

KIC 007660542

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})
007660542-01	OBS	No	1.224541	131.593009	38.3	5.775	9.8	8.2	0.80	4823	0.47	731.58
007660542-03	OBS	No	158.636885	279.978392	1239.1	2.915	10.0	9.5	0.80	4823	4.32	1.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007660542-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
007660542-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

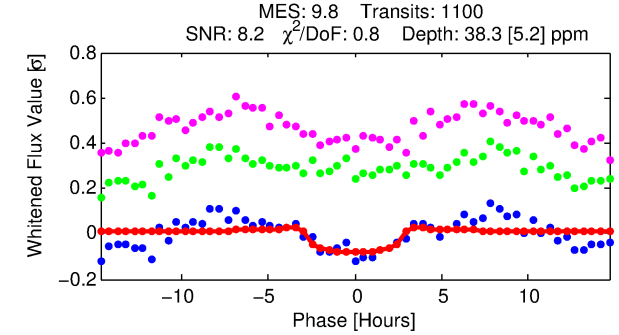
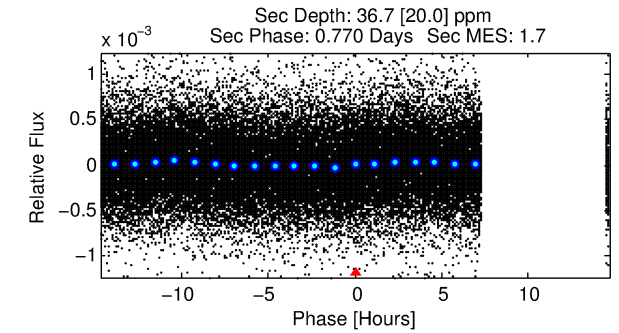
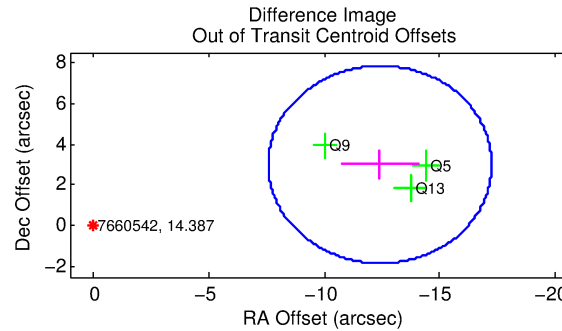
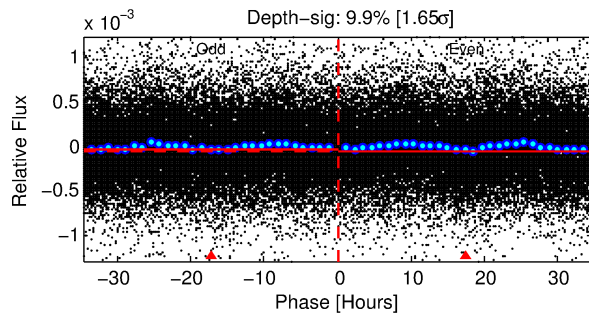
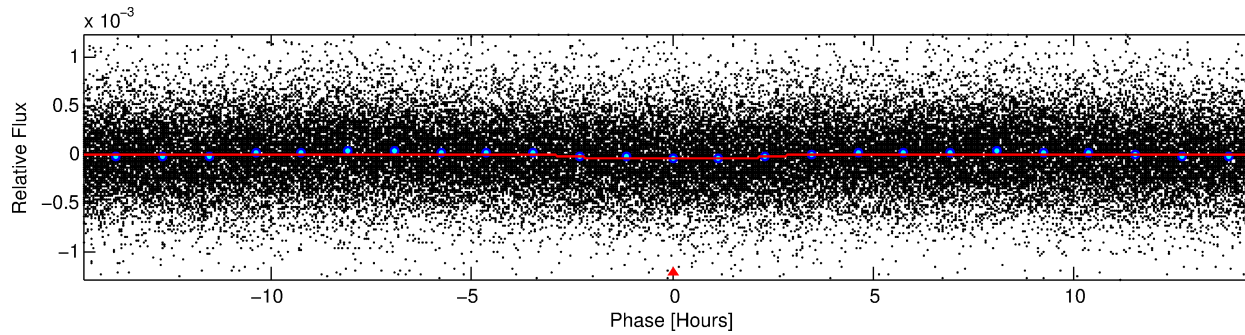
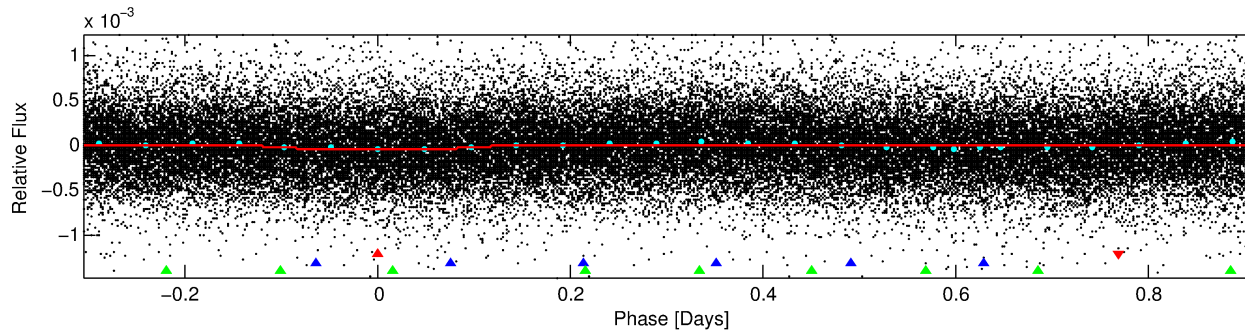
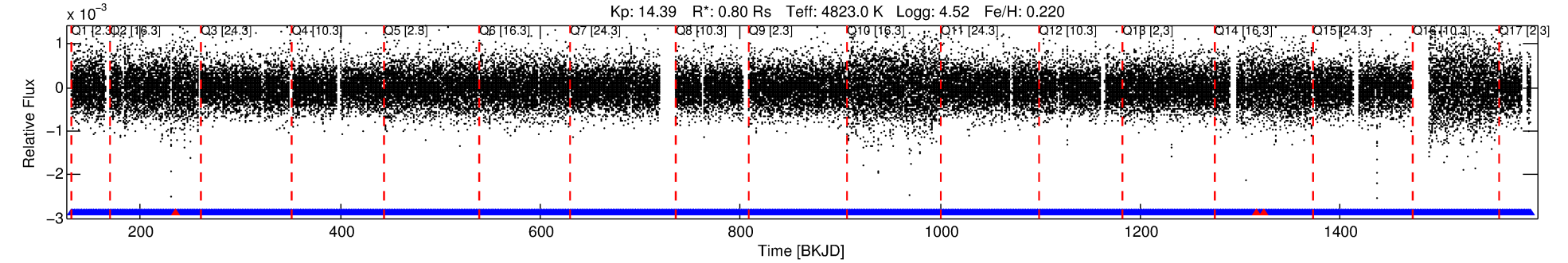
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007660542-01

No Significant Match Found

DV One-Page Summary

KIC: 7660542 Candidate: 1 of 3 Period: 1.225 d



DV Fit Results:

Period = 1.22454 [0.00002] d
Epoch = 131.5930 [0.0068] BKJD
Rp/R* = 0.0054 [0.0060]
a/R* = 1.74 [3.93]
b = 0.01 [559.14]
Seff = 731.58 [121.60]
Teq = 1326 [55] K
Rp = 0.47 [0.52] Re
a = 0.0206 [0.0016] AU
Ag = 37.95 [85.77] [0.43 σ]
Teffp = 5089 [2875] K [1.31 σ]

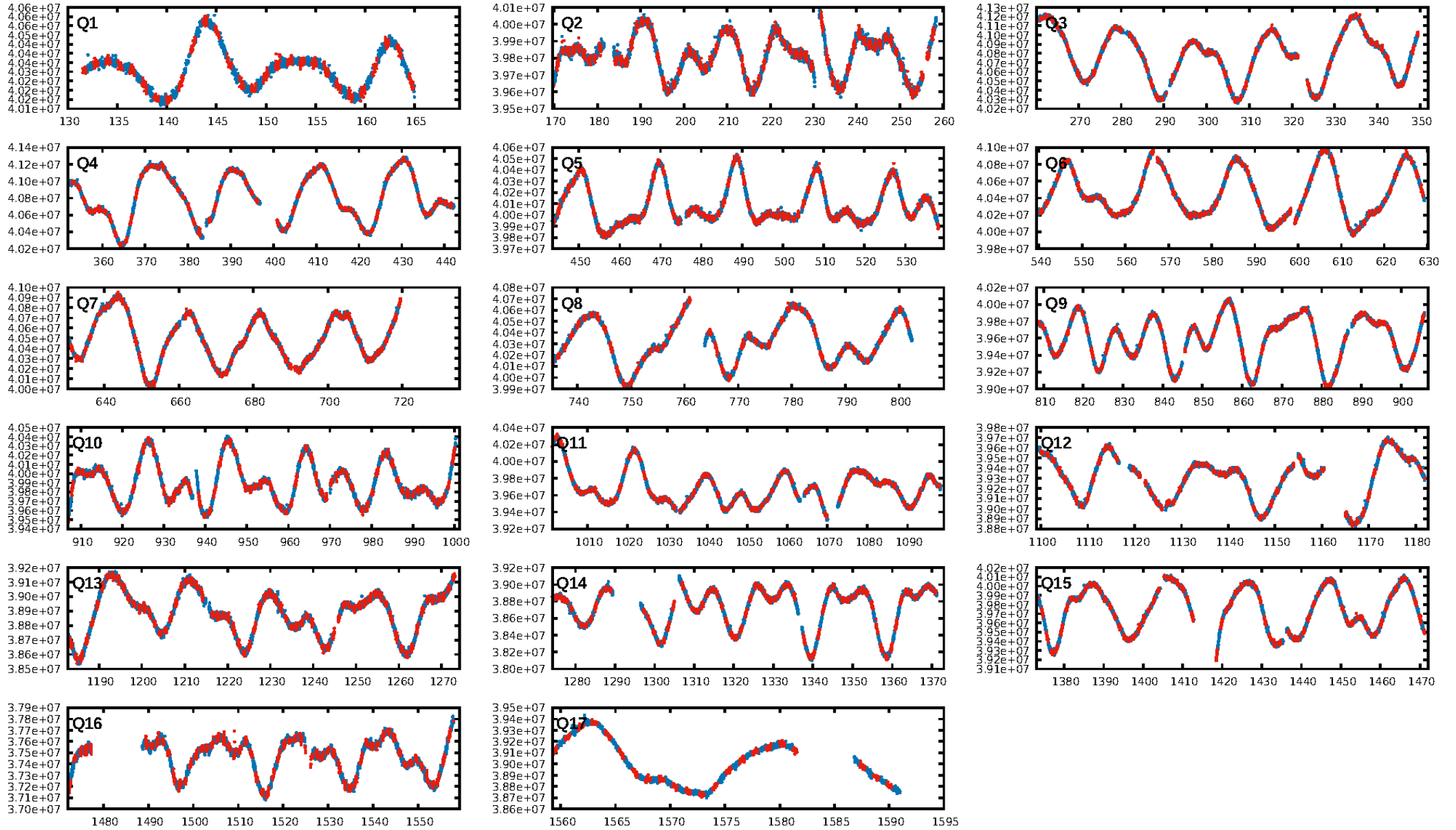
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [584.02 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.83e-20
RollingBand-fgt: 1.00 [1047/1050]
GhostDiagnostic-chr: -42
Centroid-sig: 54.2%
Centroid-so: 1.663 arcsec [1.13 σ]
OotOffset-rm: 12.773 arcsec [7.93 σ]
KicOffset-rm: 0.532 arcsec [0.75 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.36 [5/14]
DiffImageOverlap-fno: 1.00 [17/17]

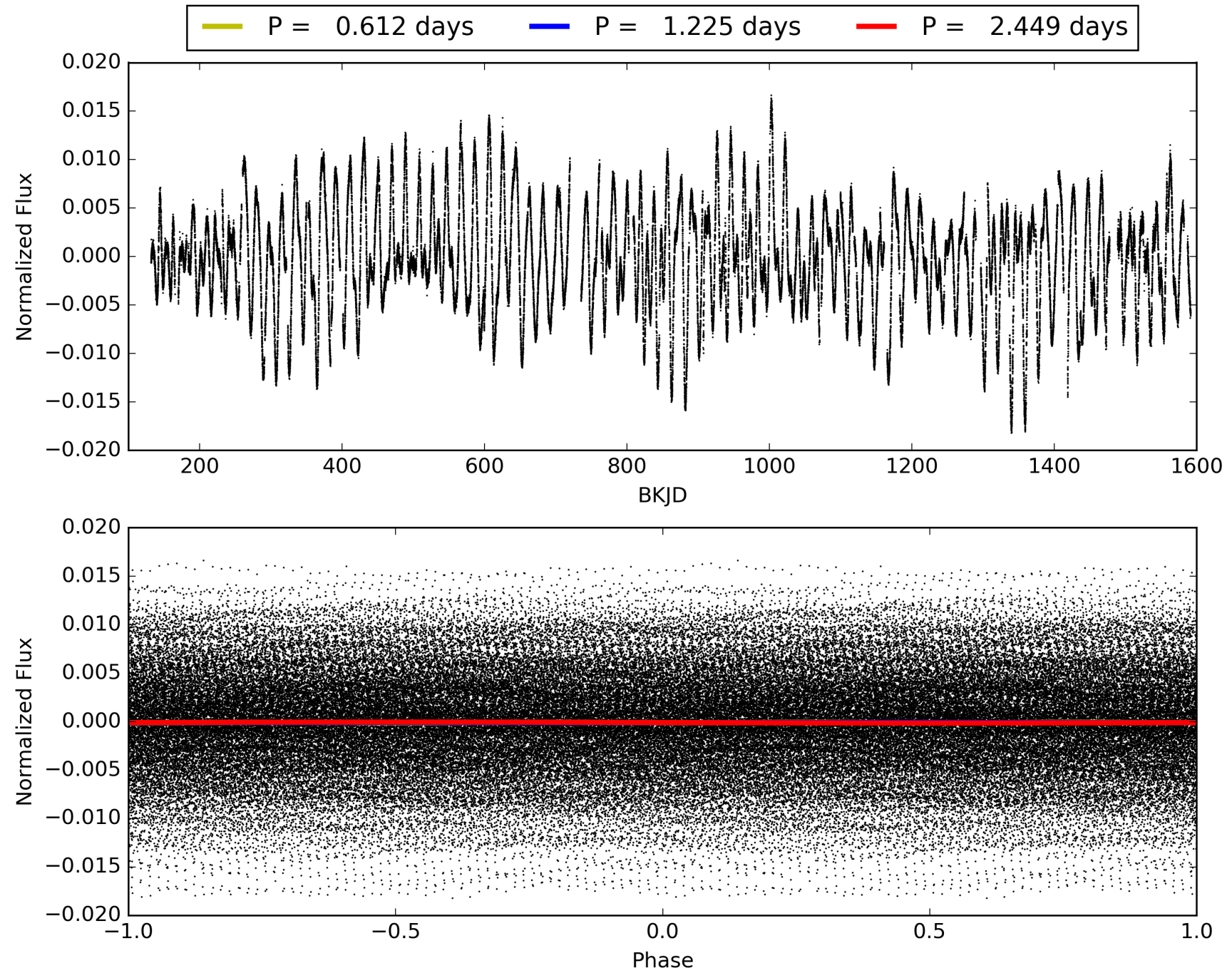
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:15:48 Z

