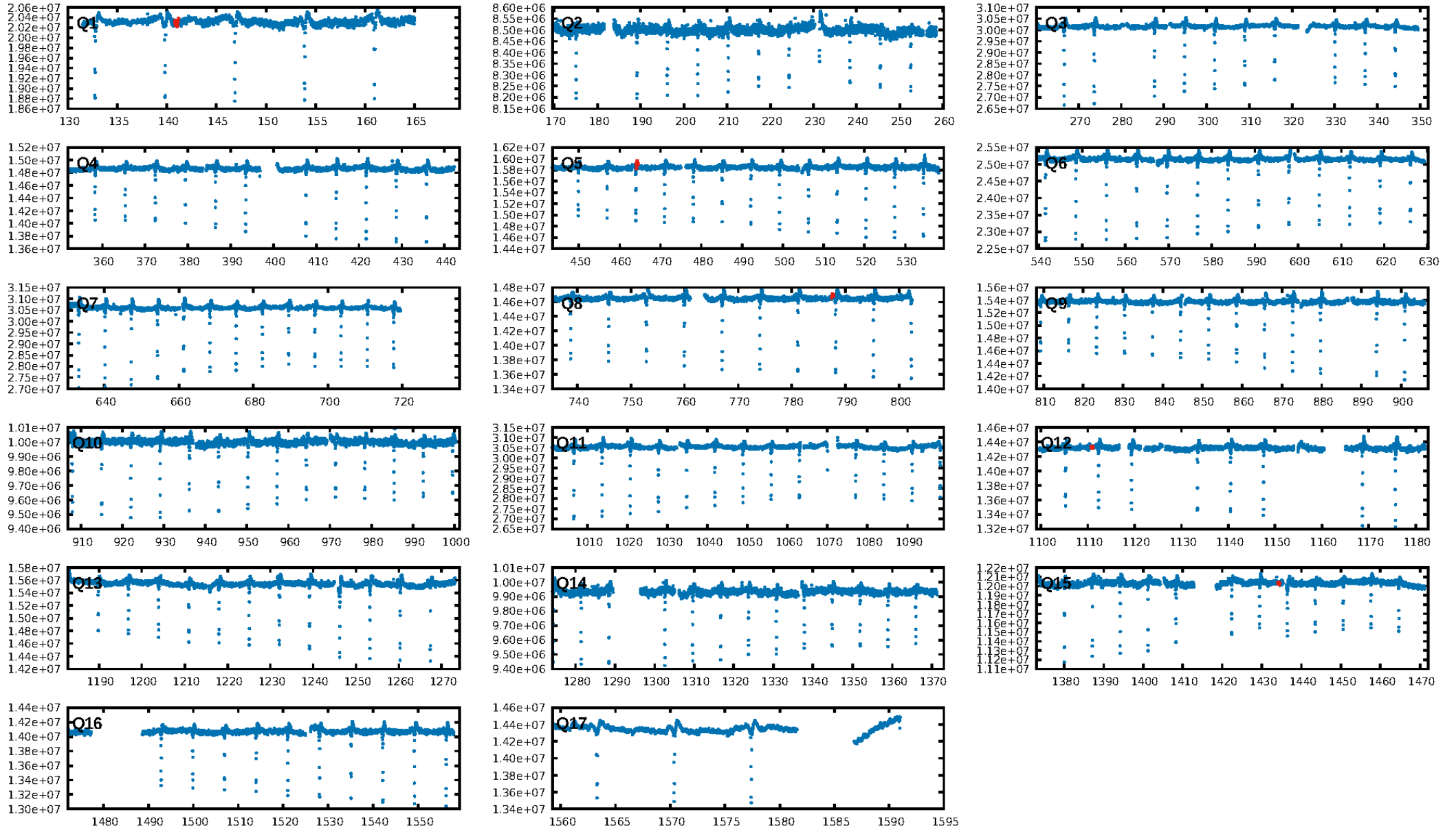
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.90σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.6066
Centroid-sig: 43.3%
Centroid-so: 4.000 arcsec [6.17σ]
OotOffset-rm: 4.229 arcsec [5.15σ]
KicOffset-rm: 11.476 arcsec [15.26σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.20 [1/5]

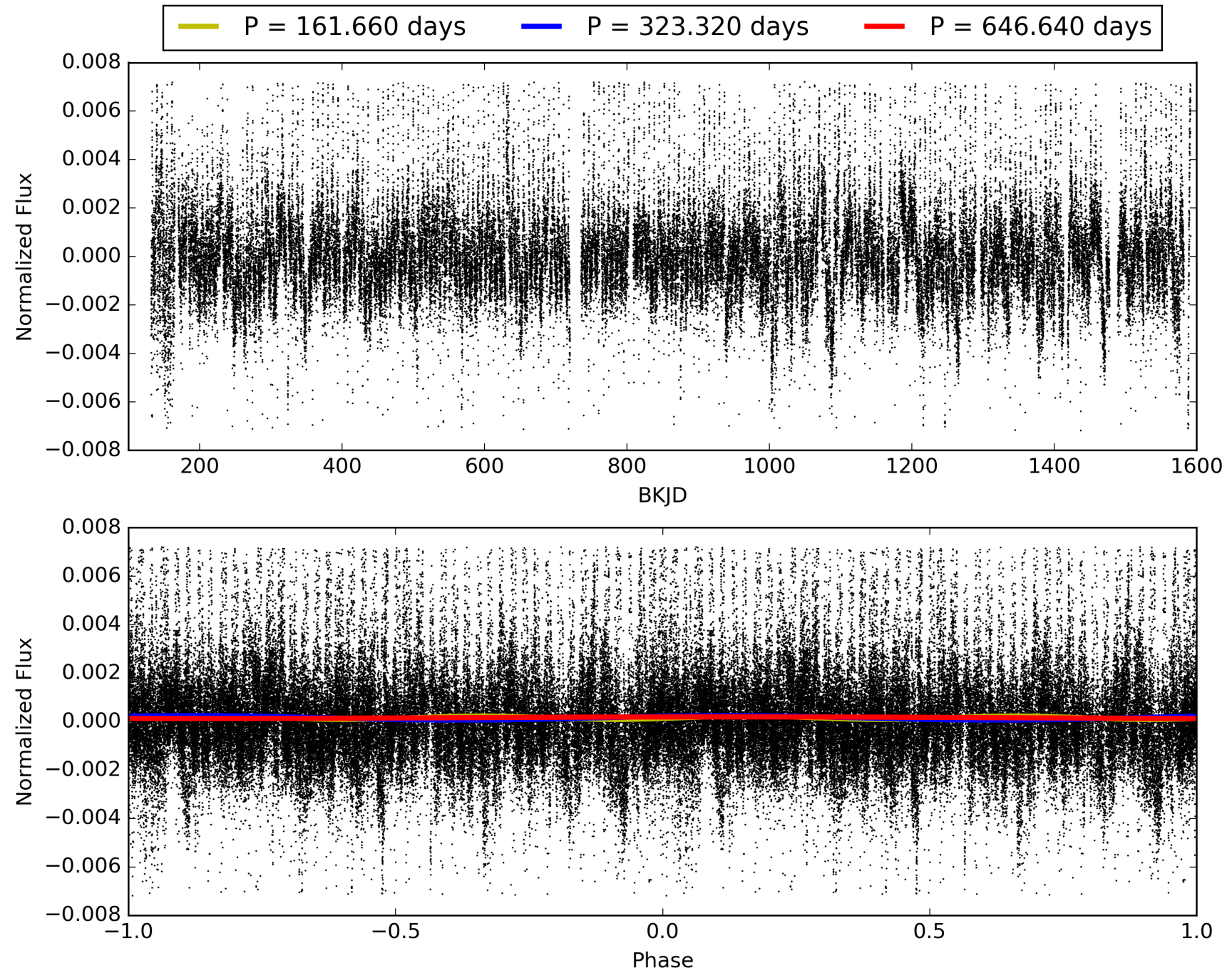
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:01:56 Z

