

KIC 011463950

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})
011463950-01	OBS	7616.01	4.054873	134.732147	148.9	12.860	11.5	12.6	2.53	7064	3.67	3890.35
011463950-02	OBS	No	411.793426	173.563522	1001.3	7.864	8.0	8.7	2.53	7064	9.78	8.21
011463950-03	OBS	No	2.929775	133.896743	71.8	16.917	8.2	7.3	2.53	7064	2.21	6000.39
011463950-04	OBS	No	130.650429	144.142290	838.2	15.440	11.1	13.8	2.53	7064	8.18	37.94
011463950-05	OBS	No	80.209254	153.167289	387.1	12.016	11.6	6.8	2.53	7064	5.32	72.72
011463950-06	OBS	No	401.186630	416.895102	605.9	7.249	8.7	8.8	2.53	7064	7.10	8.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011463950-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL
011463950-03	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
011463950-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011463950-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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 011463950-01

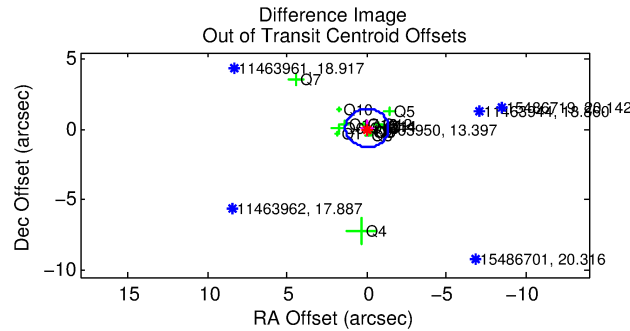
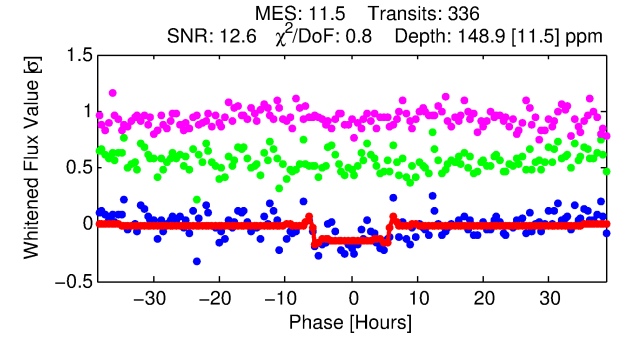
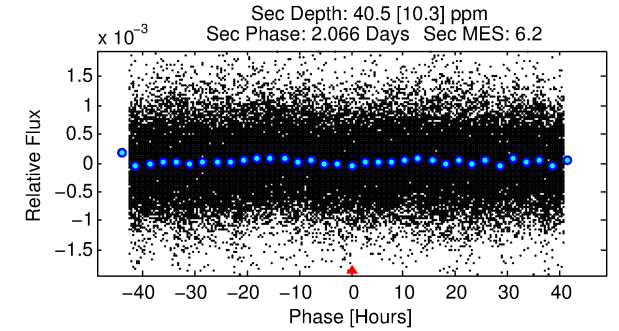
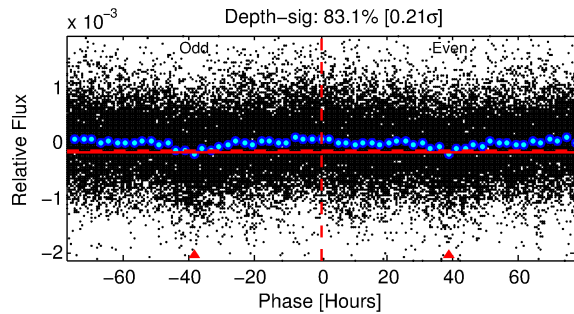
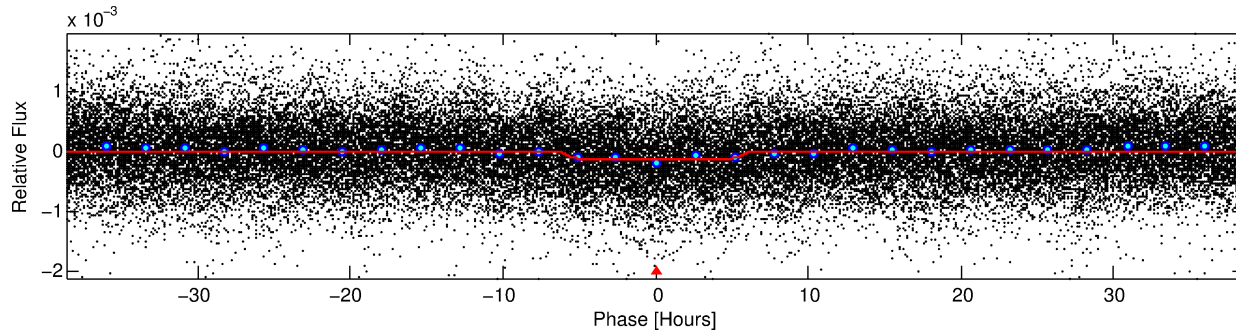
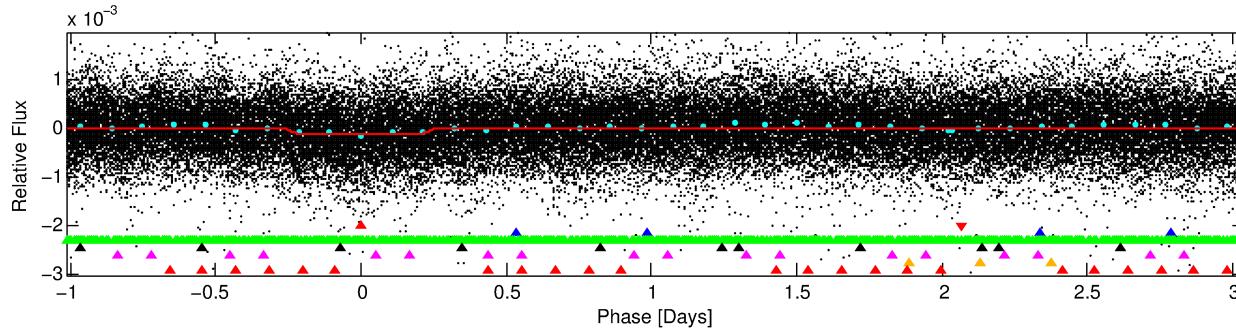
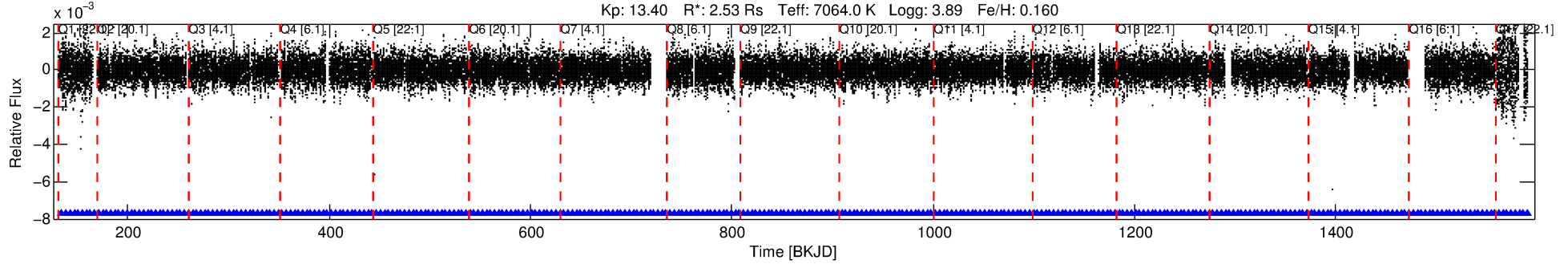
No Significant Match Found

DV One-Page Summary

KIC: 11463950 Candidate: 1 of 7 Period: 4.055 d

KOI: K07616.01 Corr: 0.969

Kp: 13.40 R*: 2.53 Rs Teff: 7064.0 K Logg: 3.89 Fe/H: 0.160



DV Fit Results:

Period = 4.05487 [0.00004] d
Epoch = 134.7321 [0.0054] BKJD
Rp/R* = 0.0133 [0.0006]
a/R* = 1.38 [0.08]
b = 0.93 [0.02]
Seff = 3890.35 [1269.65]
Teq = 2014 [164] K
Rp = 3.67 [0.89] Re
a = 0.0606 [0.0129] AU
Ag = 6.09 [2.55] [1.99σ]
Teffp = 4891 [335] K [7.71σ]

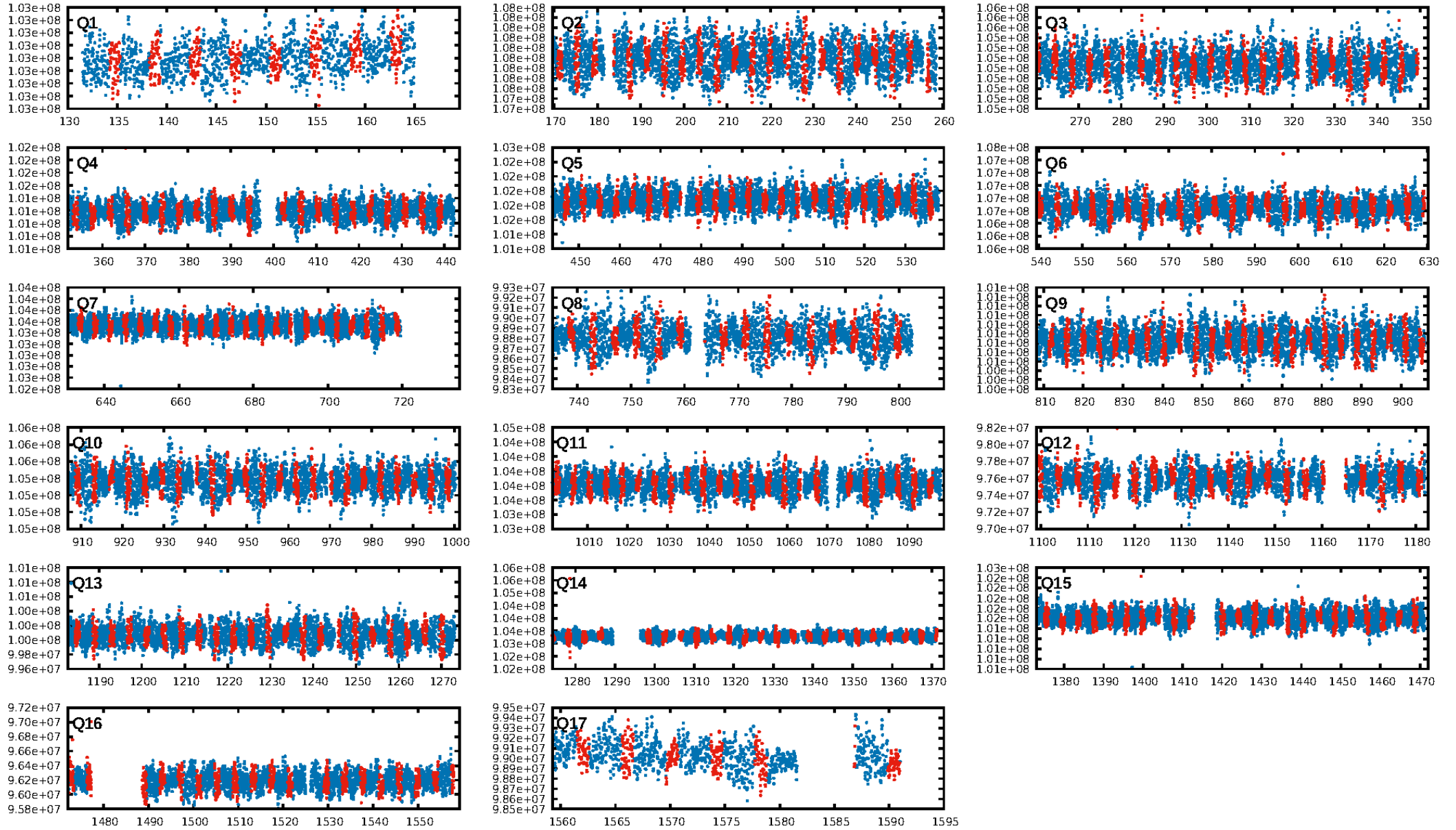
DV Diagnostic Results:

ShortPeriod-sig: 79.6% [1.27σ]
LongPeriod-sig: 100.0% [110.34σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [322/322]
GhostDiagnostic-chr: 1.51
Centroid-sig: 2.1%
Centroid-so: 0.293 arcsec [1.51σ]
OotOffset-rm: 0.116 arcsec [0.26σ]
KicOffset-rm: 0.170 arcsec [0.30σ]
OotOffset-st: 3/3/4/5 [15]
KicOffset-st: 3/3/4/5 [15]
DiffImageQuality-fgm: 0.27 [4/15]
DiffImageOverlap-fno: 0.94 [16/17]