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

TCE 007660542-01, PDC Light Curves

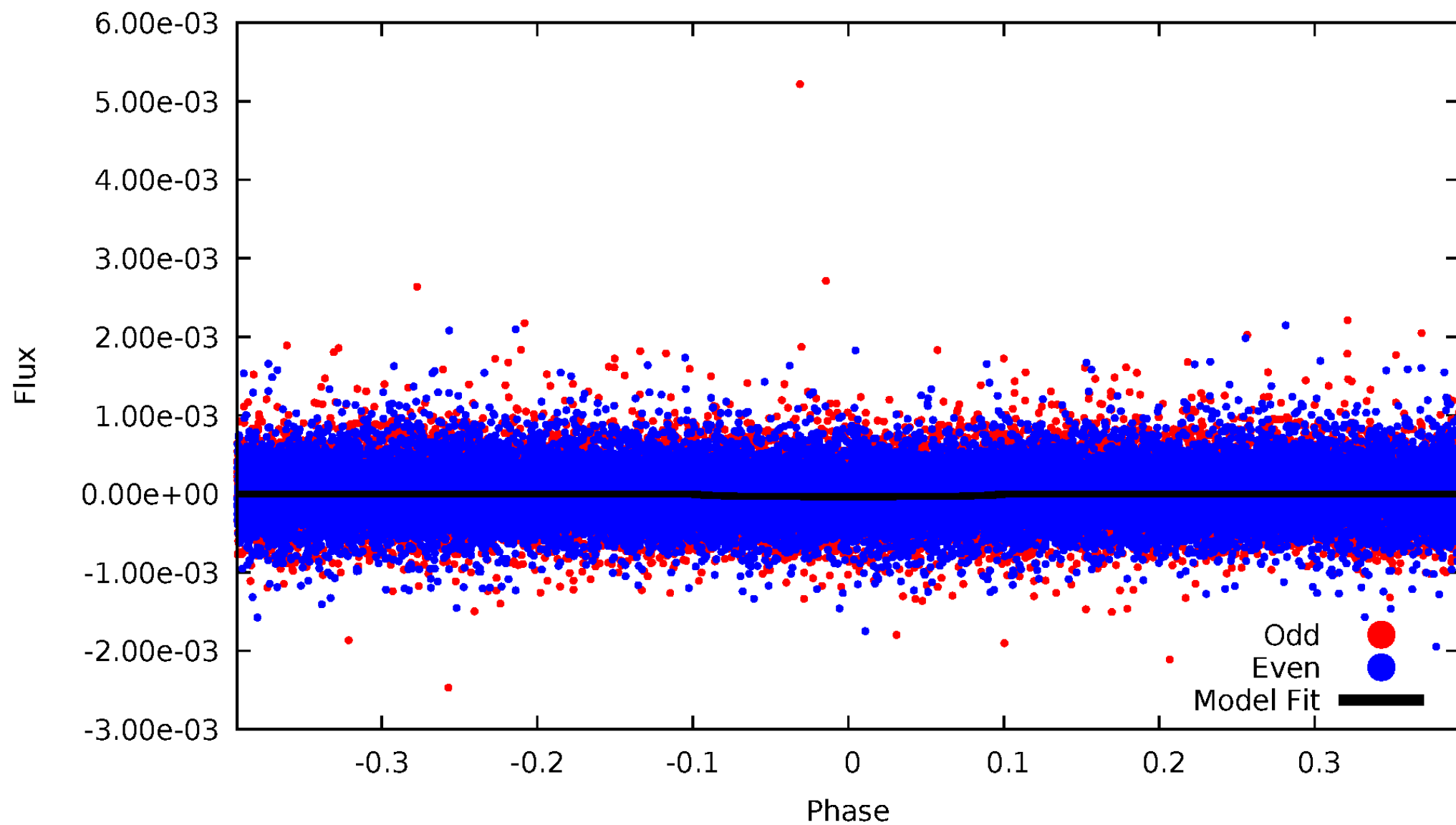


TCE 007660542-01



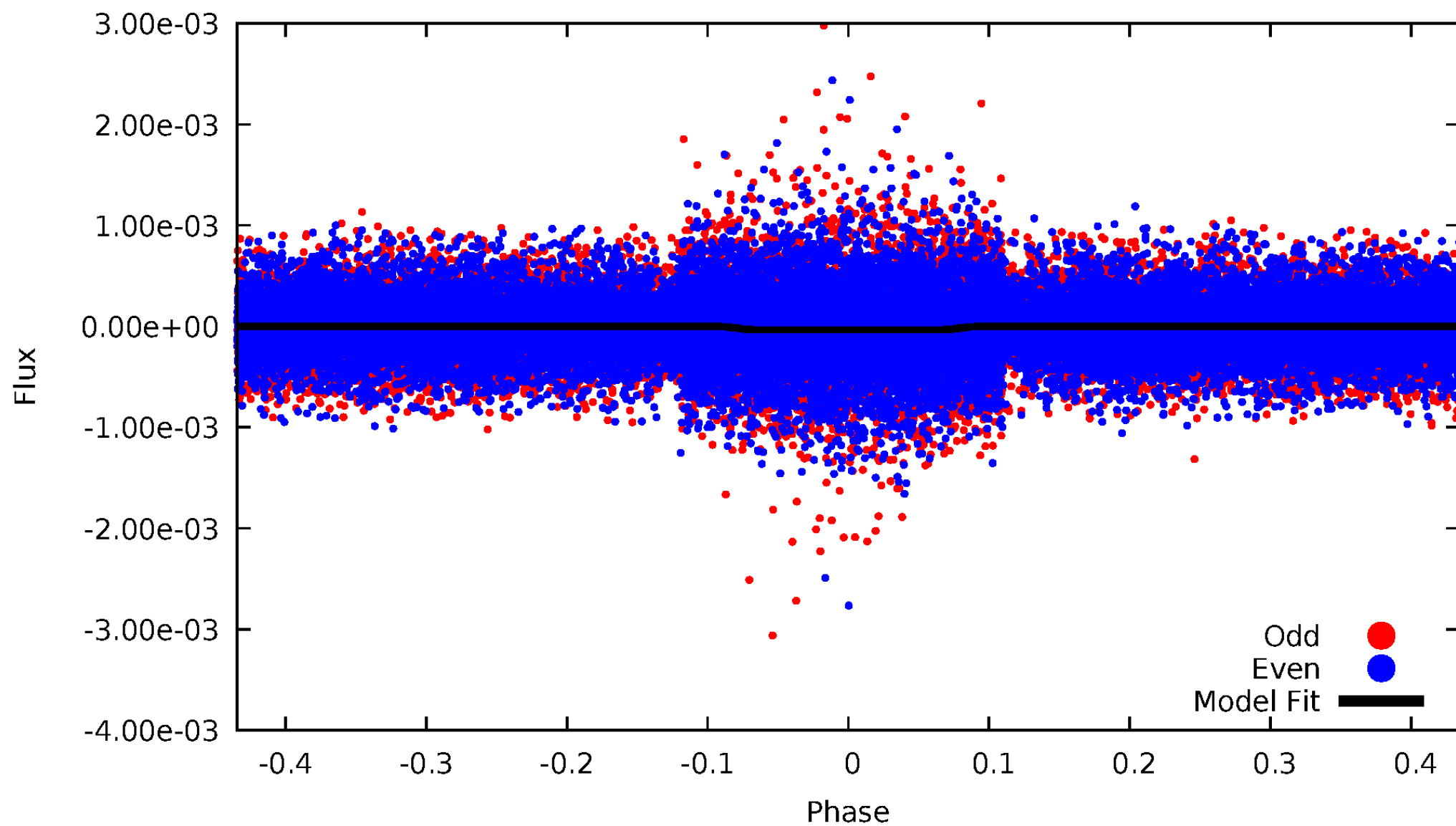
DV Odd/Even

TCE 007660542-01

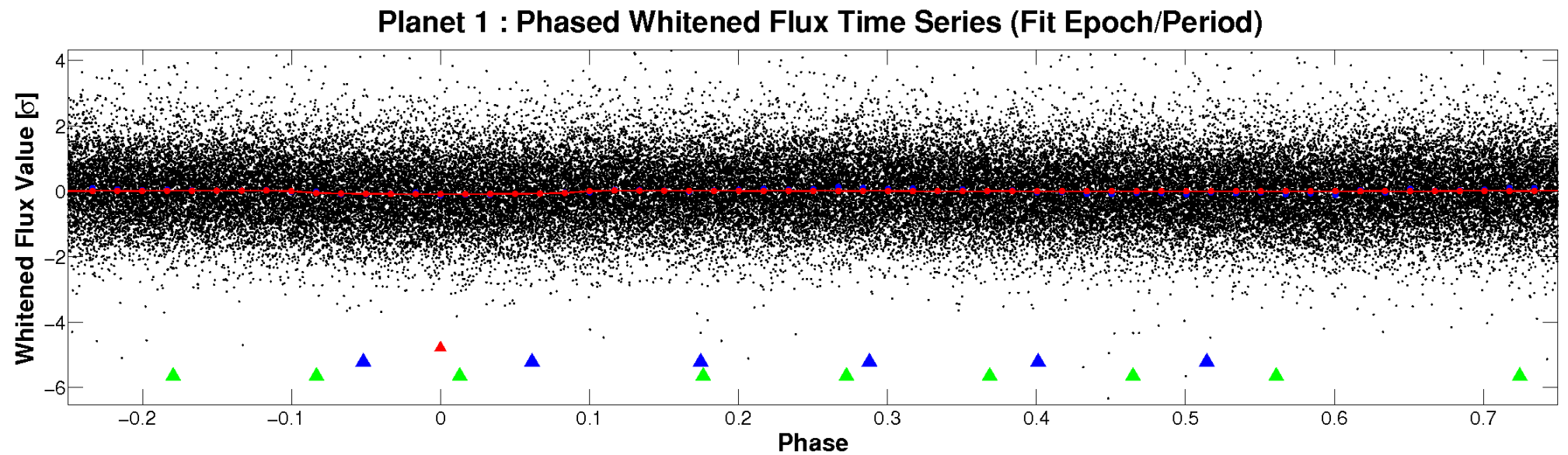
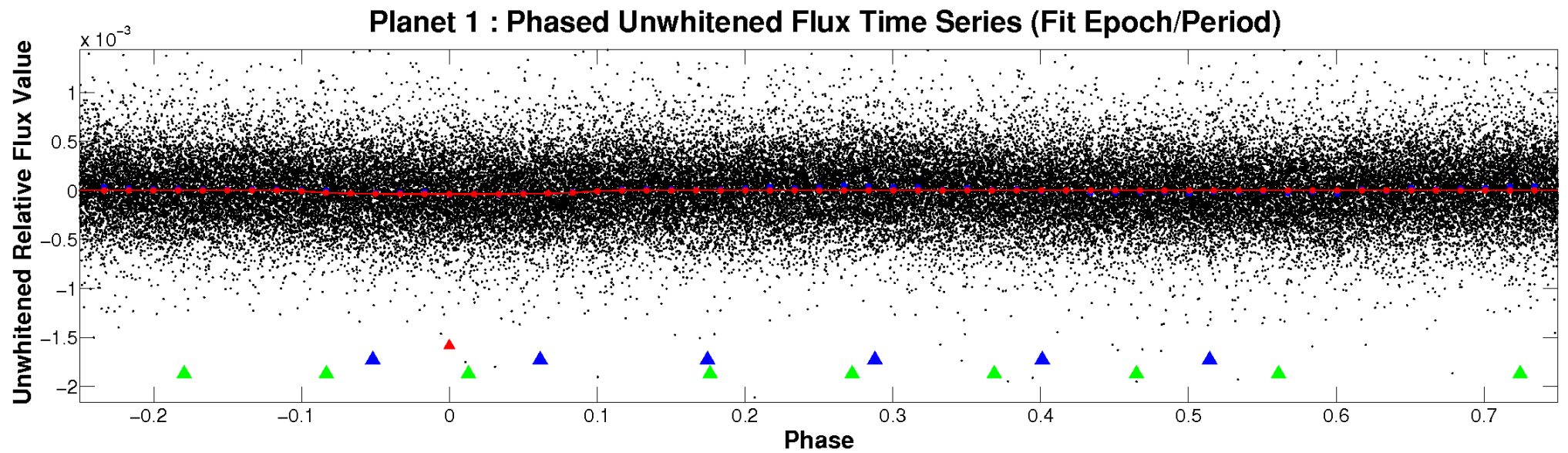


ALT Odd/Even

TCE 007660542-01

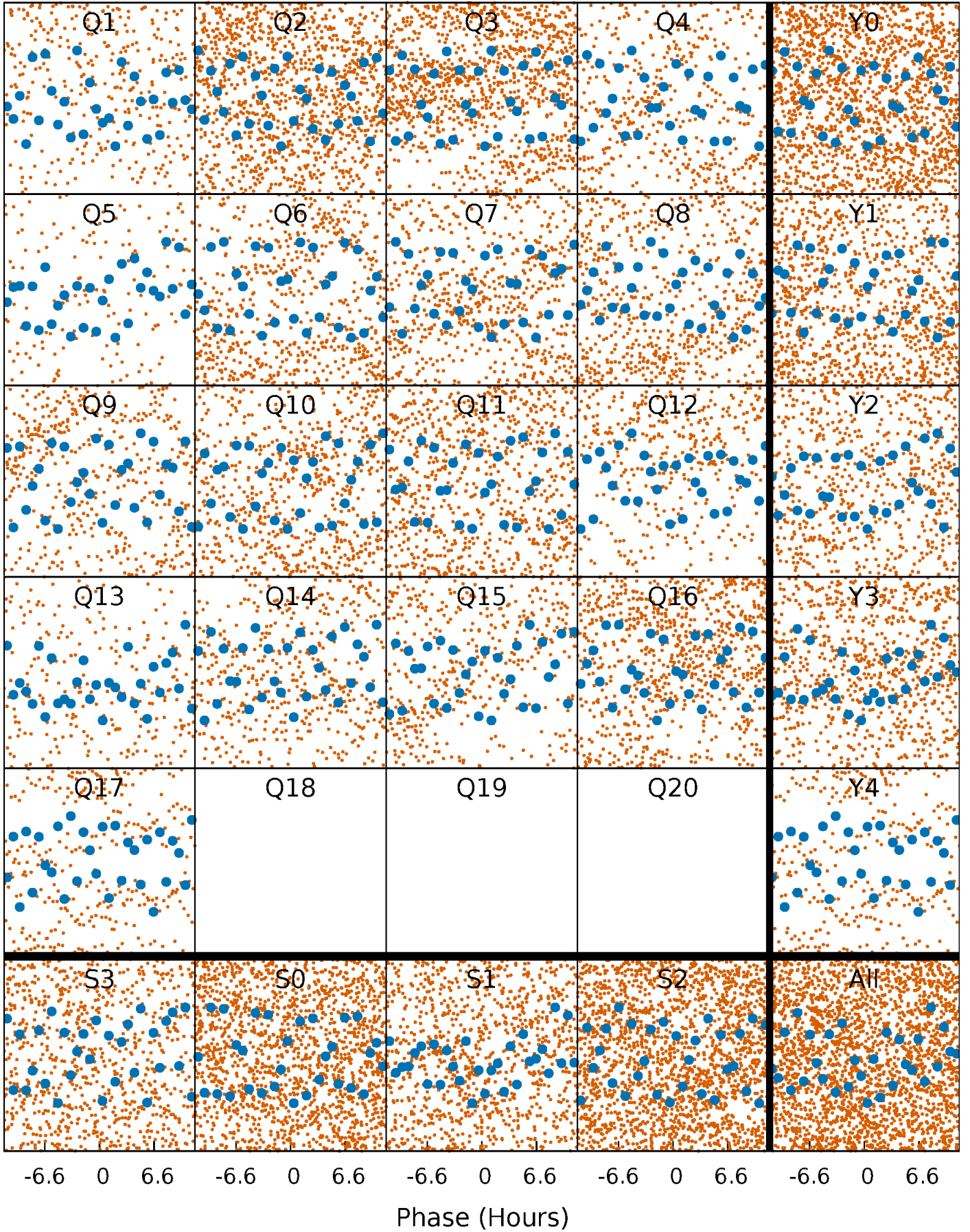


Non-Whitened Vs. Whitened Light Curve



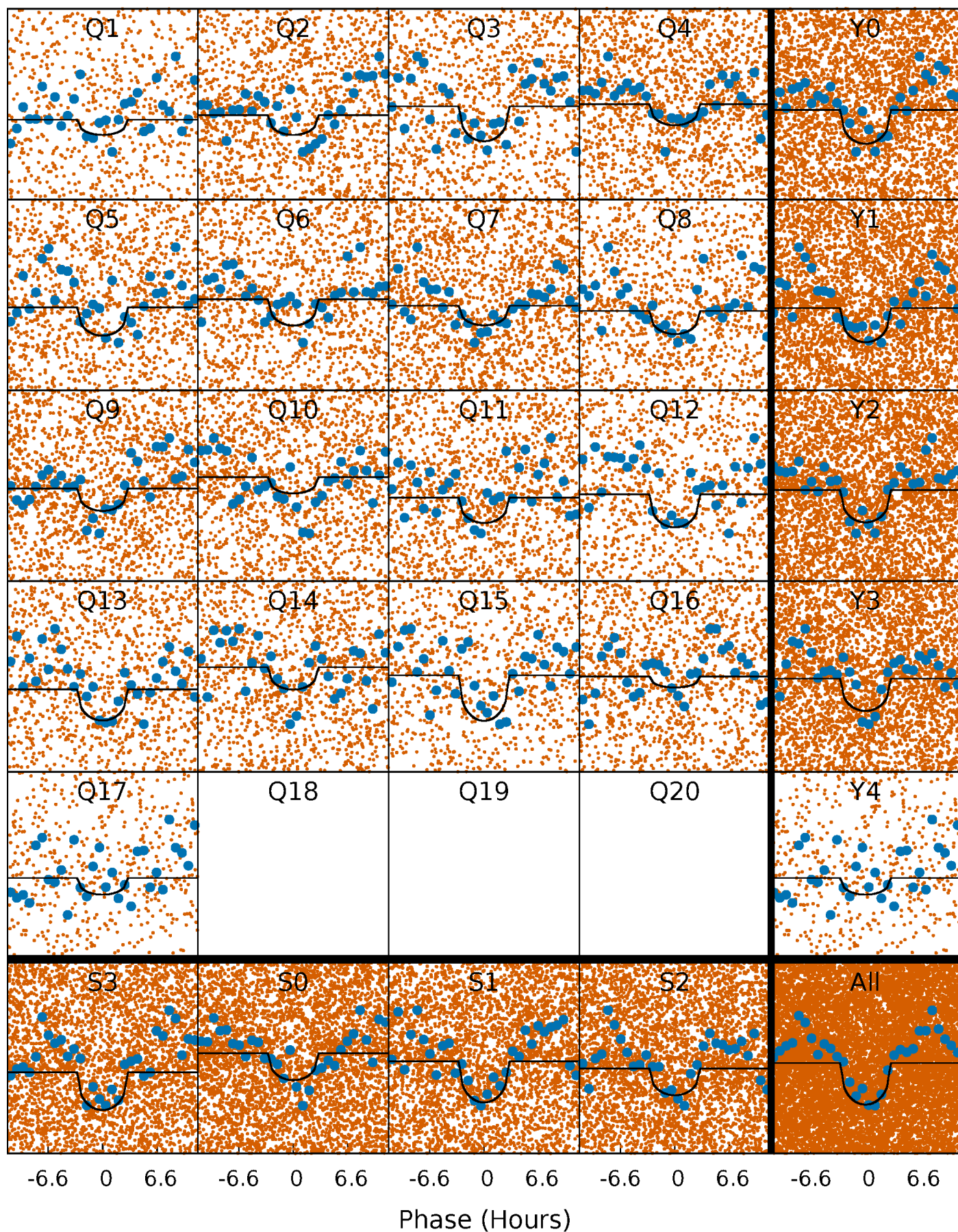
PDC Quarter-Phased Transit Curves

TCE 007660542-01 P= 1.224541 Days $T_0=131.593009$ (BKJD)



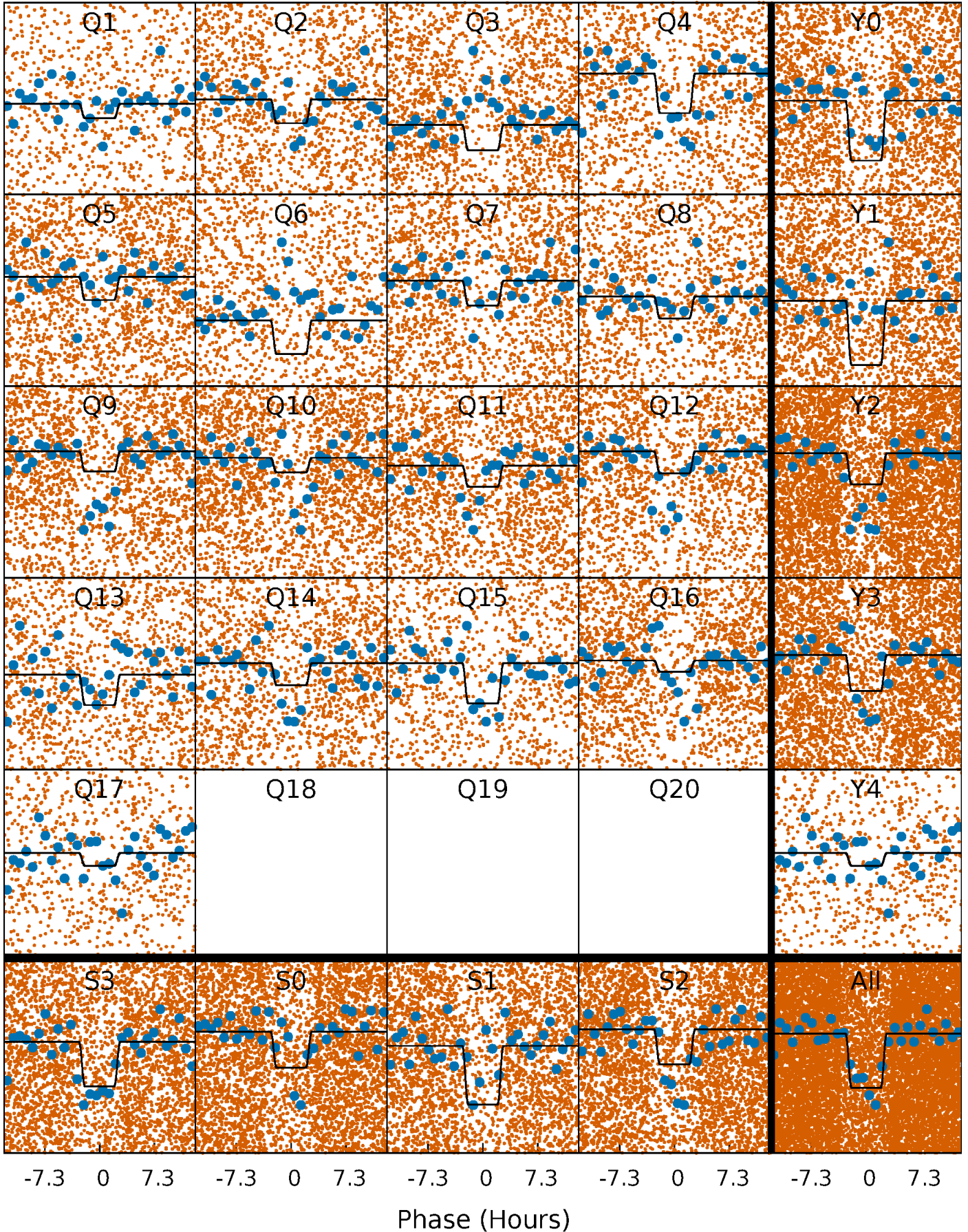
DV Quarter-Phased Transit Curves

TCE 007660542-01 P= 1.224541 Days $T_0=131.593009$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