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

TCE 003337351-04, PDC Light Curves

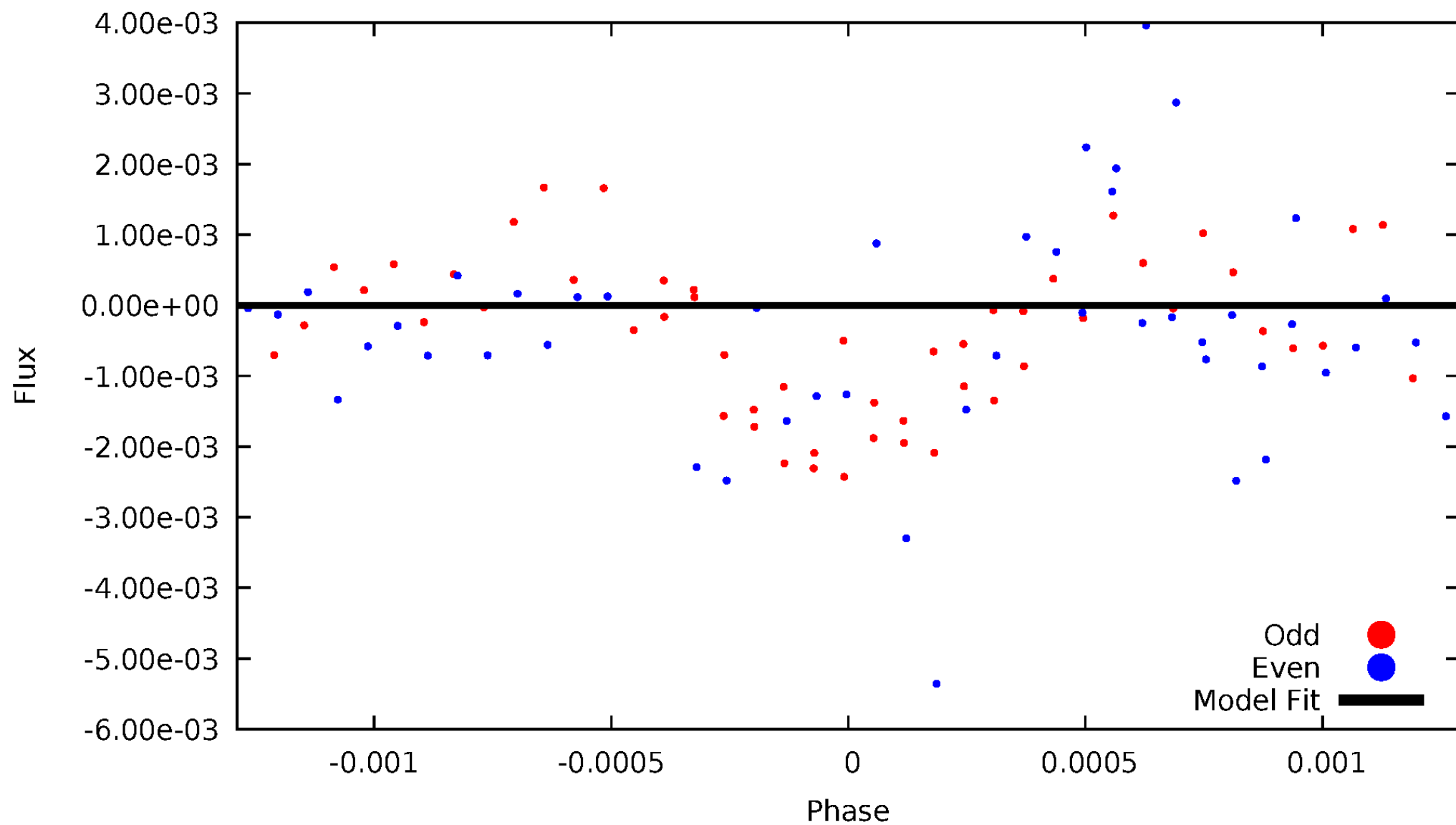


TCE 003337351-04



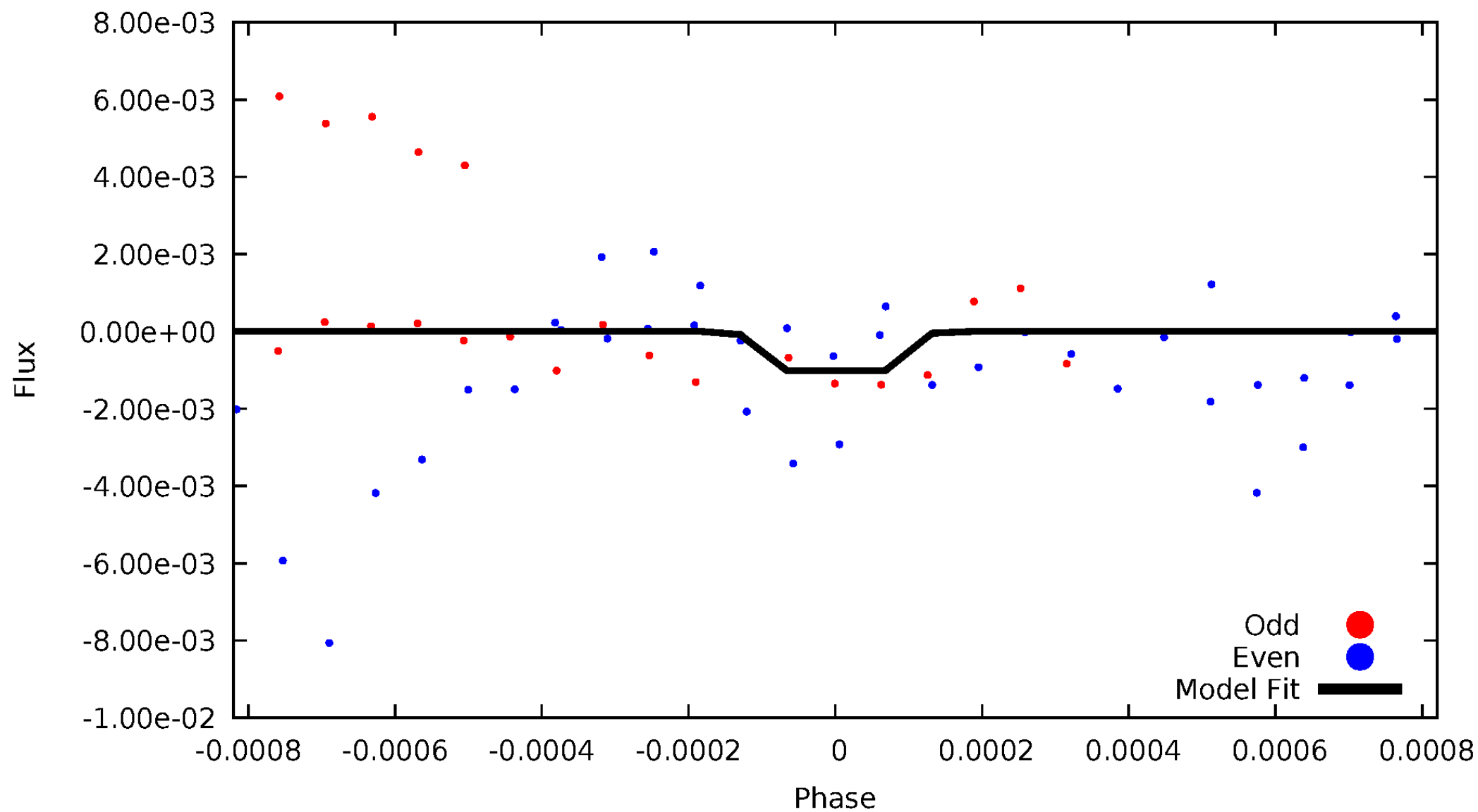
DV Odd/Even

TCE 003337351-04



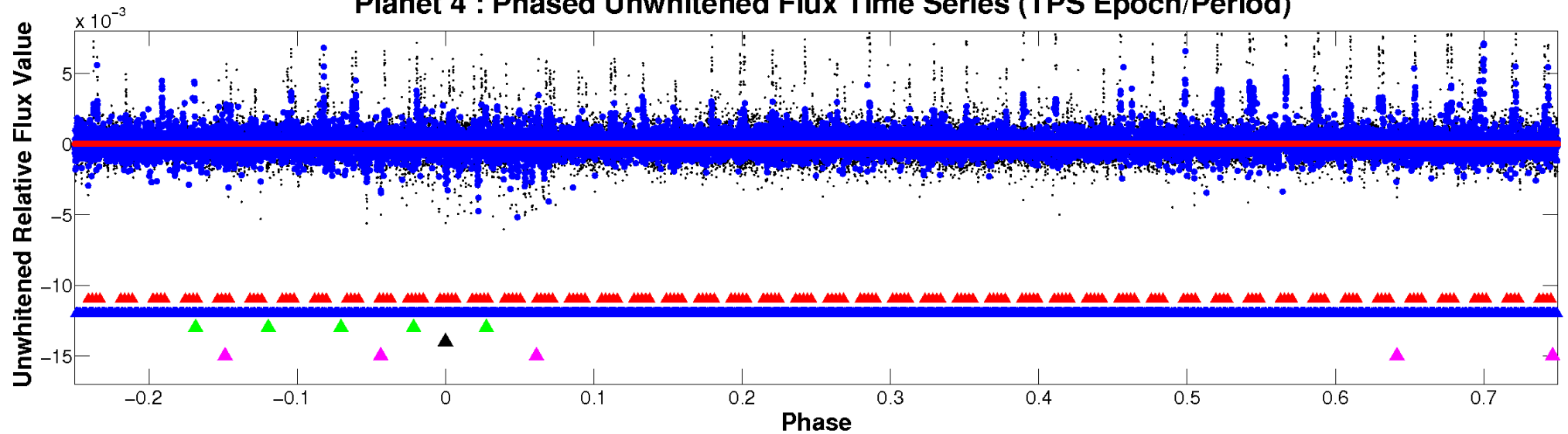
ALT Odd/Even

TCE 003337351-04

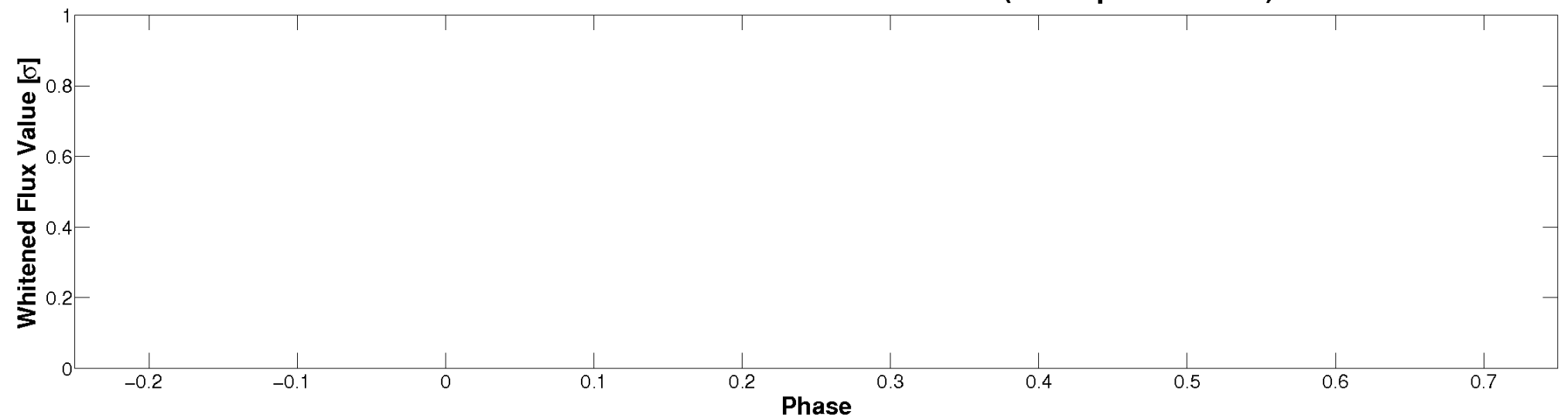


Non-Whitened Vs. Whitened Light Curve

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

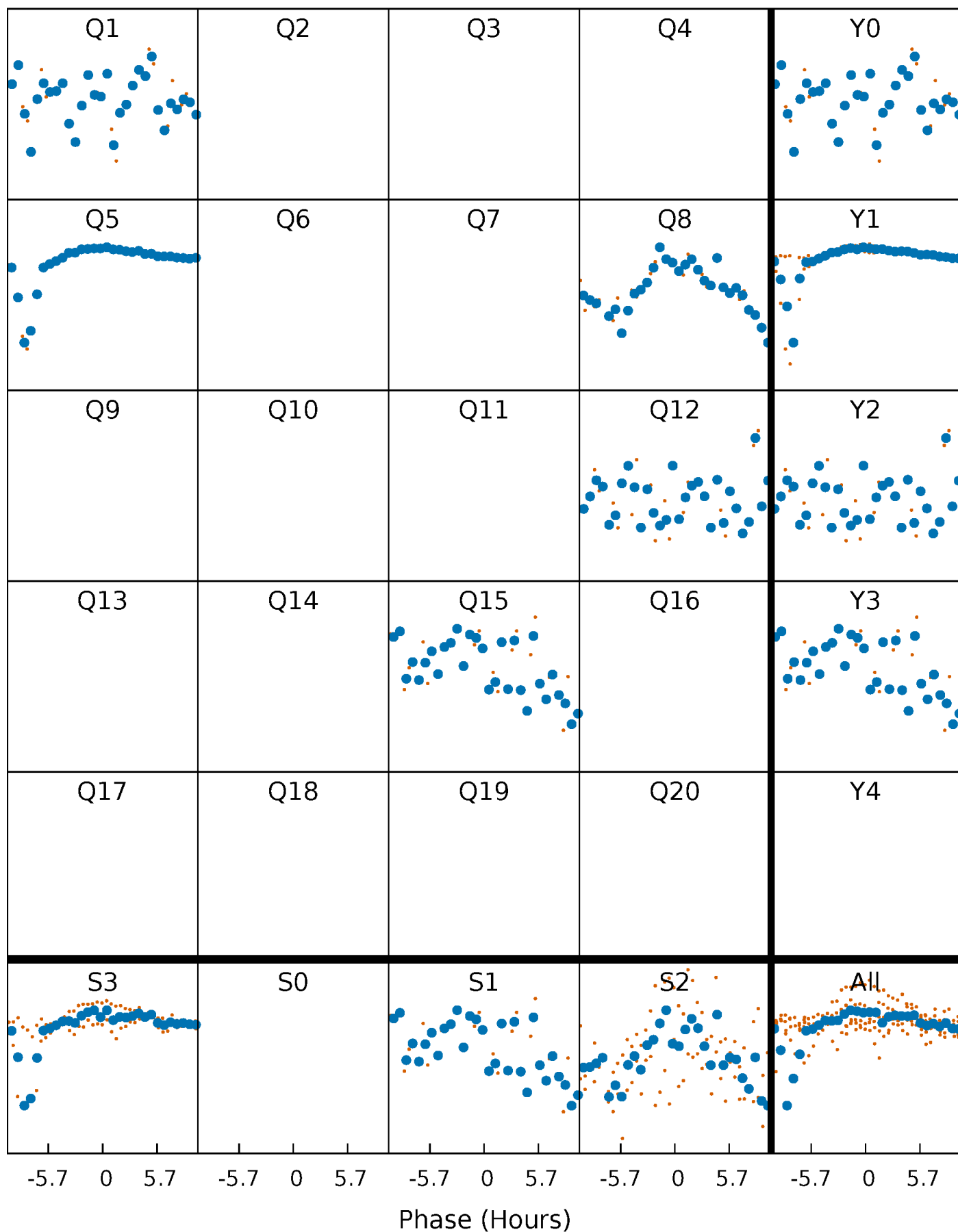


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



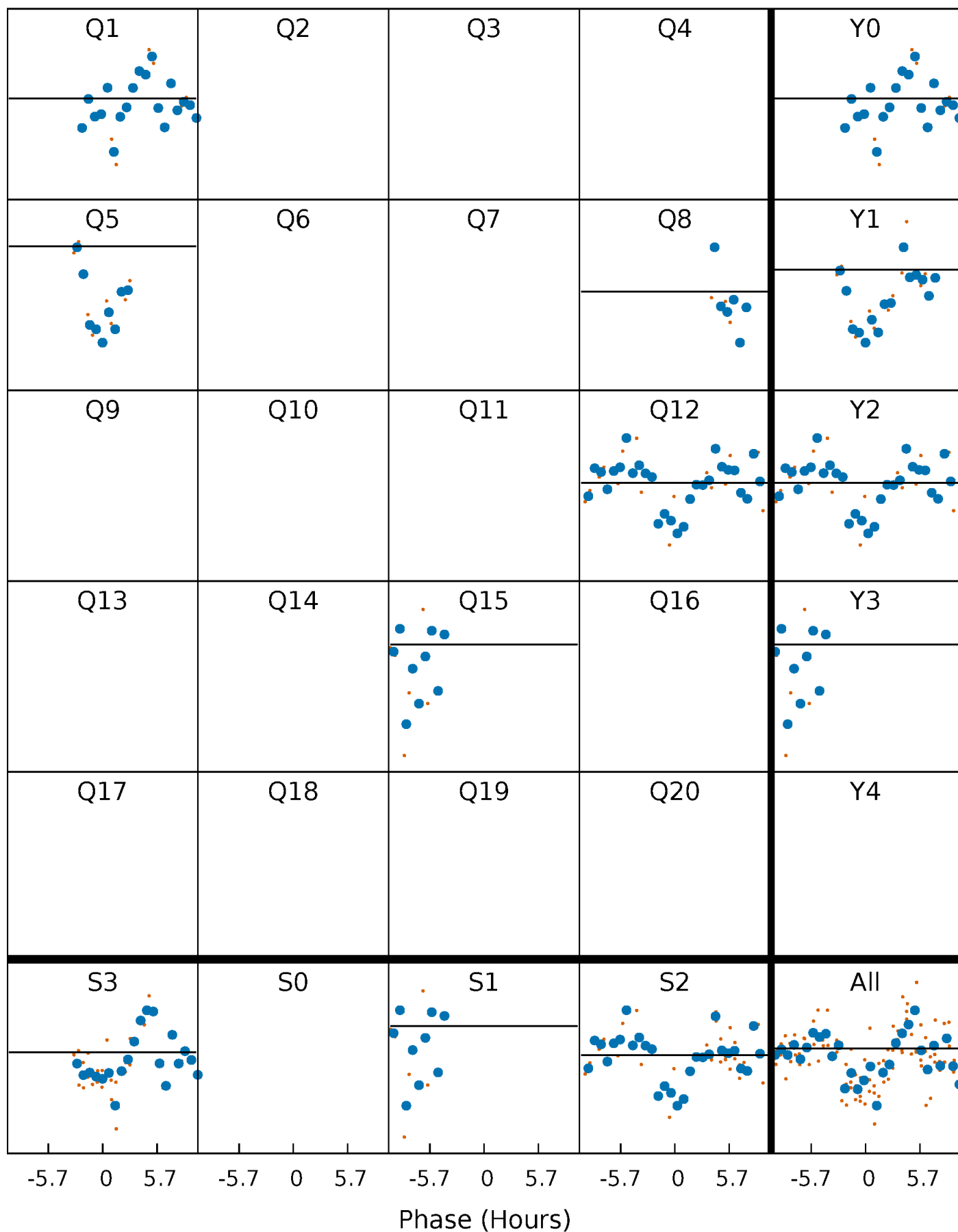
PDC Quarter-Phased Transit Curves

TCE 003337351-04 P=323.320158 Days $T_0=140.975138$ (BKJD)



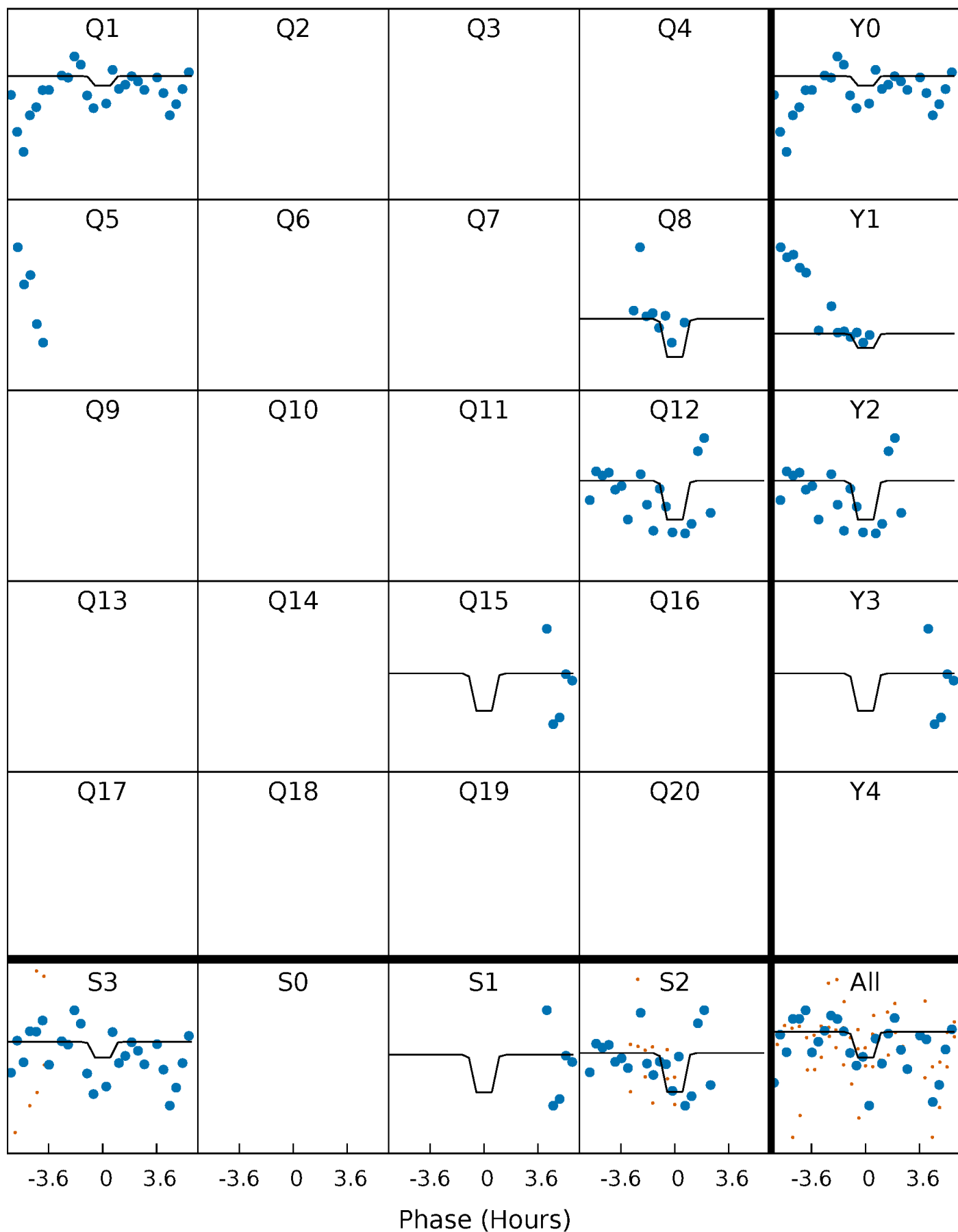
DV Quarter-Phased Transit Curves

TCE 003337351-04 $P=323.320158$ Days $T_0=140.975138$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

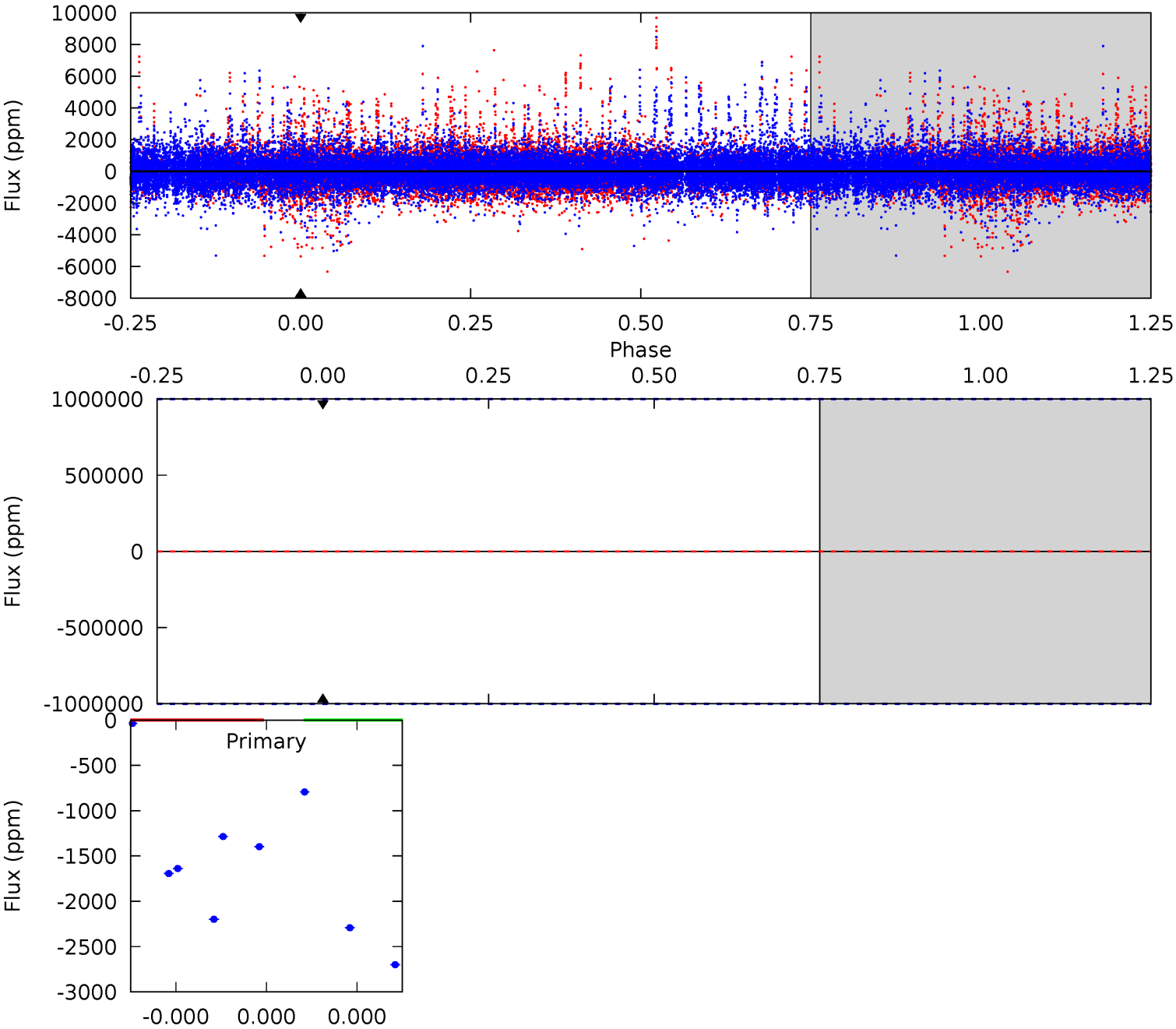
TCE 003337351-04 P=323.320158 Days $T_0=141.258123$ (BKJD)



DV Model-Shift Uniqueness Test

003337351-04, P = 323.320158 Days, E = 140.975138 Days

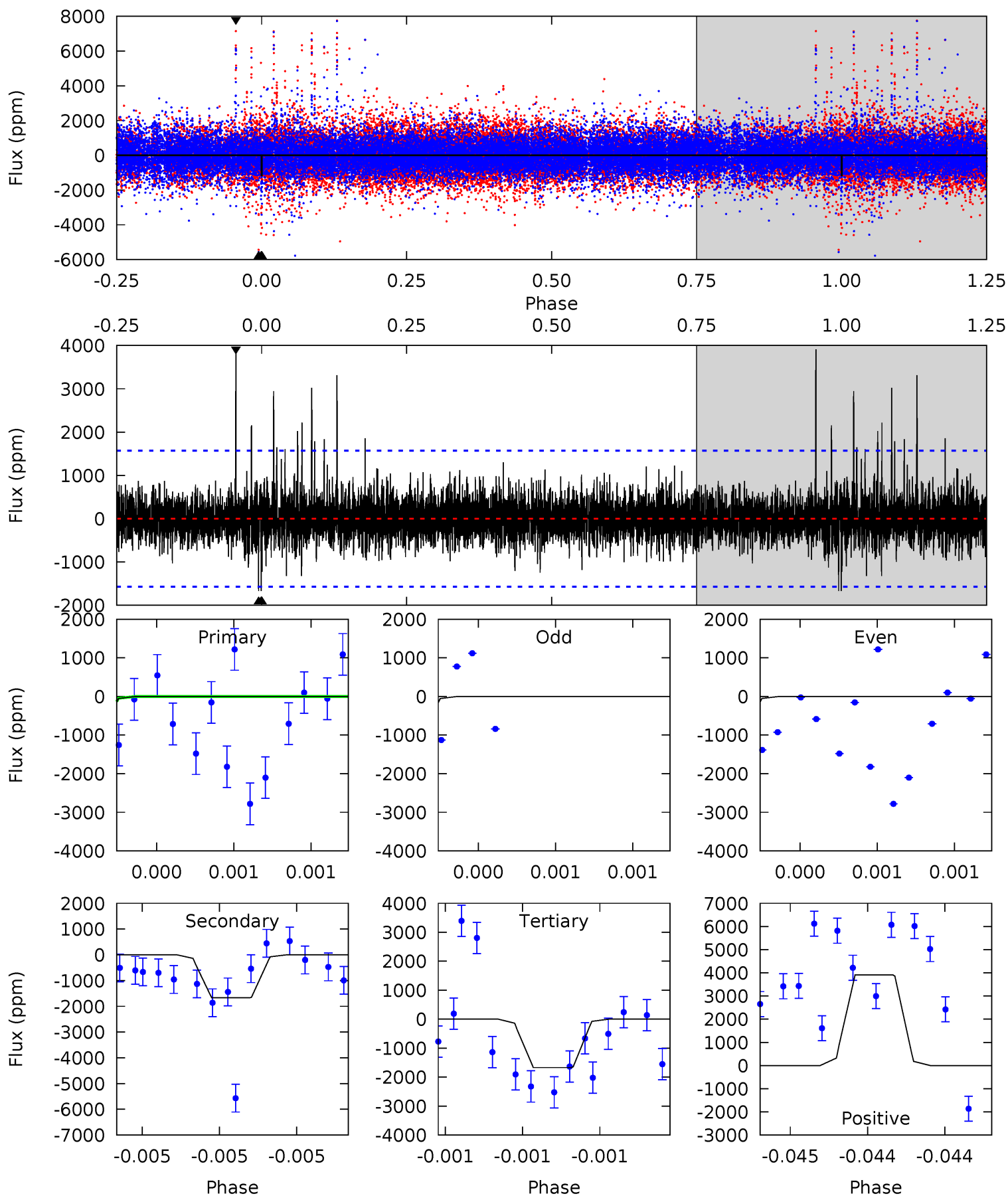
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003337351-04, P = 323.320158 Days, E = 141.258123 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.18	6.05	6.05	14.2	5.69	3.65	1.35	-1.87	-9.97	0.01	-8.10	0.06	0.98	0.70	0.51



Stellar Parameters For KIC 003337351

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5730^{+171}_{-206}	$4.417^{+0.084}_{-0.196}$	$0.180^{+0.200}_{-0.300}$	$1.035^{+0.304}_{-0.130}$	$1.018^{+0.122}_{-0.111}$	$1.295^{+0.563}_{-0.631}$
	+3%/-4%	+2%/-4%	+111%/-167%	+29%/-13%	+12%/-11%	+43%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003337351-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$9.37^{+10.86}_{-6.40}$	377^{+28}_{-21}	4812^{+12765}_{-23297}	$17515^{+891902}_{-939630}$
Alt.	-1671 ± 276	$9.70^{+8.89}_{-6.79}$	376^{+28}_{-20}	4217^{+3130}_{-825}	8418^{+82740}_{-6177}