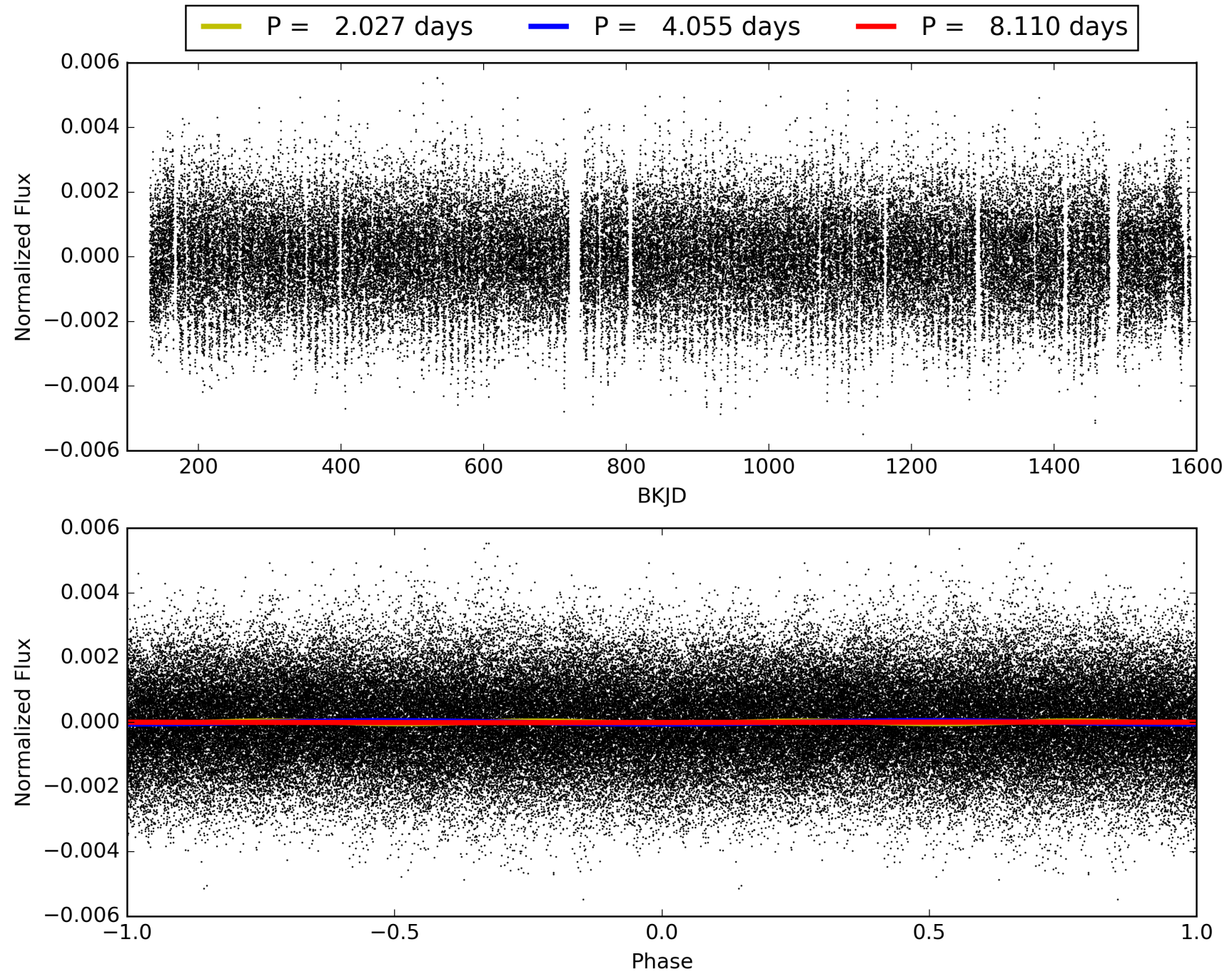
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011463950-01, PDC Light Curves