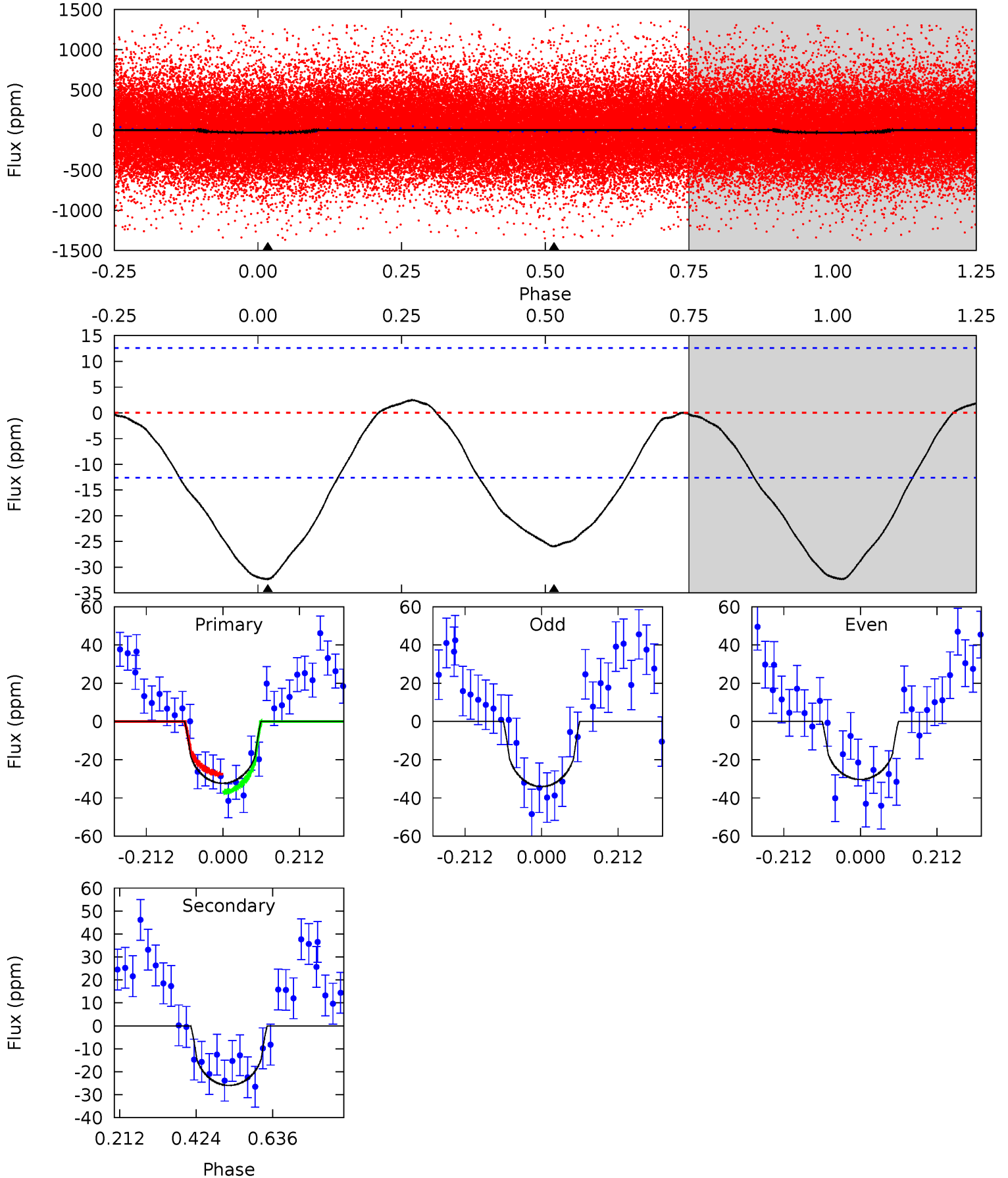
TCE 007660542-01 P= 1.224519 Days $T_0=131.620919$ (BKJD)



DV Model-Shift Uniqueness Test

007660542-01, P = 1.224541 Days, E = 130.368468 Days

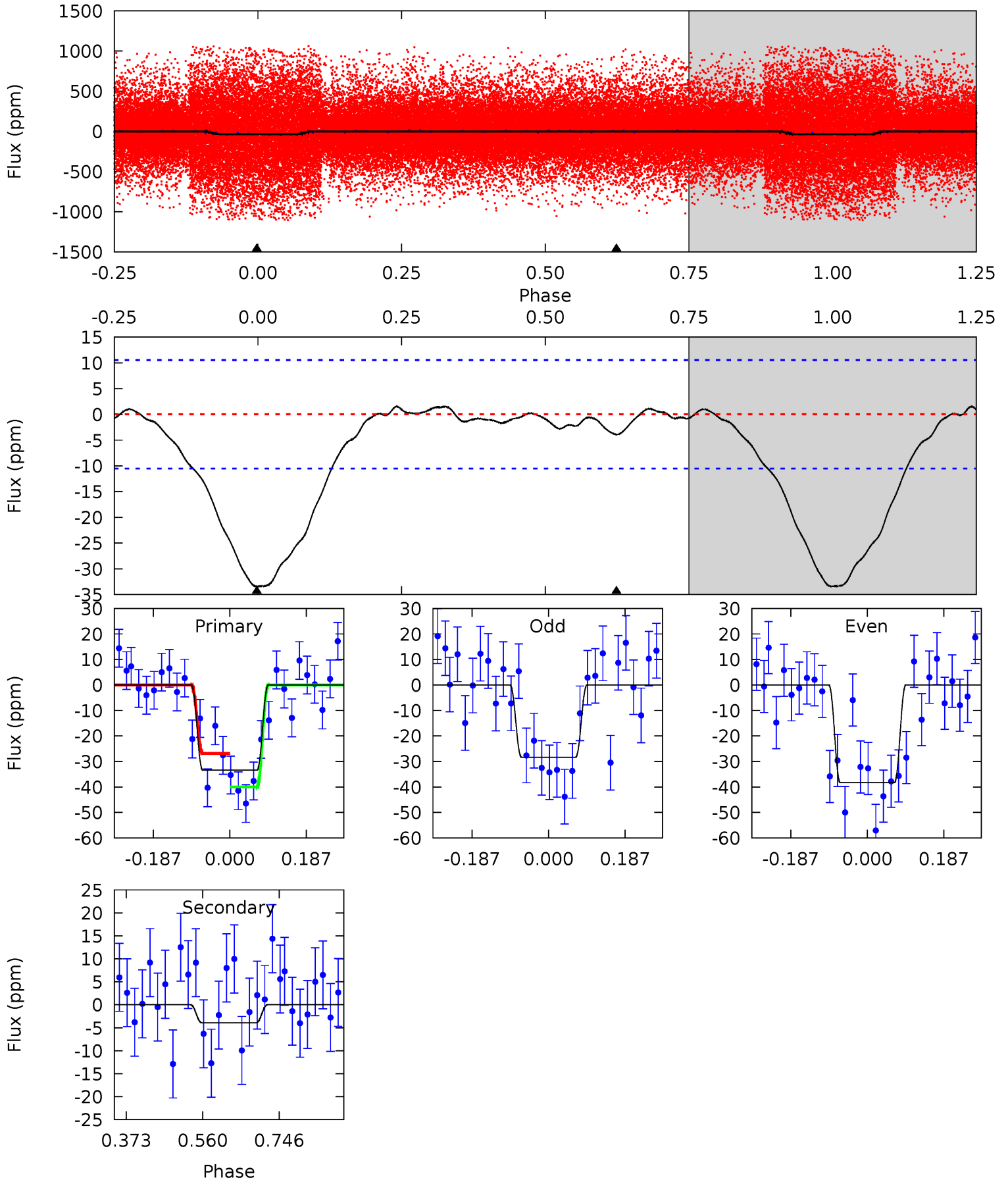
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	9.08	0	0	4.40	1.25	0.58	11.3	11.3	9.08	9.08	0.65	0.79	0.07	1.61



Alt Model-Shift Uniqueness Test

007660542-01, P = 1.224519 Days, E = 130.396400 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	1.66	0	0	4.43	1.32	0.42	14.1	14.1	1.66	1.66	2.10	1.09	0.04	2.75



Stellar Parameters For KIC 007660542

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4823^{+144}_{-129}	$4.522^{+0.063}_{-0.063}$	$0.220^{+0.200}_{-0.300}$	$0.800^{+0.056}_{-0.076}$	$0.776^{+0.060}_{-0.054}$	$2.134^{+0.677}_{-0.471}$
	+3%/-3%	+1%/-1%	+91%/-136%	+7%/-9%	+8%/-7%	+32%/-22%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007660542-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-26 ± 3	$0.60^{+0.47}_{-0.38}$	1853^{+71}_{-62}	4306^{+2472}_{-827}	17^{+118}_{-12}
Alt.	-4 ± 2	$0.60^{+0.48}_{-0.38}$	1848^{+72}_{-62}	2990^{+1367}_{-798}	$2.138^{+16.127}_{-1.700}$

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

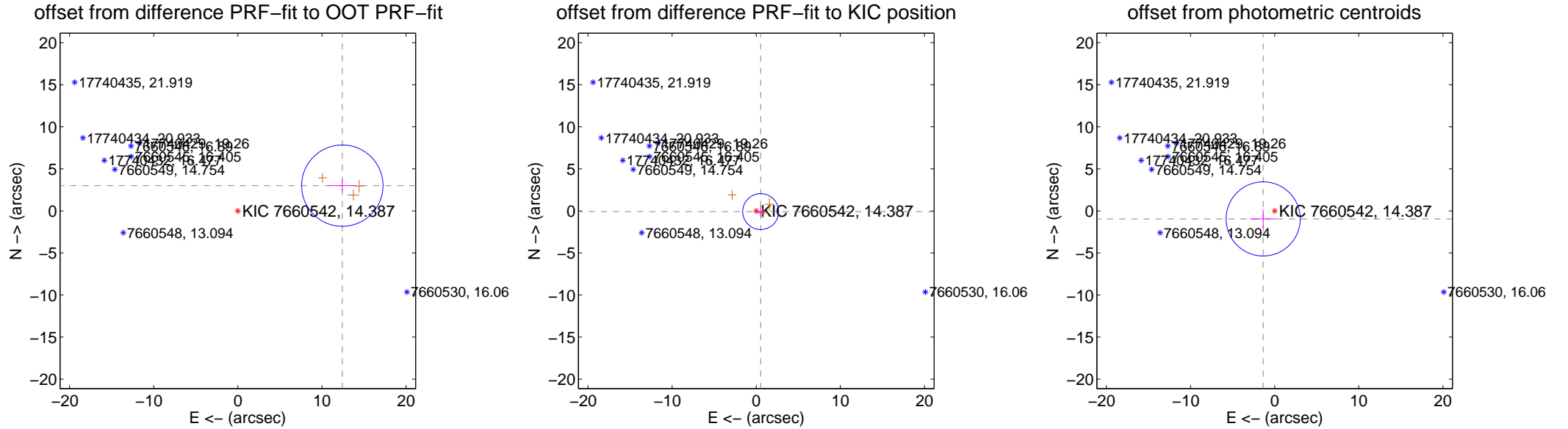
DV Centroid Data

Supplemental centroid analysis for 007660542-01. Kepler magnitude: 14.39. Transit SNR 8.17

There are 5 quarters with good PRF difference image offsets

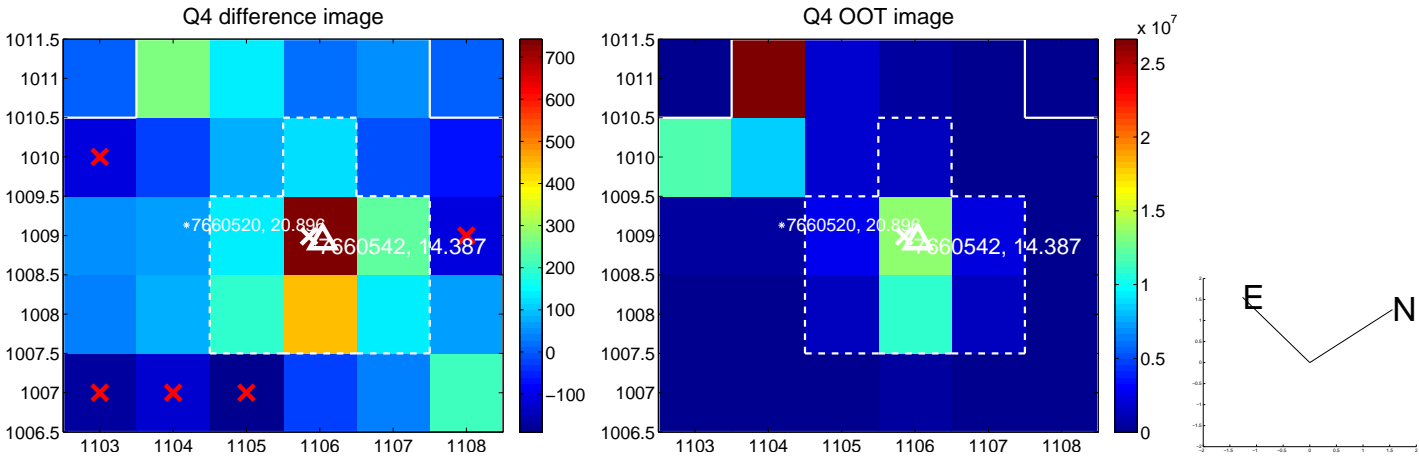
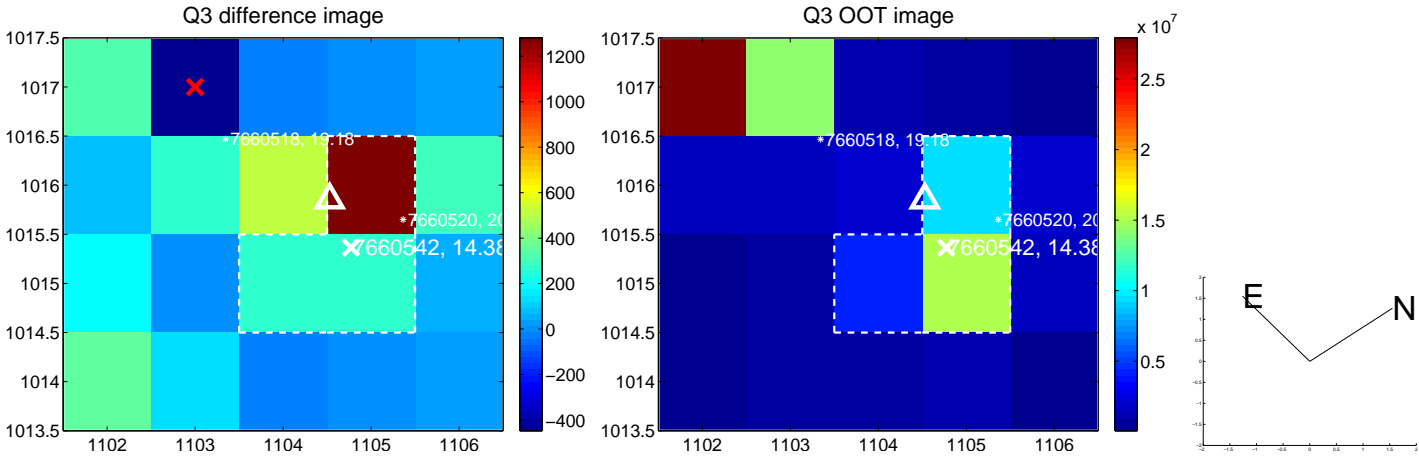
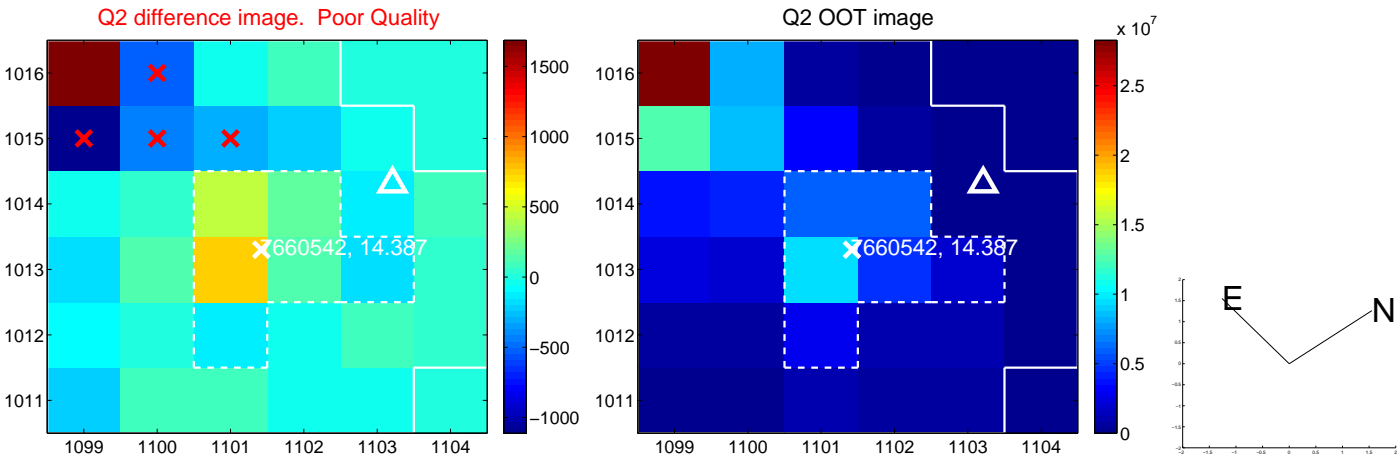
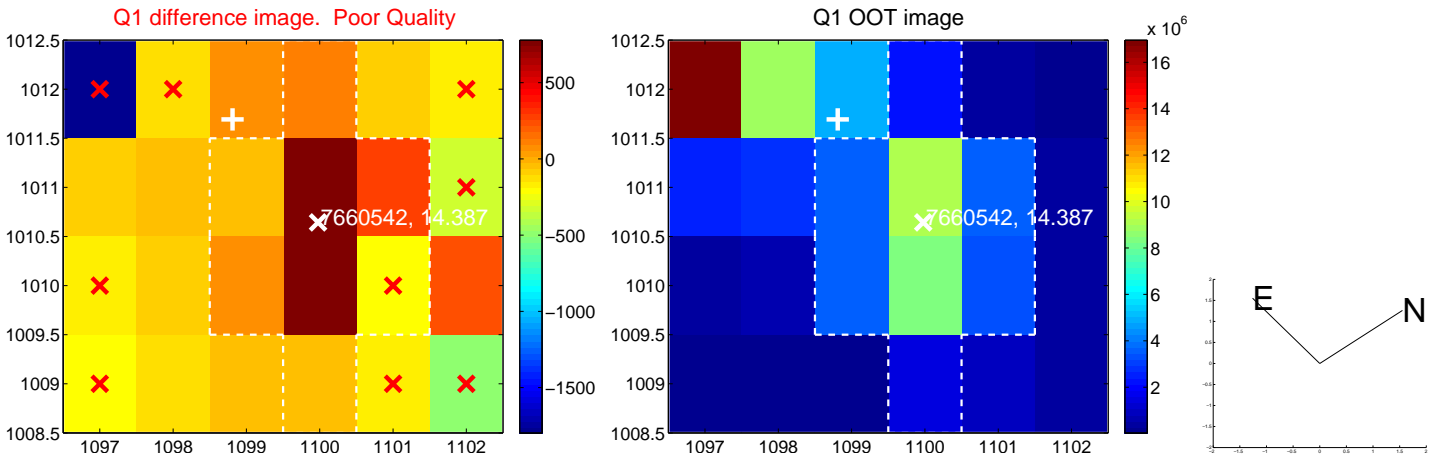
The OOT PRF centroid is offset from the target star catalog position by about 13.13 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	12.773 ± 1.612	7.93	-12.416 ± 1.650	3.002 ± 0.678
PRF-fit source offset from KIC position	0.532 ± 0.711	0.75	-0.526 ± 0.708	-0.082 ± 0.630
photometric centroid source offset	1.66 ± 1.47	1.13	1.36 ± 1.62	-0.95 ± 1.11