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

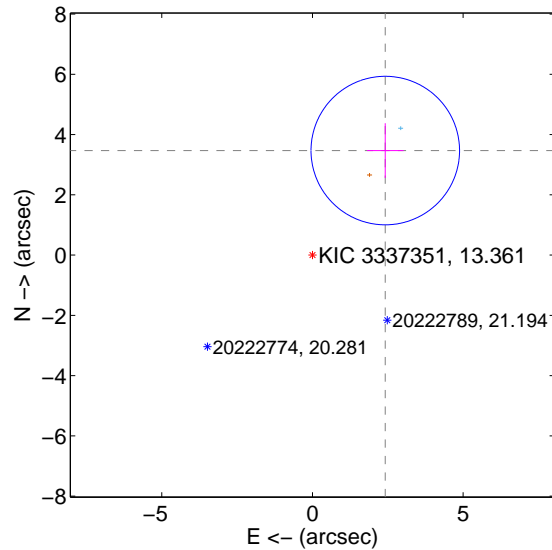
Supplemental centroid analysis for 003337351-04. Kepler magnitude: 13.36. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

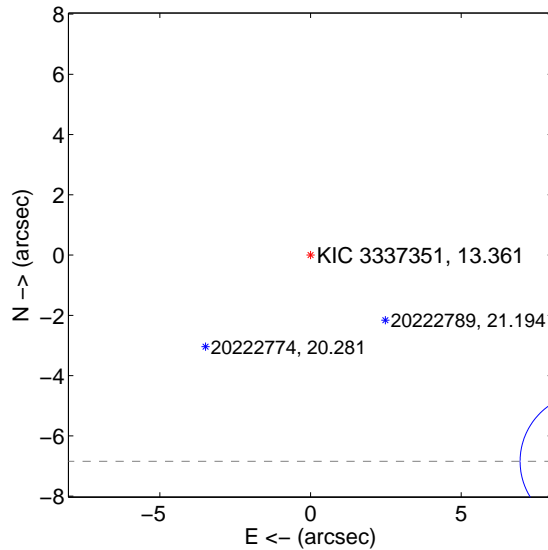
The OOT PRF centroid is offset from the target star catalog position by about 12.64 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.229 ± 0.822	5.15	-2.417 ± 0.606	3.470 ± 0.908
PRF-fit source offset from KIC position	11.476 ± 0.752	15.26	-9.212 ± 0.833	-6.844 ± 0.577
photometric centroid source offset	4.00 ± 0.65	6.17	-3.07 ± 0.60	-2.57 ± 0.71

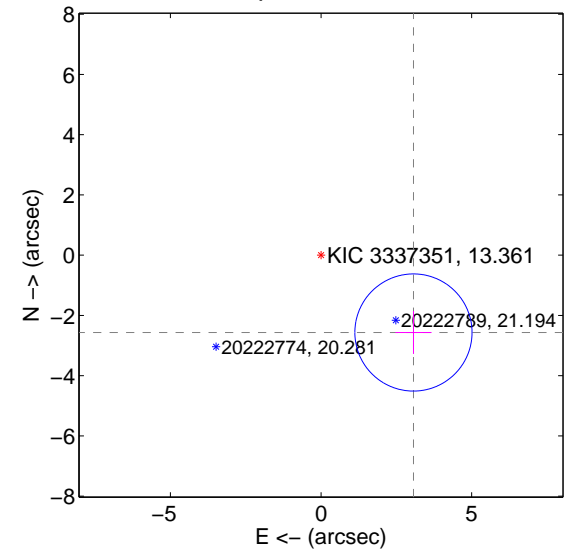
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

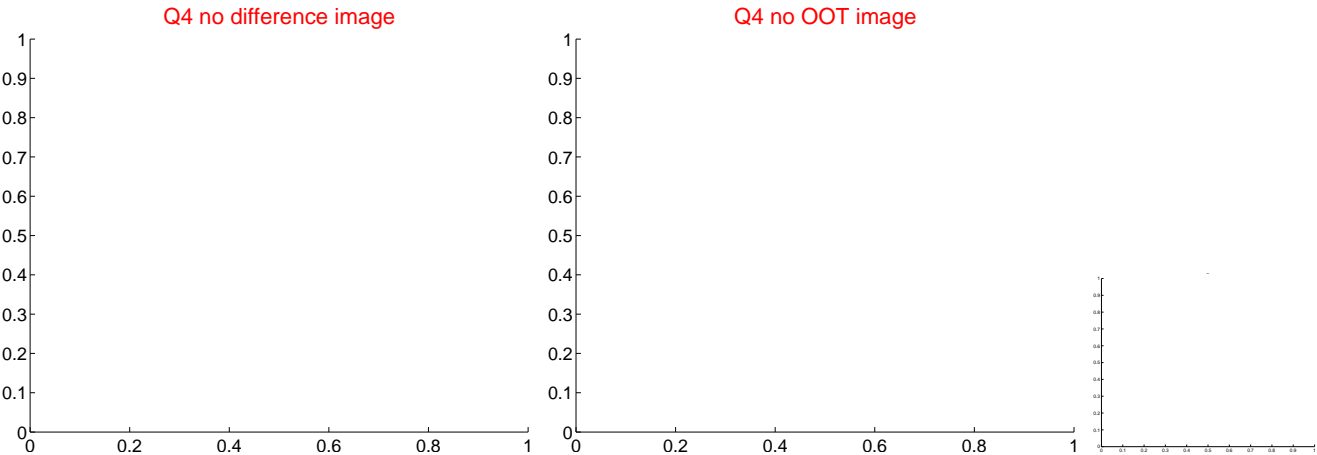
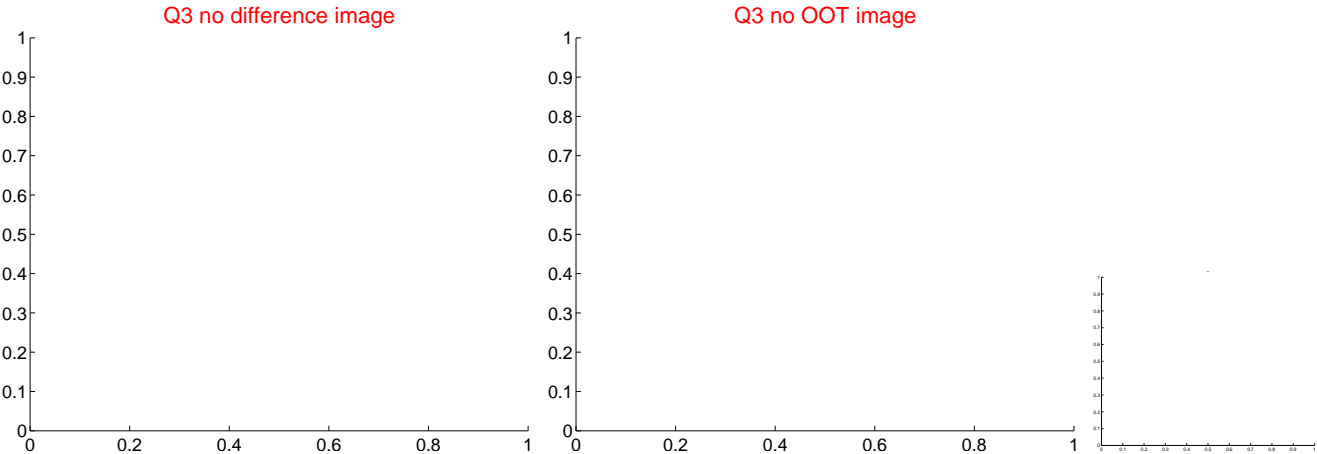
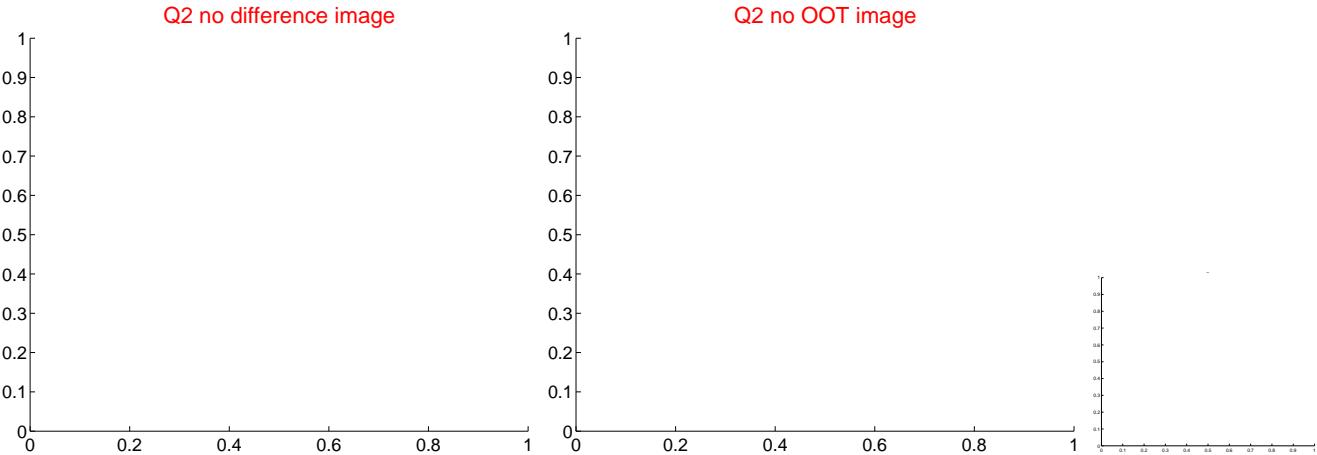
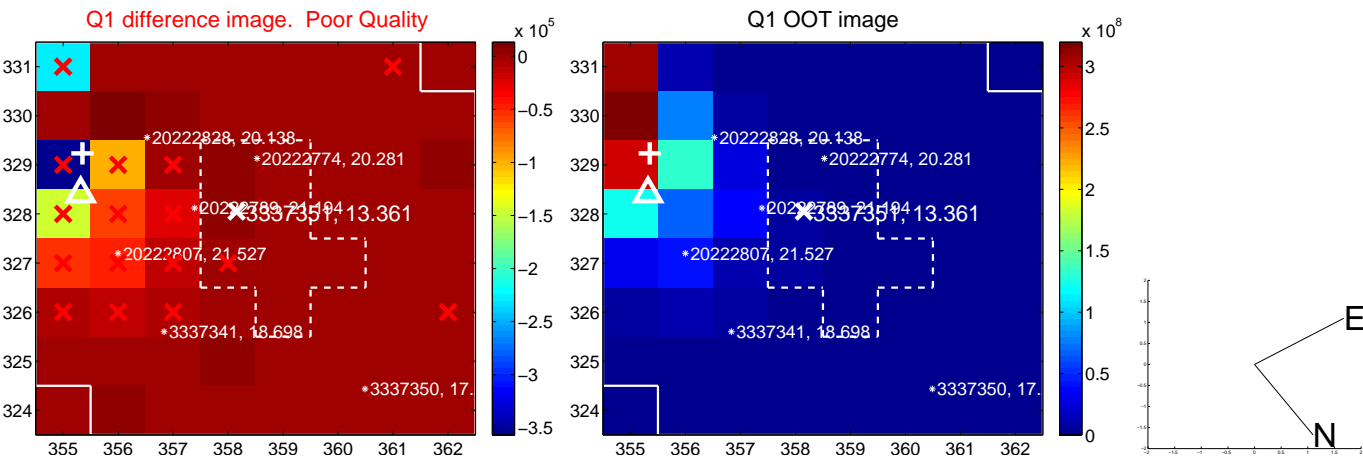


offset from photometric centroids

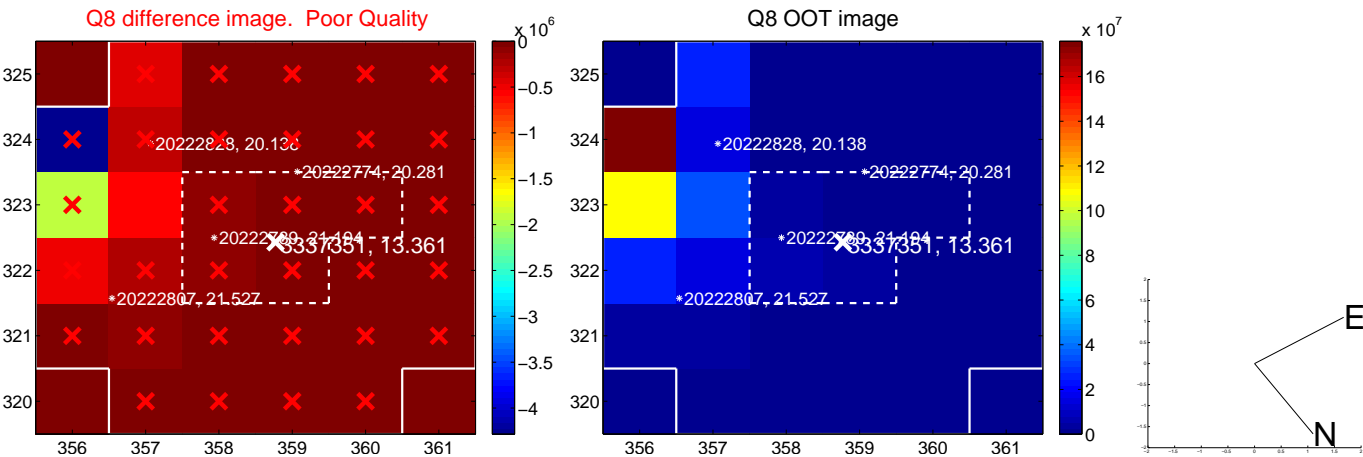
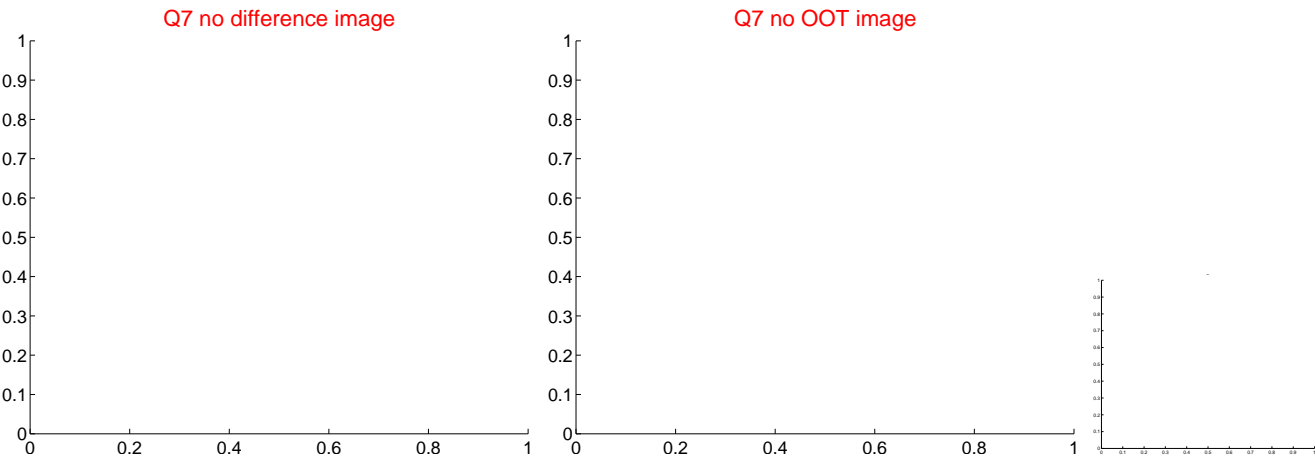
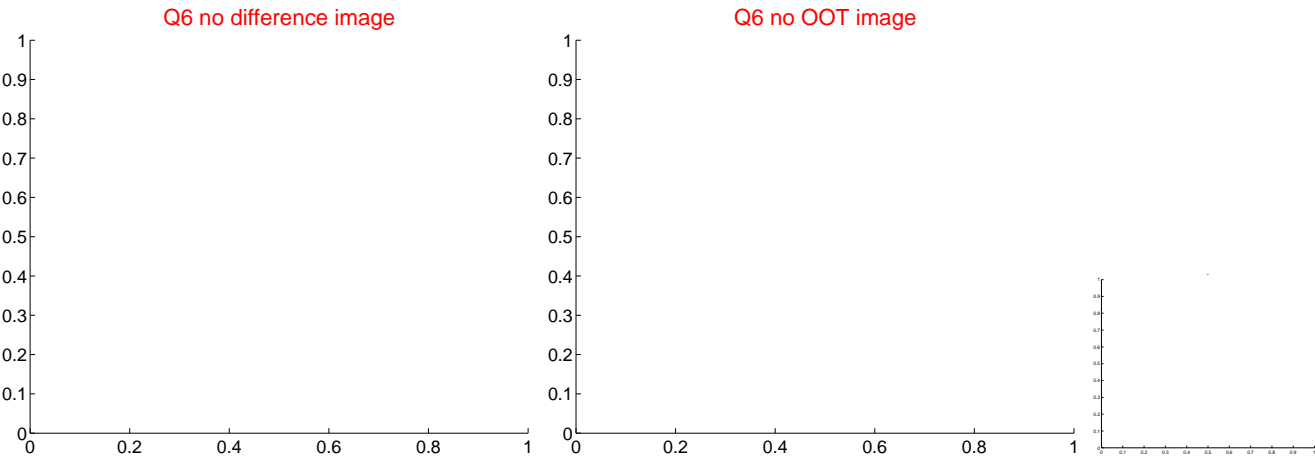
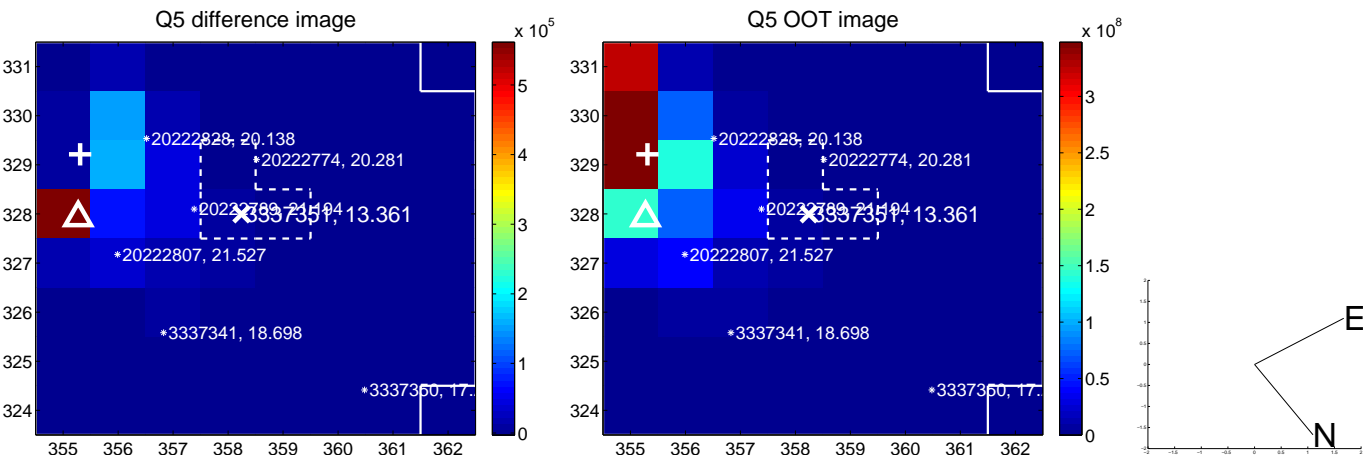