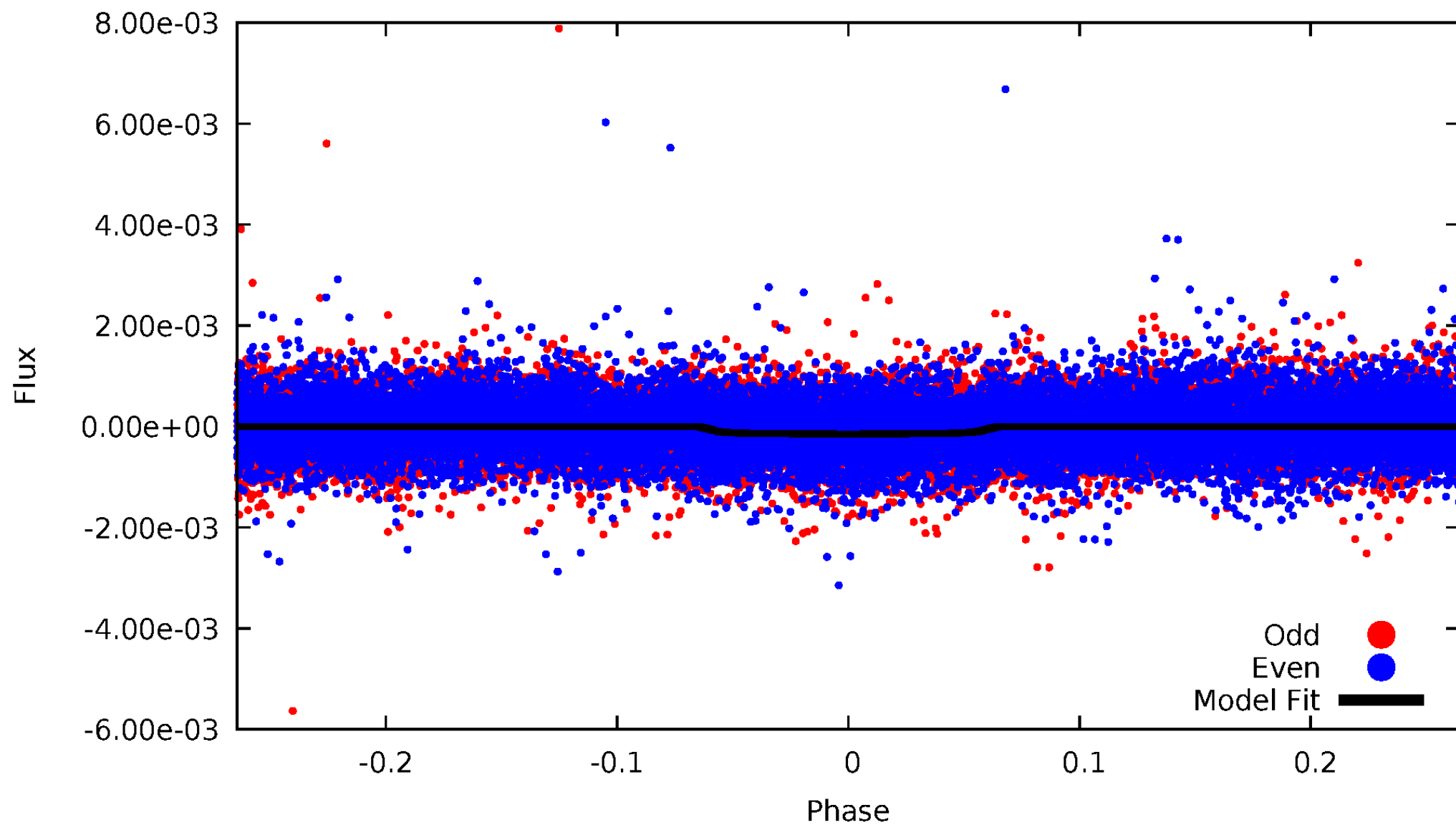


TCE 011463950-01



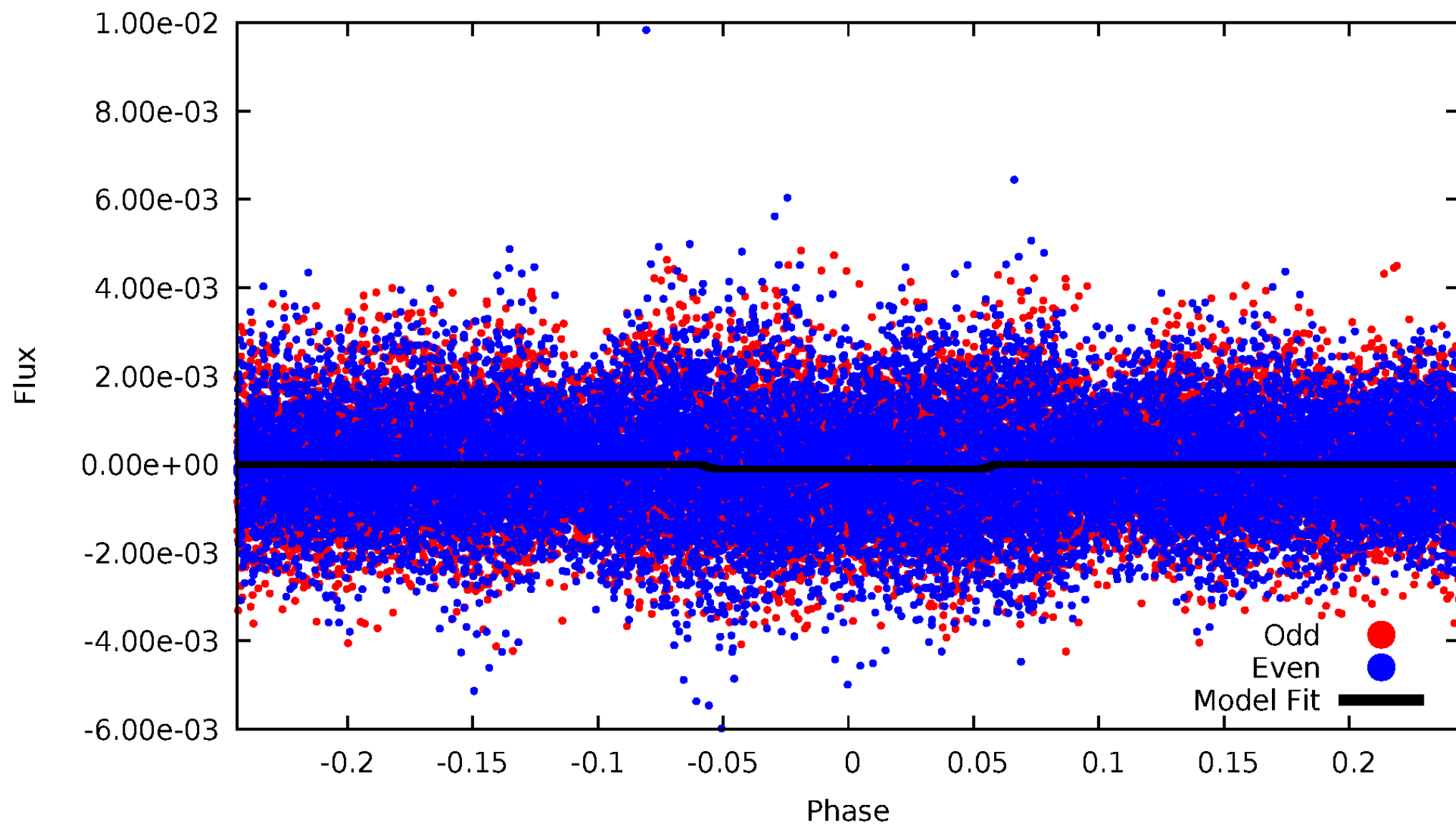
DV Odd/Even

TCE 011463950-01



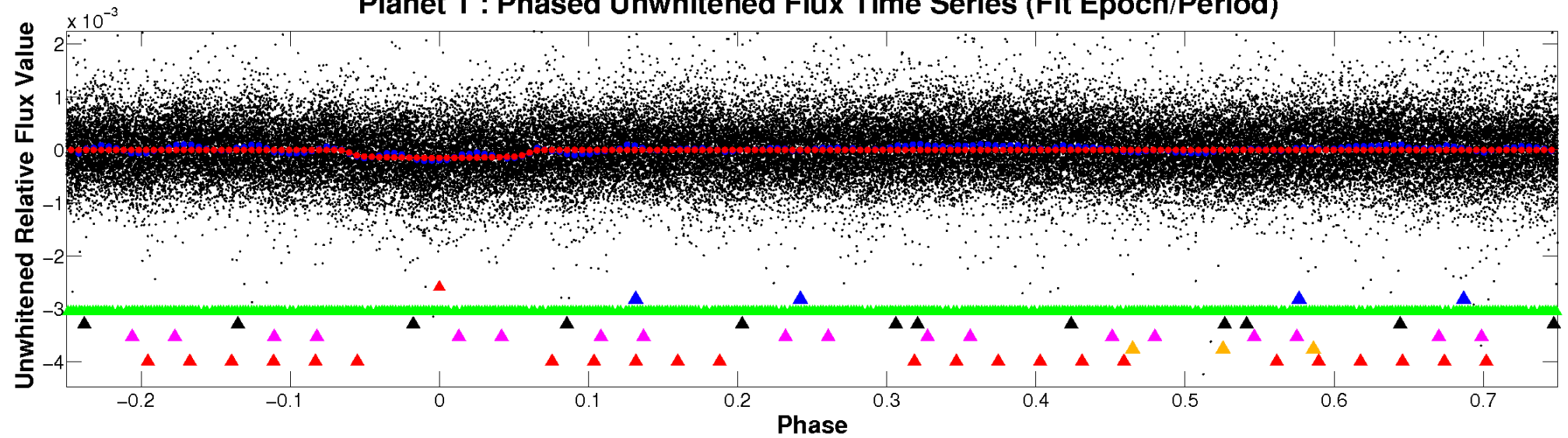
ALT Odd/Even

TCE 011463950-01

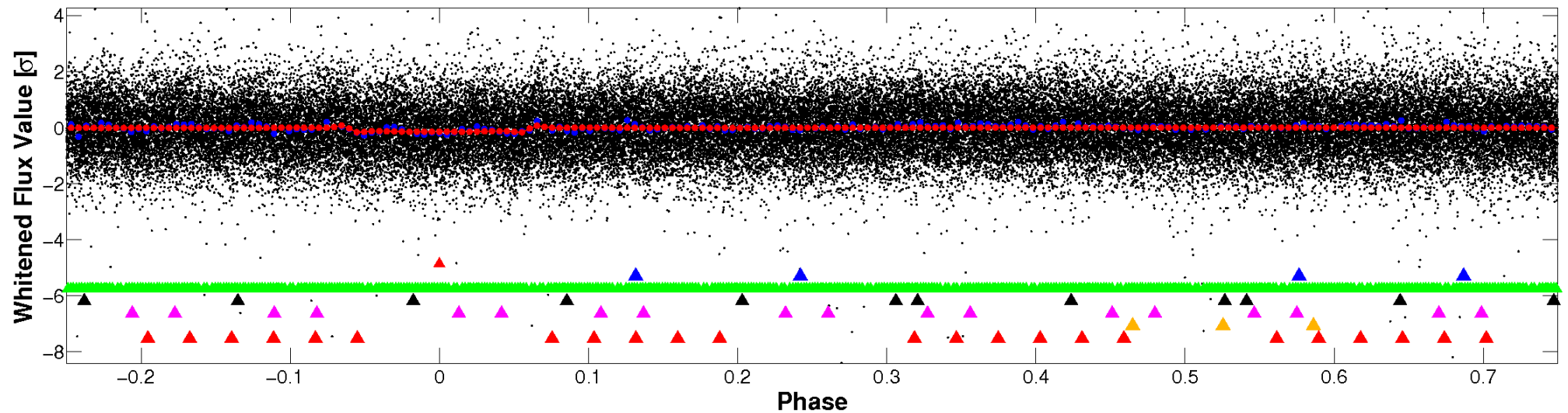


Non-Whitened Vs. Whitened Light Curve

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

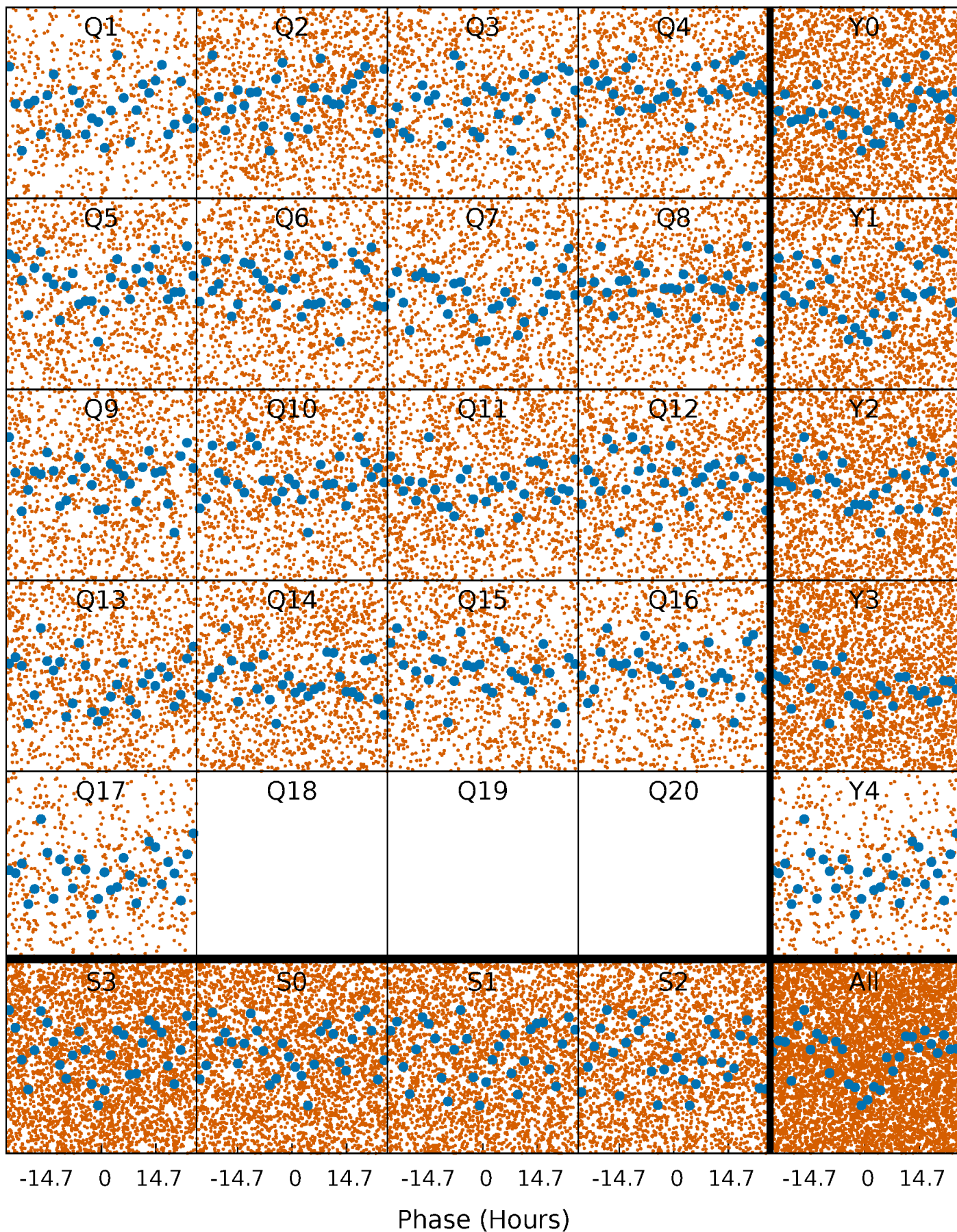


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



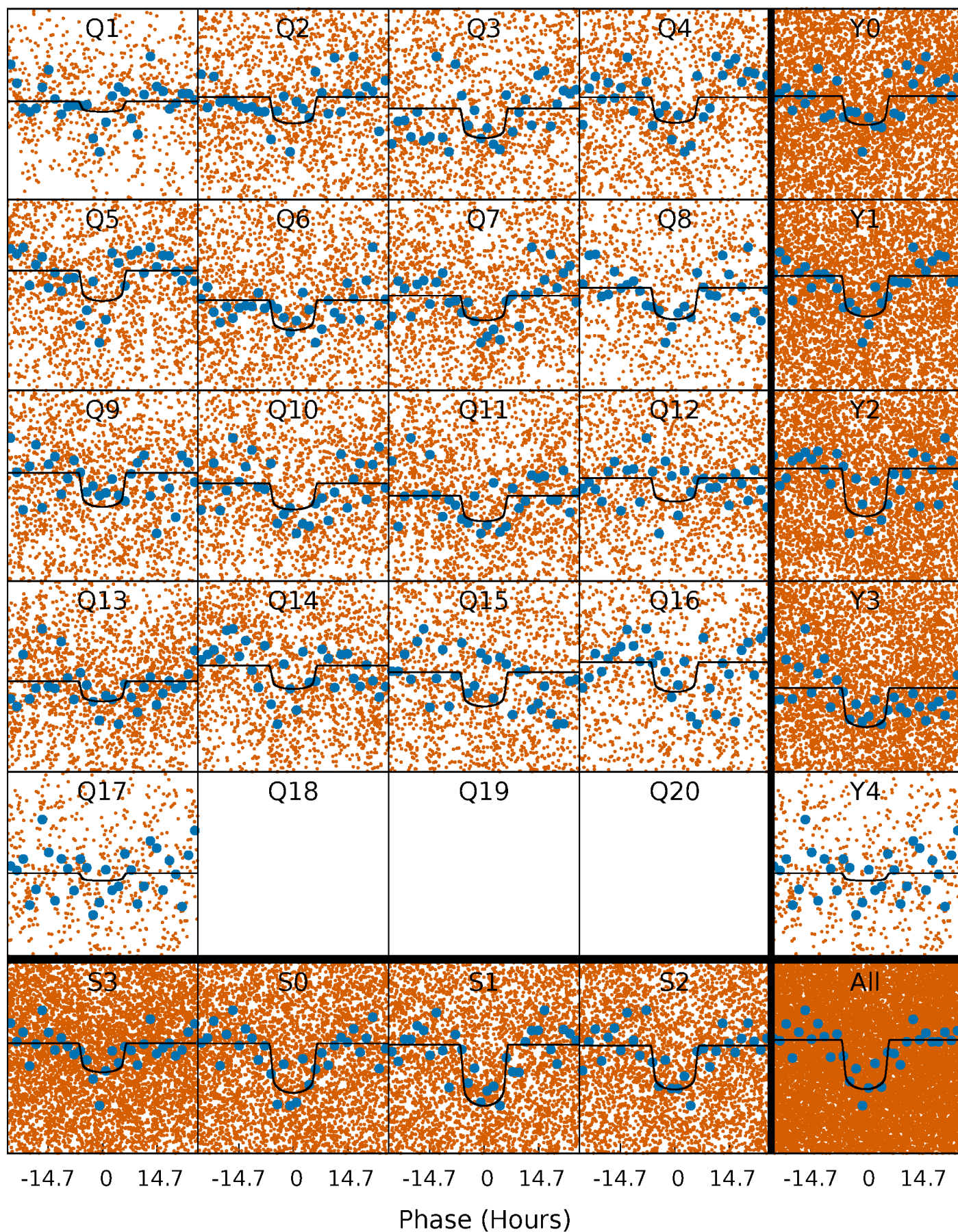
PDC Quarter-Phased Transit Curves

TCE 011463950-01 P= 4.054873 Days $T_0=134.732147$ (BKJD)



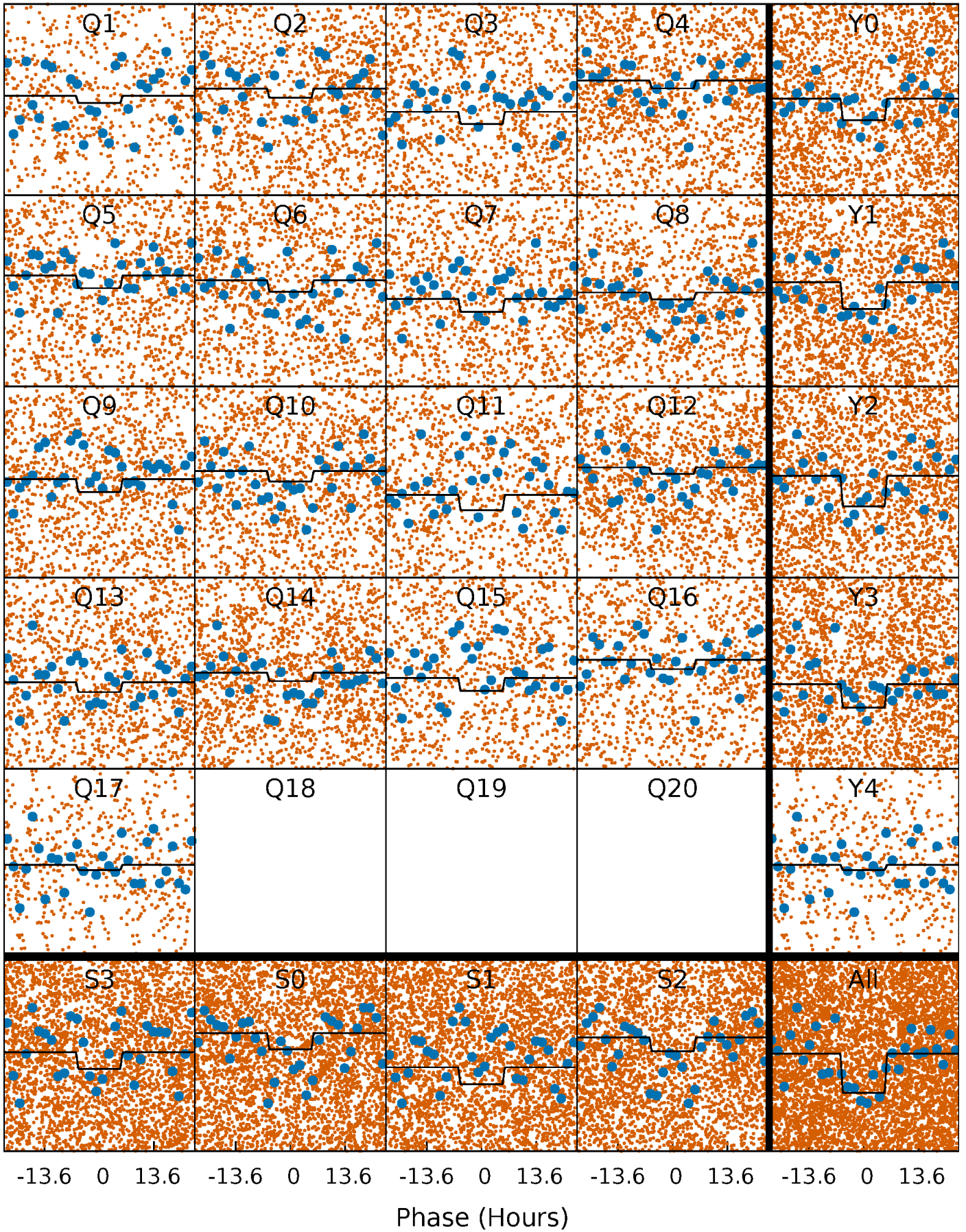
DV Quarter-Phased Transit Curves

TCE 011463950-01 P= 4.054873 Days $T_0=134.732147$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

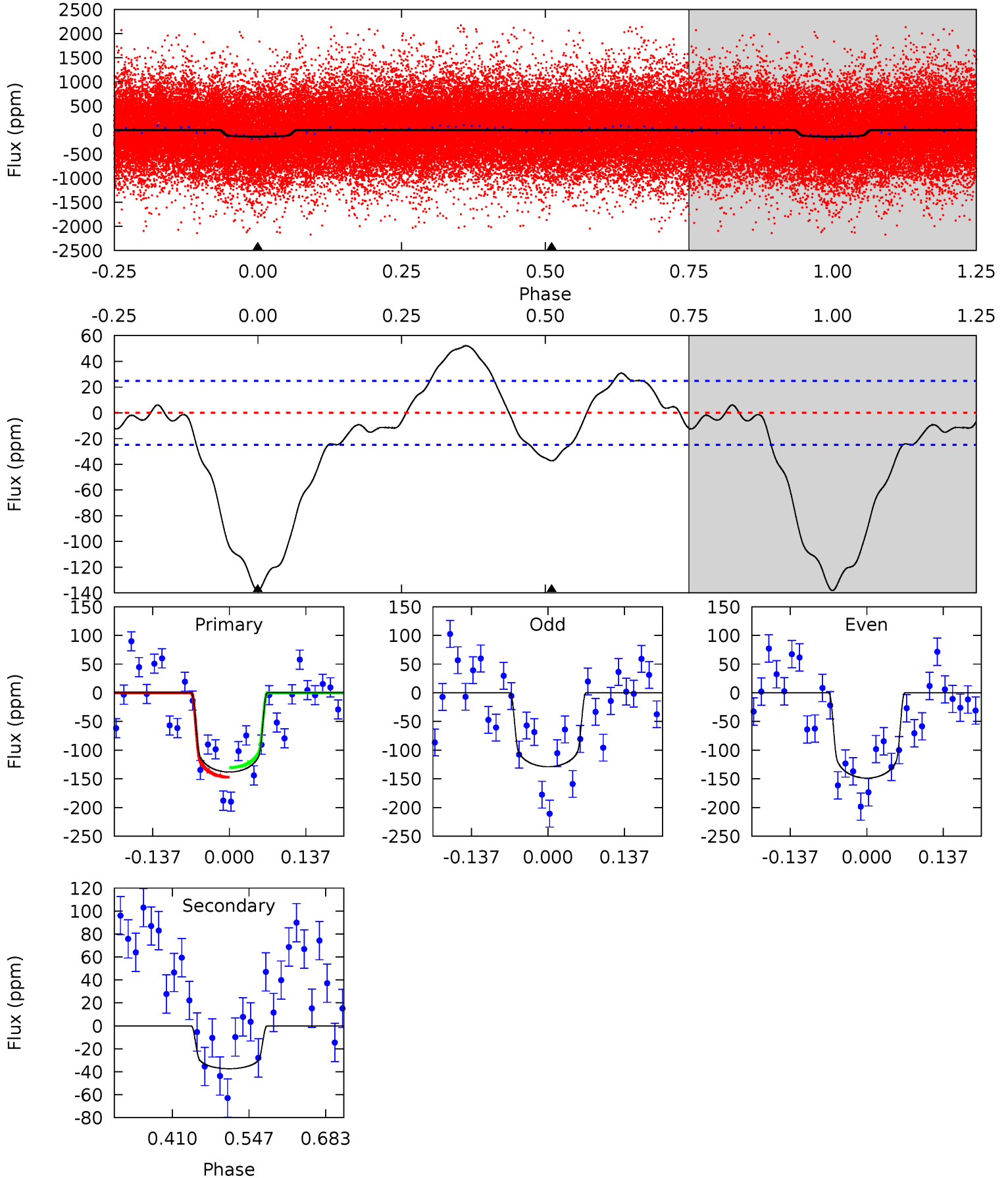
TCE 011463950-01 P= 4.054989 Days $T_0=134.711016$ (BKJD)