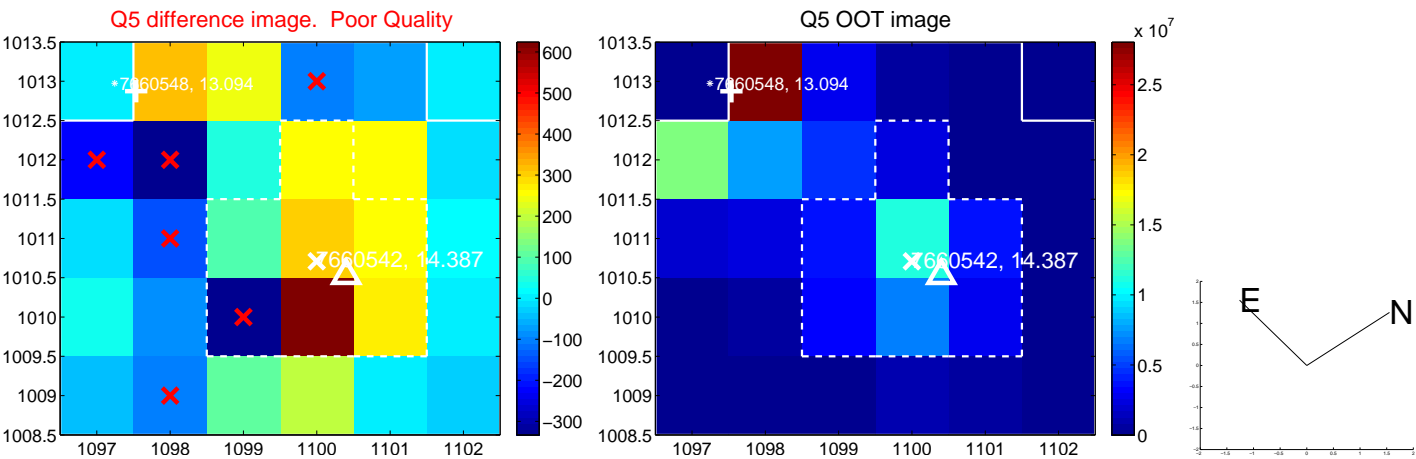


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

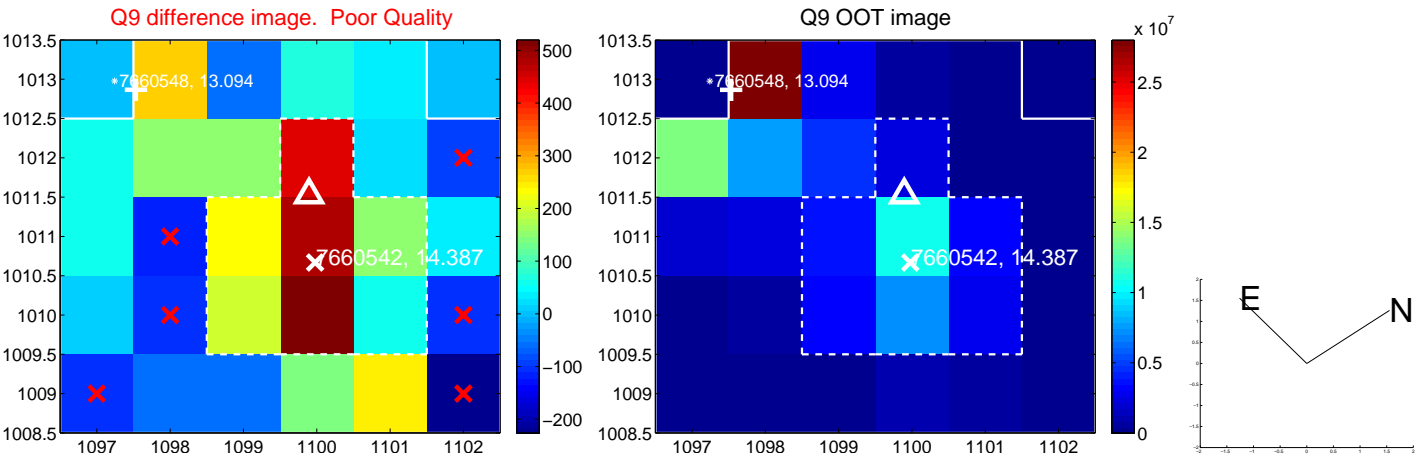
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



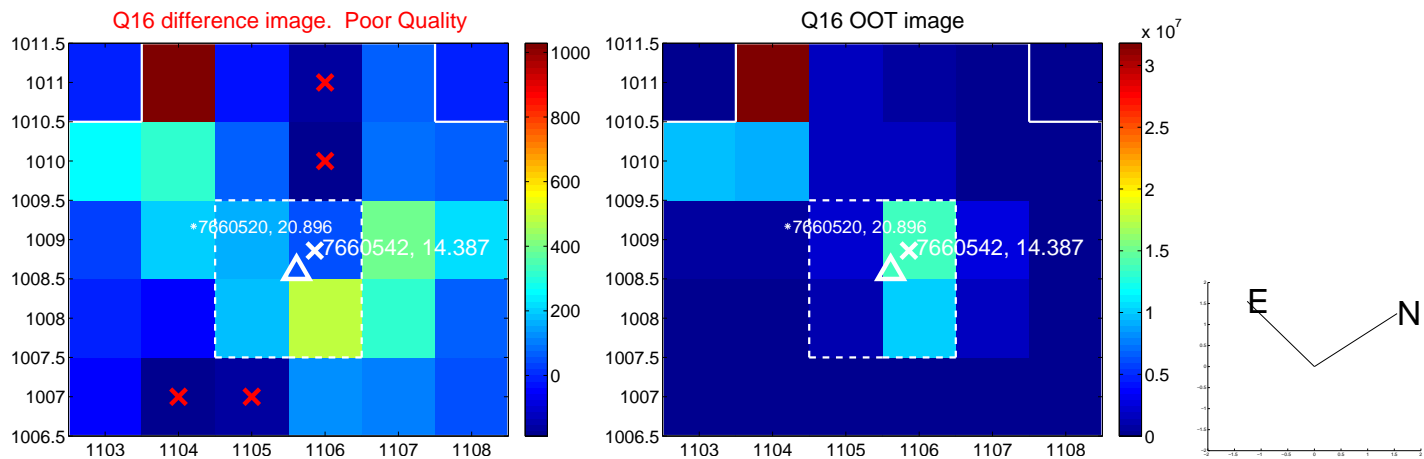
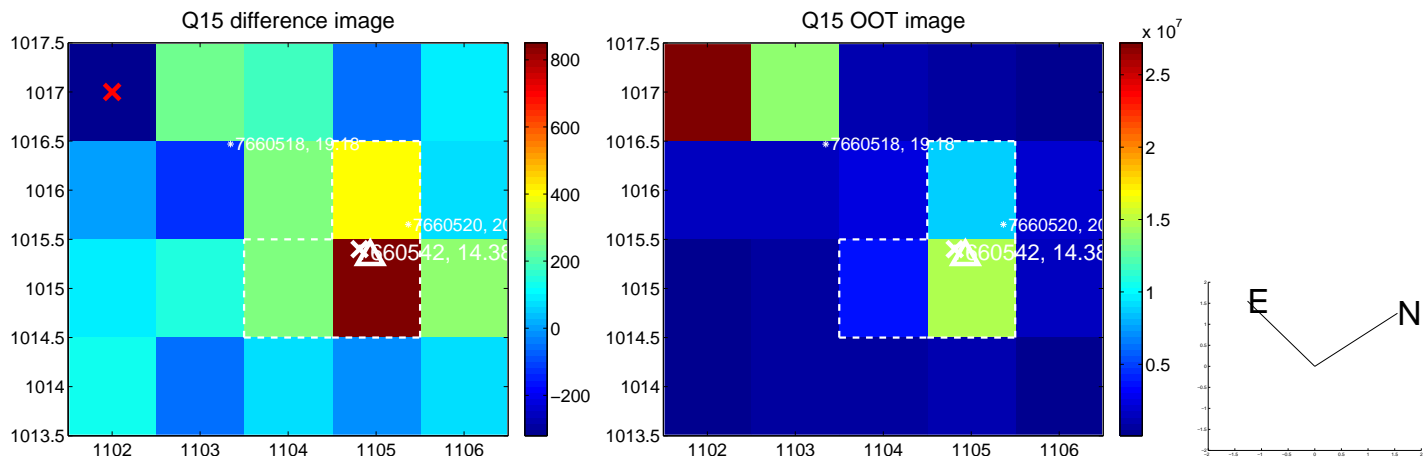
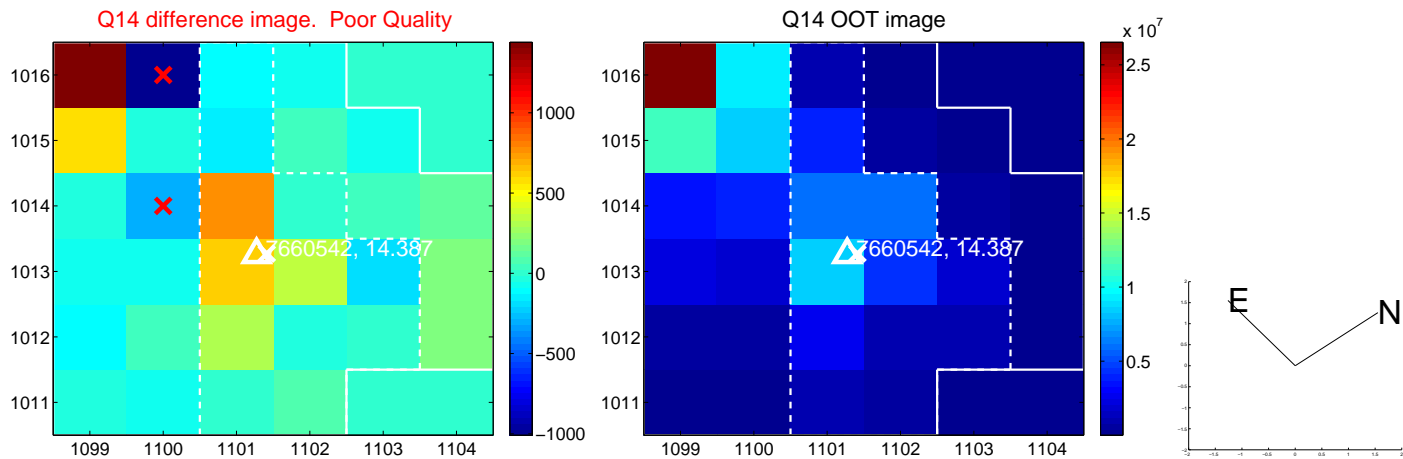
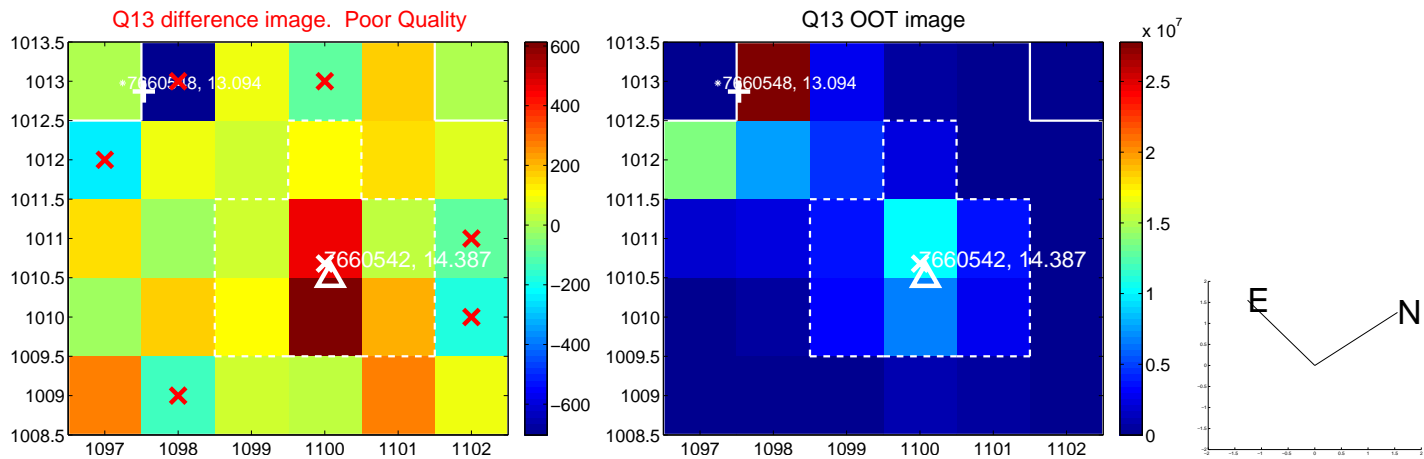
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



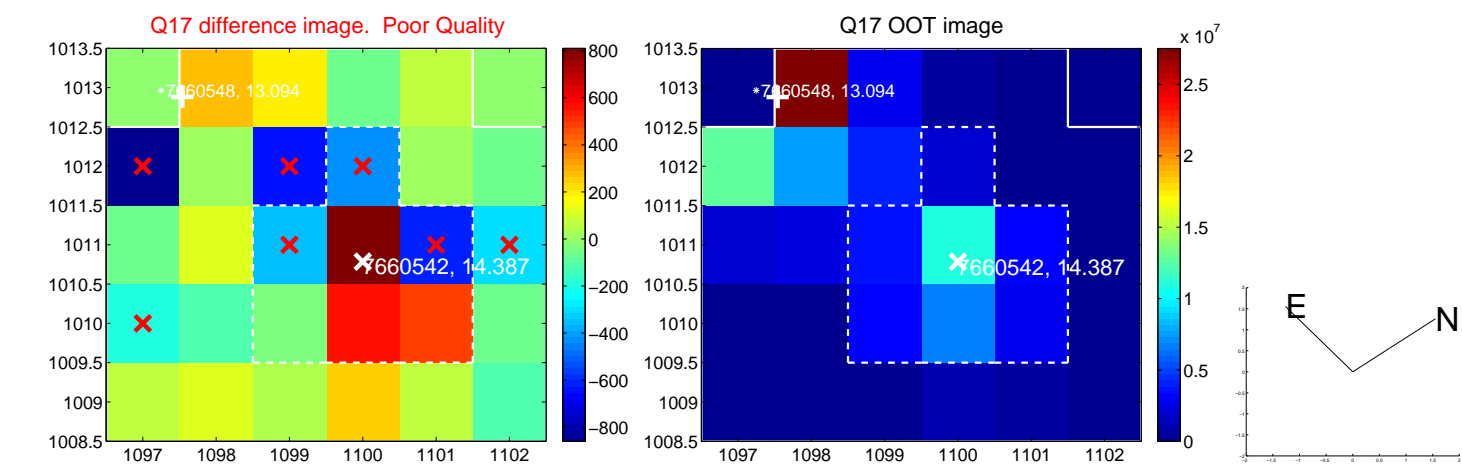
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



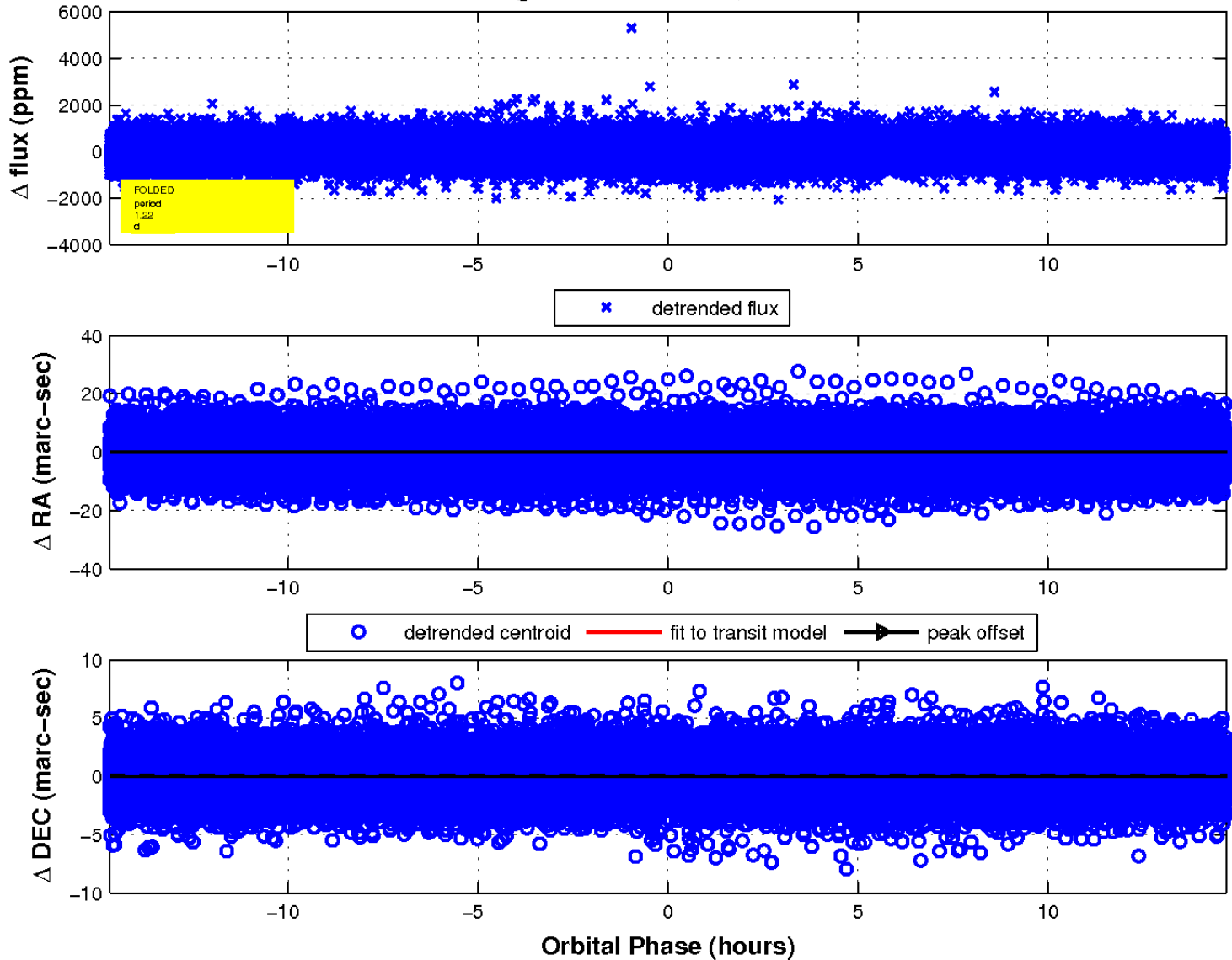
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