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

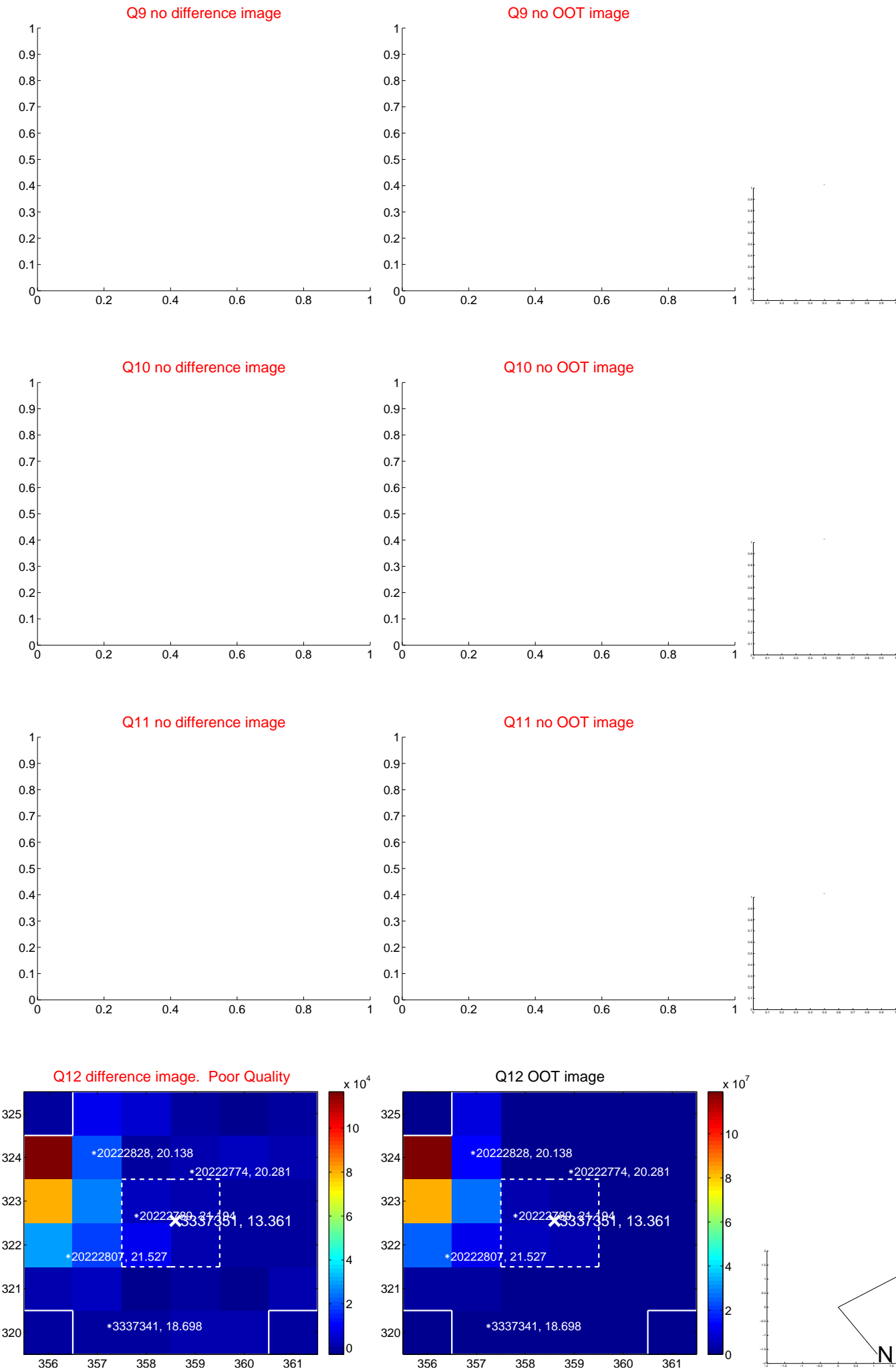
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



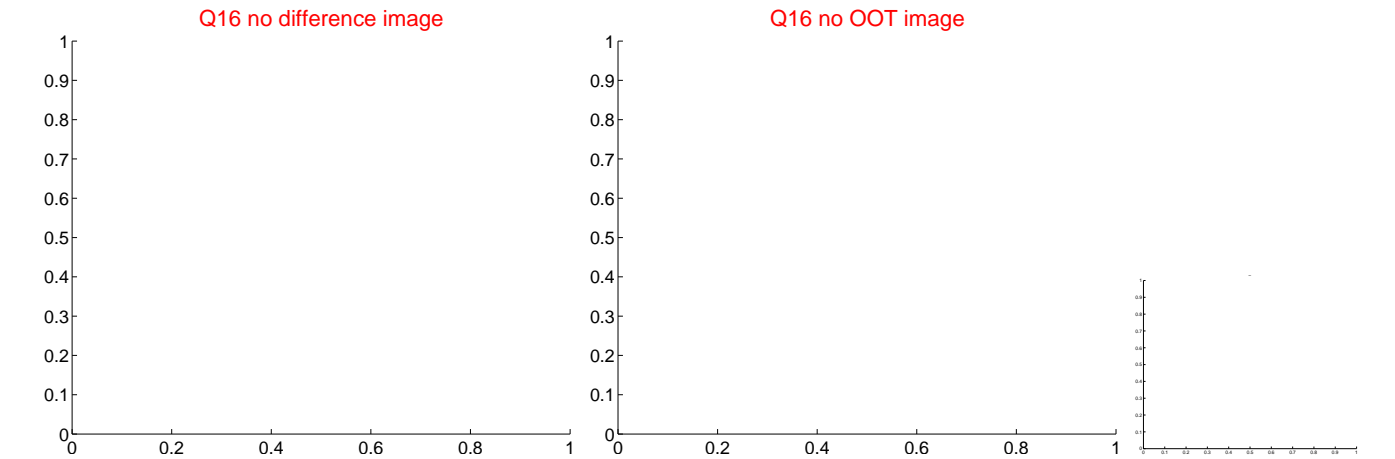
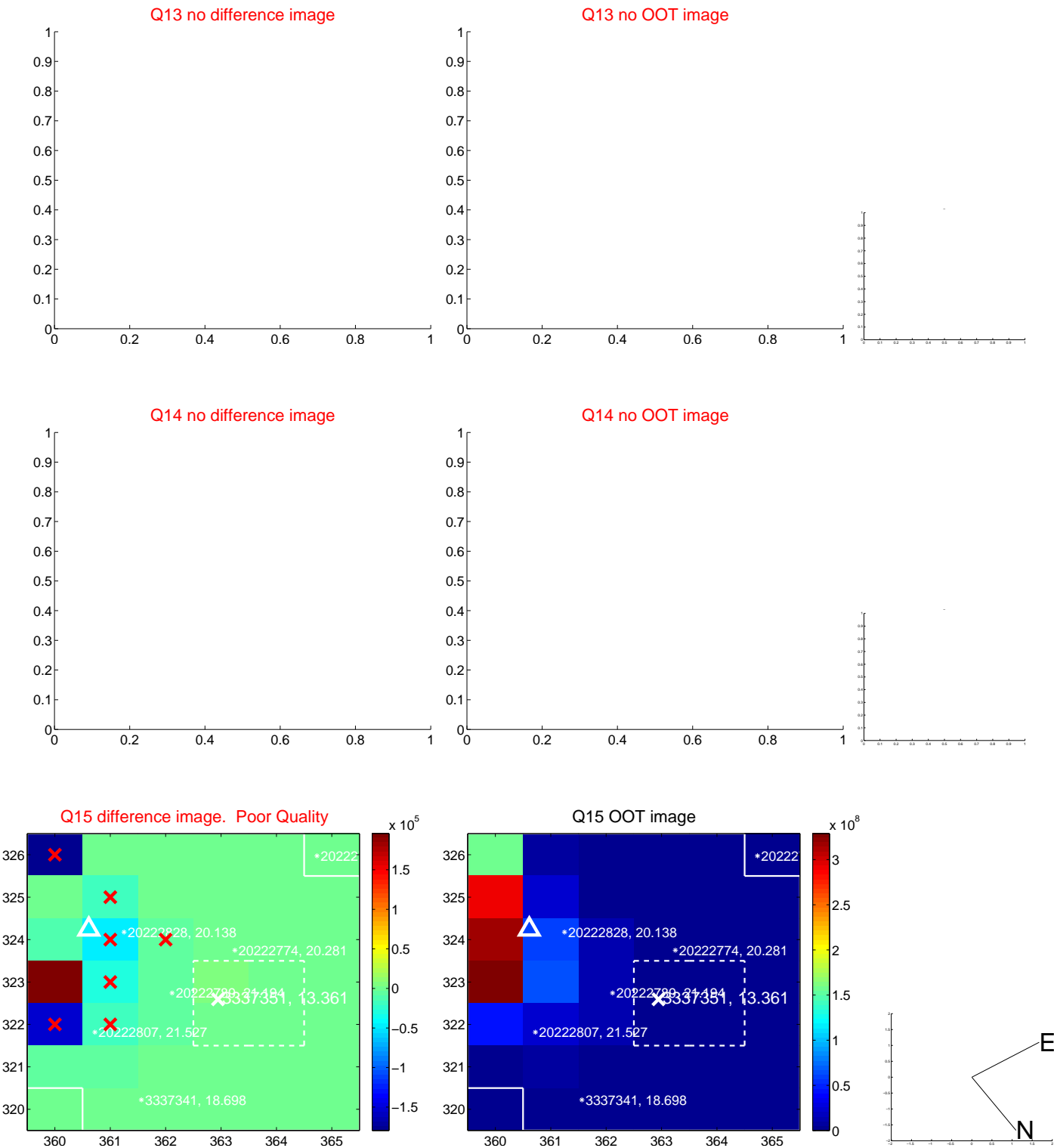
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

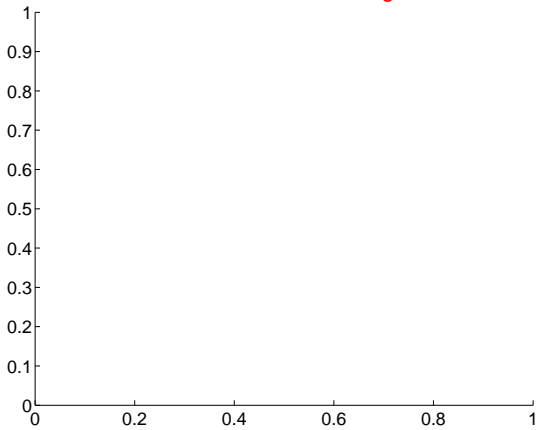


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

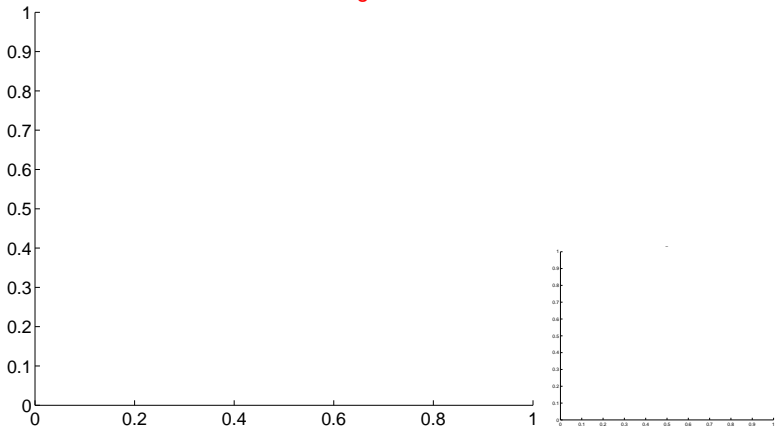


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

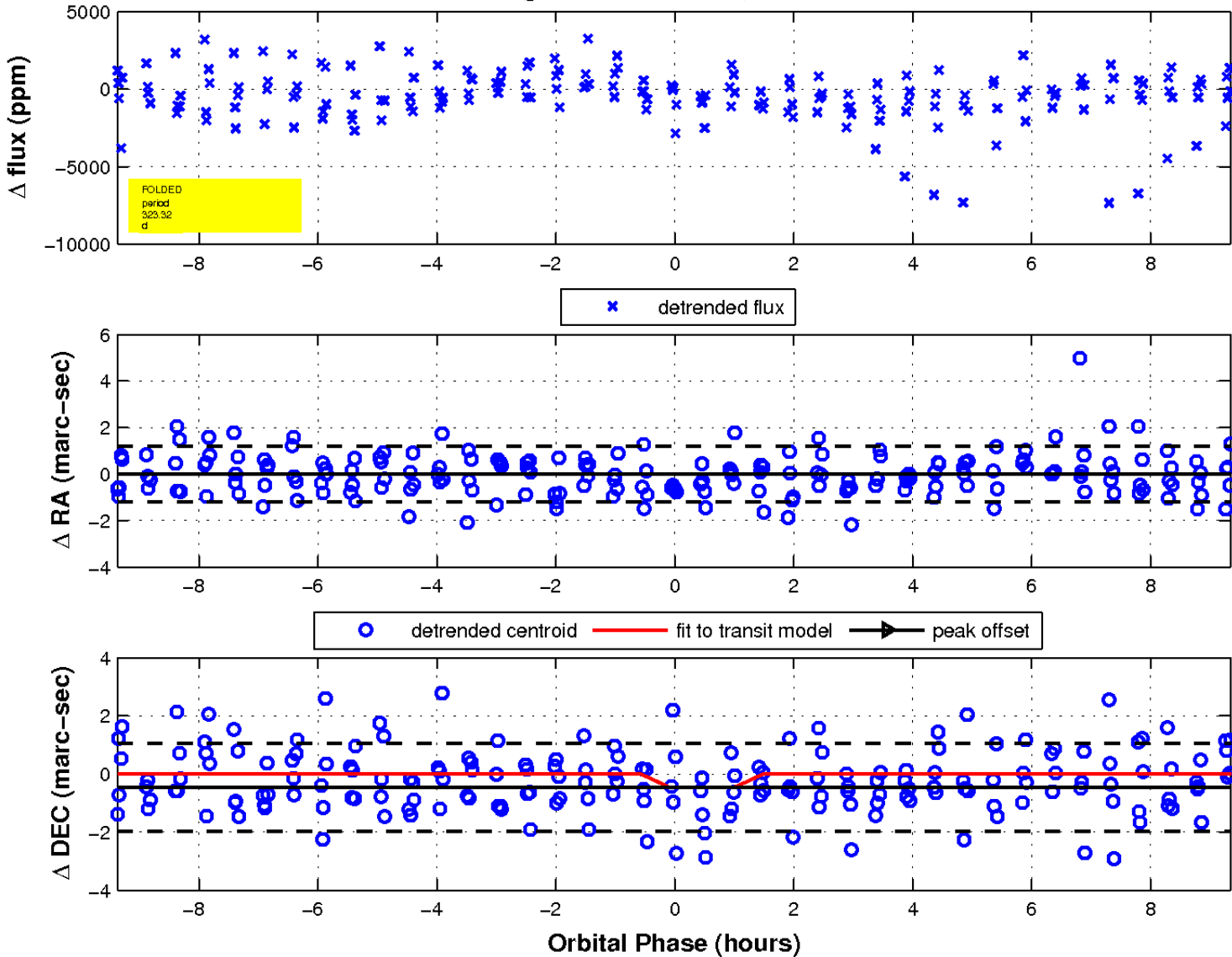
Q17 no difference image



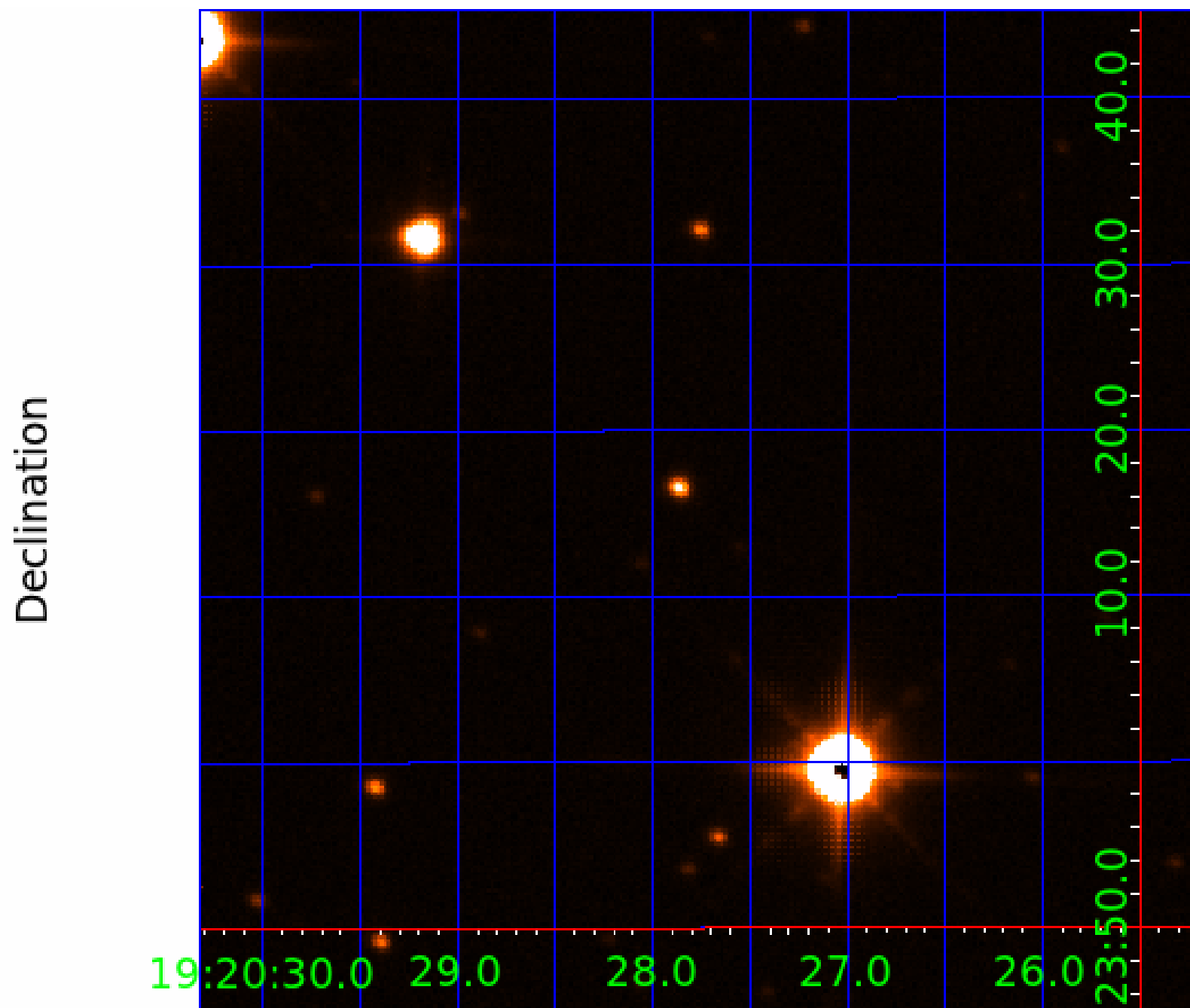
Q17 no OOT image



fluxWeightedCentroids, Planet 4 of 5



UKIRT Image



KIC 003337351

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})
003337351-01	OBS	0965.01	7.047118	132.748762	58966.5	2.978	1292.6	679.5	1.03	5730	39.20	197.15
003337351-02	OBS	No	1.409415	132.094900	155.2	4.659	11.9	9.5	1.03	5730	1.31	1685.60
003337351-03	OBS	No	307.480082	149.869407	2913.8	19.488	9.8	7.1	1.03	5730	5.51	1.28
003337351-04	OBS	No	323.320158	140.975138	1926.5	5.000	10.4	-1.0	1.03	5730	4.48	1.20
003337351-05	OBS	No	289.385951	160.802072	3047.2	6.817	9.0	11.4	1.03	5730	10.80	1.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337351-01	OBS	FP	0.00	0	1	1	1	DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
003337351-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET
003337351-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003337351-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_NOFITS
003337351-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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 003337351-05