DV Model-Shift Uniqueness Test

011463950-01, P = 4.054873 Days, E = 130.677274 Days

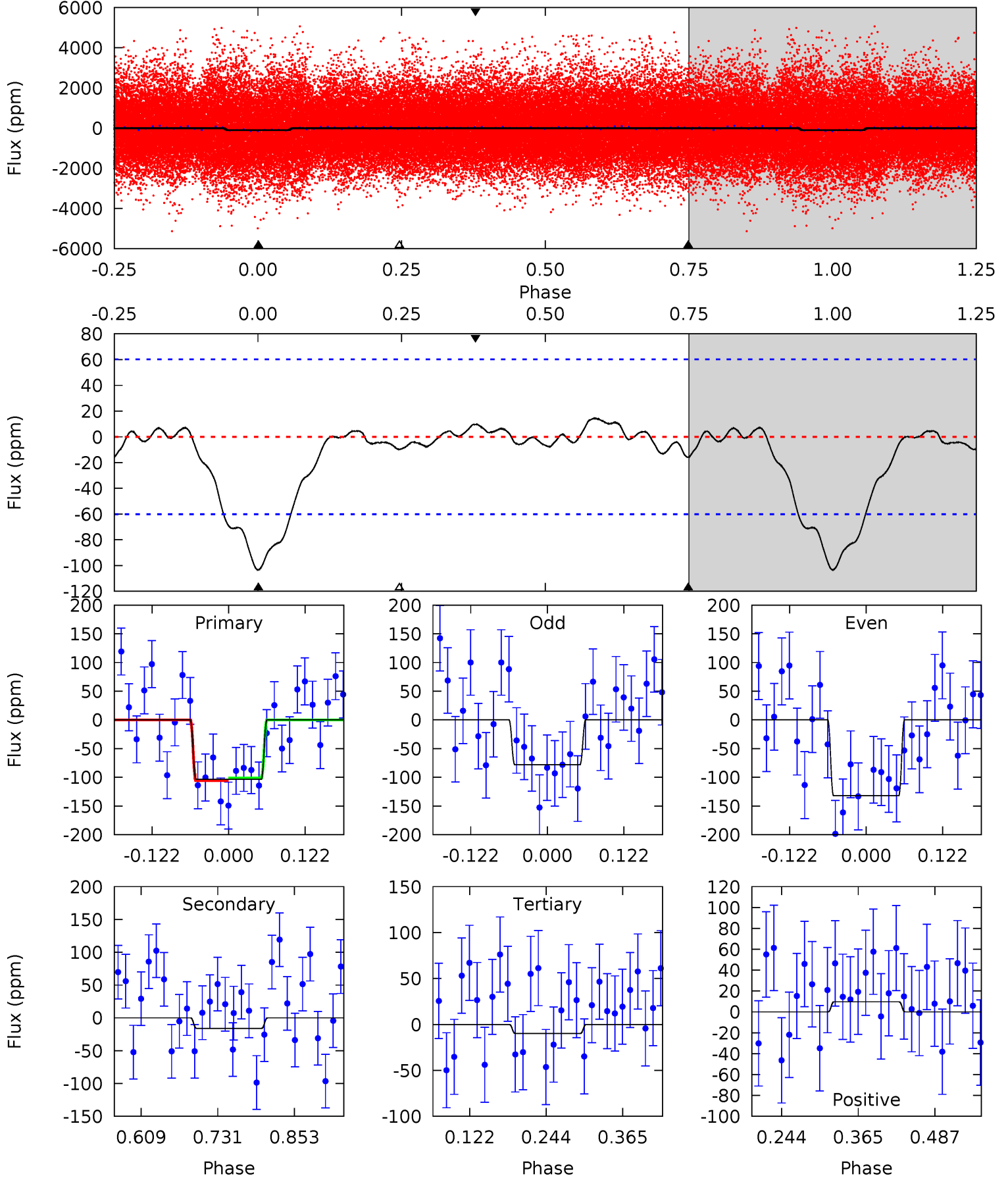
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	6.77	0	0	4.50	1.49	3.73	25.0	25.0	6.77	6.77	1.81	1.03	0.27	1.53



Alt Model-Shift Uniqueness Test

011463950-01, P = 4.054989 Days, E = 130.656027 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.77	1.20	0.74	0.73	4.52	1.55	0.46	7.03	7.04	0.46	0.47	2.02	0.96	0.12	0.18



Stellar Parameters For KIC 011463950

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7064^{+74}_{-95}	$3.888^{+0.182}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$2.531^{+0.405}_{-0.607}$	$1.806^{+0.090}_{-0.217}$	$0.157^{+0.156}_{-0.049}$
	+1%/-1%	+5%/-3%	+94%/-94%	+16%/-24%	+5%/-12%	+100%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011463950-01 / KOI 7616.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-37 ± 6	$3.60^{+0.41}_{-0.44}$	2796^{+129}_{-160}	4808^{+185}_{-200}	$5.704^{+1.994}_{-1.320}$
Alt.	-16 ± 13	$2.77^{+0.33}_{-0.36}$	2791^{+128}_{-156}	4519^{+599}_{-1328}	$4.310^{+3.791}_{-3.492}$

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

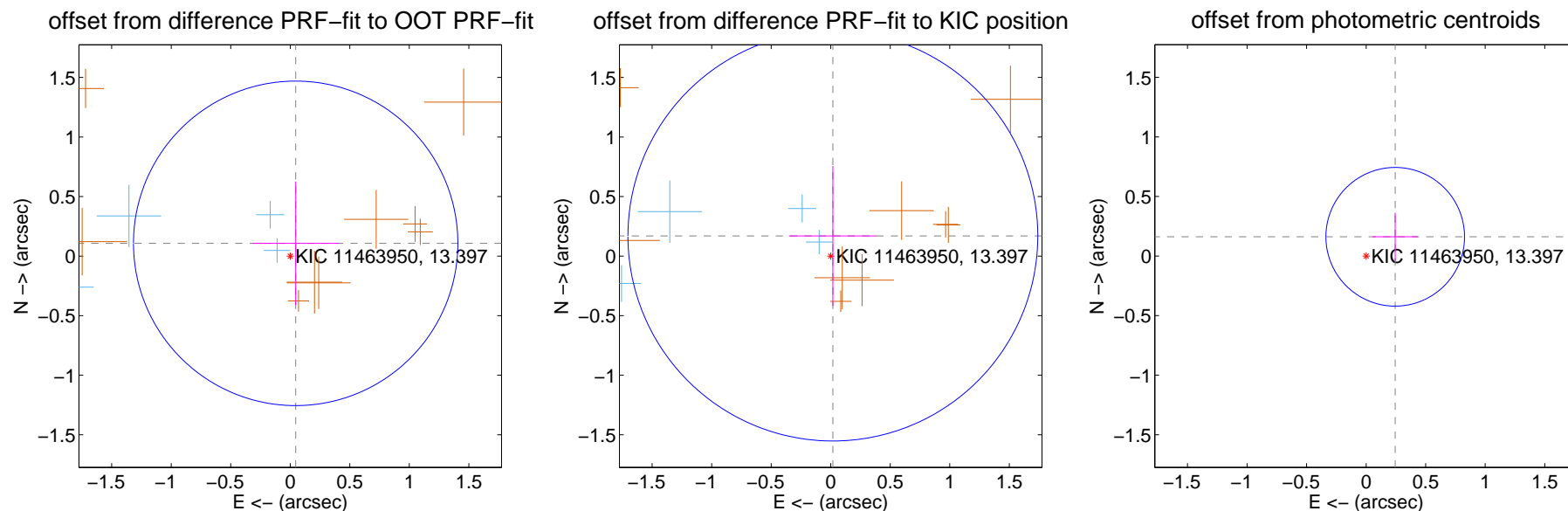
DV Centroid Data

Supplemental centroid analysis for 011463950-01. Kepler magnitude: 13.40. Transit SNR 12.57

There are 4 quarters with good PRF difference image offsets

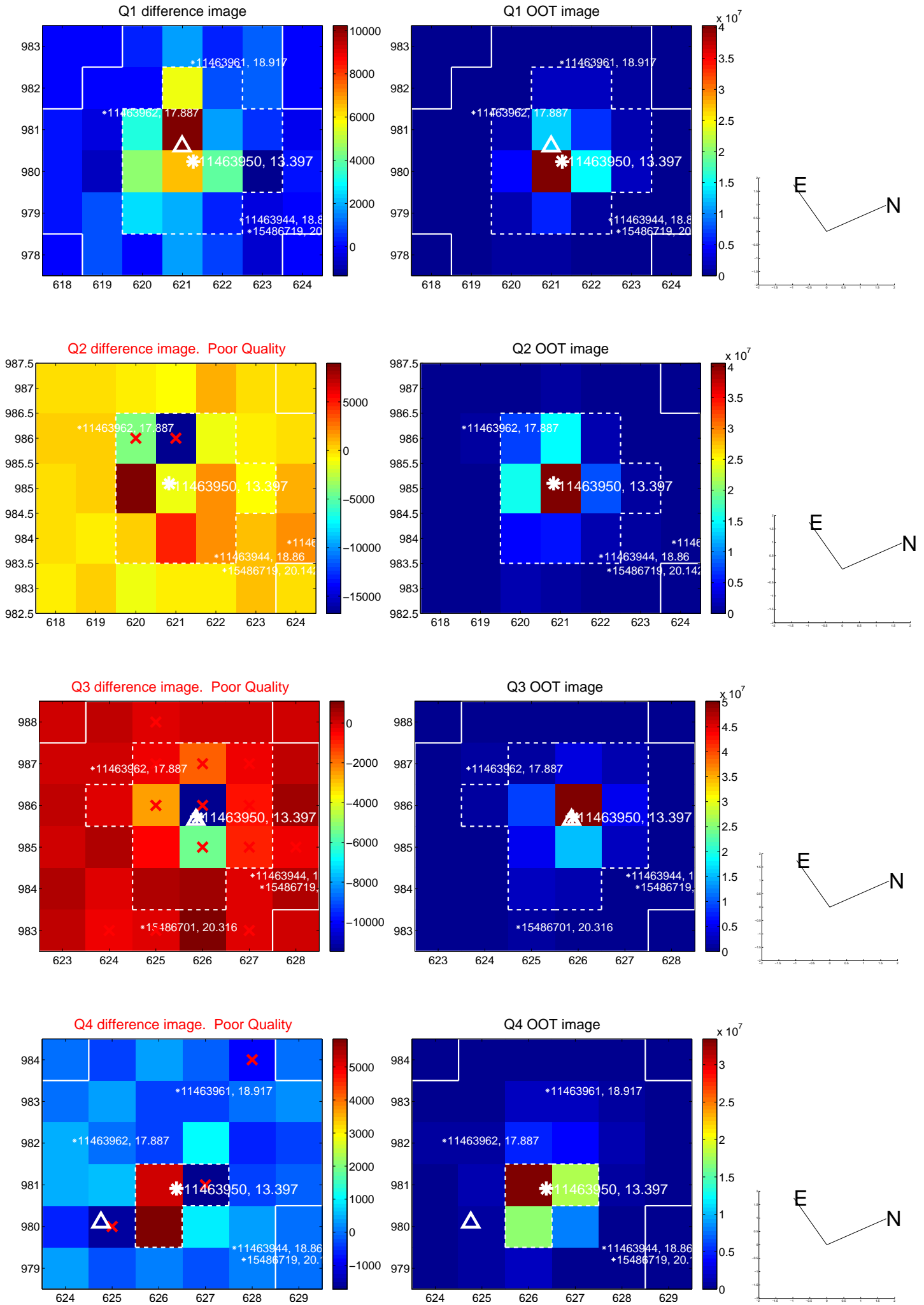
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.116 ± 0.454	0.26	-0.045 ± 0.362	0.107 ± 0.519
PRF-fit source offset from KIC position	0.170 ± 0.574	0.30	-0.018 ± 0.368	0.169 ± 0.587
photometric centroid source offset	0.29 ± 0.19	1.51	-0.24 ± 0.19	0.16 ± 0.20