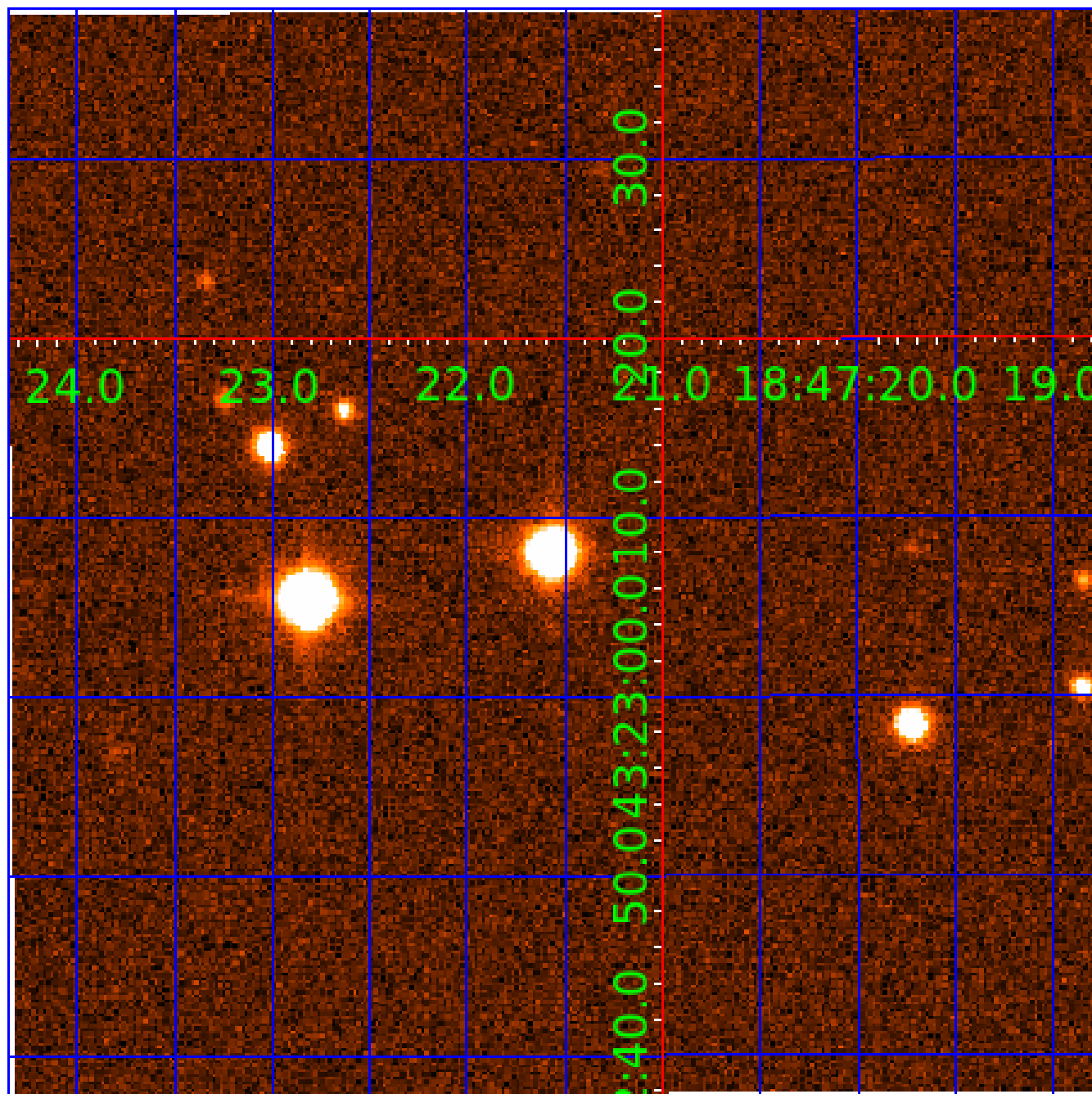


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 007660542

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})
007660542-01	OBS	No	1.224541	131.593009	38.3	5.775	9.8	8.2	0.80	4823	0.47	731.58
007660542-03	OBS	No	158.636885	279.978392	1239.1	2.915	10.0	9.5	0.80	4823	4.32	1.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007660542-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
007660542-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

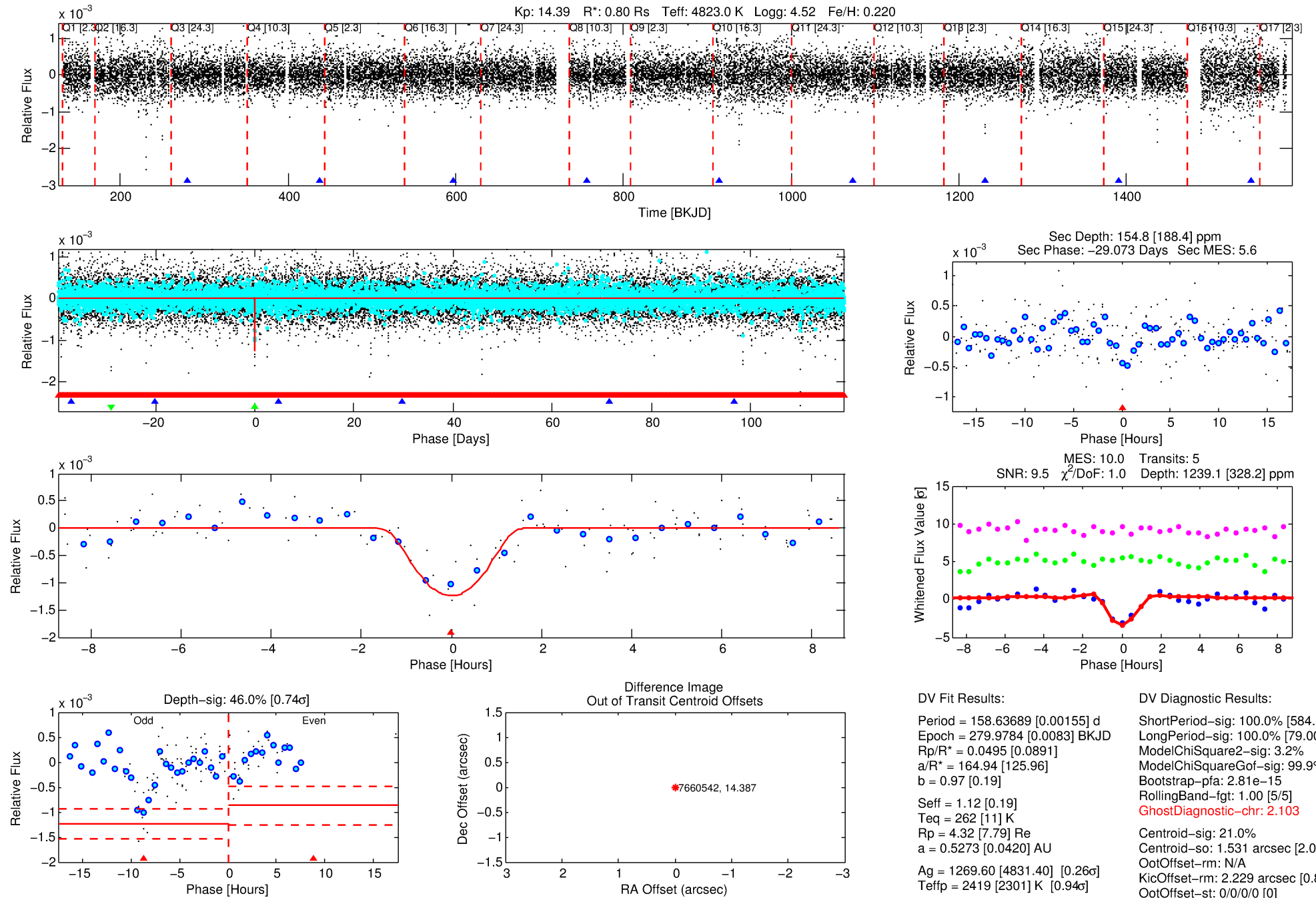
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007660542-03

No Significant Match Found

DV One-Page Summary

KIC: 7660542 Candidate: 3 of 3 Period: 158.637 d



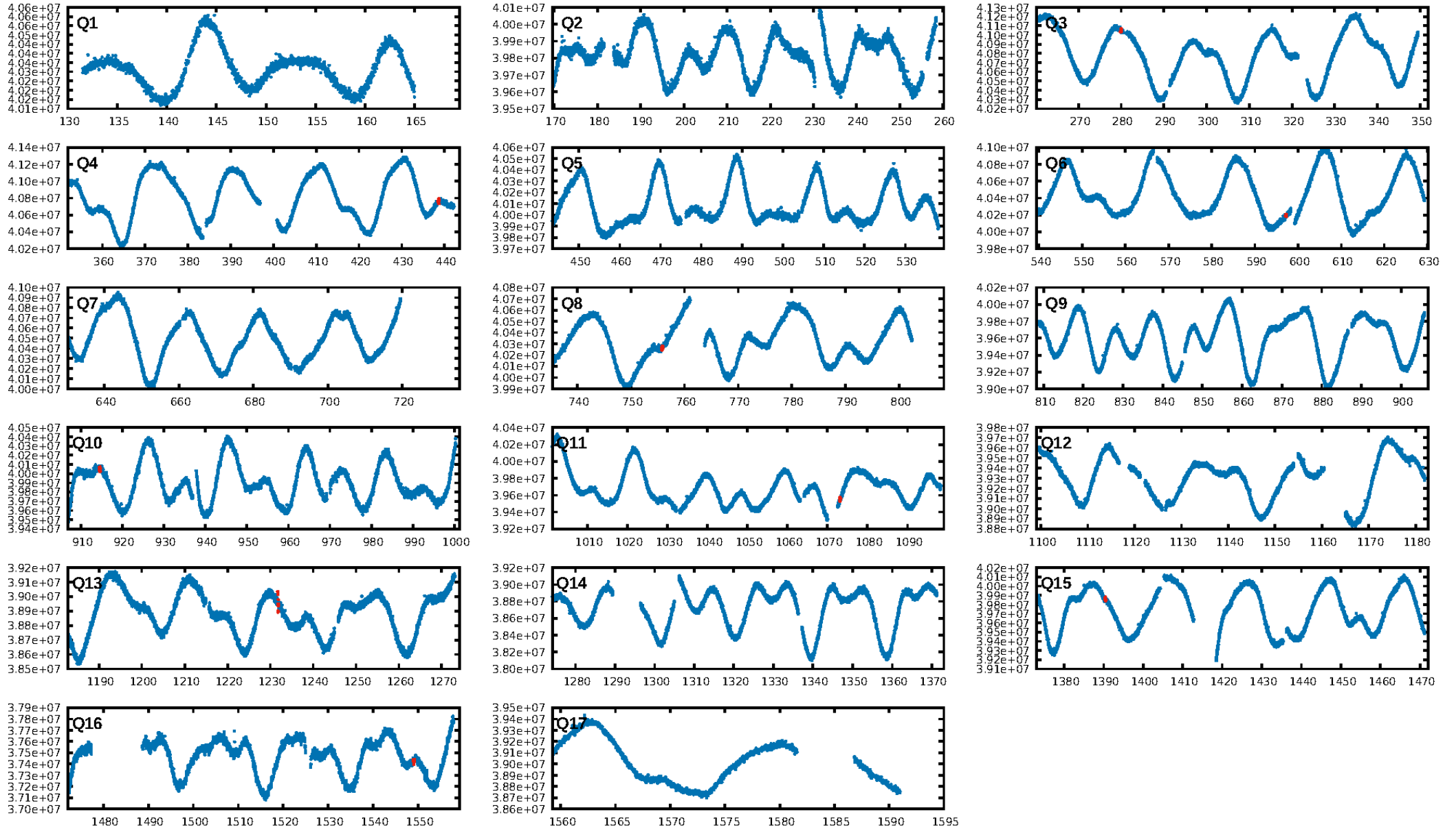
DV Fit Results:

Period = 158.63689 [0.00155] d
Epoch = 279.9784 [0.0083] BKJD
Rp/R* = 0.0495 [0.0891]
a/R* = 164.94 [125.96]
b = 0.97 [0.19]
Seff = 1.12 [0.19]
Teq = 262 [11] K
Rp = 4.32 [7.79] Re
a = 0.5273 [0.0420] AU
Ag = 1269.60 [4831.40] [0.26σ]
Teffp = 2419 [2301] K [0.94σ]

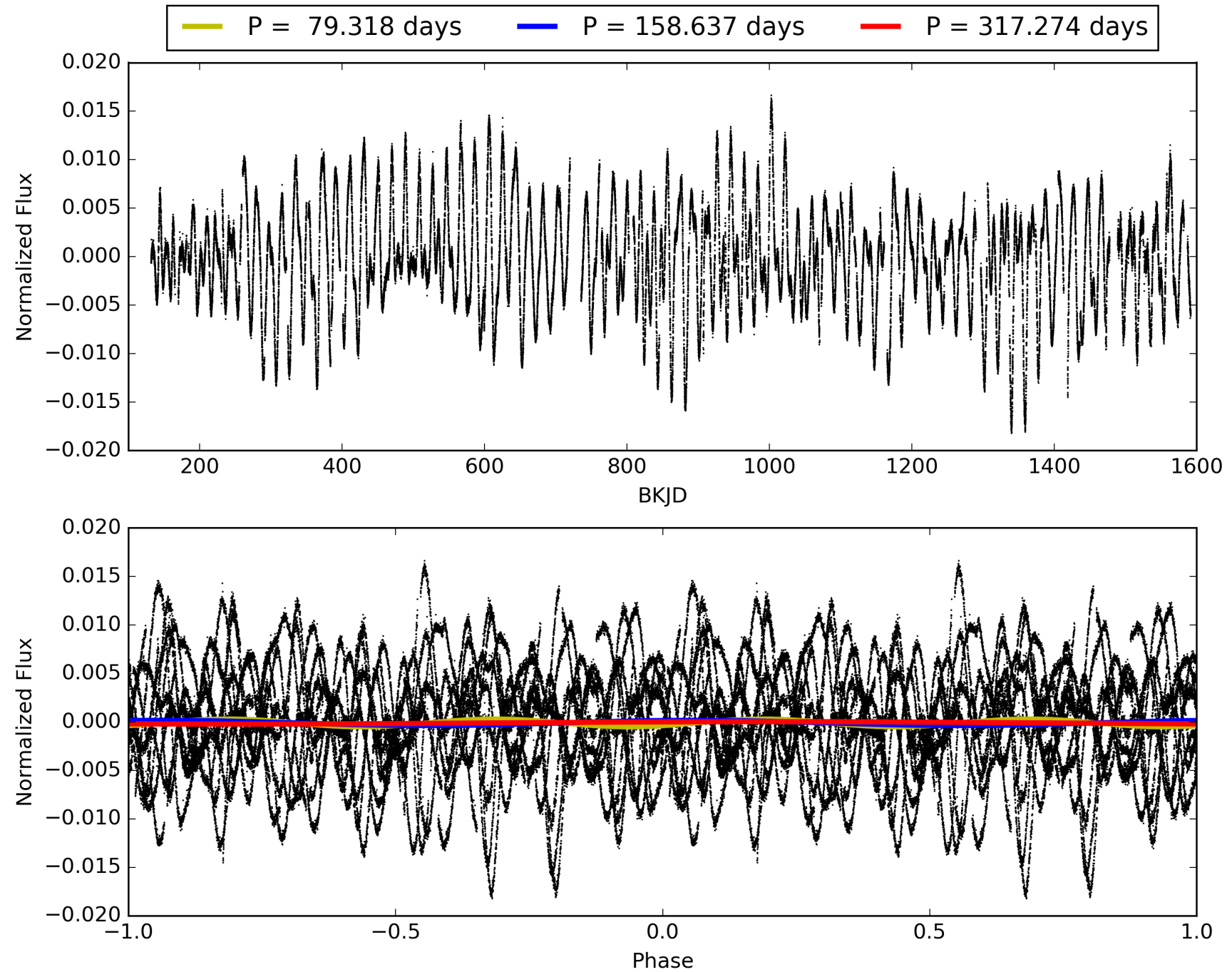
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [584.02σ]
LongPeriod-sig: 100.0% [79.00σ]
ModelChiSquare2-sig: 3.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.81e-15
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 2.103
Centroid-sig: 21.0%
Centroid-so: 1.531 arcsec [2.04σ]
OotOffset-rm: N/A
KicOffset-rm: 2.229 arcsec [0.86σ]
OotOffset-st: 0/0/0 [0]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.29 [2/7]