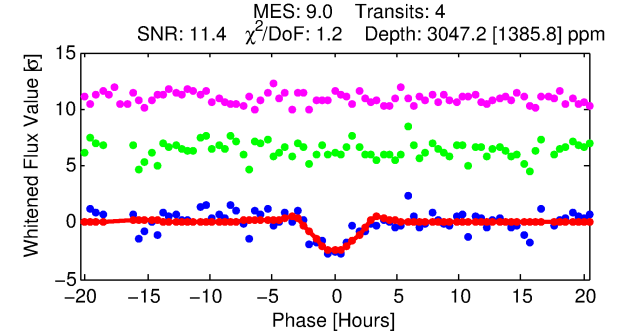
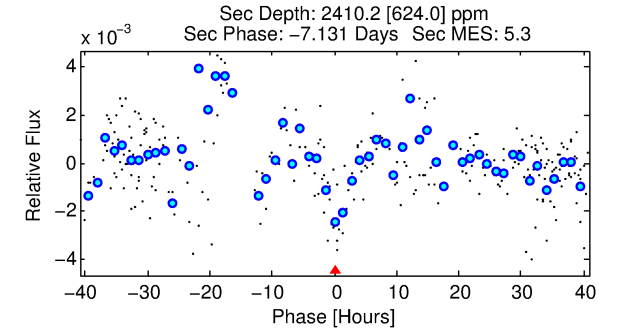
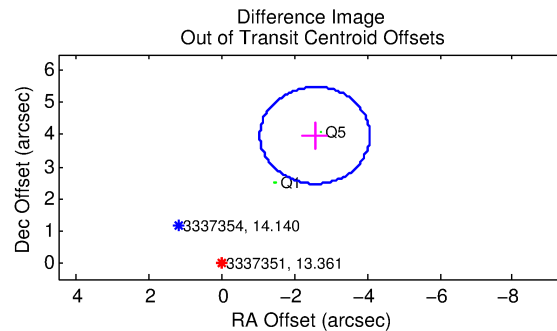
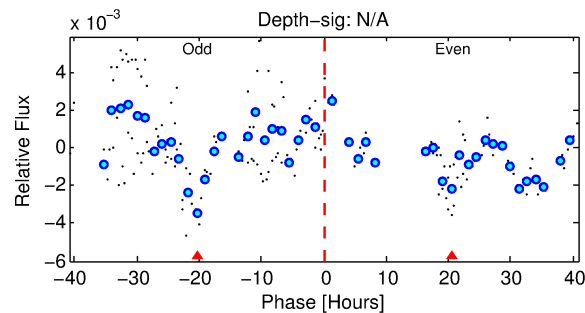
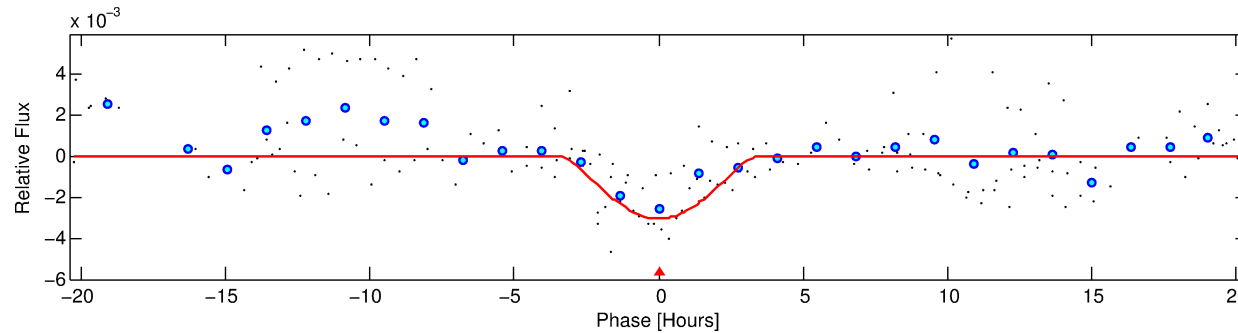
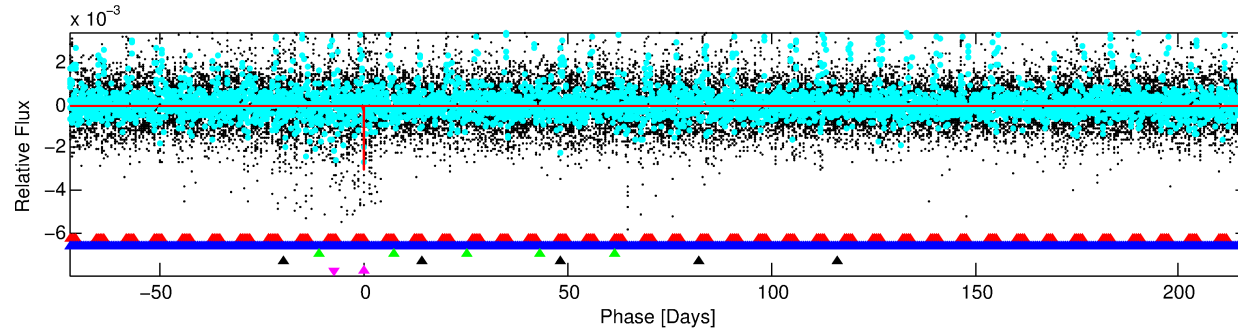
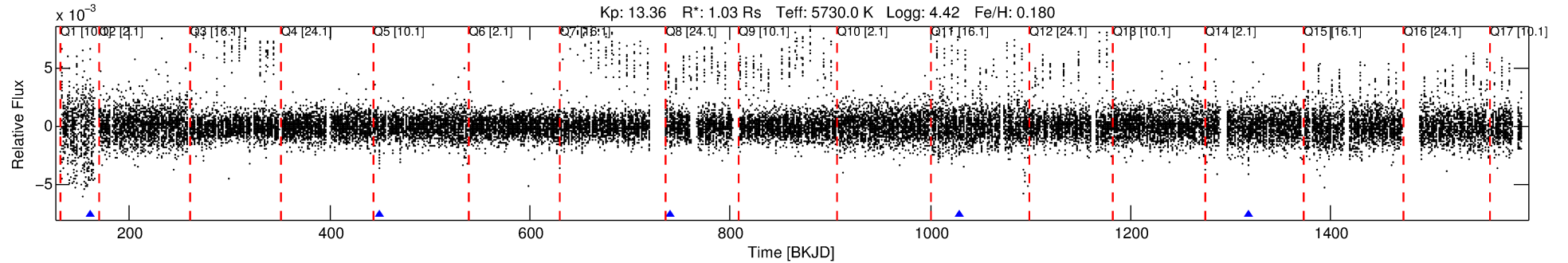
No Significant Match Found

DV One-Page Summary

KIC: 3337351 Candidate: 5 of 5 Period: 289.386 d

KOI: K00965 Corr: No Ephemeris Match

Kp: 13.36 R*: 1.03 Rs Teff: 5730.0 K Logg: 4.42 Fe/H: 0.180



DV Fit Results:

Period = 289.38595 [0.00557] d
Epoch = 160.8021 [0.0126] BKJD
Rp/R* = 0.0956 [0.3559]
a/R* = 145.30 [107.95]
b = 1.00 [0.53]
Seff = 1.39 [0.54]
Teq = 277 [27] K
Rp = 10.80 [40.32] Re
a = 0.8623 [0.2129] AU
Ag = 8454.71 [63060.38] [0.13σ]
Teff = 4106 [7649] K [0.50σ]

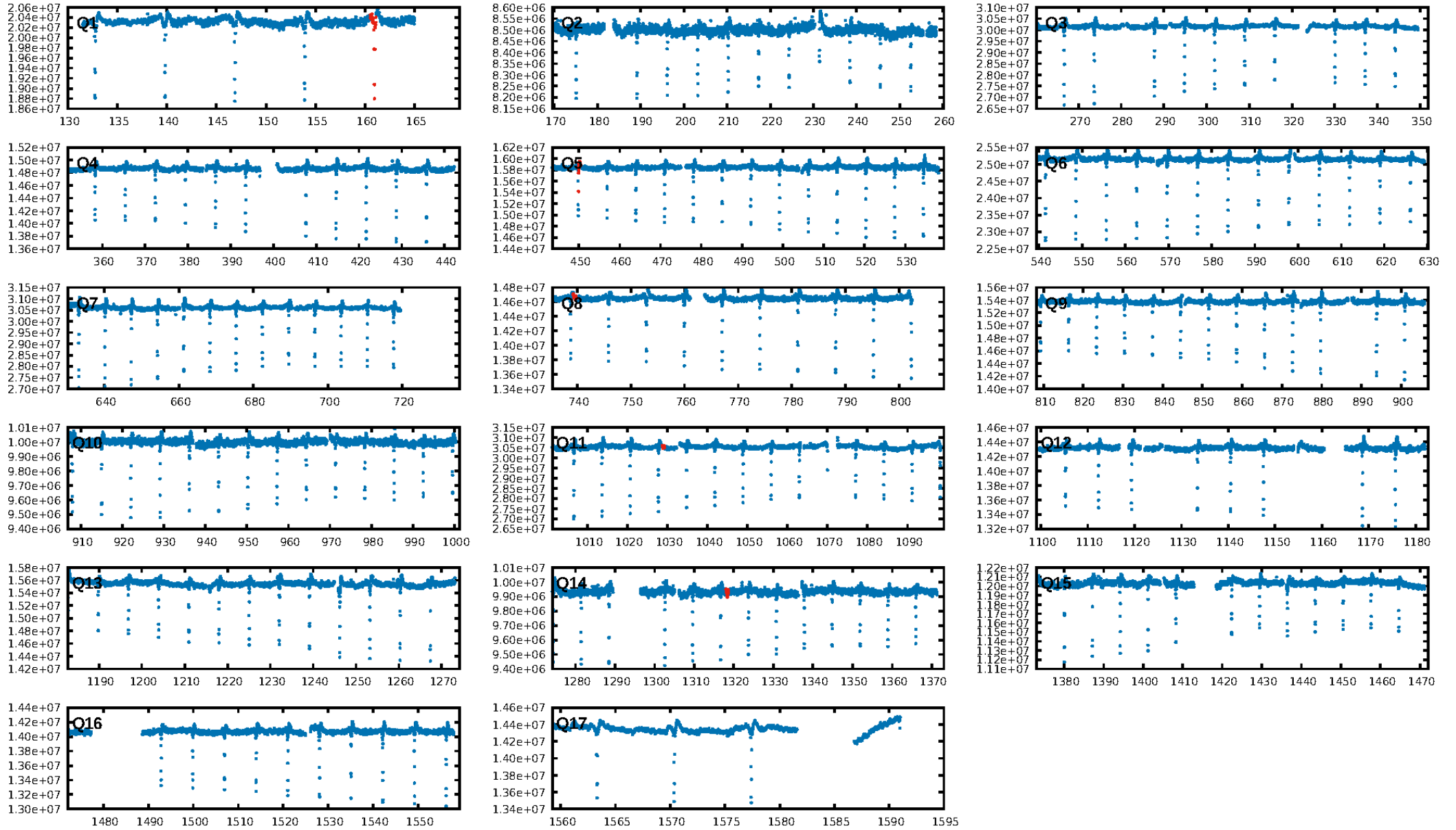
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [910.94σ]
LongPeriod-sig: 100.0% [21.03σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.884
Centroid-sig: 9.4%
Centroid-so: 4.421 arcsec [24.24σ]
OotOffset-rm: 4.728 arcsec [9.40σ]
KicOffset-rm: 11.534 arcsec [25.45σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/5]

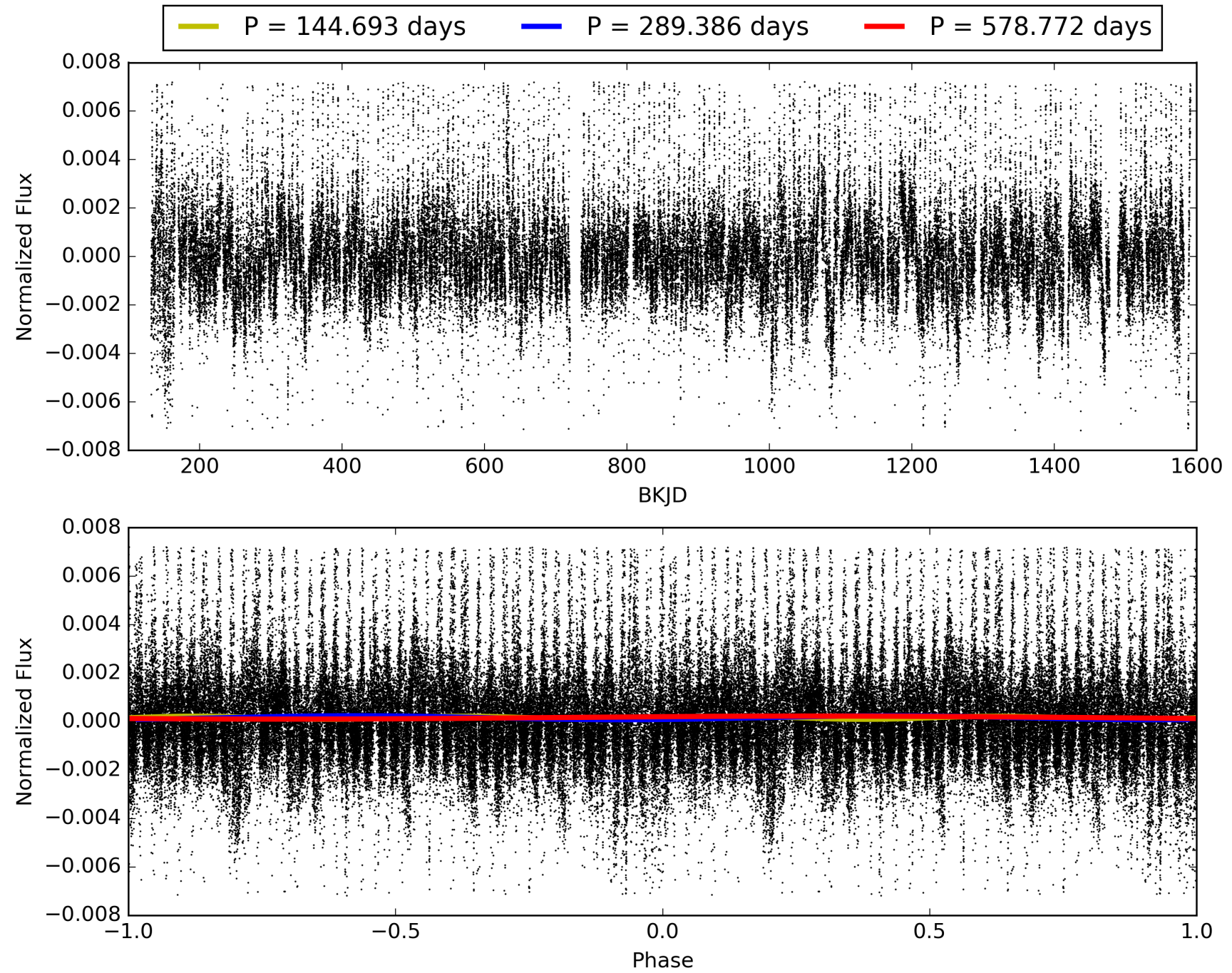
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:02:04 Z