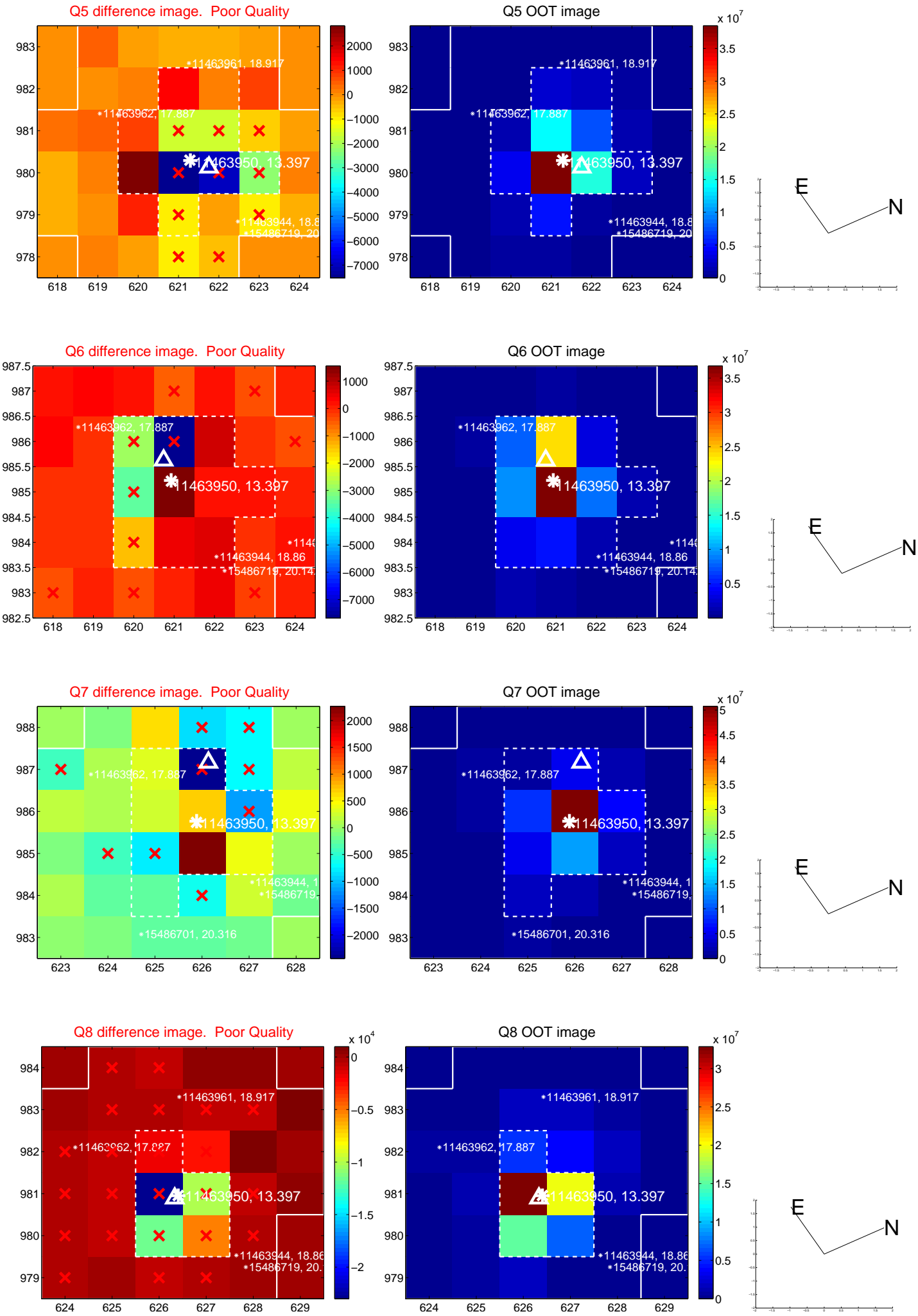


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

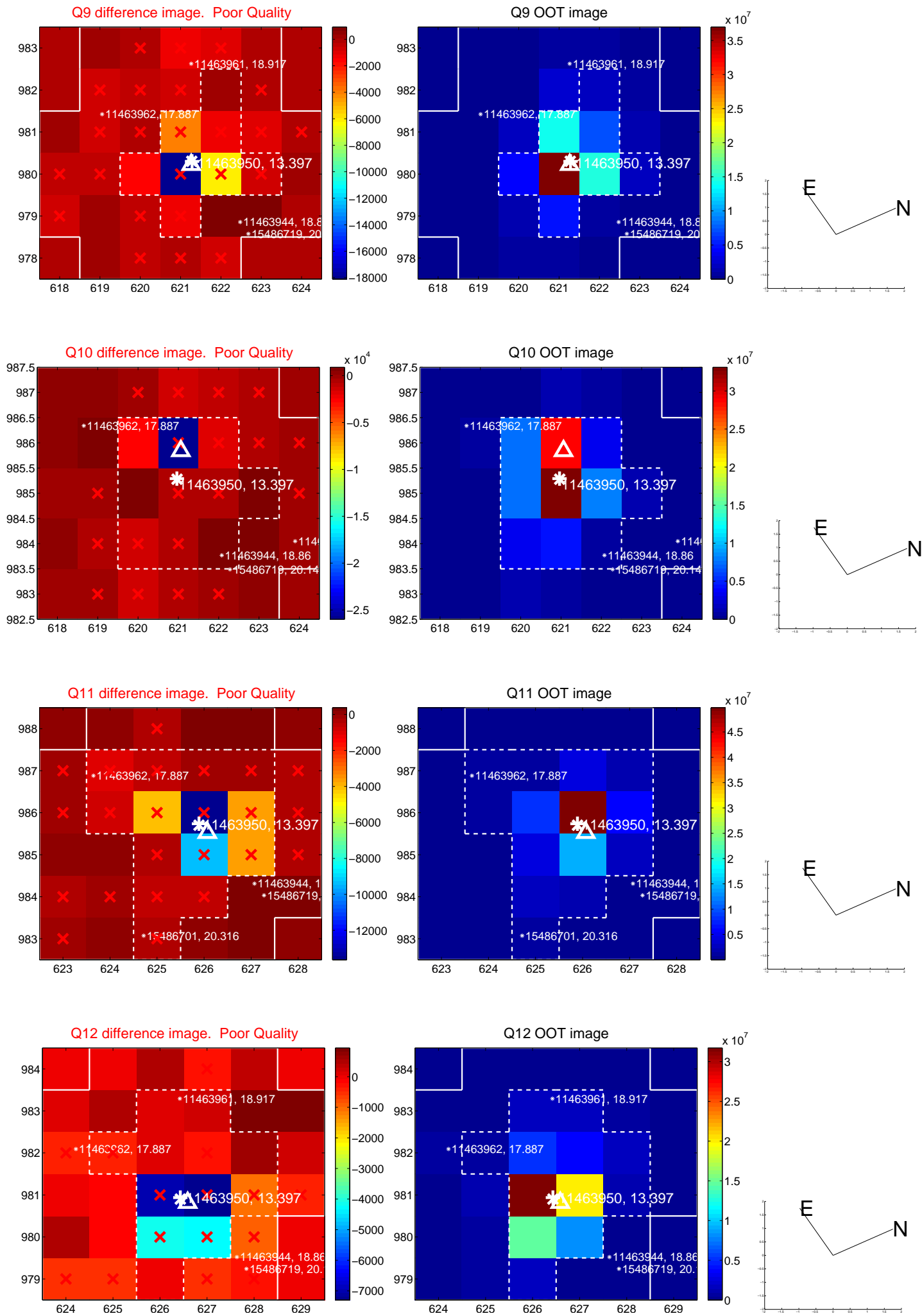
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



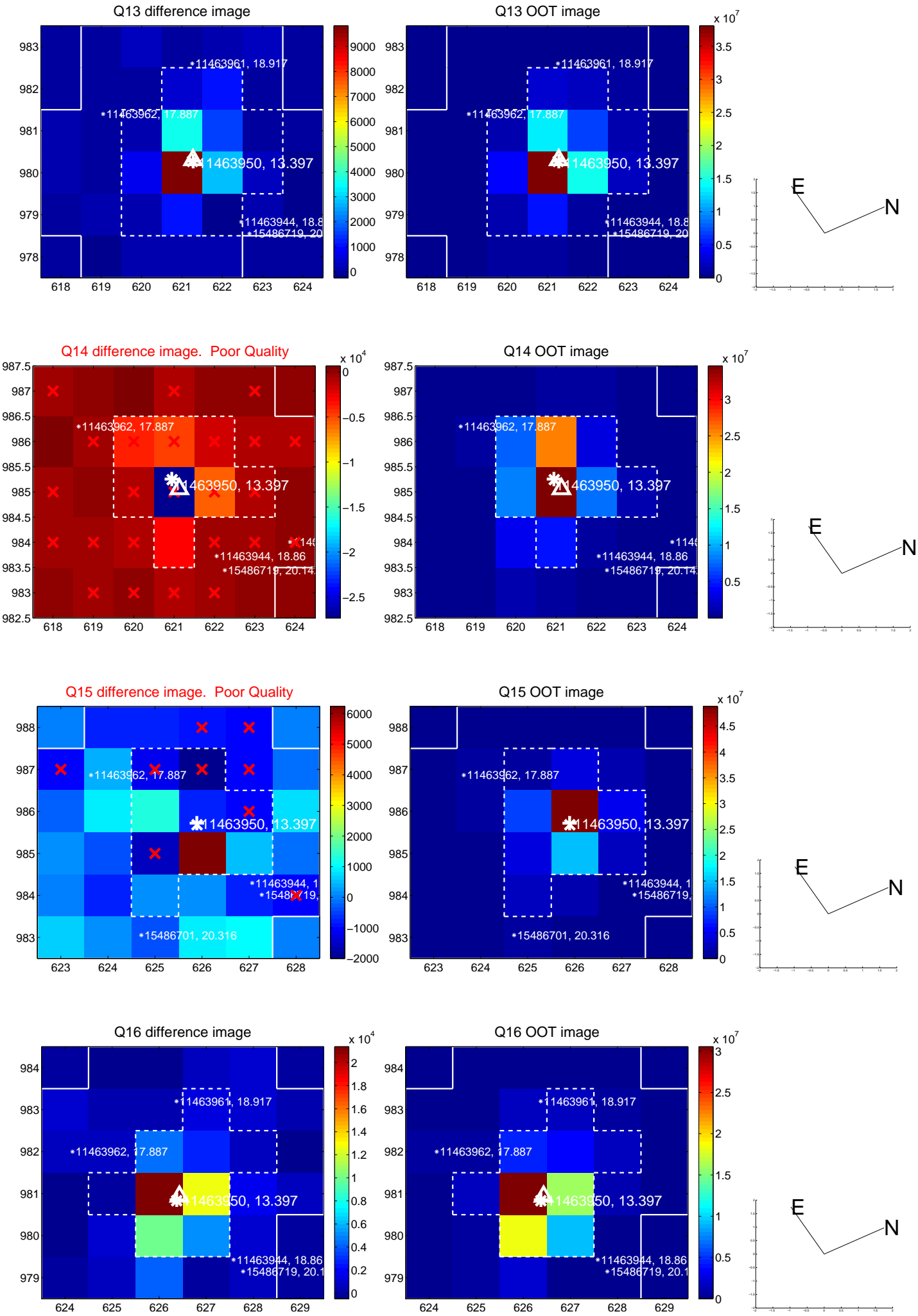
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



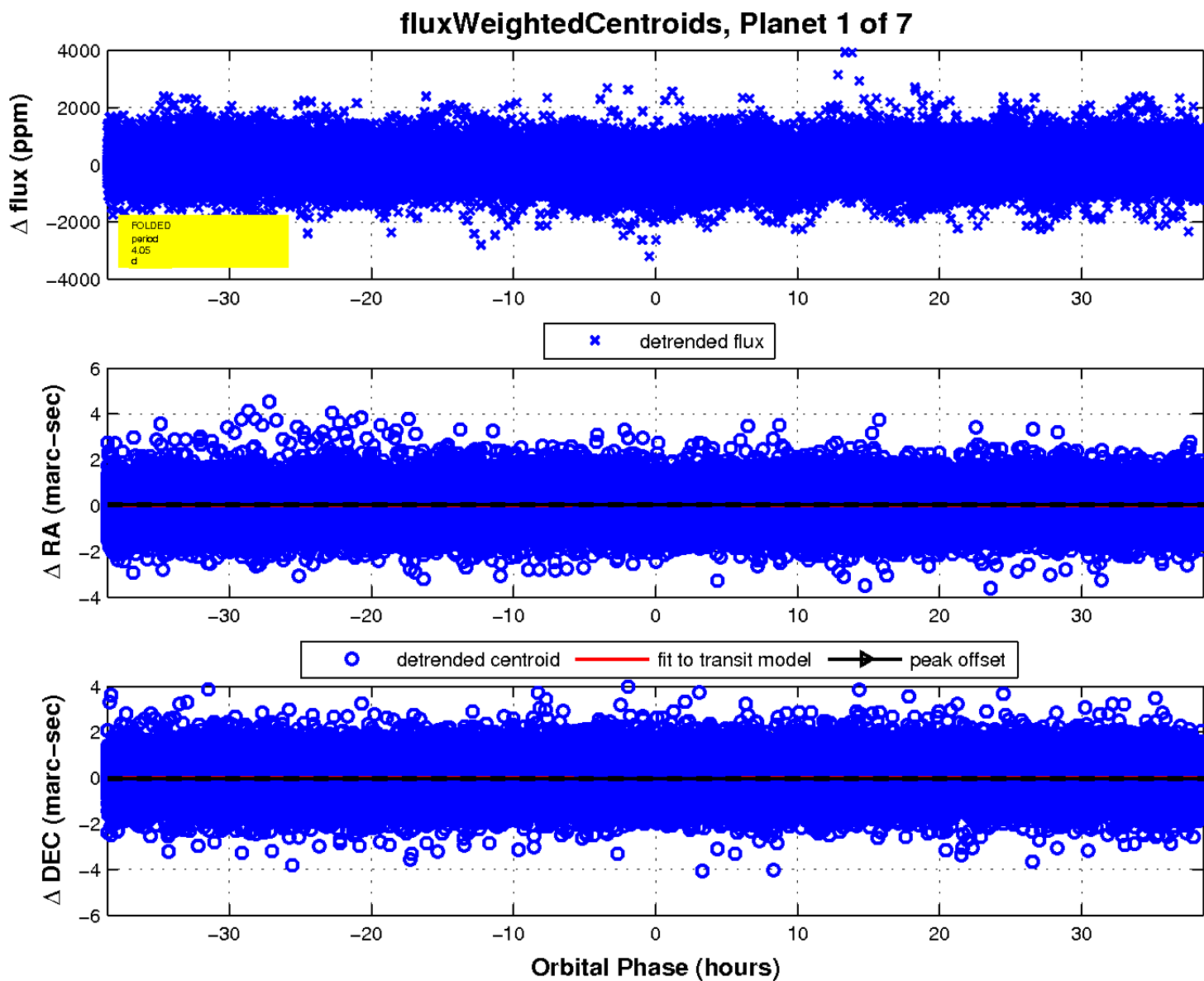
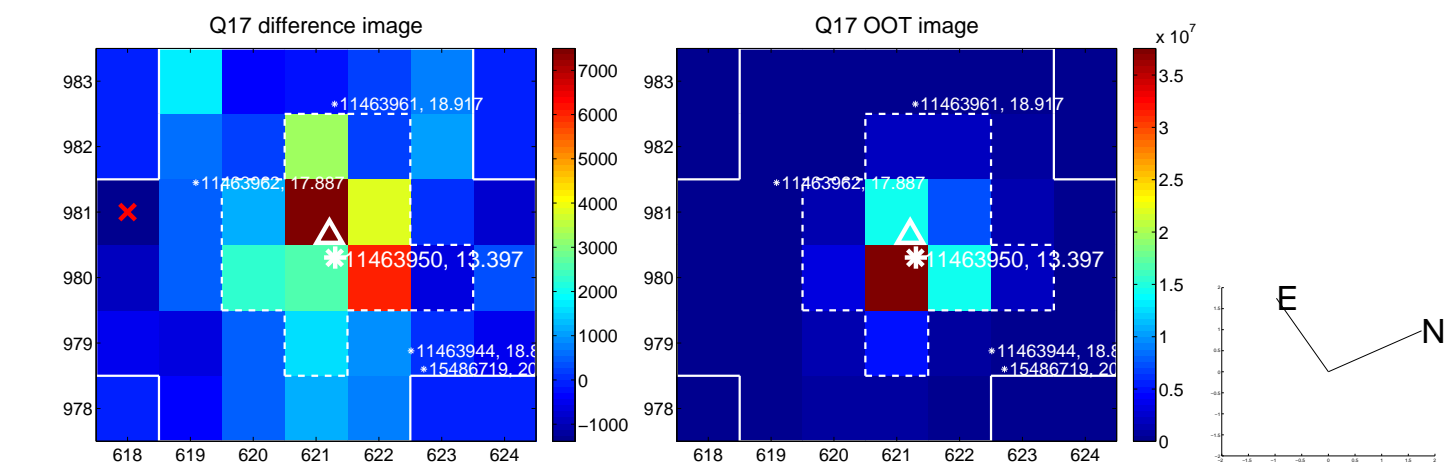
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