TCE 007660542-03, PDC Light Curves

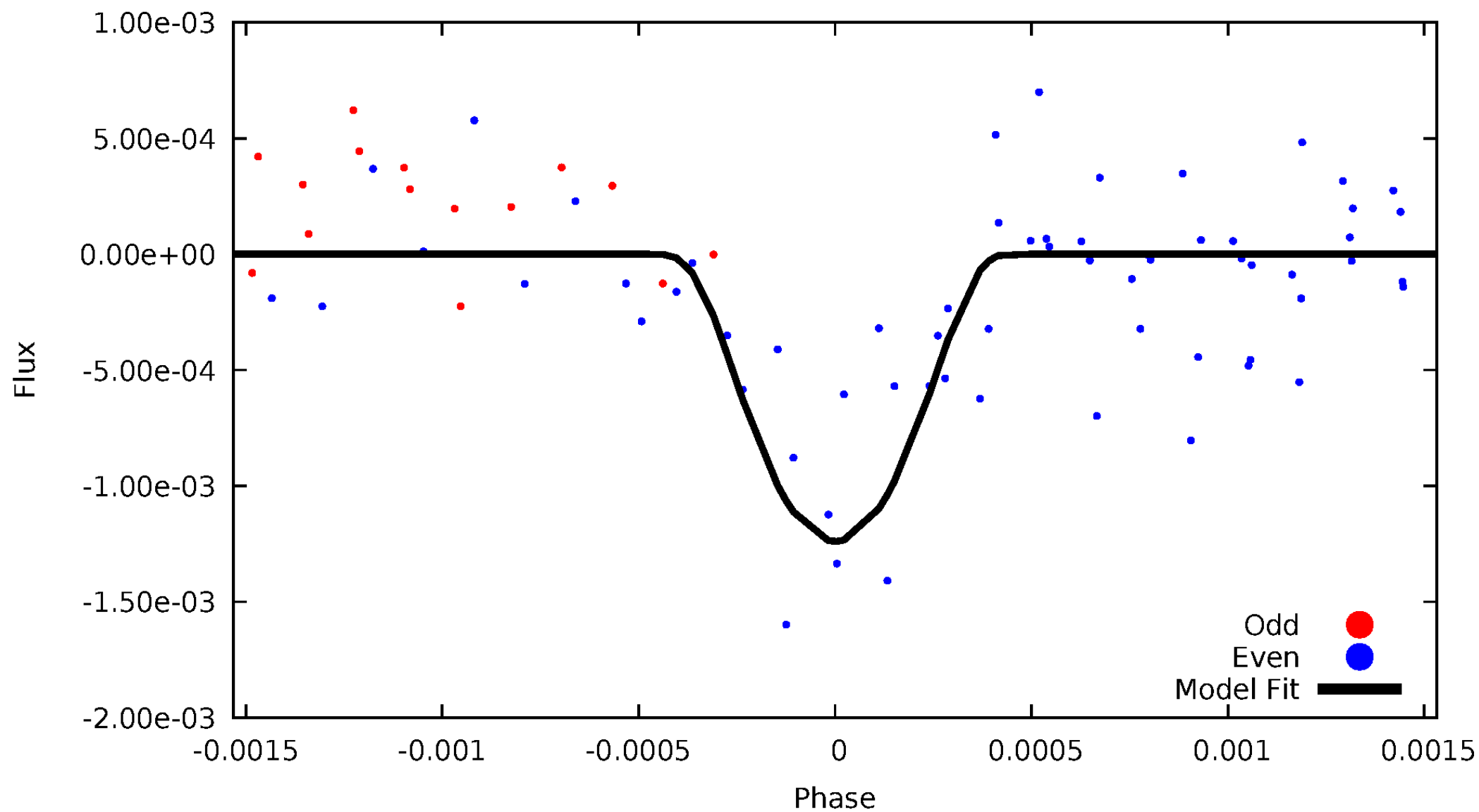


TCE 007660542-03



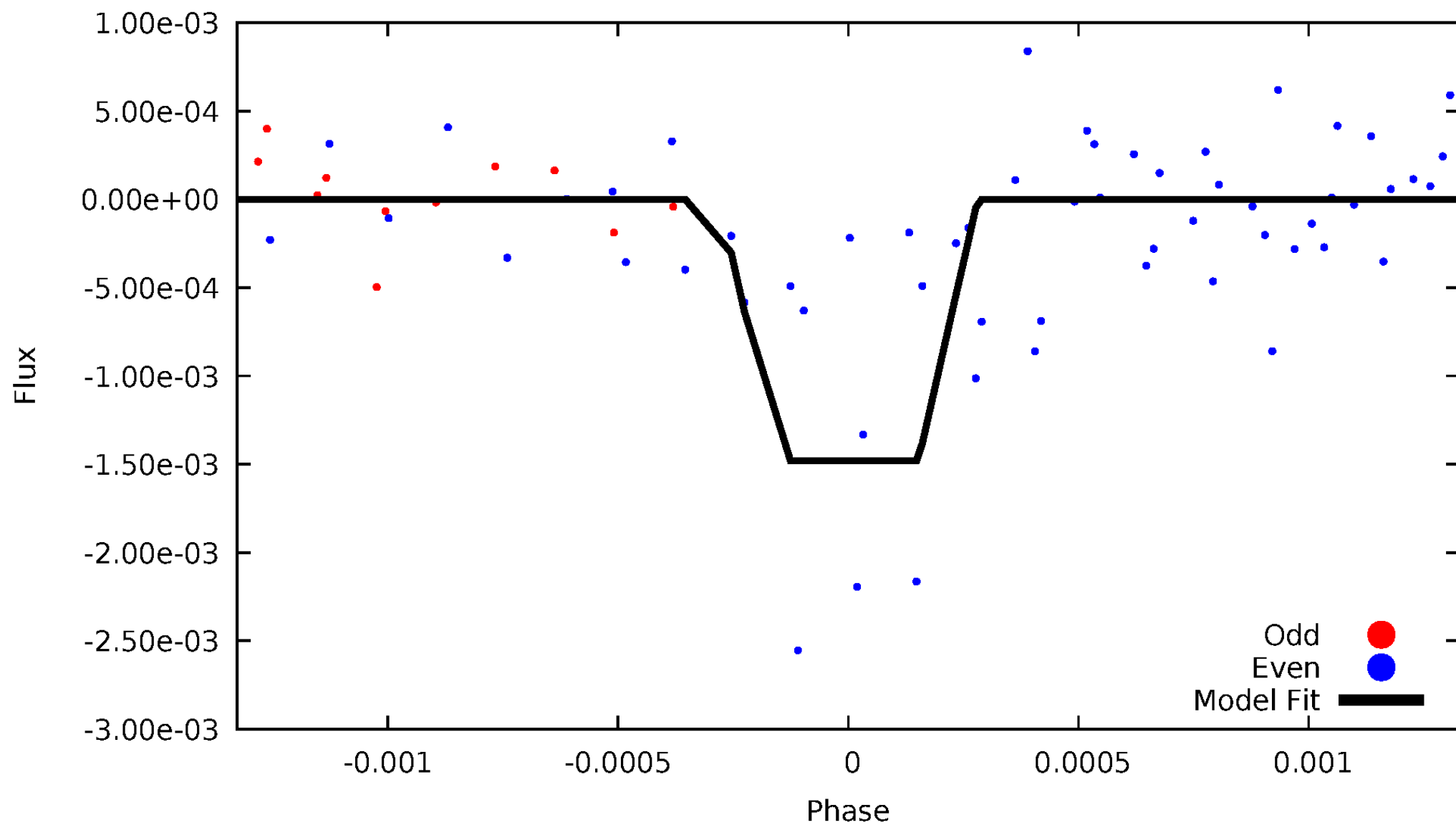
DV Odd/Even

TCE 007660542-03



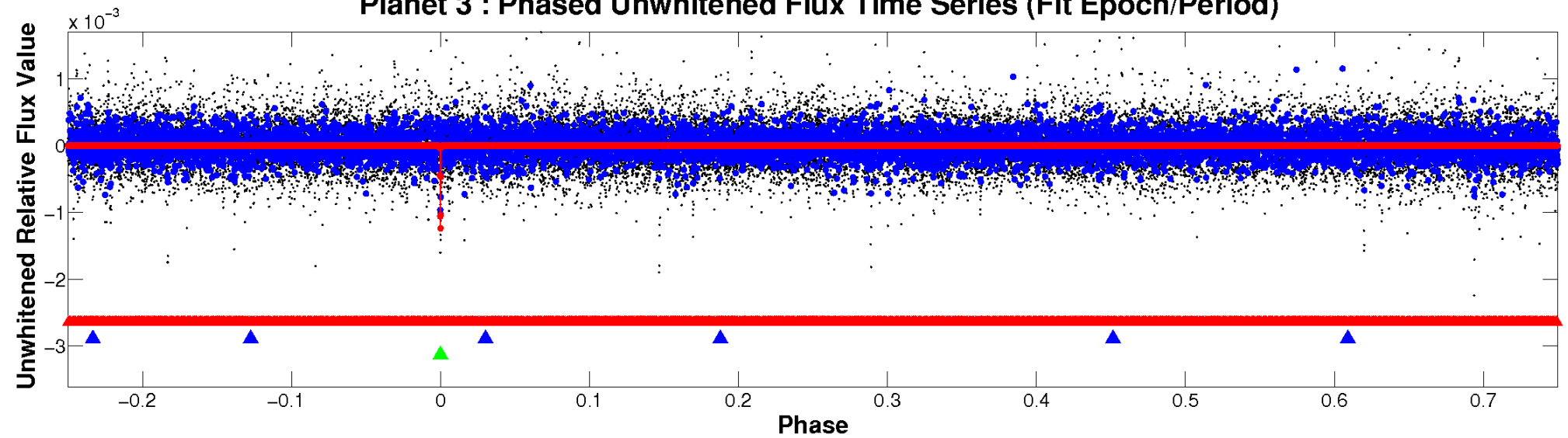
ALT Odd/Even

TCE 007660542-03

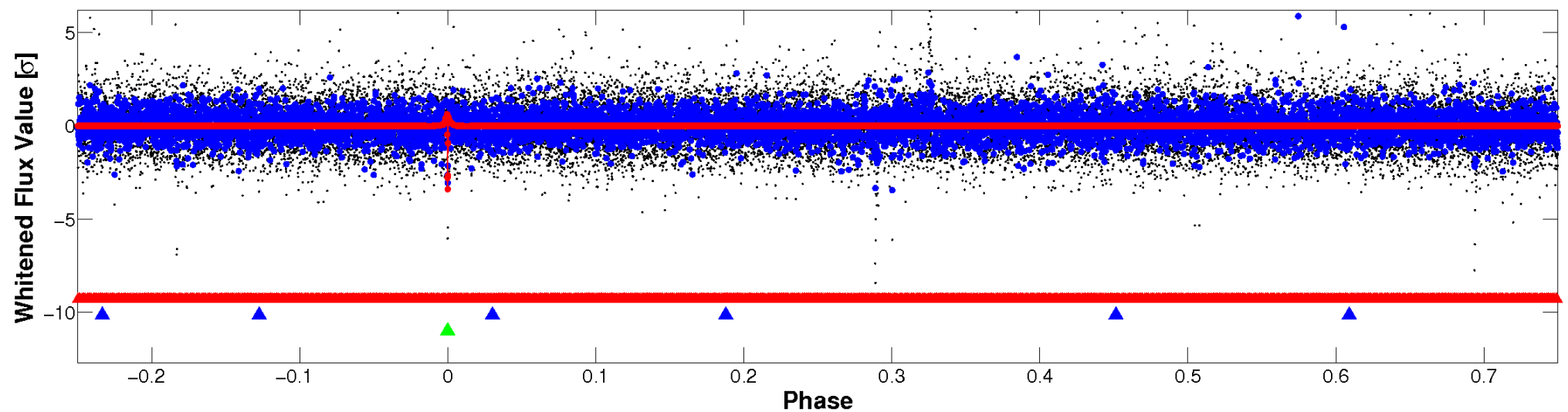


Non-Whitened Vs. Whitened Light Curve

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

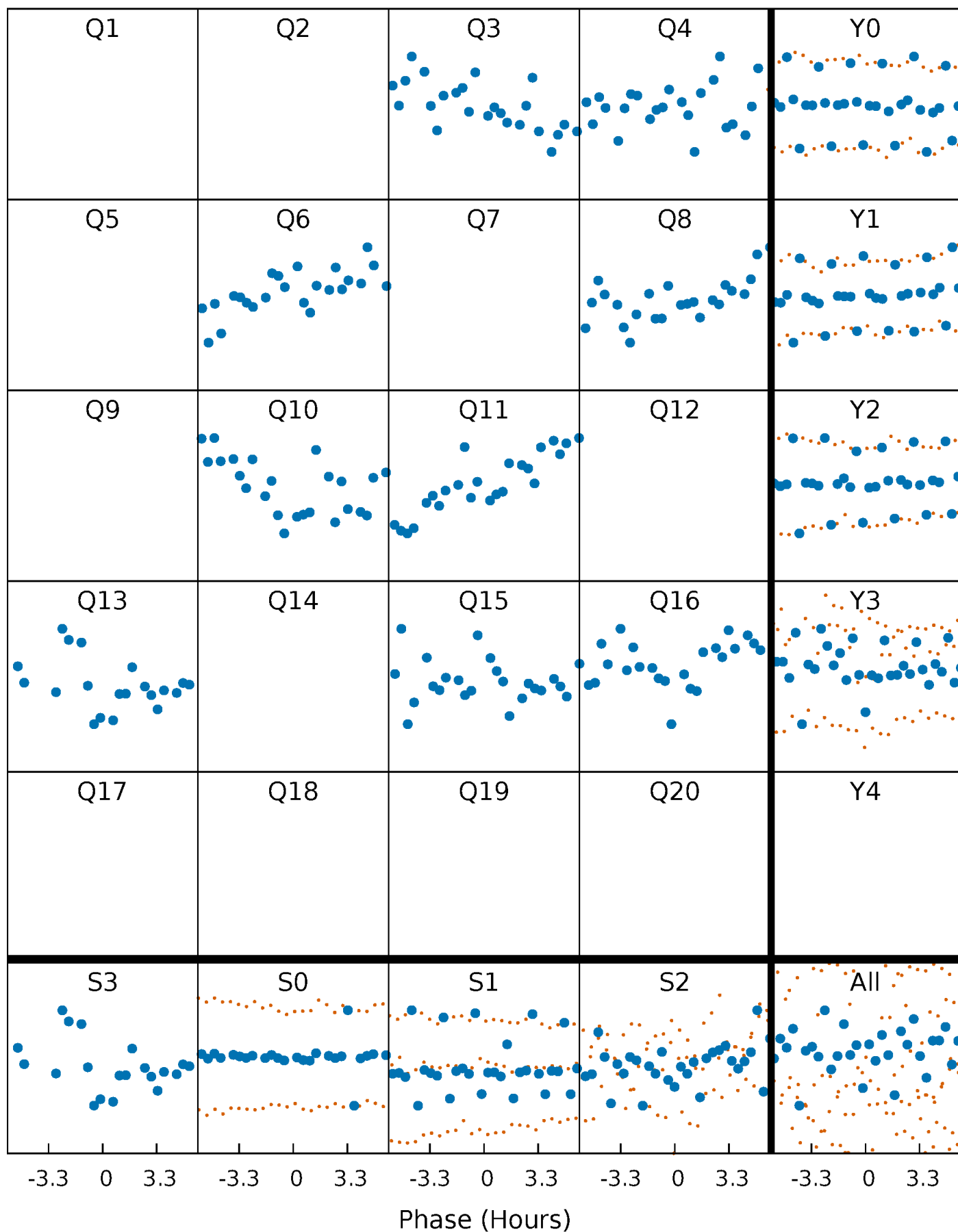


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



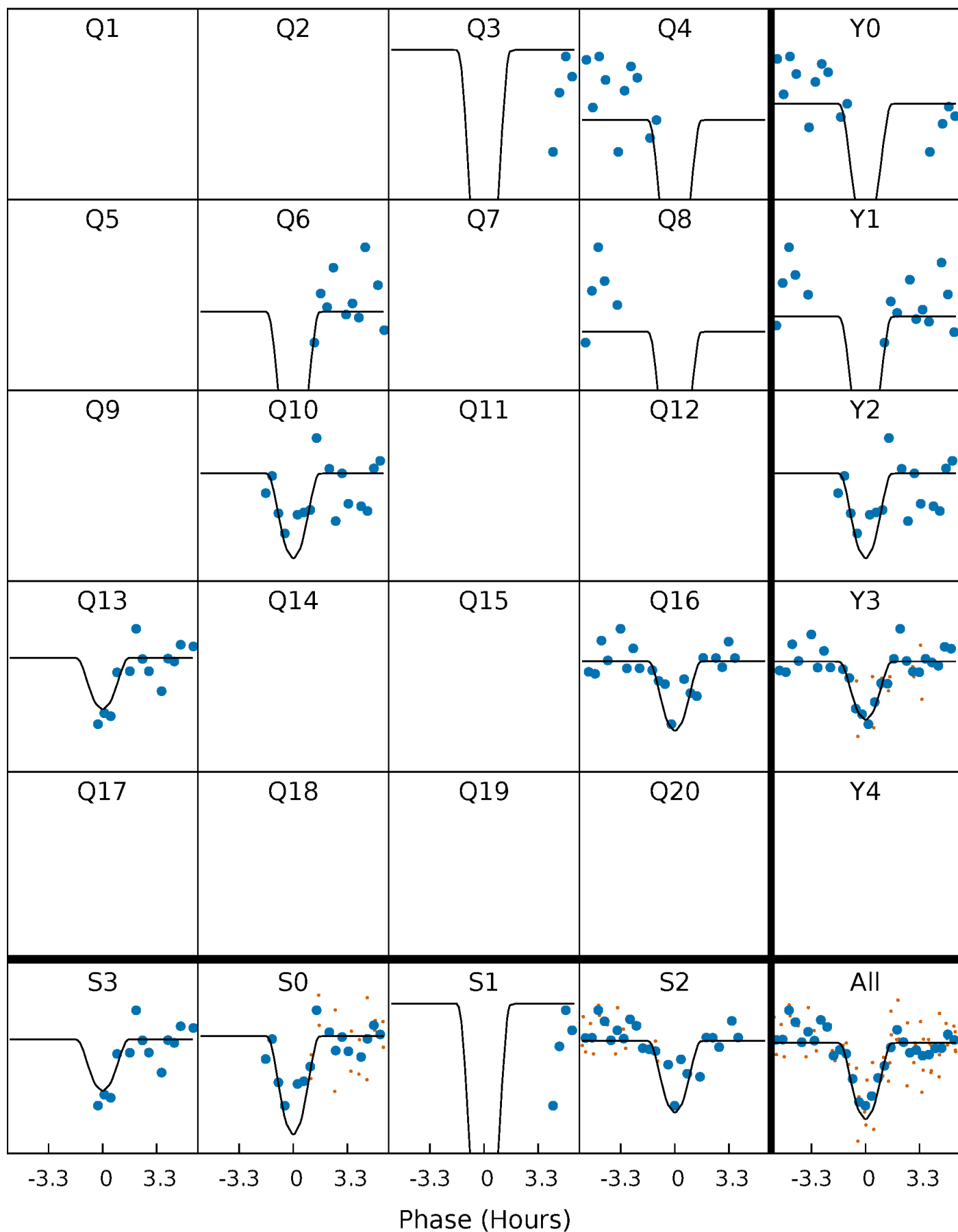
PDC Quarter-Phased Transit Curves

TCE 007660542-03 P=158.636885 Days $T_0=279.978392$ (BKJD)



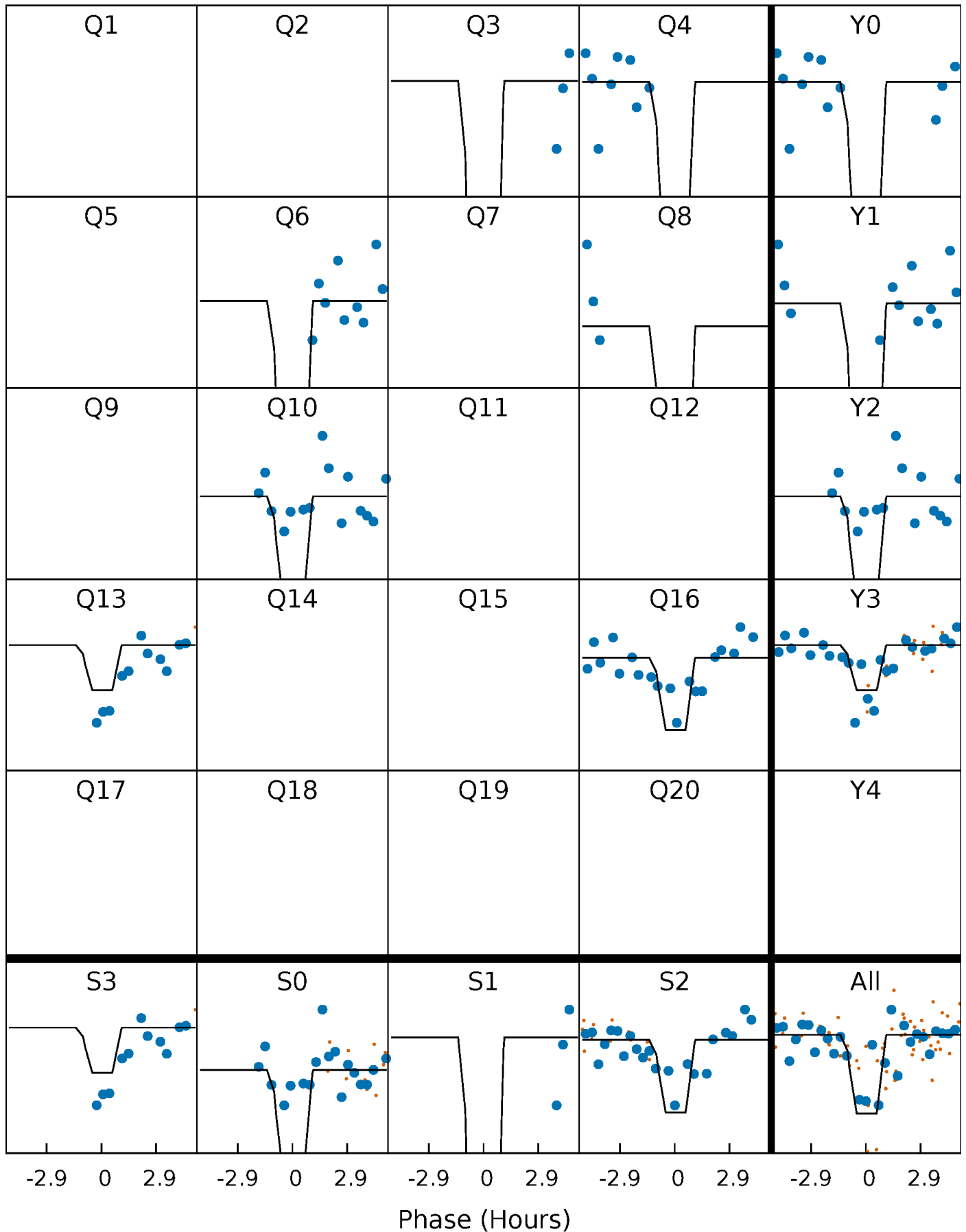
DV Quarter-Phased Transit Curves

TCE 007660542-03 P=158.636885 Days $T_0=279.978392$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