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

TCE 003337351-05, PDC Light Curves

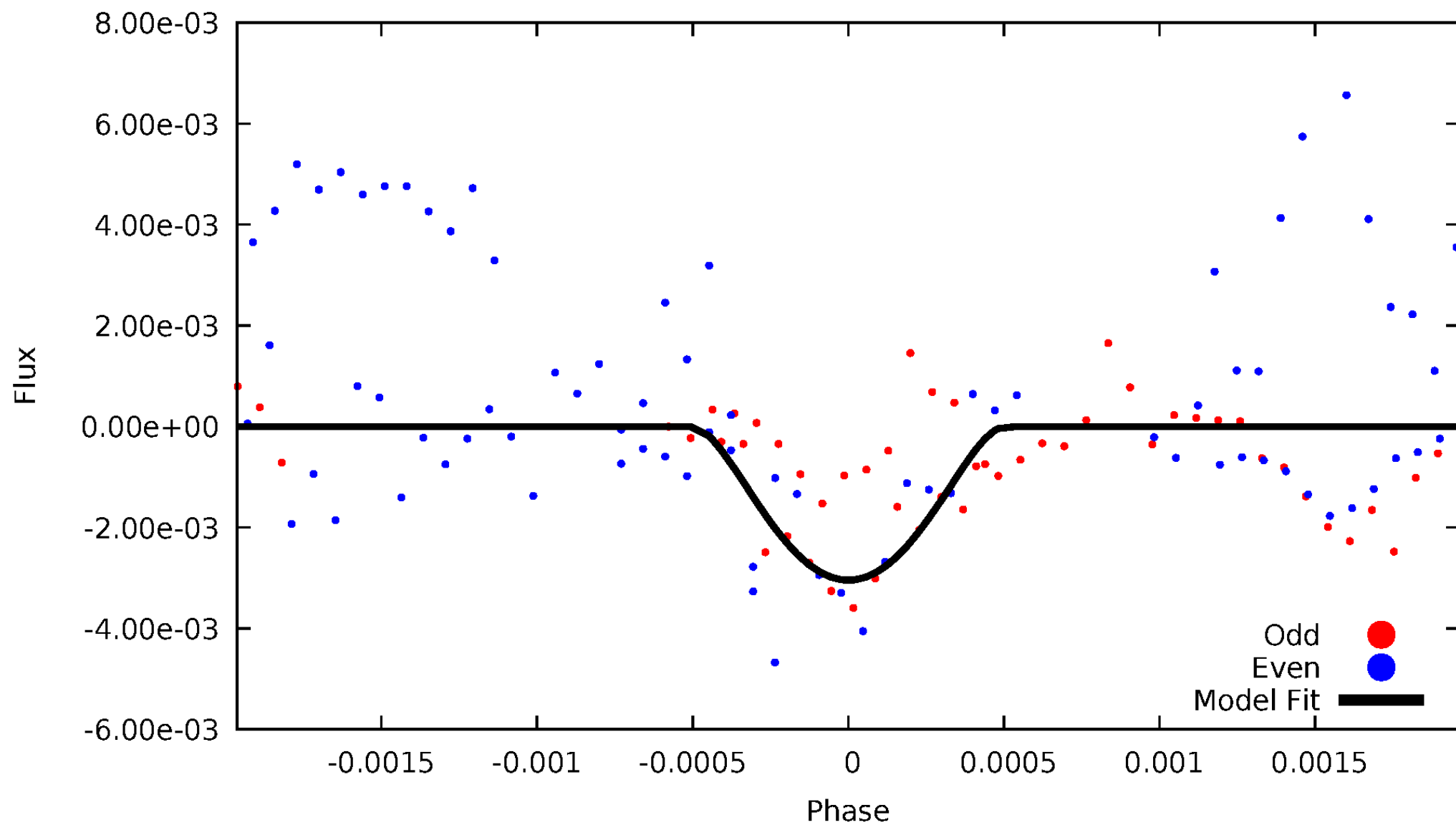


TCE 003337351-05



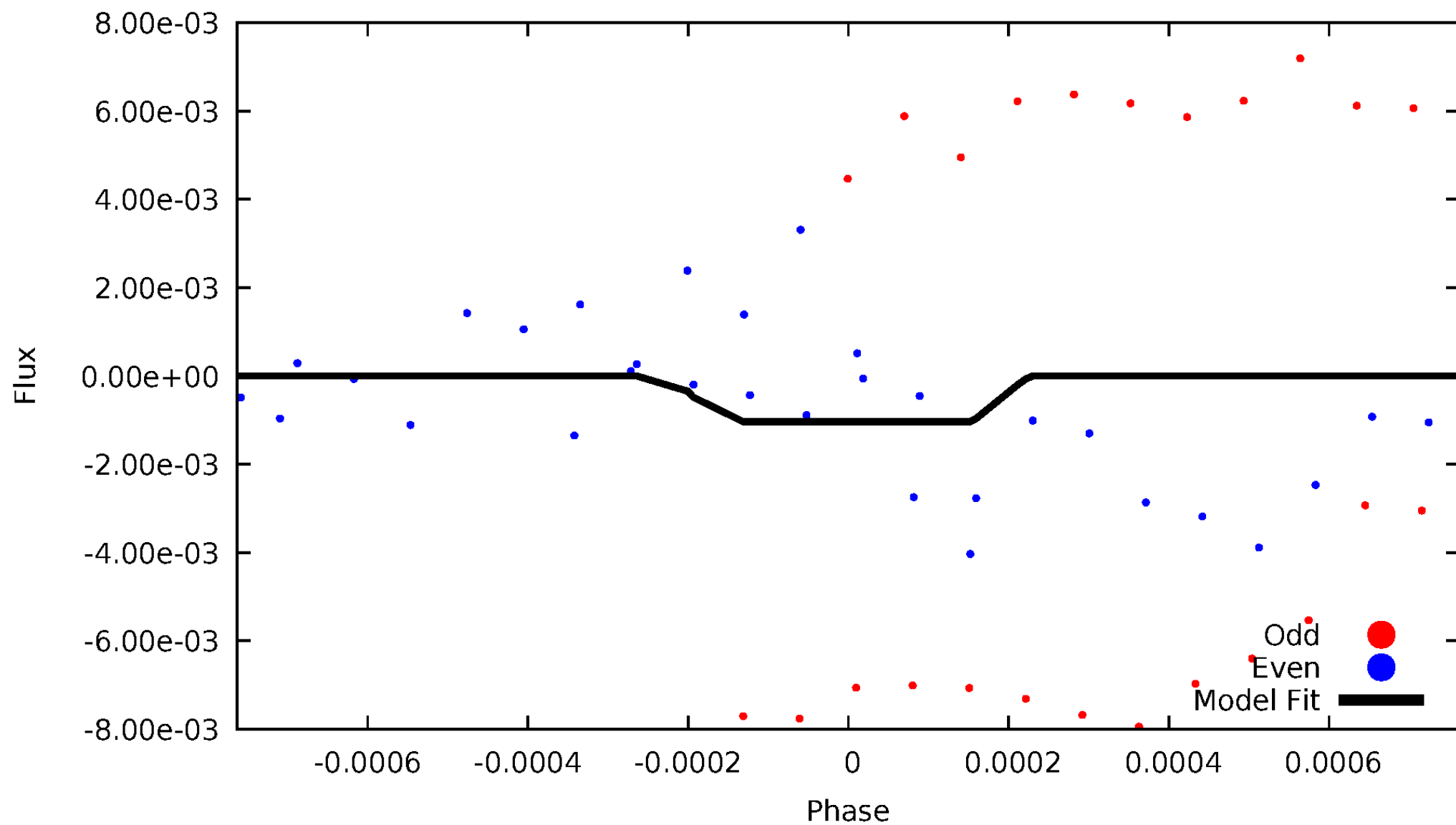
DV Odd/Even

TCE 003337351-05



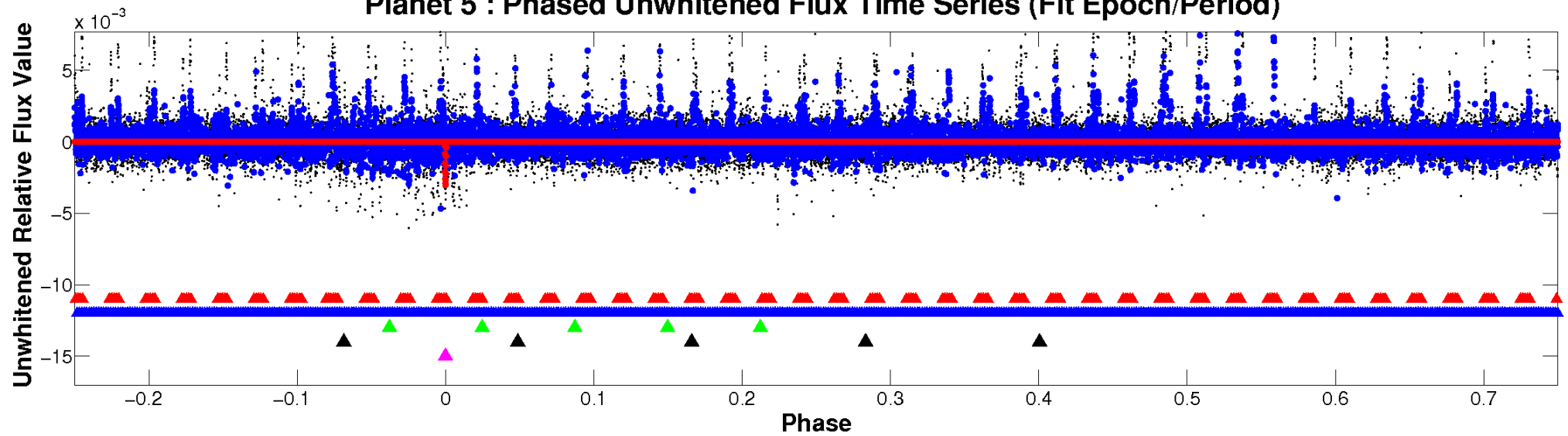
ALT Odd/Even

TCE 003337351-05

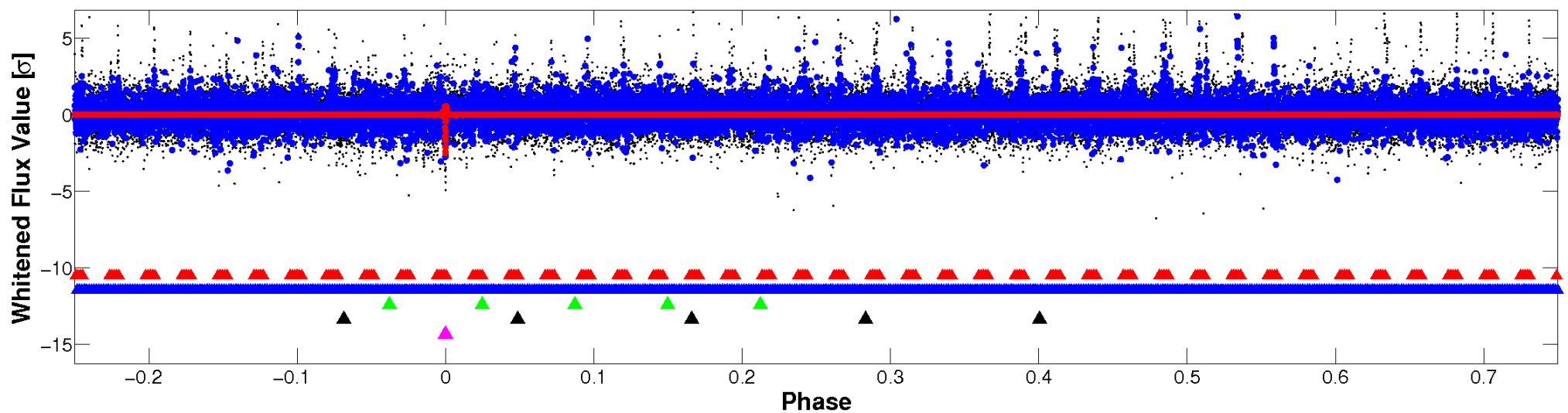


Non-Whitened Vs. Whitened Light Curve

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

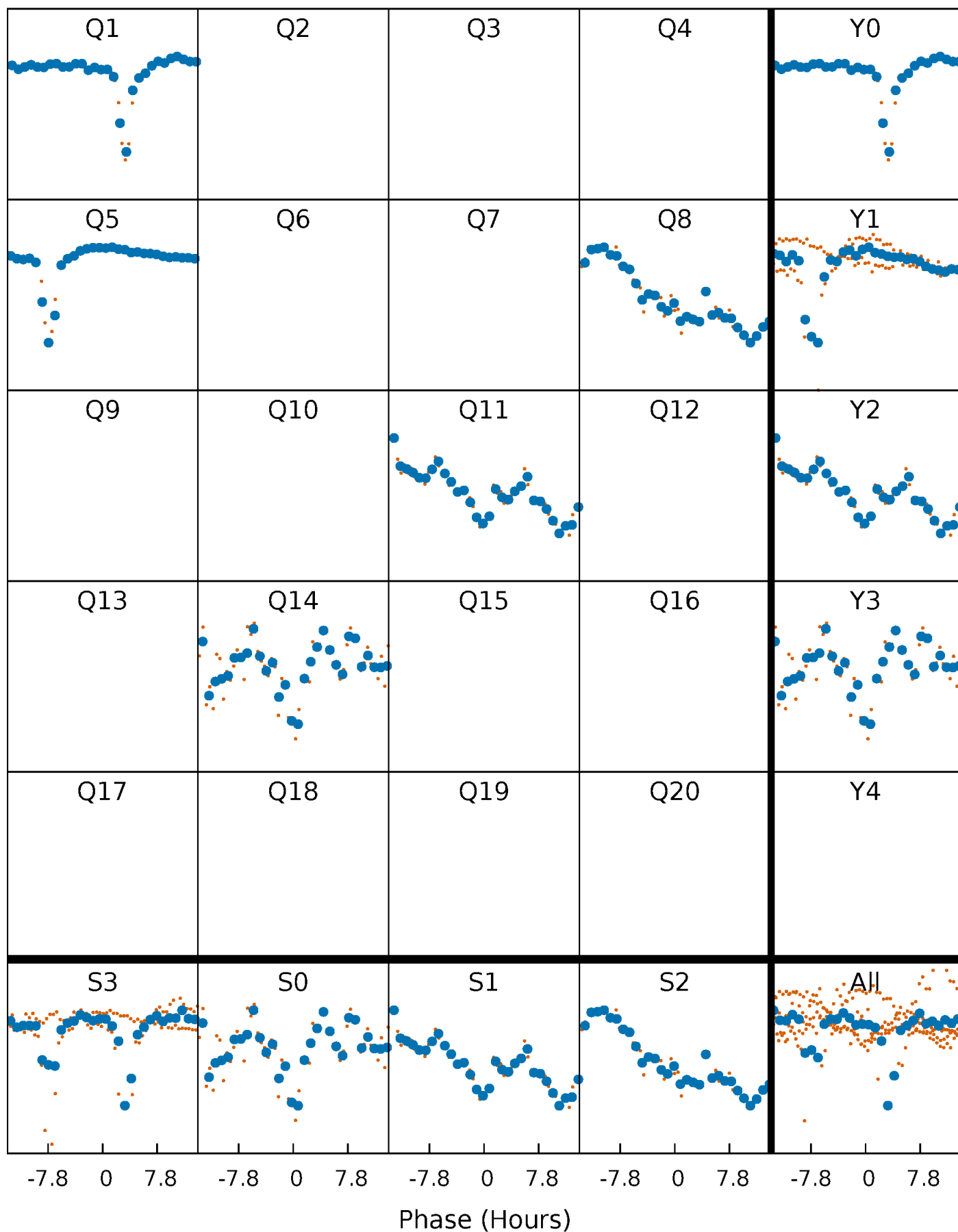


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



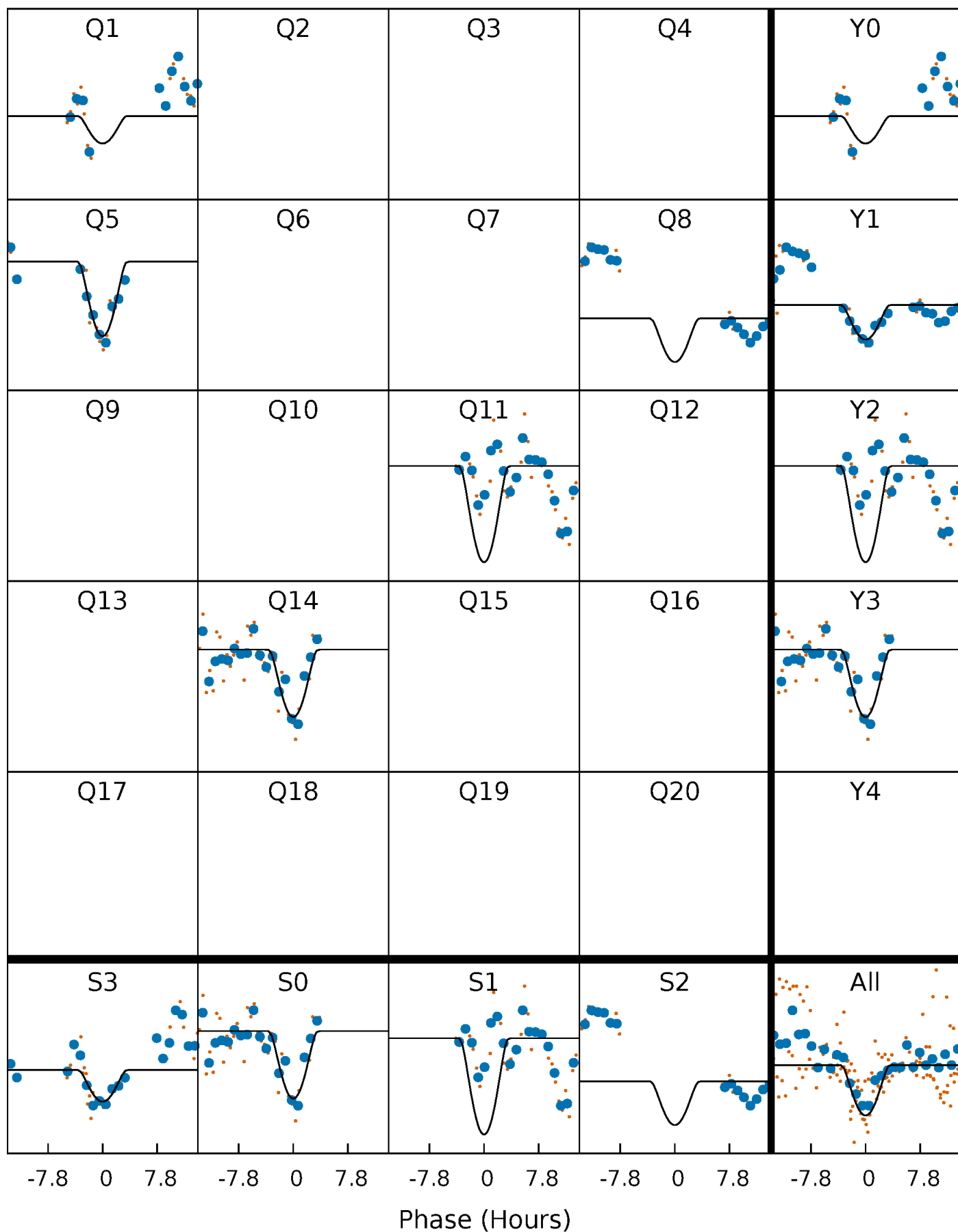
PDC Quarter-Phased Transit Curves

TCE 003337351-05 $P=289.385951$ Days $T_0=160.802072$ (BKJD)



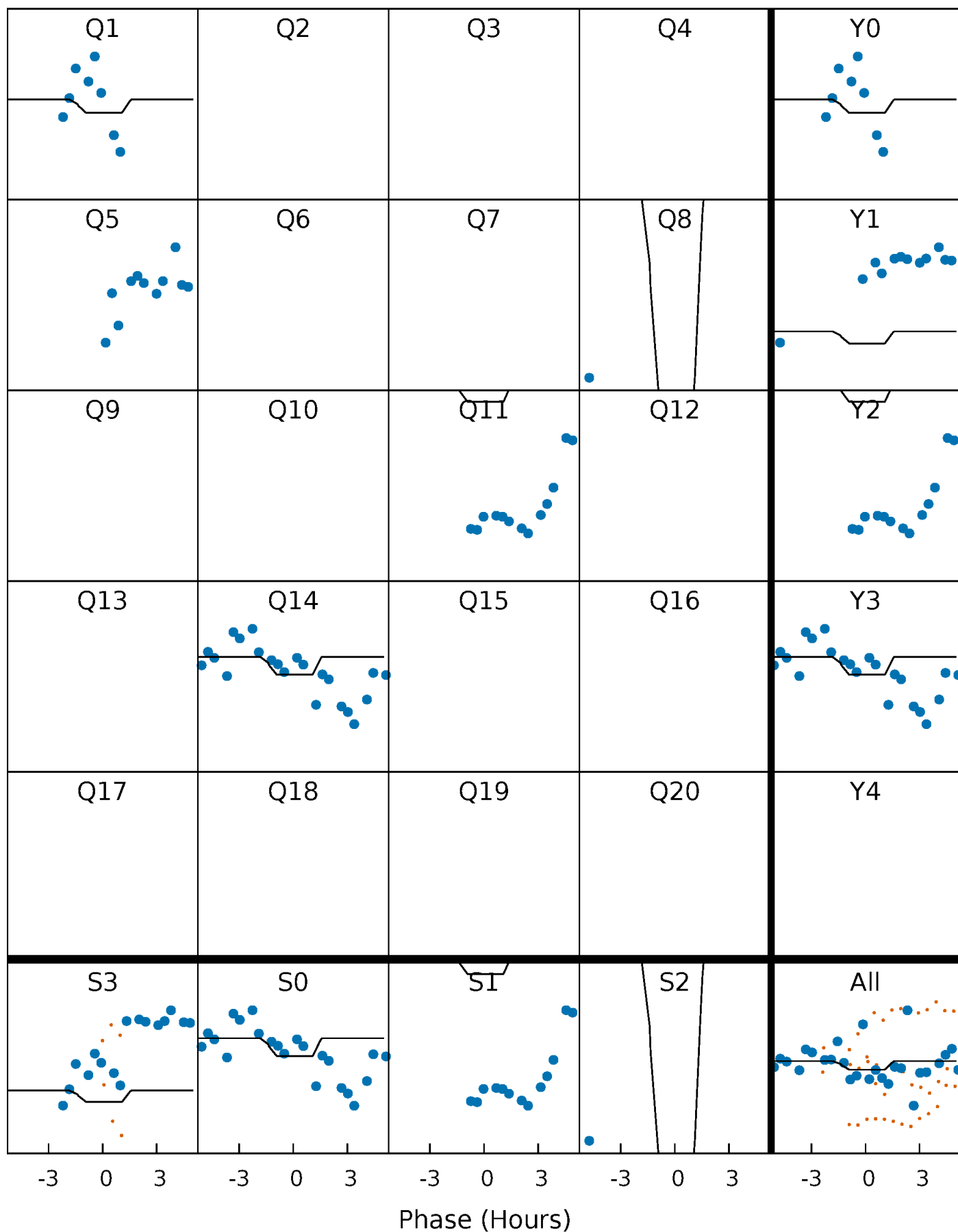
DV Quarter-Phased Transit Curves

TCE 003337351-05 $P=289.385951$ Days $T_0=160.802072$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

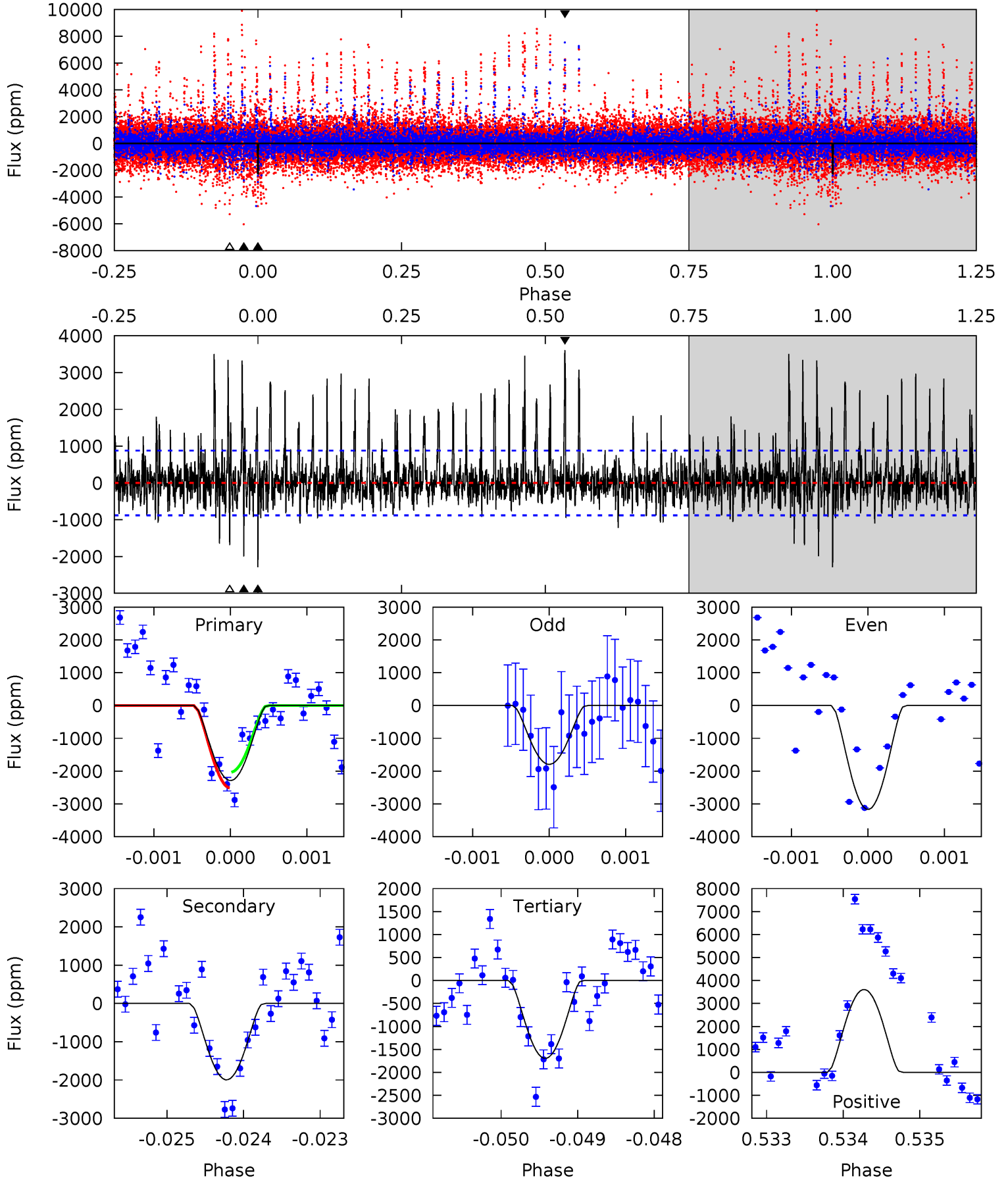
TCE 003337351-05 P=289.380312 Days $T_0=160.689895$ (BKJD)