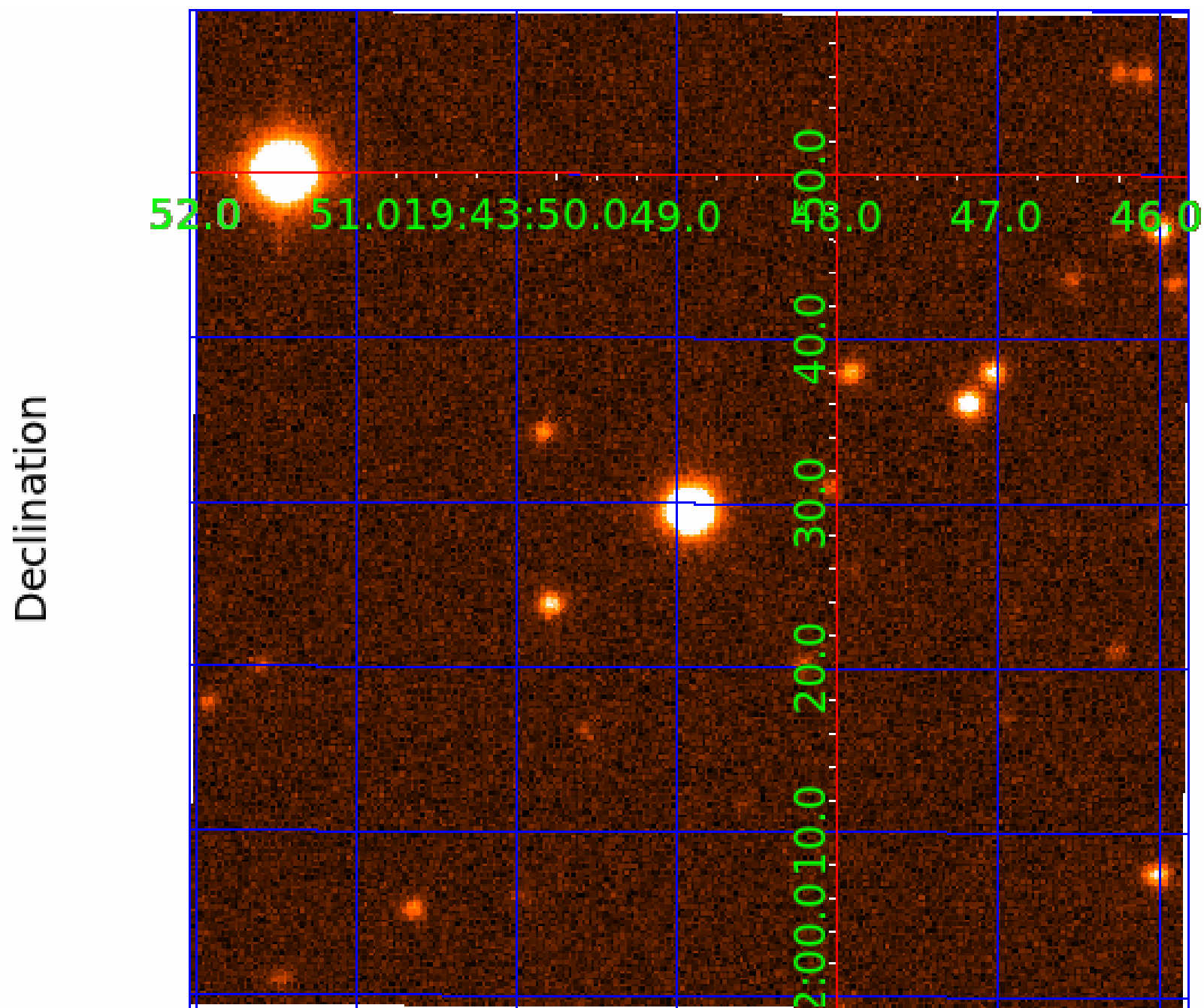
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011463950

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})
011463950-01	OBS	7616.01	4.054873	134.732147	148.9	12.860	11.5	12.6	2.53	7064	3.67	3890.35
011463950-02	OBS	No	411.793426	173.563522	1001.3	7.864	8.0	8.7	2.53	7064	9.78	8.21
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011463950-05	OBS	No	80.209254	153.167289	387.1	12.016	11.6	6.8	2.53	7064	5.32	72.72
011463950-06	OBS	No	401.186630	416.895102	605.9	7.249	8.7	8.8	2.53	7064	7.10	8.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011463950-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL
011463950-03	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
011463950-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011463950-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

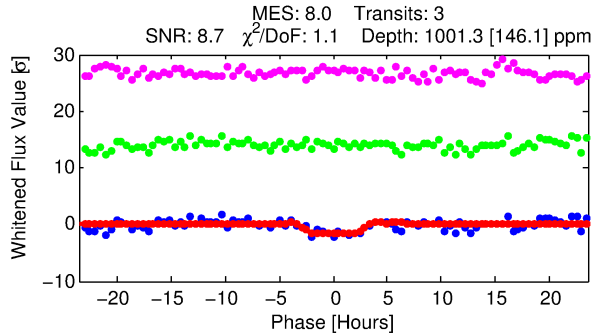
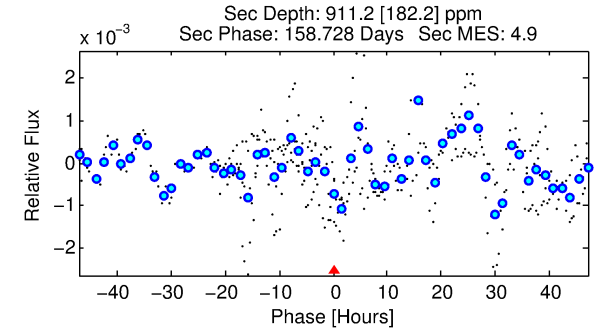
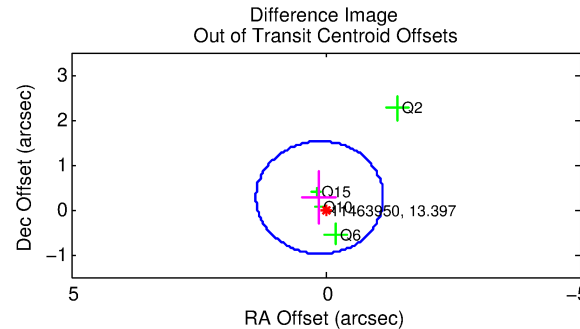
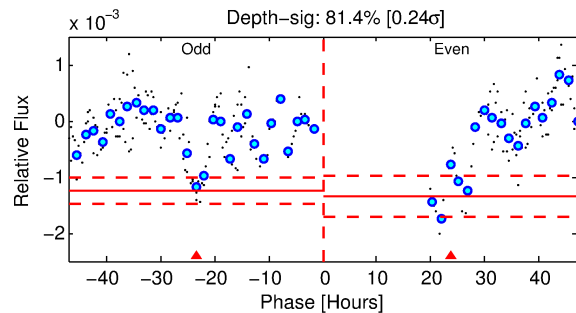
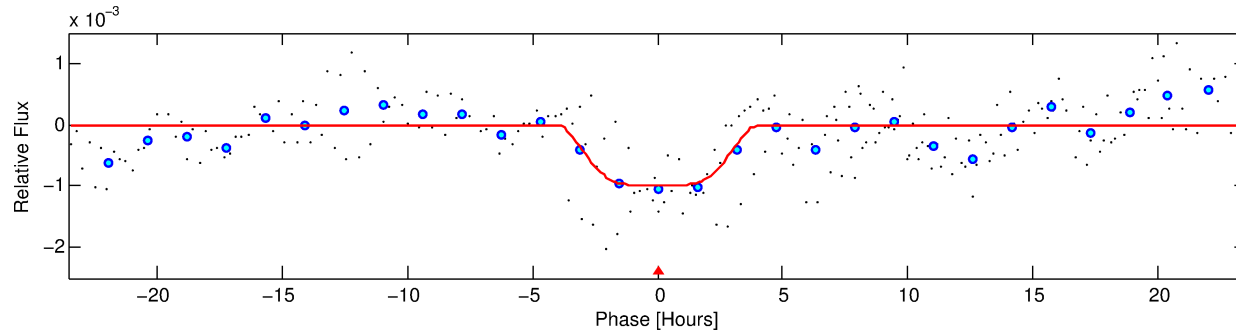
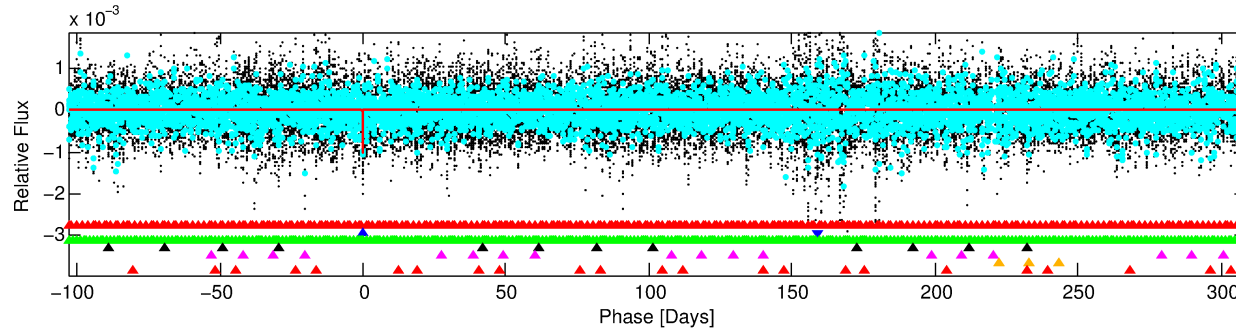
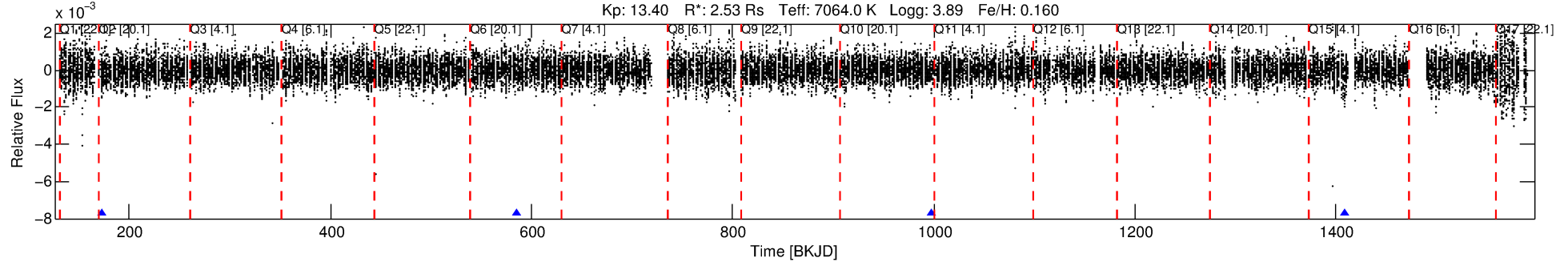
Ephemeris Match Information For 011463950-02

No Significant Match Found

DV One-Page Summary

KIC: 11463950 Candidate: 2 of 7 Period: 411.793 d
KOI: K07616 Corr: No Ephemeris Match

Kp: 13.40 R*: 2.53 Rs Teff: 7064.0 K Logg: 3.89 Fe/H: 0.160



DV Fit Results:

Period = 411.79343 [0.00816] d
Epoch = 173.5635 [0.0169] BKJD
Rp/R* = 0.0354 [0.0032]
a/R* = 167.79 [31.24]
b = 0.95 [0.02]
Seff = 8.21 [2.68]
Teq = 432 [35] K
Rp = 9.78 [2.50] Re
a = 1.3193 [0.2801] AU
Ag = 9116.83 [3820.30] [2.39σ]
Teffp = 6521 [446] K [13.61σ]