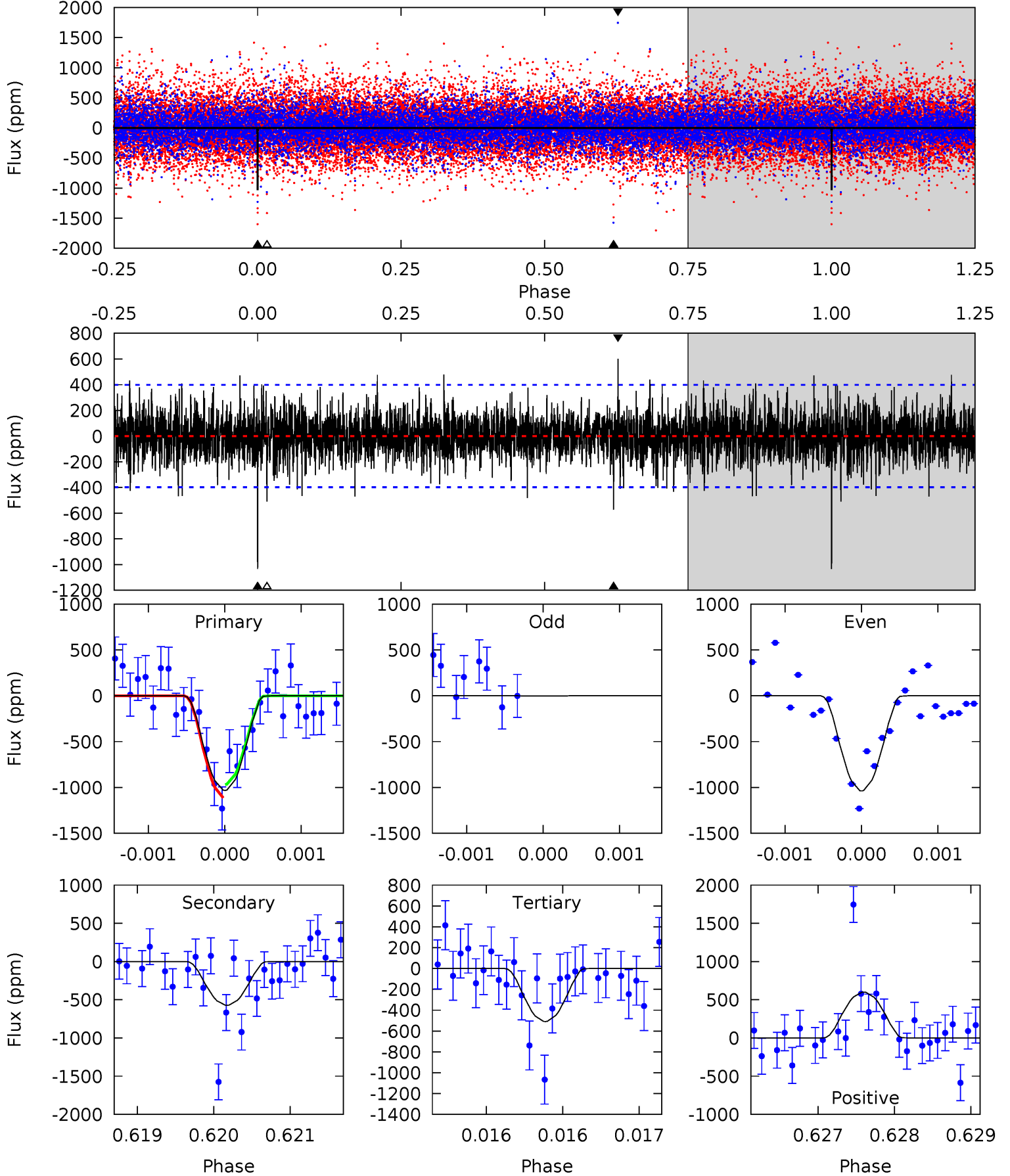
TCE 007660542-03 P=158.634169 Days $T_0=279.992365$ (BKJD)



DV Model-Shift Uniqueness Test

007660542-03, P = 158.636885 Days, E = 121.341507 Days

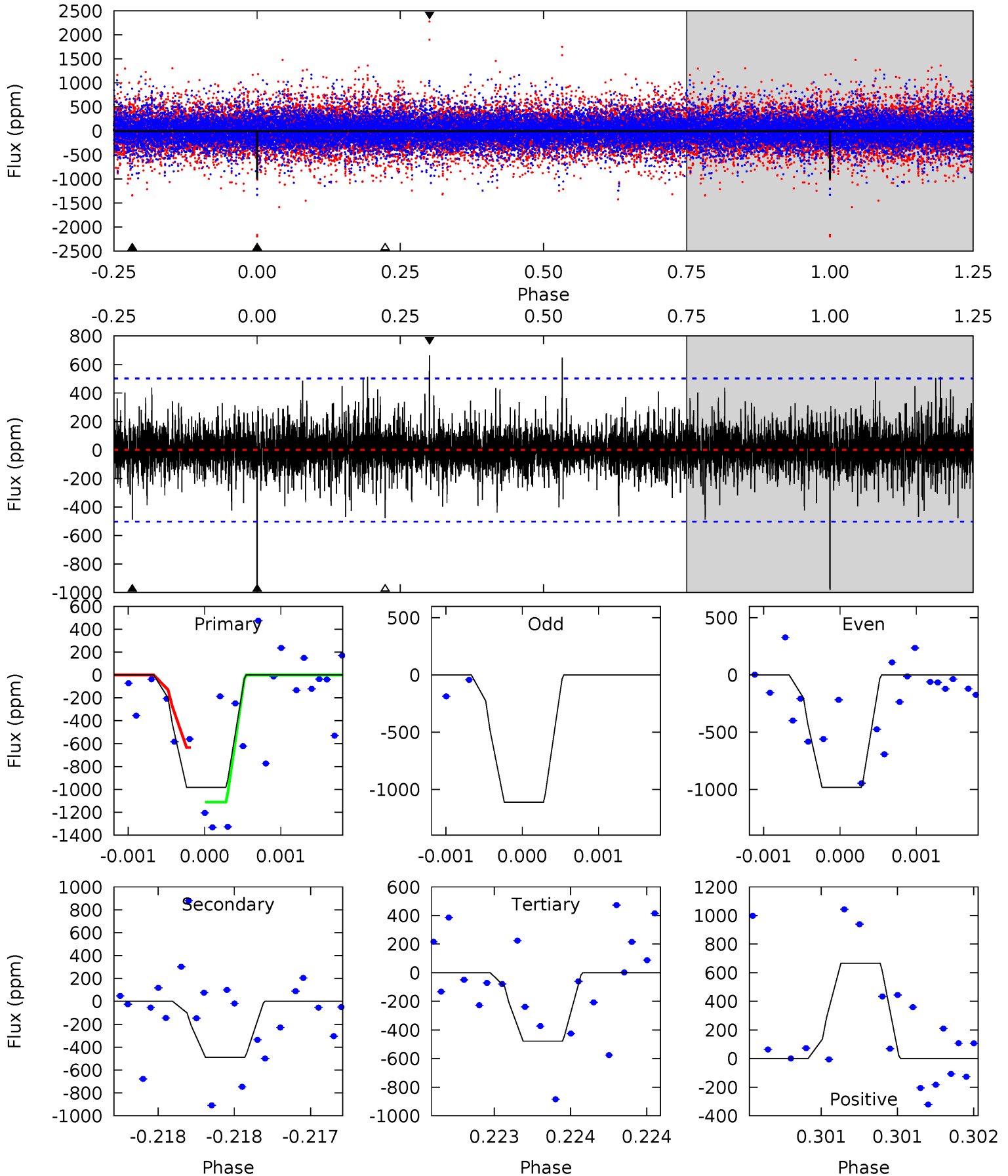
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	7.90	7.03	8.29	5.49	3.35	1.70	7.22	5.96	0.87	-0.39	3.31	1.01	0.37	0.98



Alt Model-Shift Uniqueness Test

007660542-03, P = 158.634169 Days, E = 121.358196 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	5.42	5.30	7.38	5.56	3.46	1.18	5.59	3.51	0.12	-1.96	0.89	1.34	0.40	2.40



Stellar Parameters For KIC 007660542

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4823^{+144}_{-129}	$4.522^{+0.063}_{-0.063}$	$0.220^{+0.200}_{-0.300}$	$0.800^{+0.056}_{-0.076}$	$0.776^{+0.060}_{-0.054}$	$2.134^{+0.677}_{-0.471}$
	+3%/-3%	+1%/-1%	+91%/-136%	+7%/-9%	+8%/-7%	+32%/-22%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007660542-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-573 ± 72	$7.42^{+6.62}_{-4.93}$	366^{+13}_{-12}	3115^{+1434}_{-483}	1634^{+12882}_{-1199}
Alt.	-489 ± 90	$6.52^{+6.33}_{-4.37}$	367^{+13}_{-12}	3197^{+1444}_{-580}	1832^{+14391}_{-1396}

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 $A_{obs} \gg 1.0$

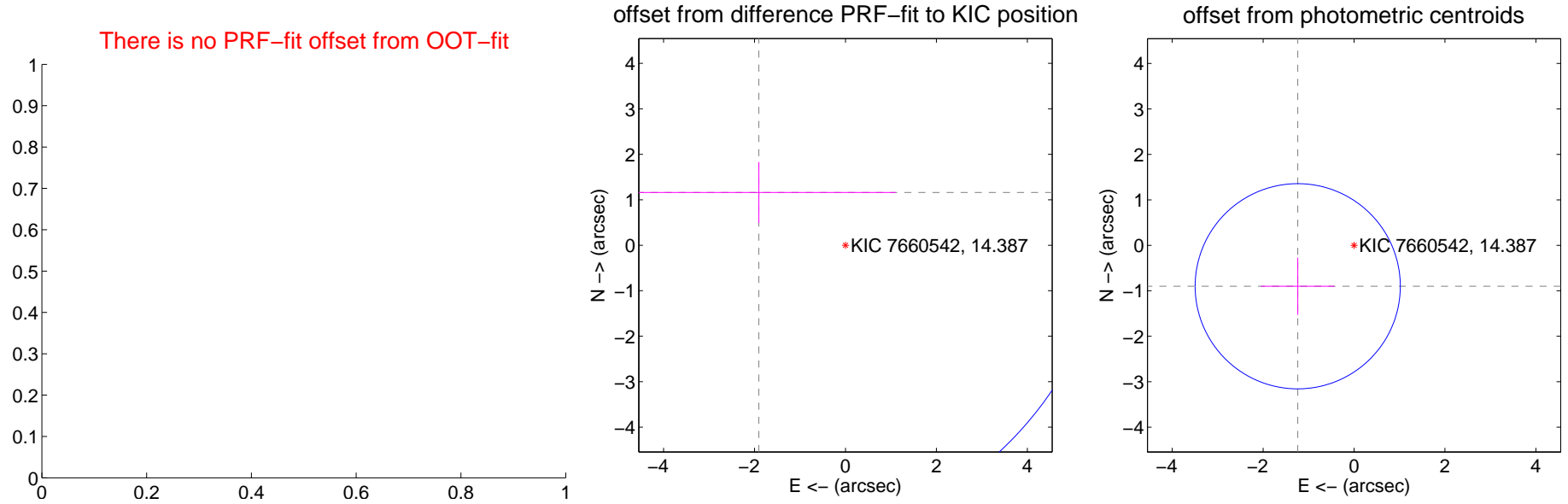
DV Centroid Data

Supplemental centroid analysis for 007660542-03. Kepler magnitude: 14.39. Transit SNR 9.46

There are 0 quarters with good PRF difference image offsets

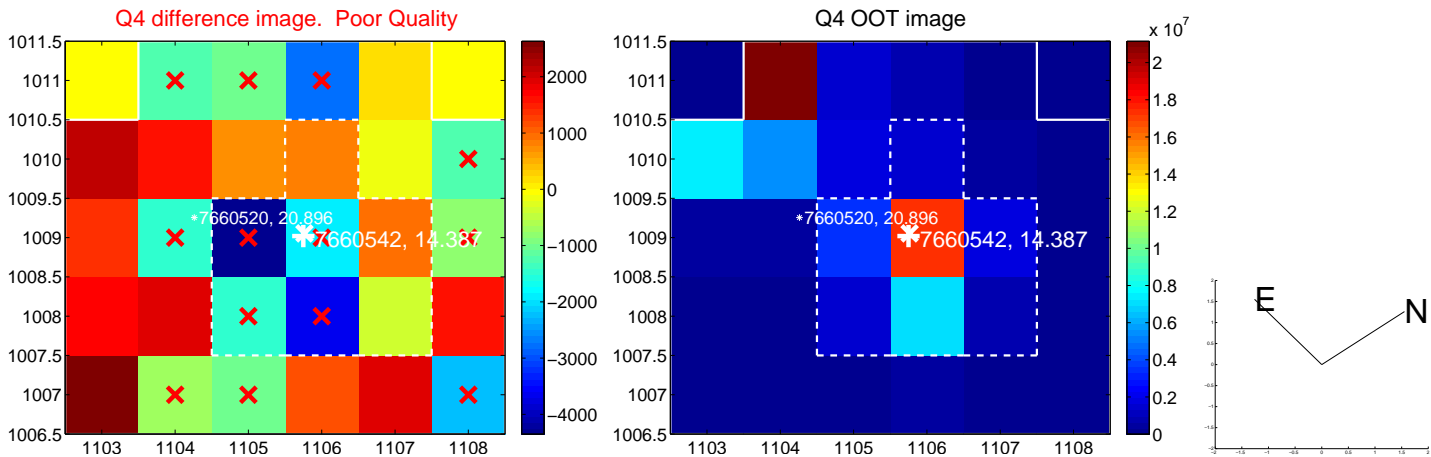
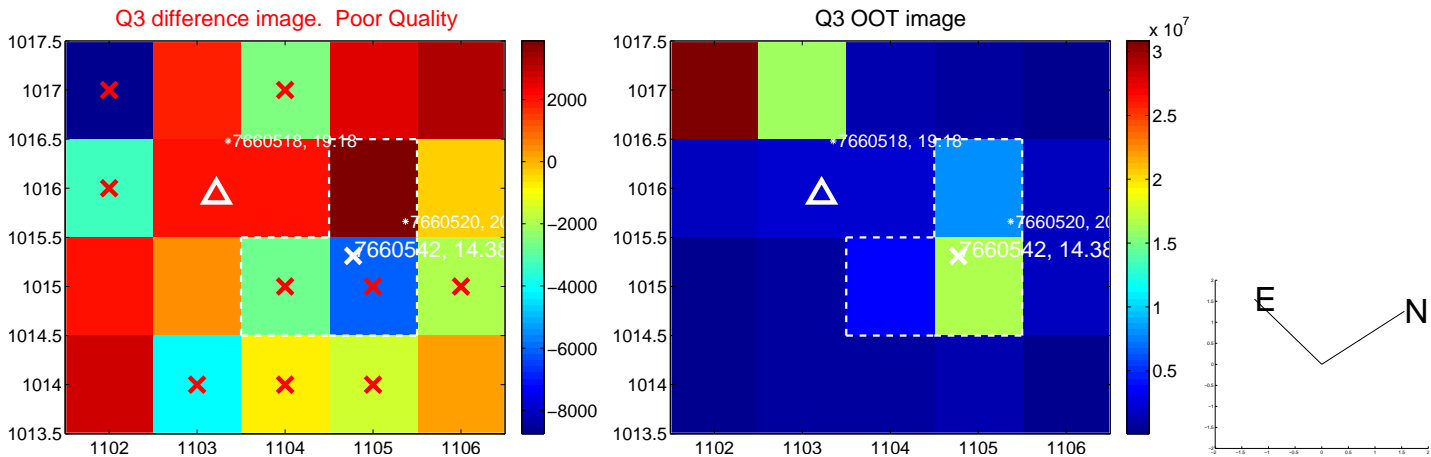
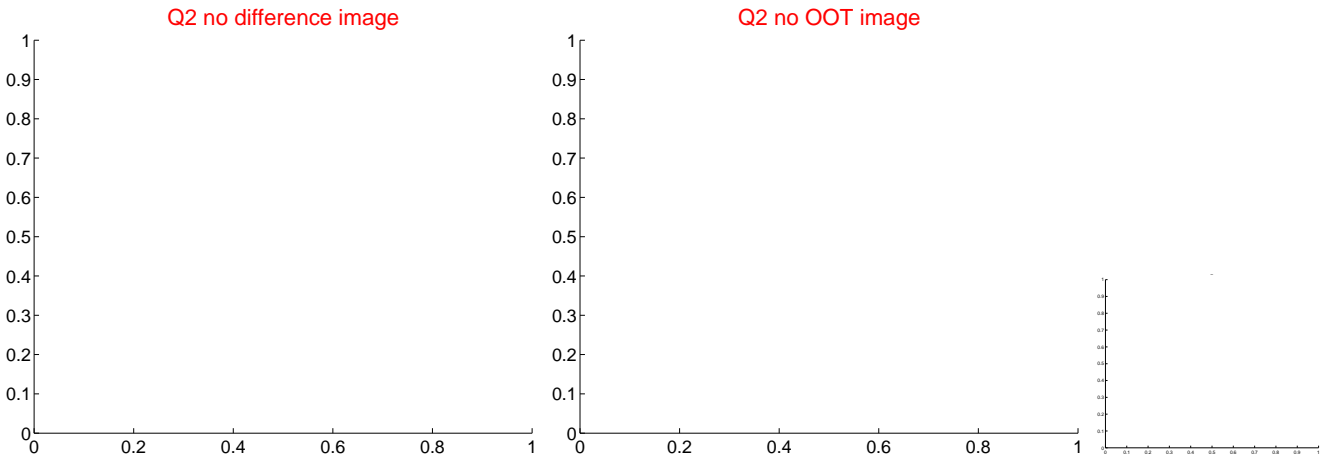
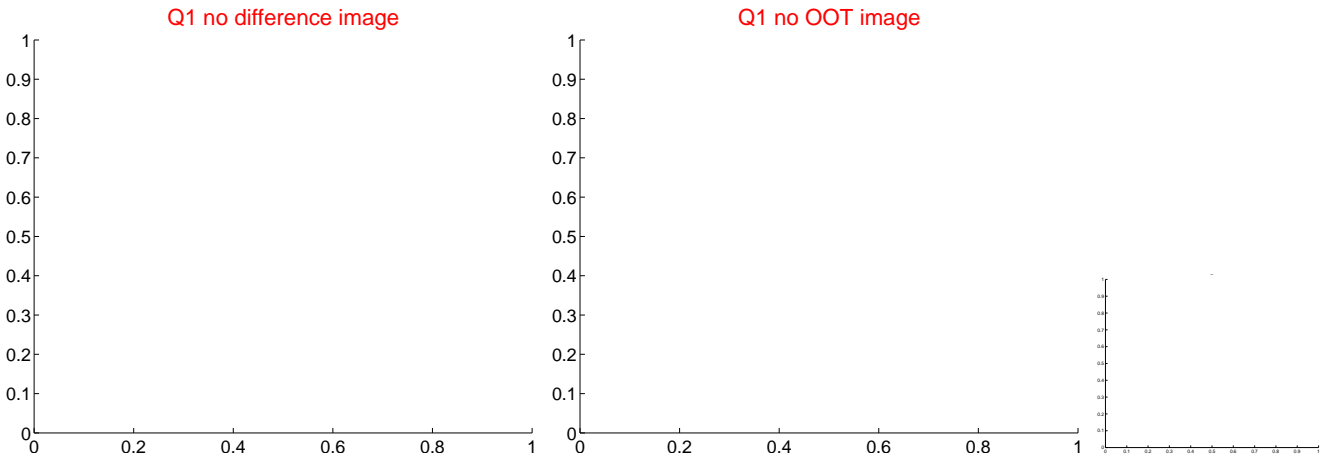
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	2.229 ± 2.592	0.86	1.904 ± 3.007	1.159 ± 0.669
photometric centroid source offset	1.53 ± 0.75	2.04	1.24 ± 0.81	-0.90 ± 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



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

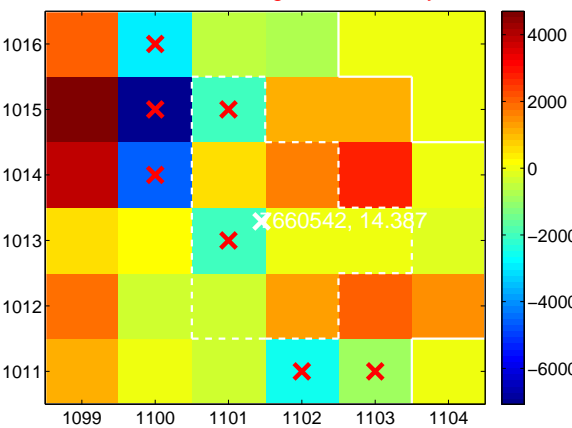
Q5 no difference image



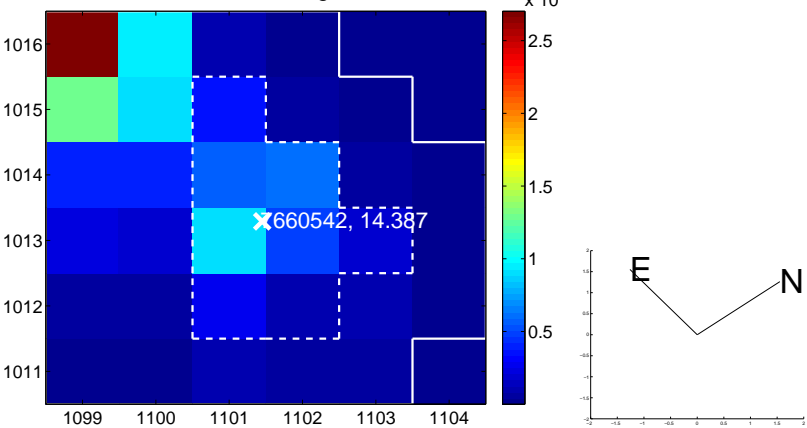
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