DV Model-Shift Uniqueness Test

003337351-05, P = 289.385951 Days, E = 160.802072 Days

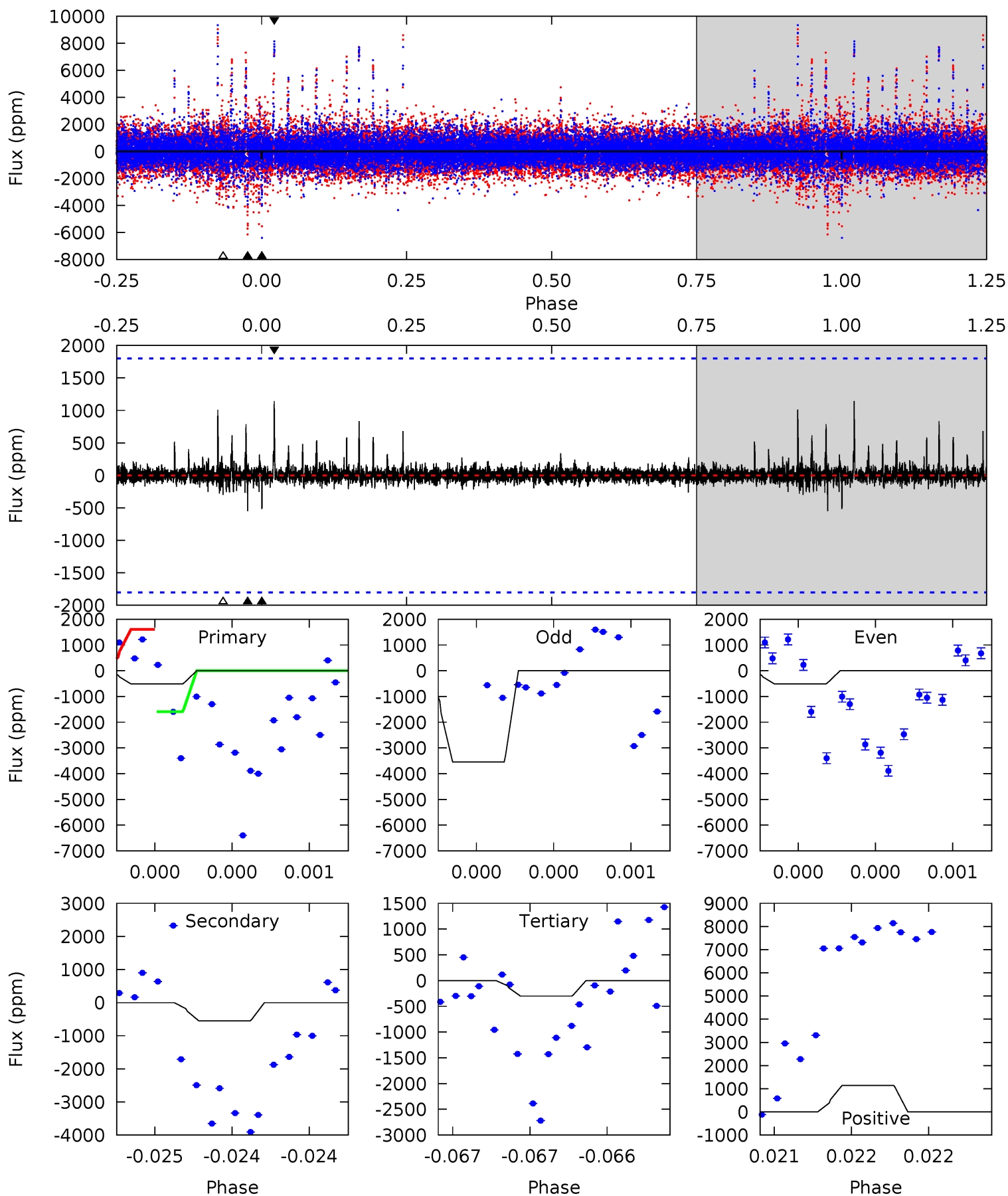
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	12.3	10.5	22.3	5.44	3.27	3.21	3.67	-8.14	1.85	-9.96	3.45	1.06	0.61	1.48



Alt Model-Shift Uniqueness Test

003337351-05, P = 289.380312 Days, E = 160.689895 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.61	1.71	0.94	3.56	5.60	3.52	0.26	0.67	-1.95	0.77	-1.85	6.02	1.45	0.68	0.02



Stellar Parameters For KIC 003337351

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5730^{+171}_{-206}	$4.417^{+0.084}_{-0.196}$	$0.180^{+0.200}_{-0.300}$	$1.035^{+0.304}_{-0.130}$	$1.018^{+0.122}_{-0.111}$	$1.295^{+0.563}_{-0.631}$
	+3%/-4%	+2%/-4%	+111%/-167%	+29%/-13%	+12%/-11%	+43%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003337351-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1993 ± 162	$32.75^{+34.49}_{-23.21}$	392^{+29}_{-22}	2969^{+1394}_{-501}	762^{+8266}_{-584}
Alt.	-550 ± 321	$30.18^{+32.62}_{-21.13}$	390^{+28}_{-21}	2511^{+1077}_{-464}	209^{+2494}_{-175}

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

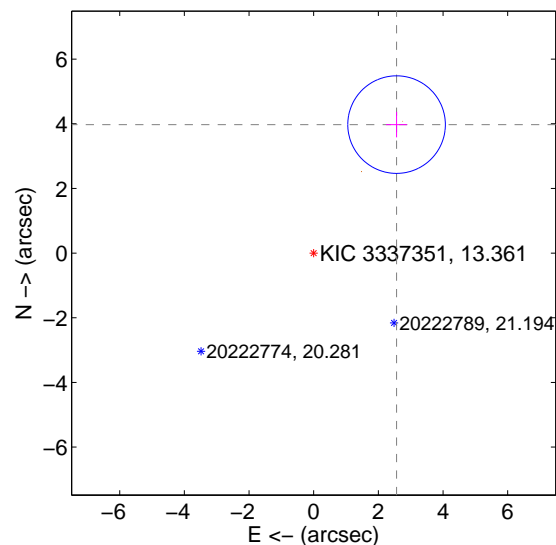
Supplemental centroid analysis for 003337351-05. Kepler magnitude: 13.36. Transit SNR 11.38

There are 1 quarters with good PRF difference image offsets

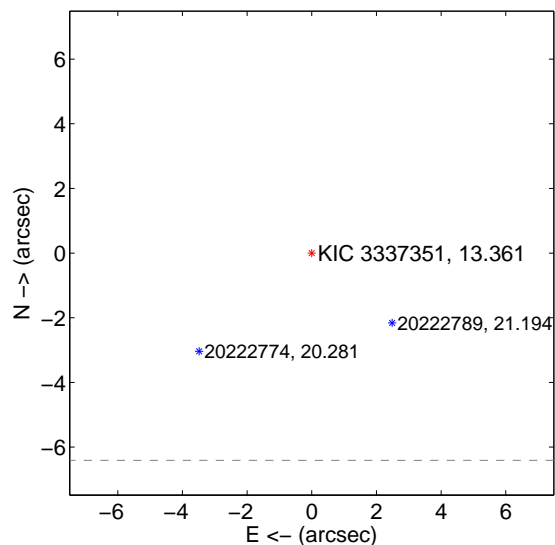
The OOT PRF centroid is offset from the target star catalog position by about 12.62 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.728 ± 0.503	9.40	-2.562 ± 0.324	3.974 ± 0.394
PRF-fit source offset from KIC position	11.534 ± 0.453	25.45	-9.589 ± 0.527	-6.410 ± 0.206
photometric centroid source offset	4.42 ± 0.18	24.24	-3.02 ± 0.16	-3.23 ± 0.20

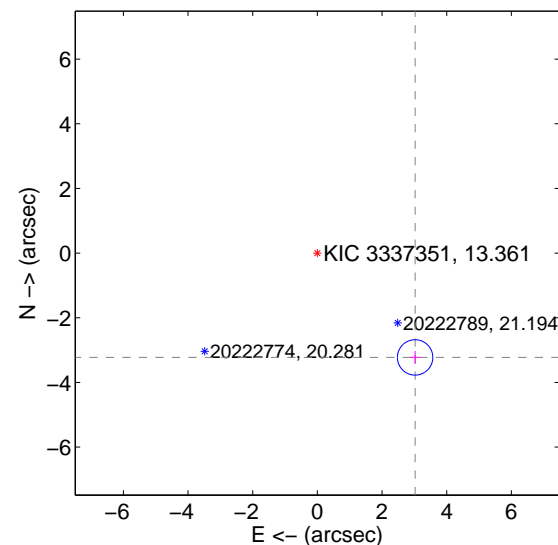
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

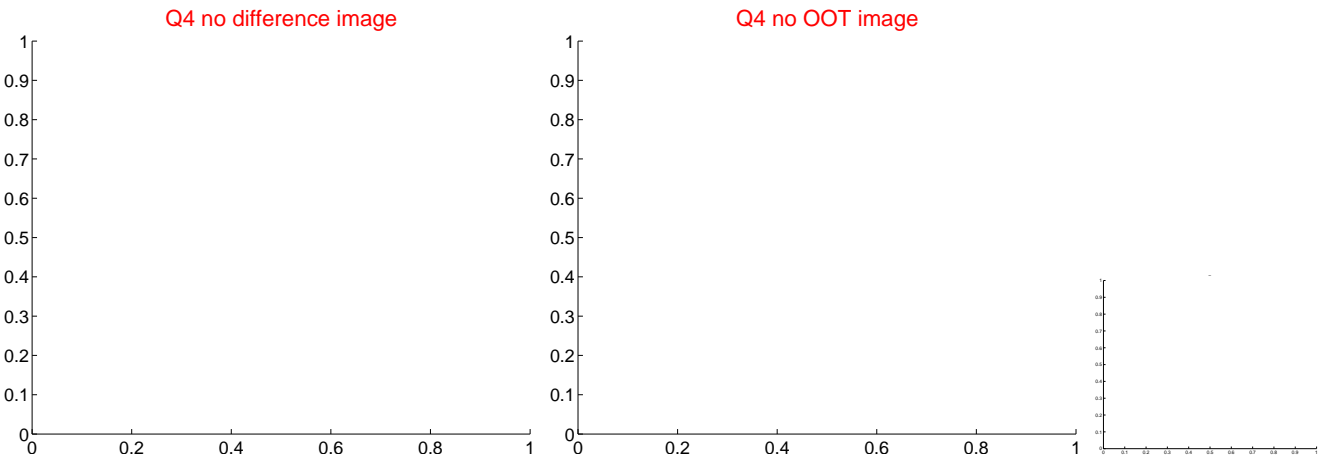
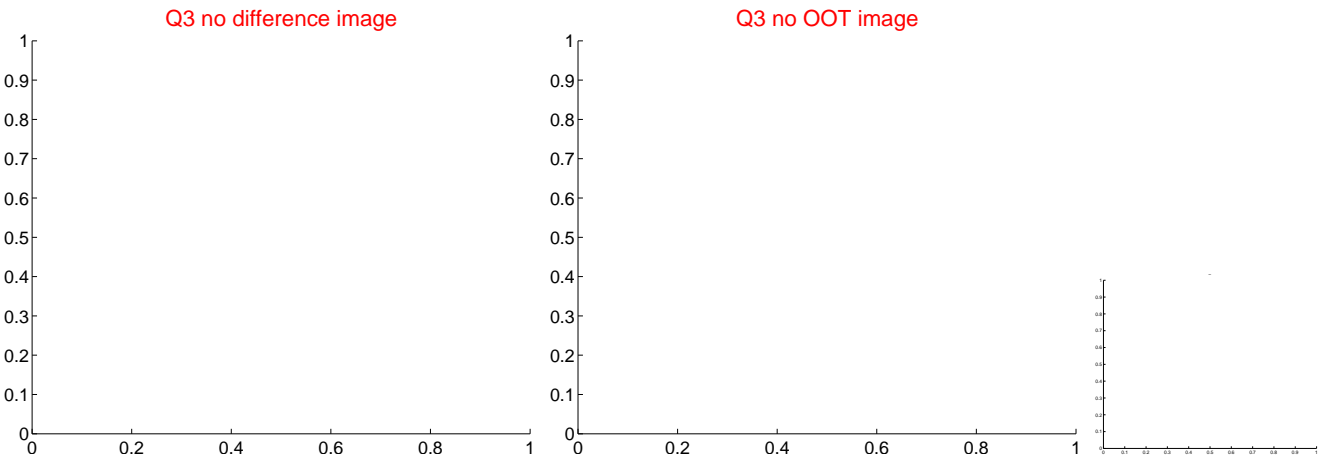
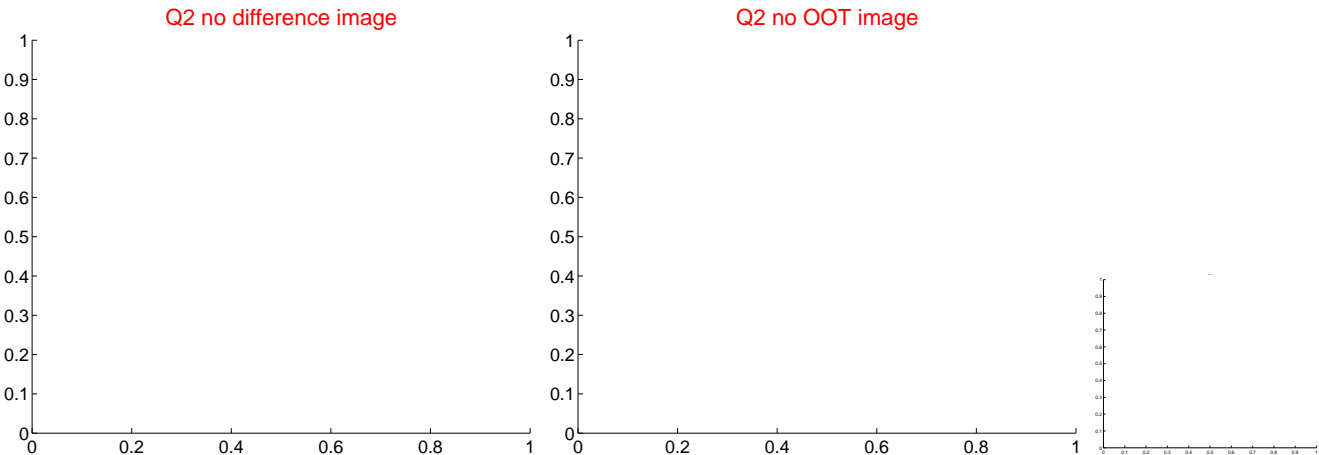
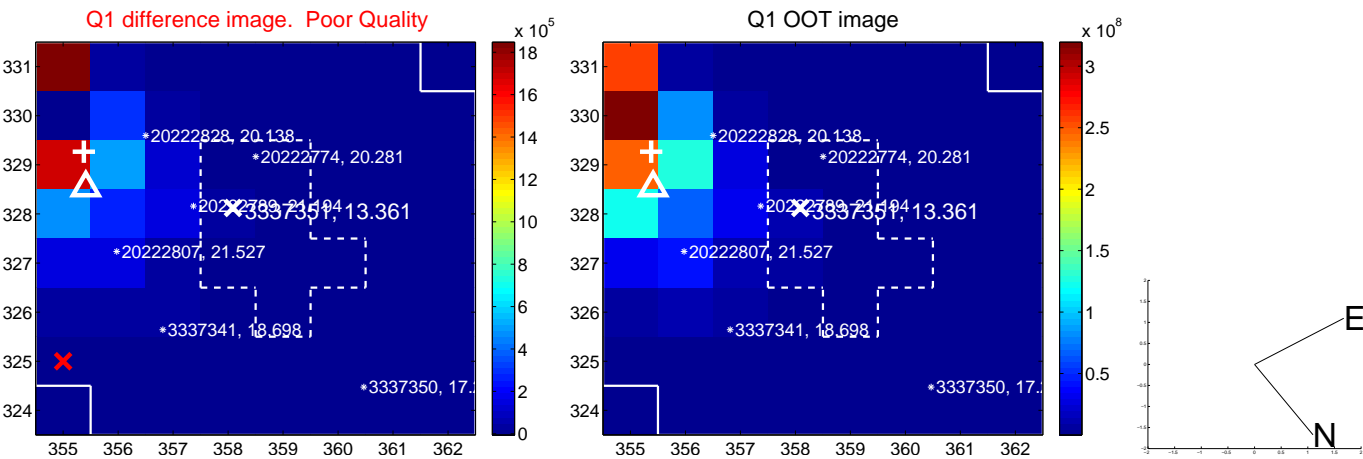