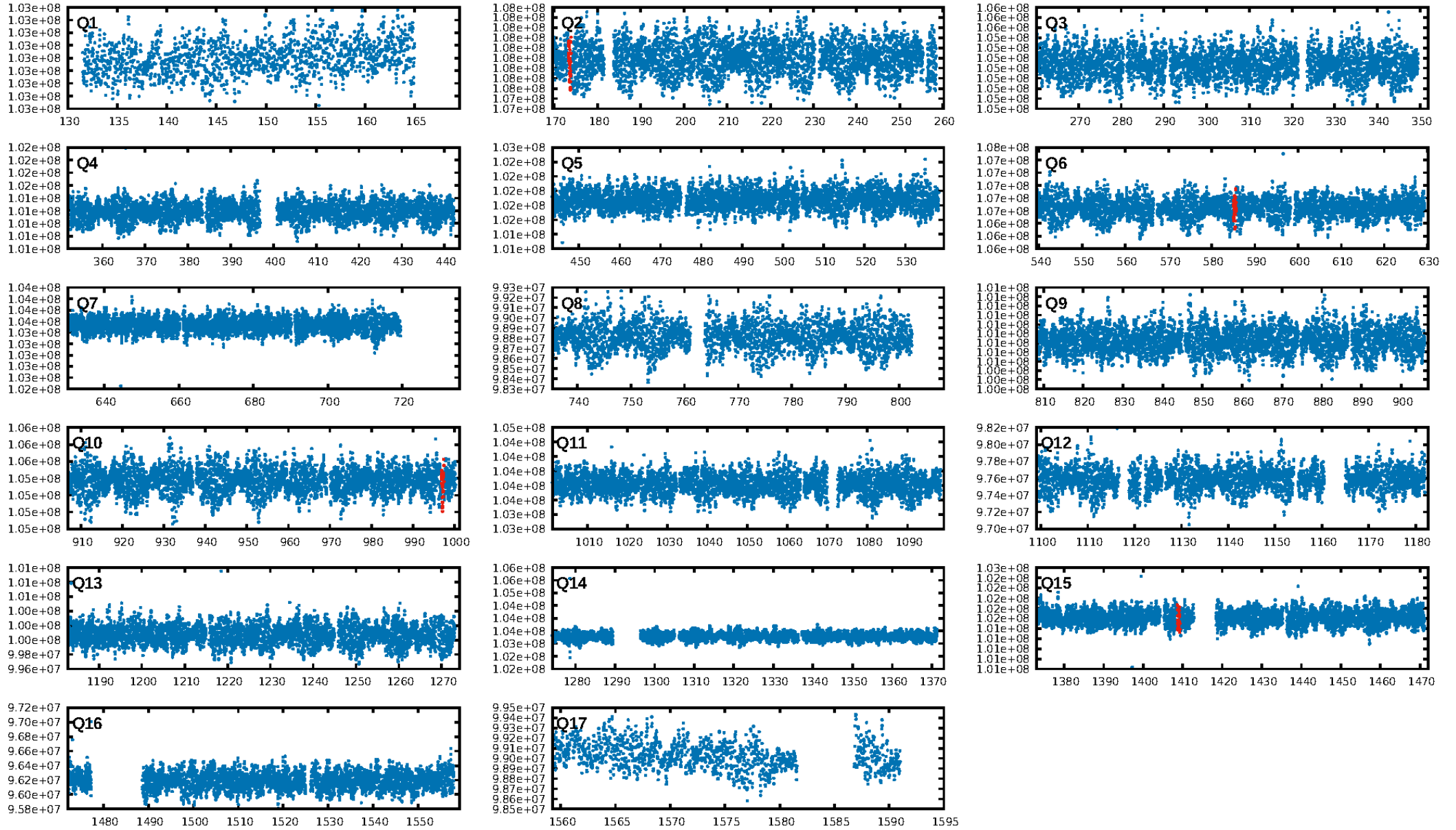
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.80σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 88.9%
ModelChiSquareGof-sig: 89.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -56.47
Centroid-sig: 6.8%
Centroid-so: 0.432 arcsec [1.11σ]
OotOffset-rm: 0.291 arcsec [0.70σ]
OotOffset-st: 3/1/0/0 [4]
KicOffset-rm: 0.341 arcsec [0.75σ]
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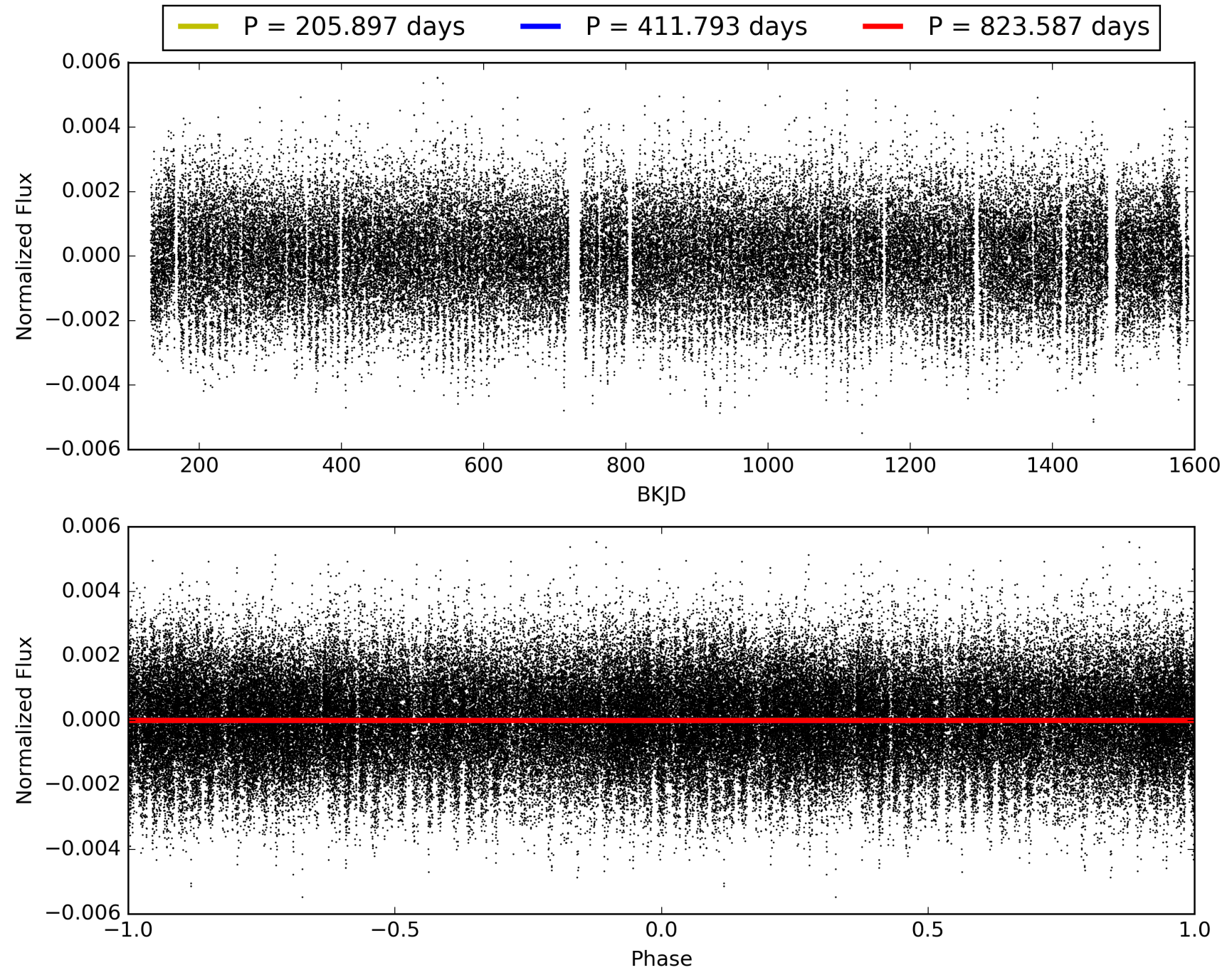
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:12 Z