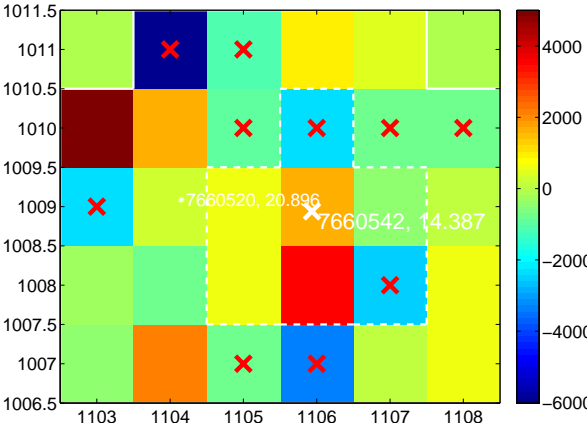
Q7 no difference image



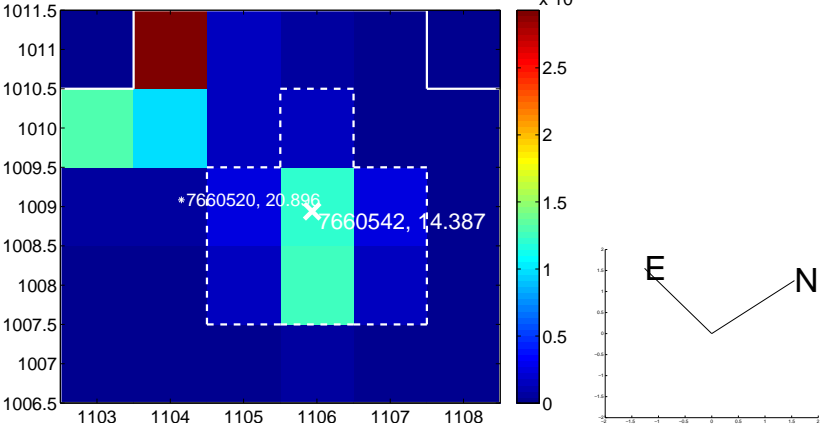
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image

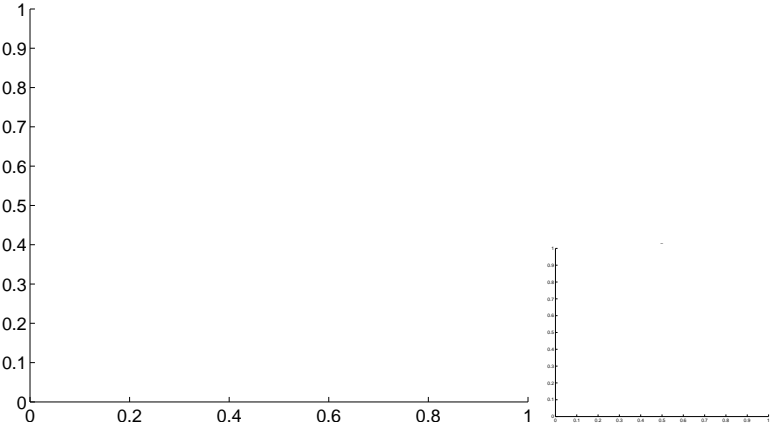


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

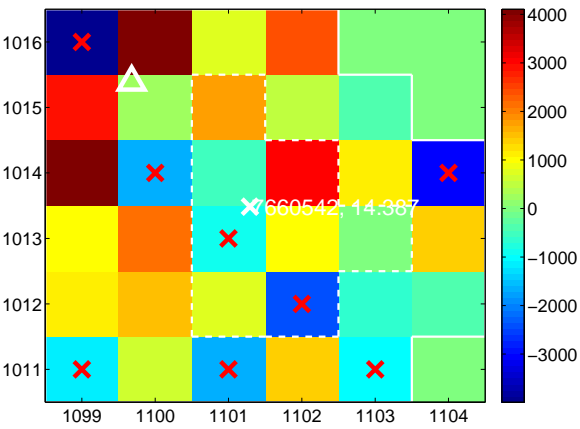
Q9 no difference image



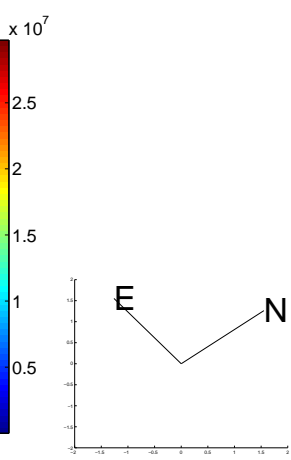
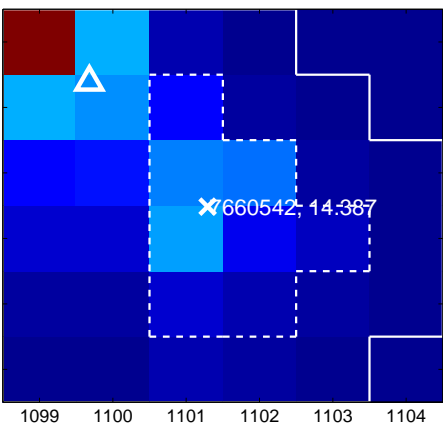
Q9 no OOT image



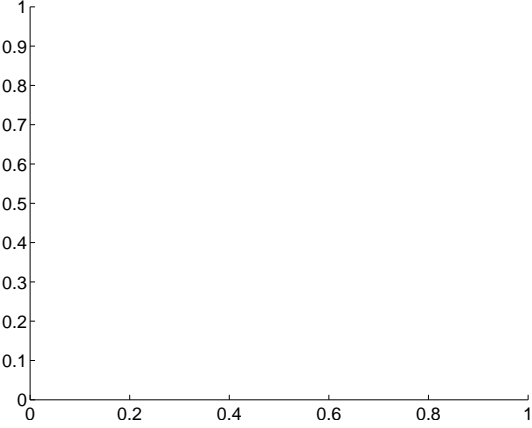
Q10 difference image. Poor Quality



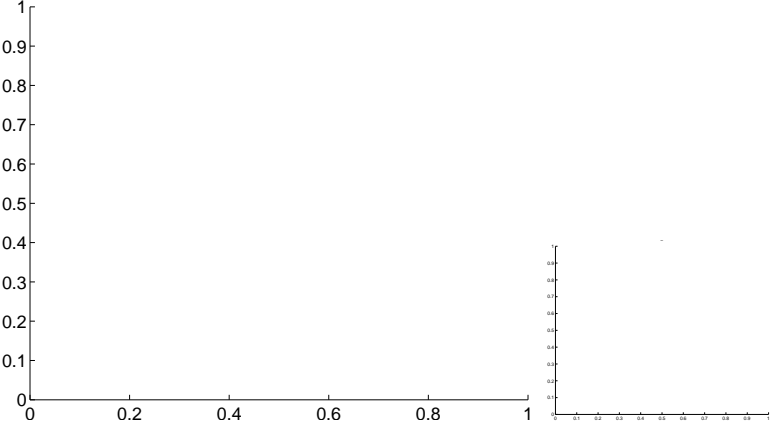
Q10 OOT image



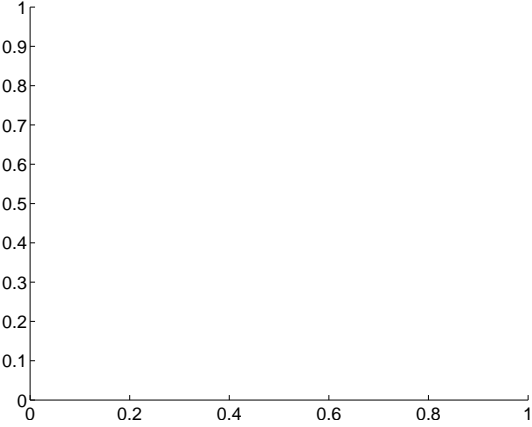
Q11 no difference image



Q11 no OOT image



Q12 no difference image

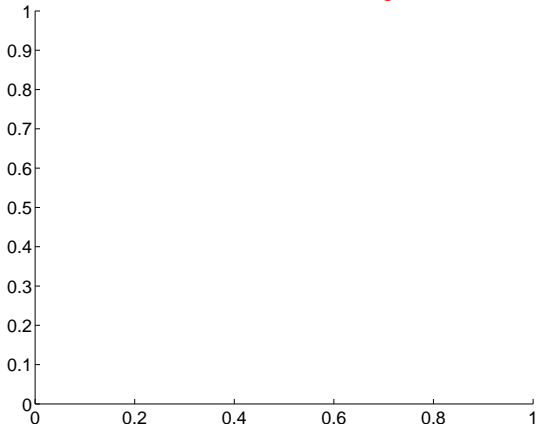


Q12 no OOT image

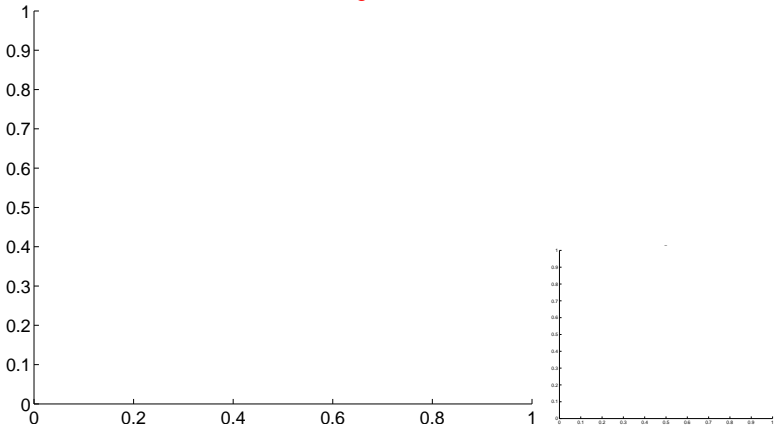


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

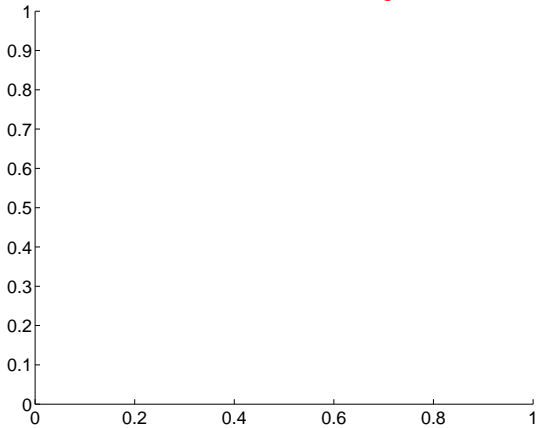
Q13 no difference image



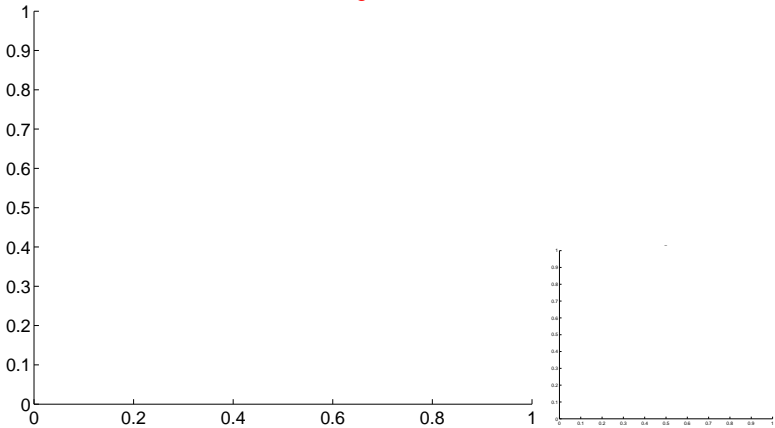
Q13 no OOT image



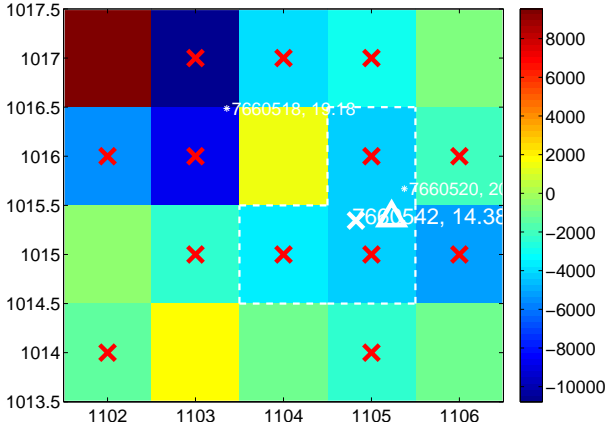
Q14 no difference image



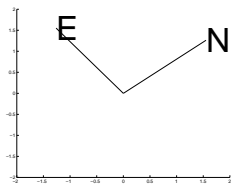
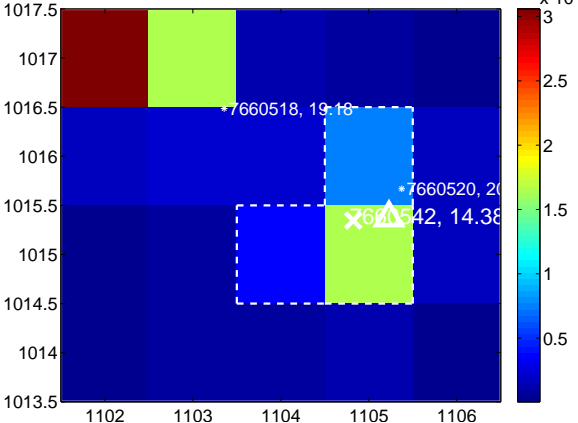
Q14 no OOT image



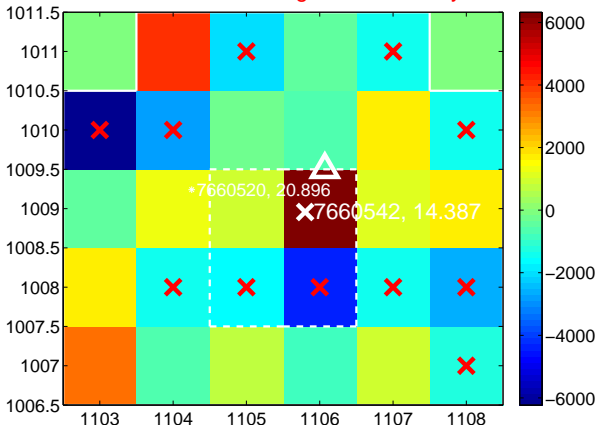
Q15 difference image. Poor Quality



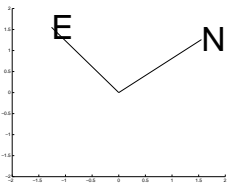
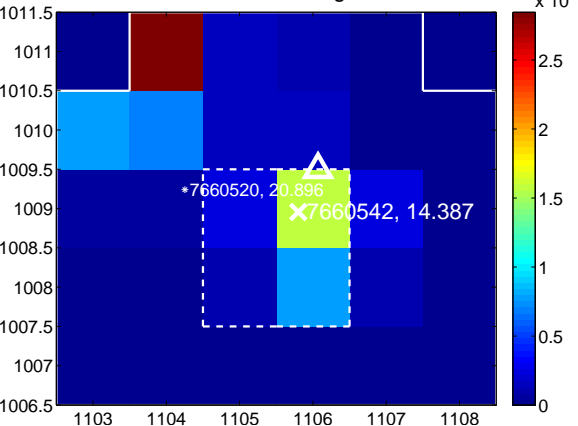
Q15 OOT image



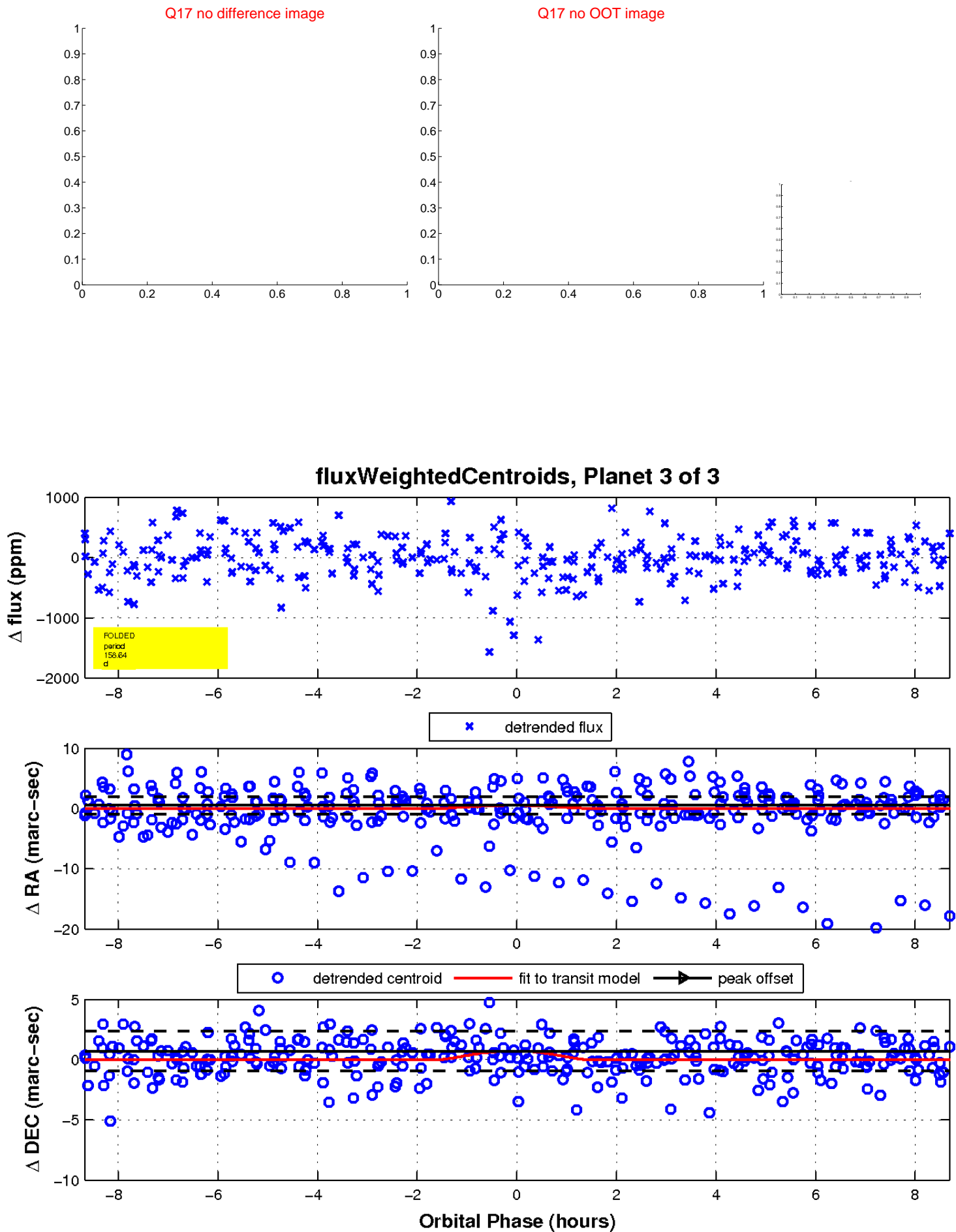
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

Declination