offset from photometric centroids

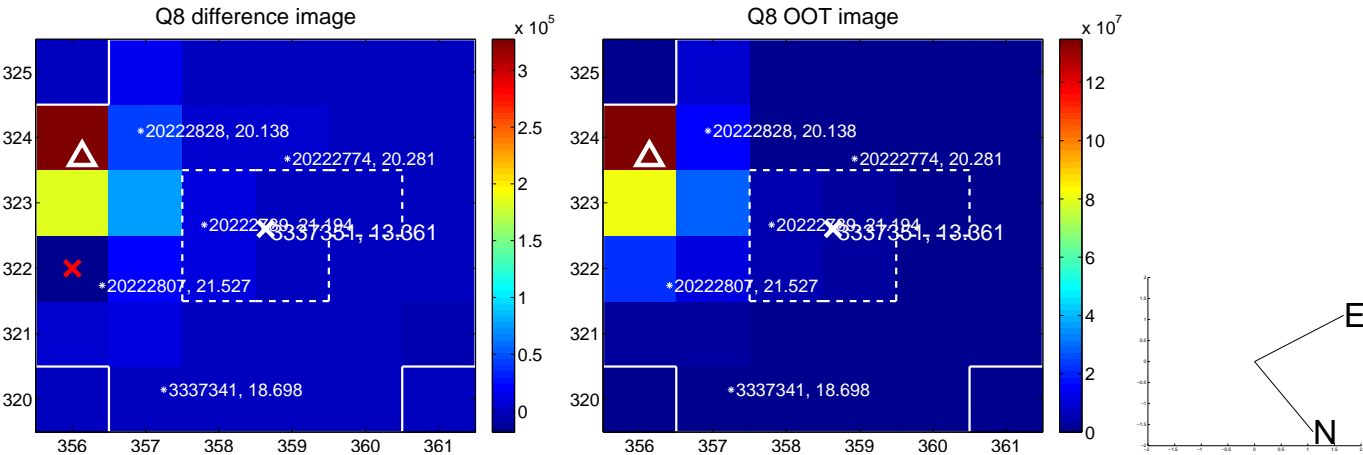
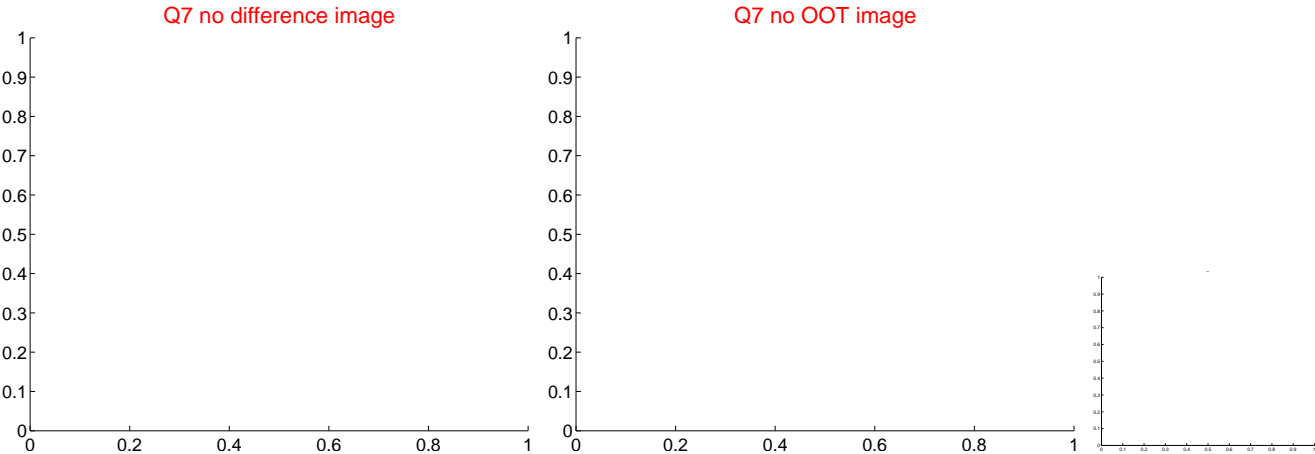
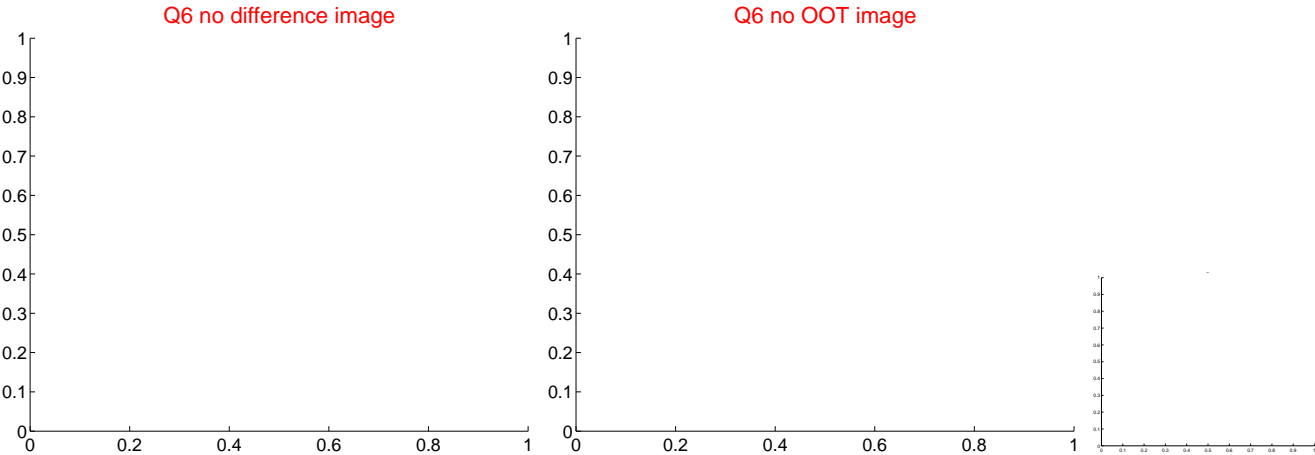
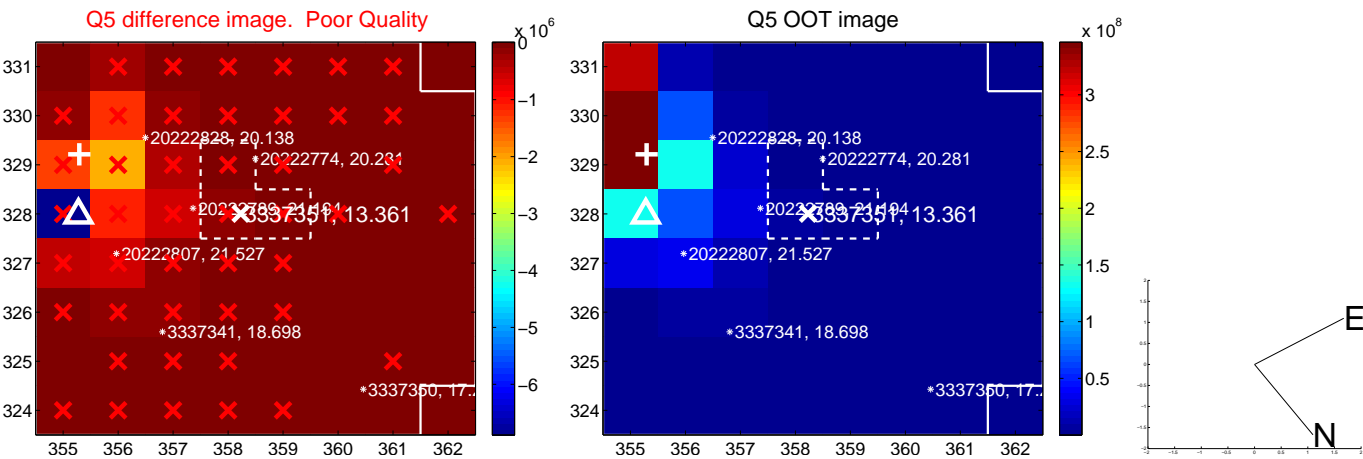


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

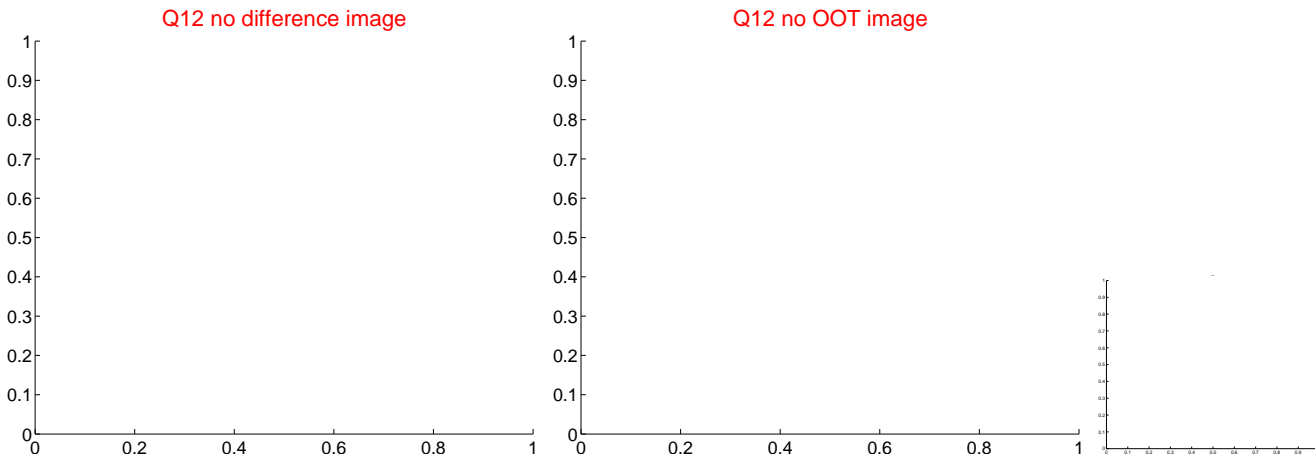
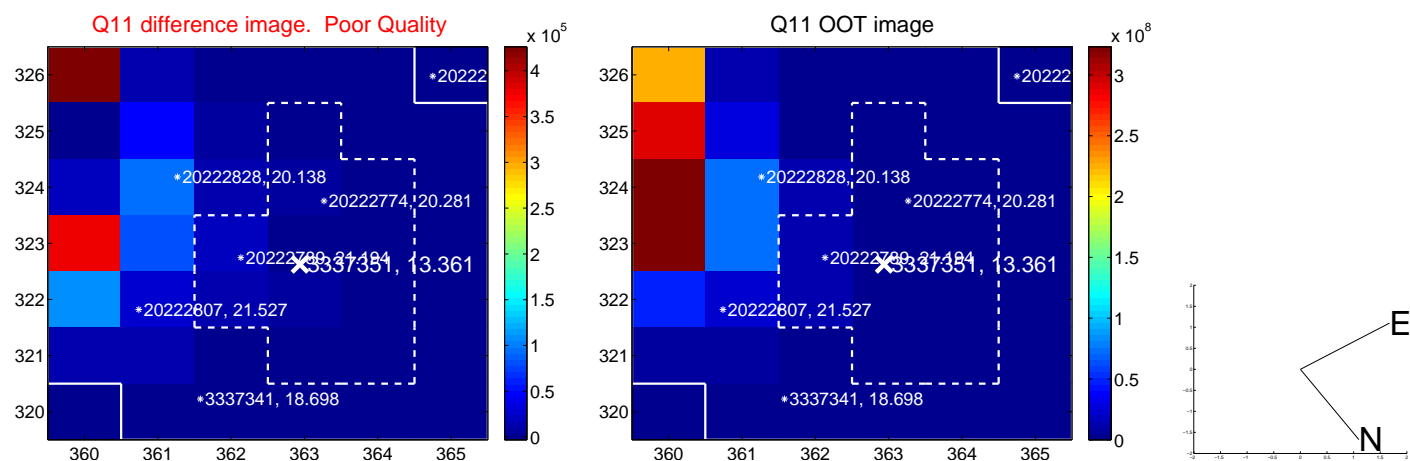
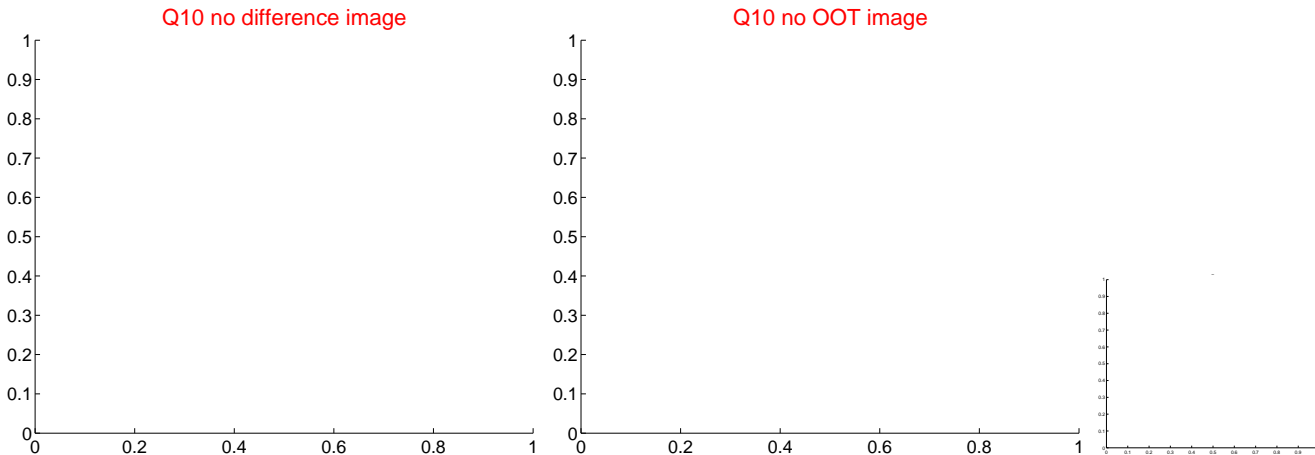
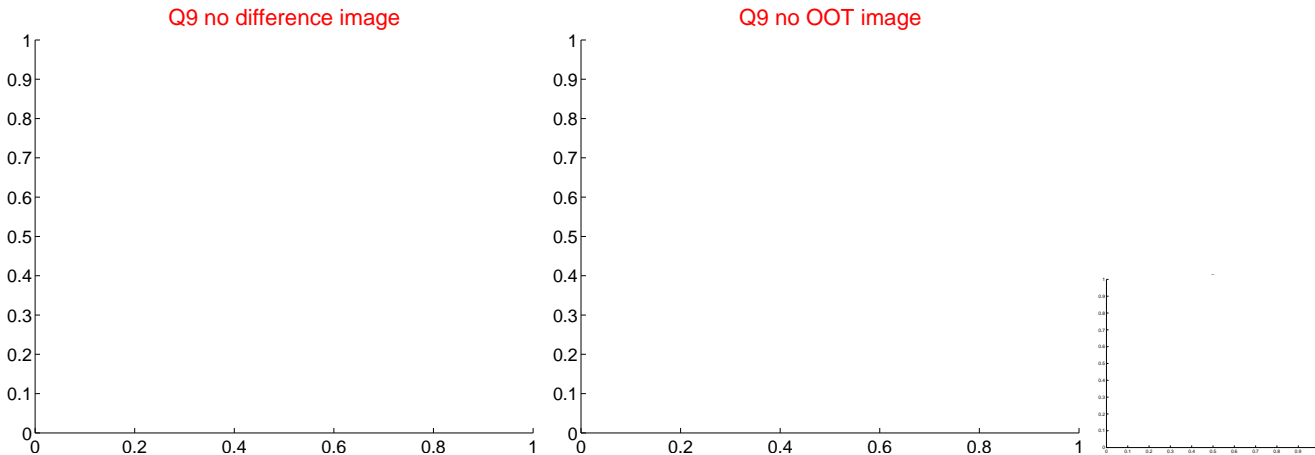
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



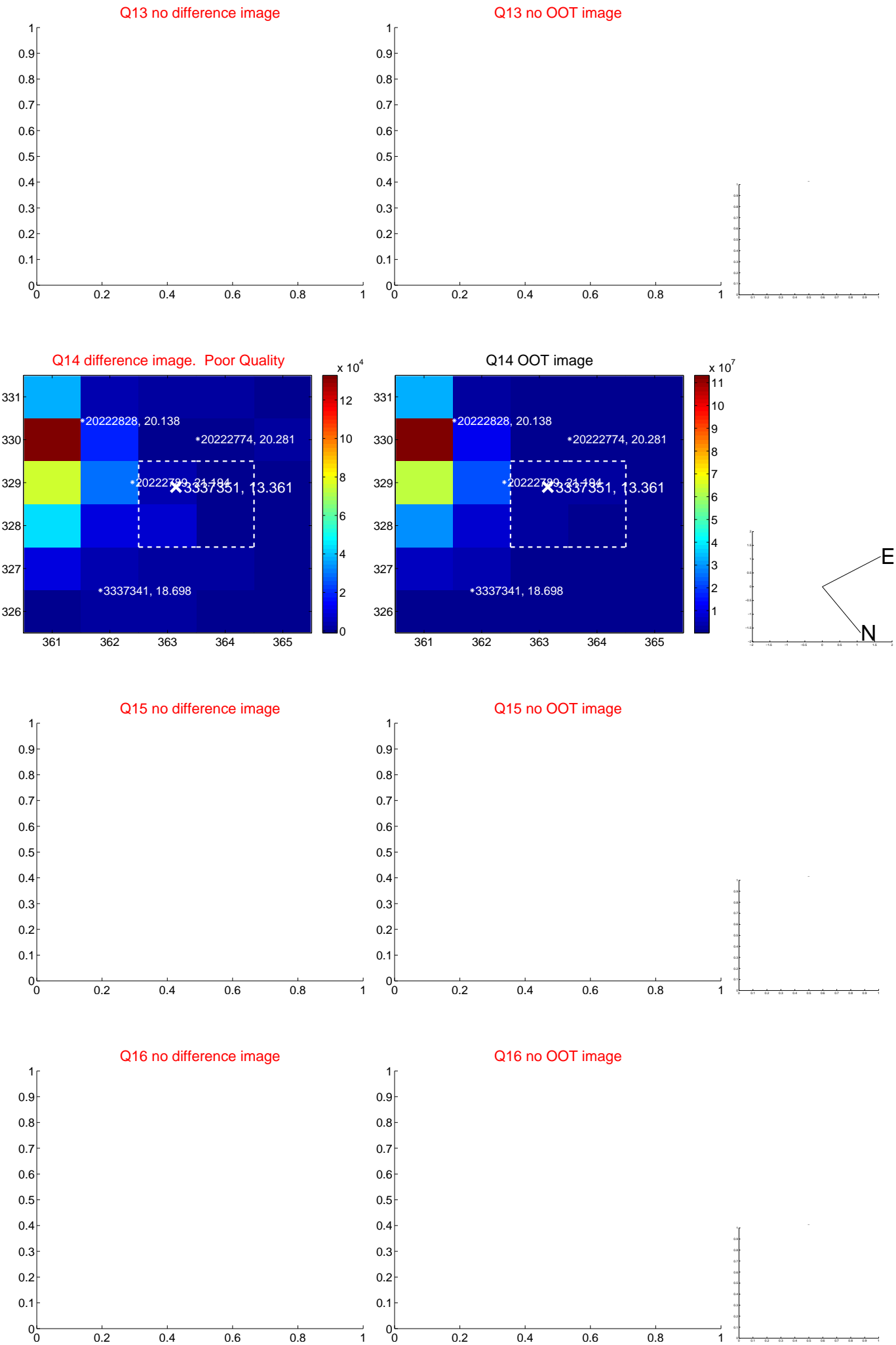
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



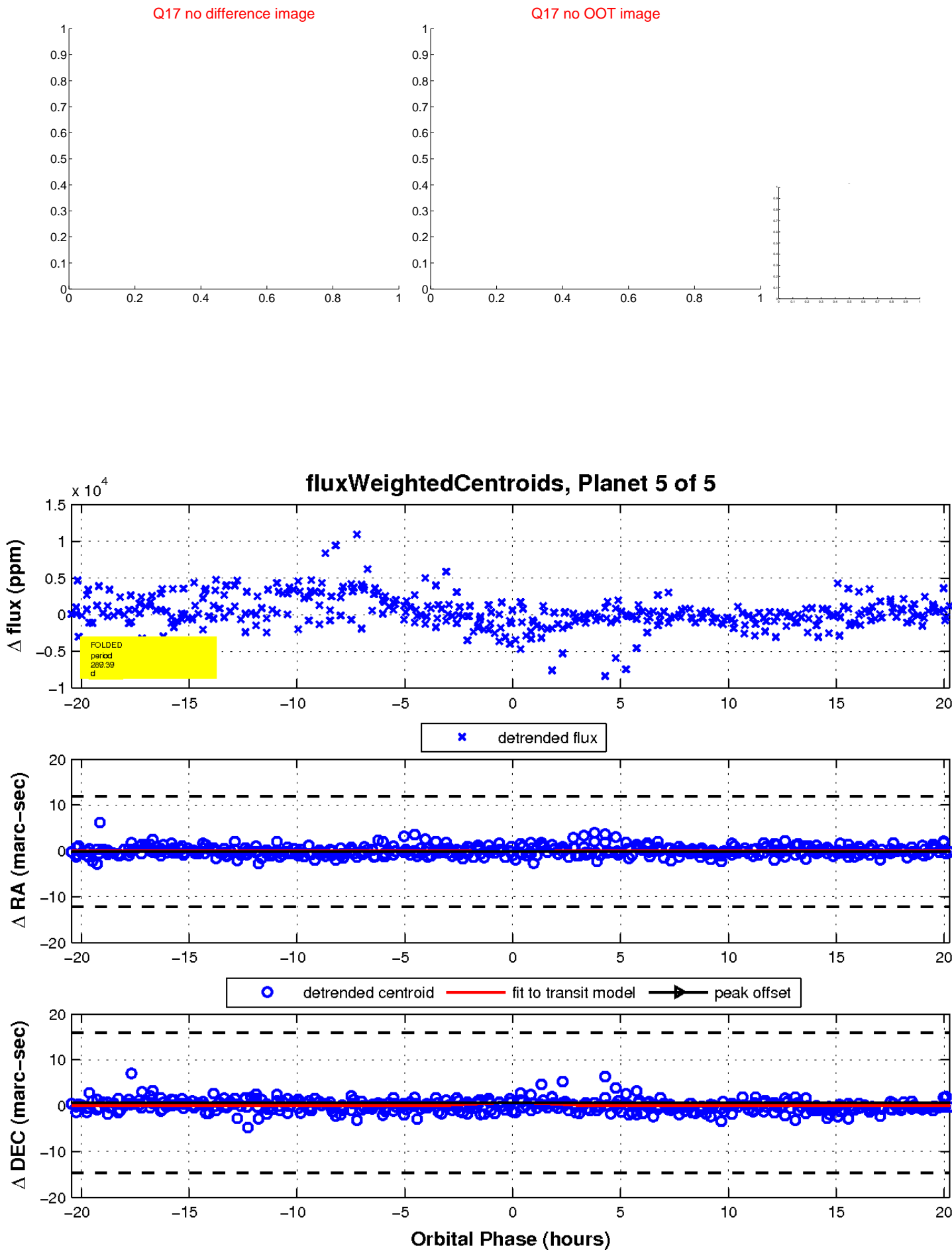
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



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



UKIRT Image