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

TCE 011463950-02, PDC Light Curves

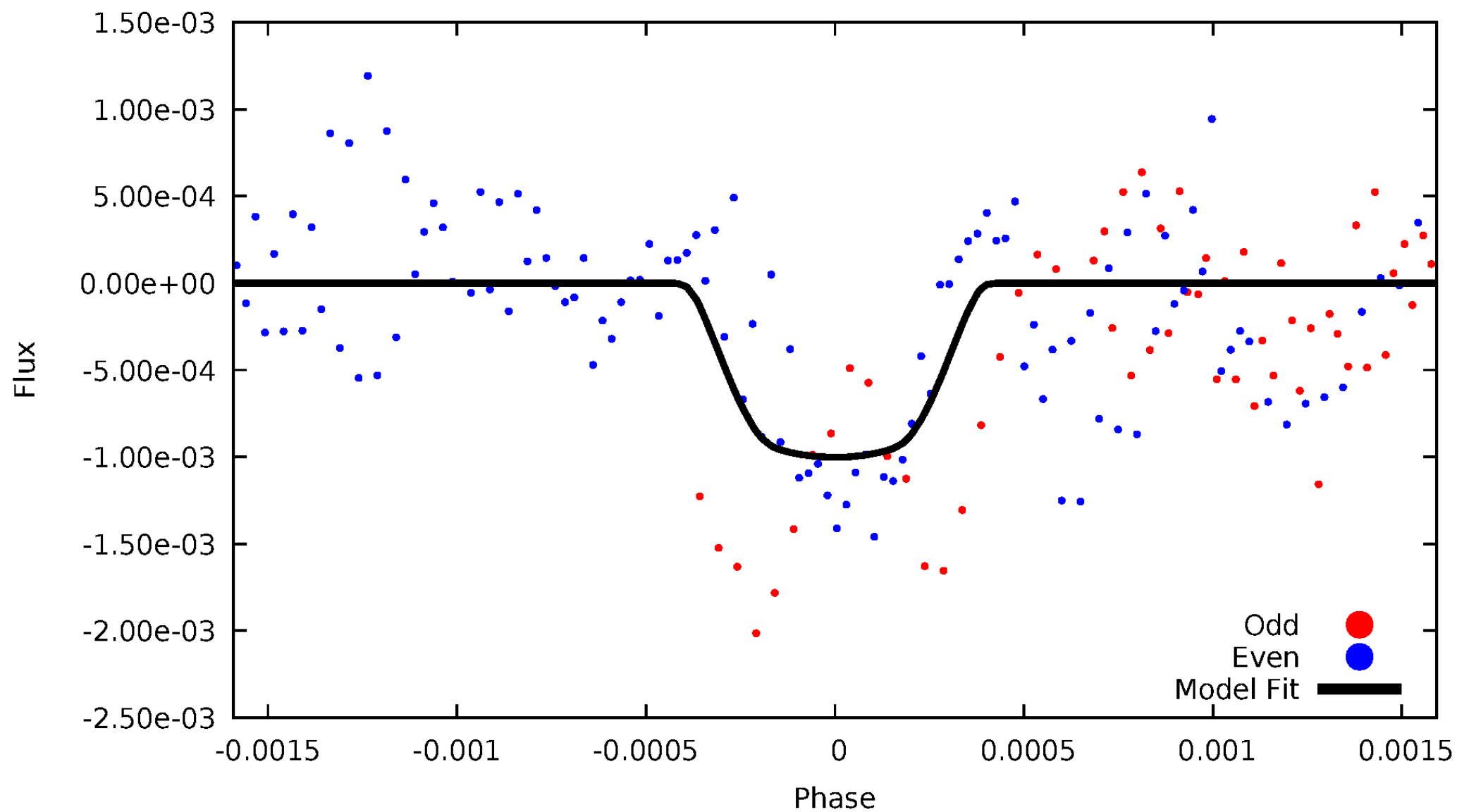


TCE 011463950-02



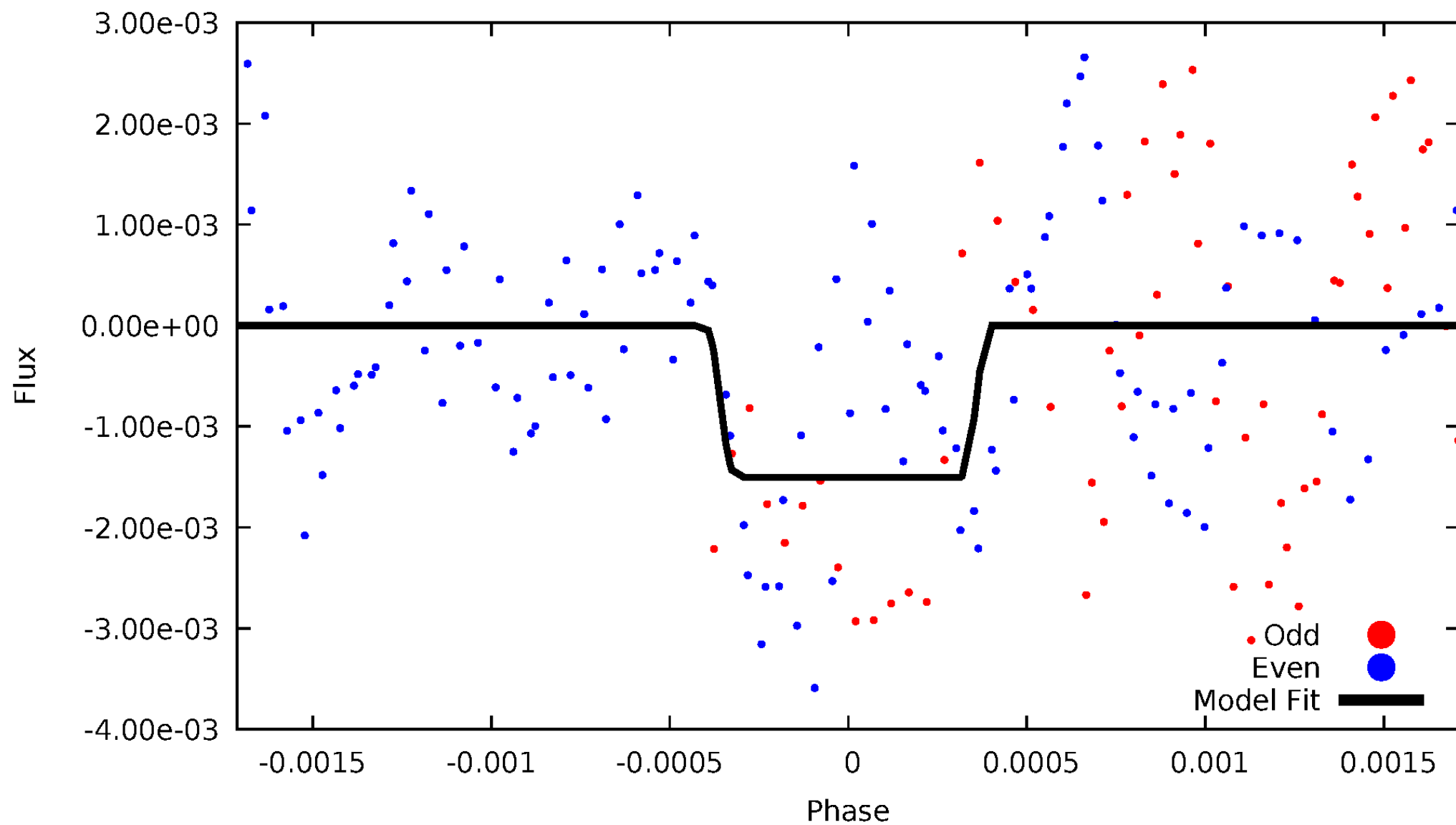
DV Odd/Even

TCE 011463950-02



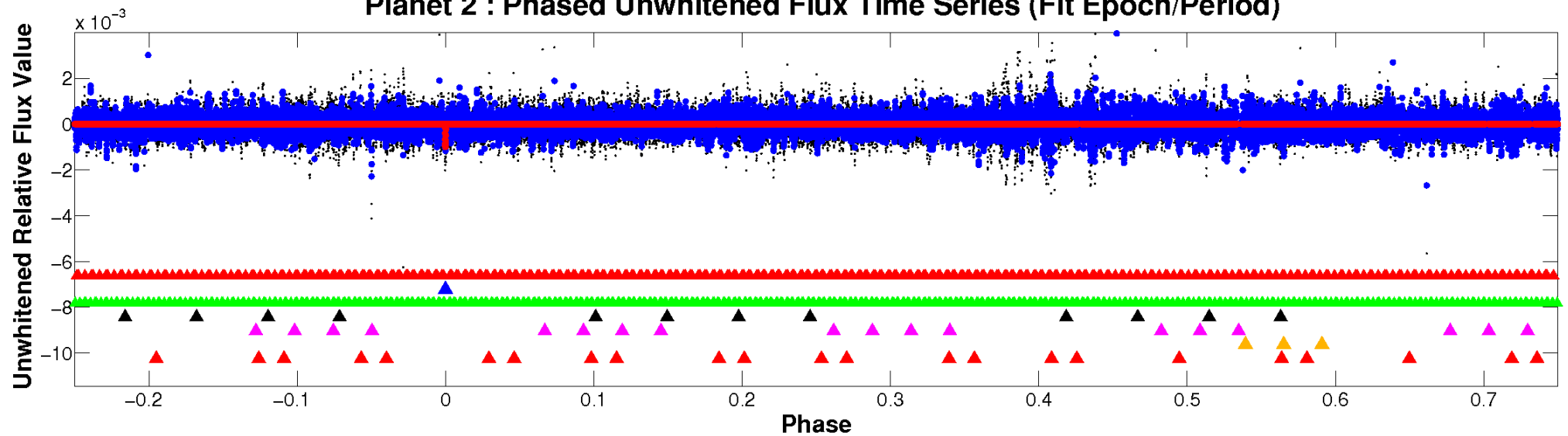
ALT Odd/Even

TCE 011463950-02

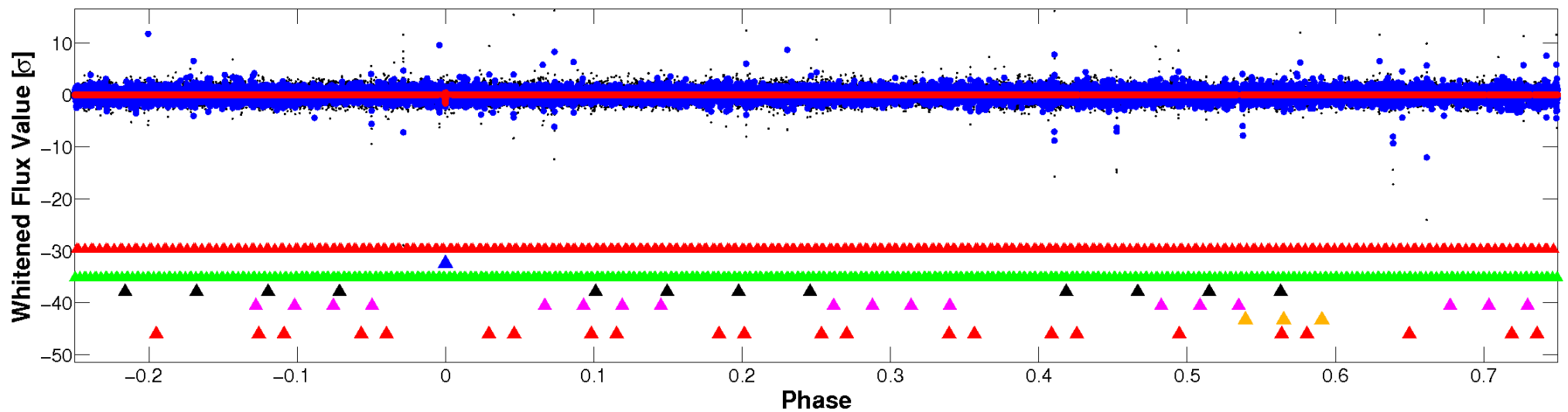


Non-Whitened Vs. Whitened Light Curve

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

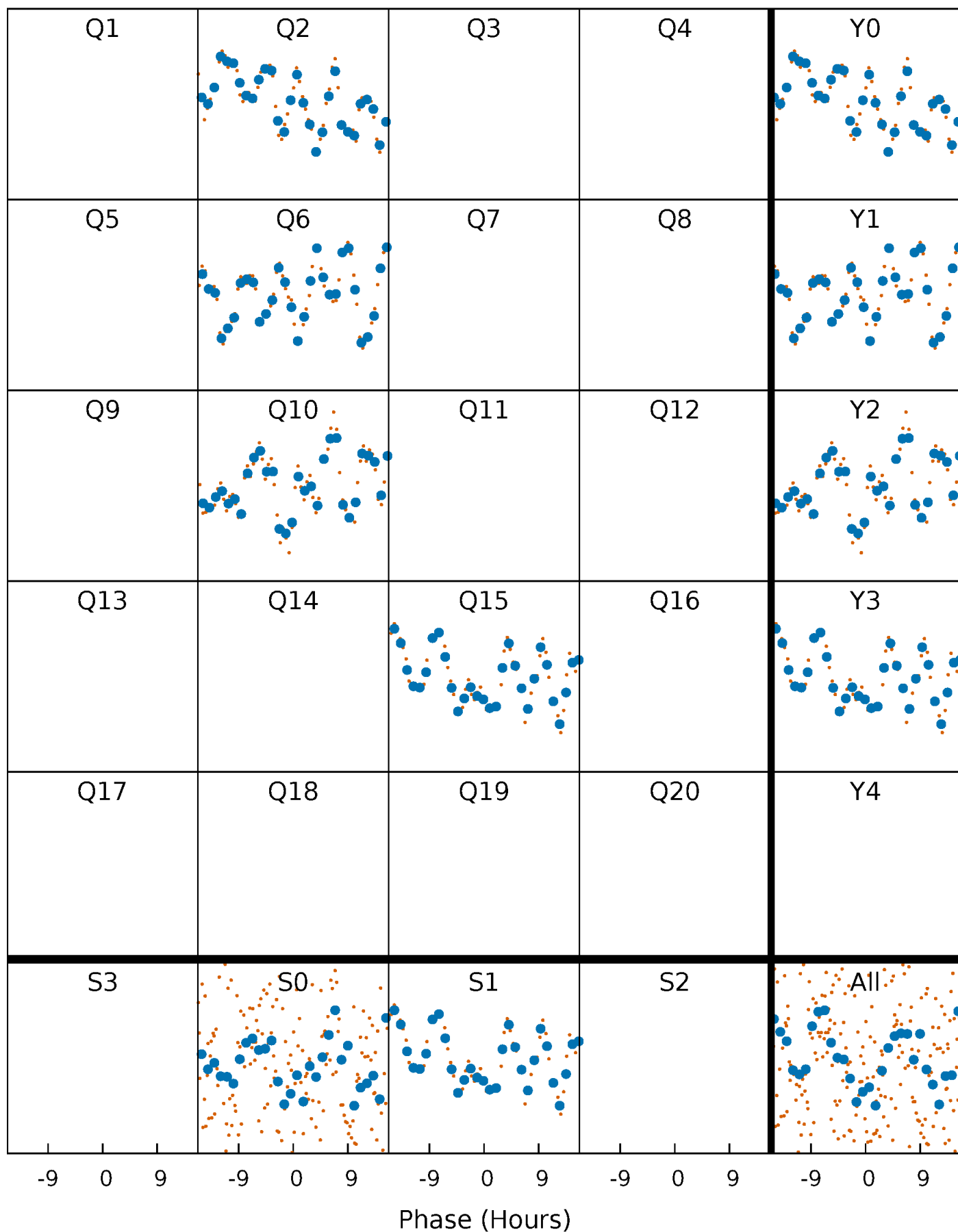


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



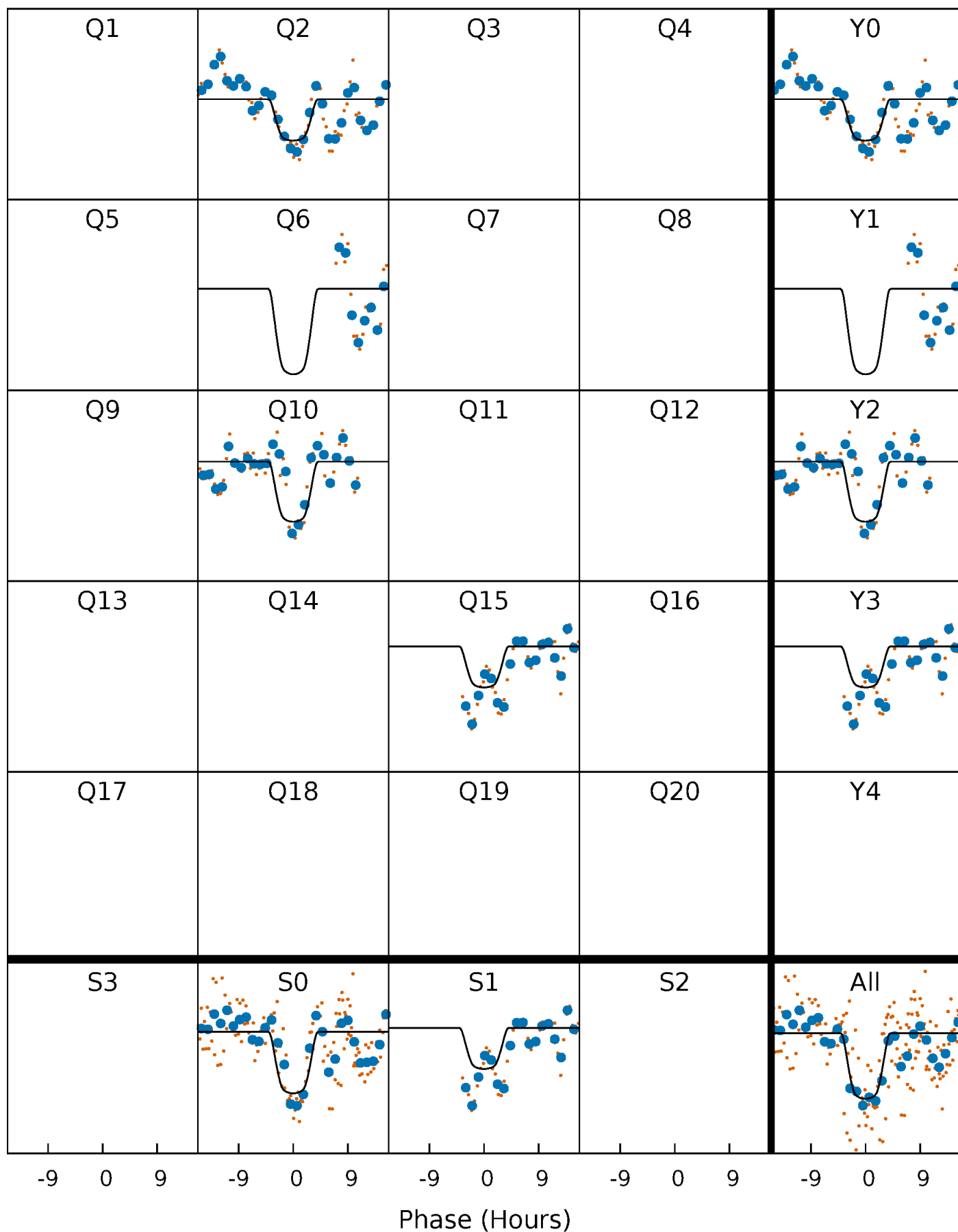
PDC Quarter-Phased Transit Curves

TCE 011463950-02 $P=411.793426$ Days $T_0=173.563522$ (BKJD)



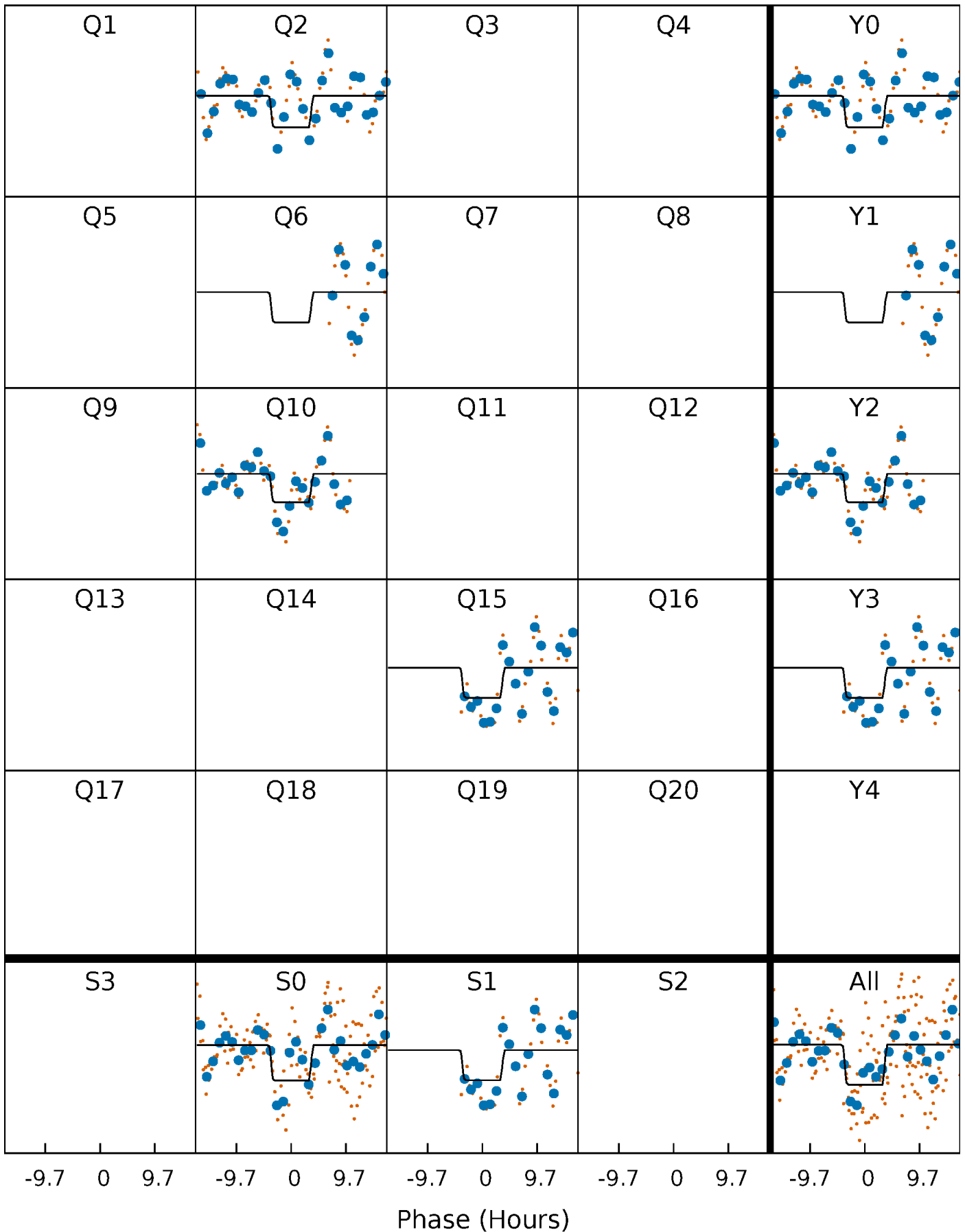
DV Quarter-Phased Transit Curves

TCE 011463950-02 $P=411.793426$ Days $T_0=173.563522$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

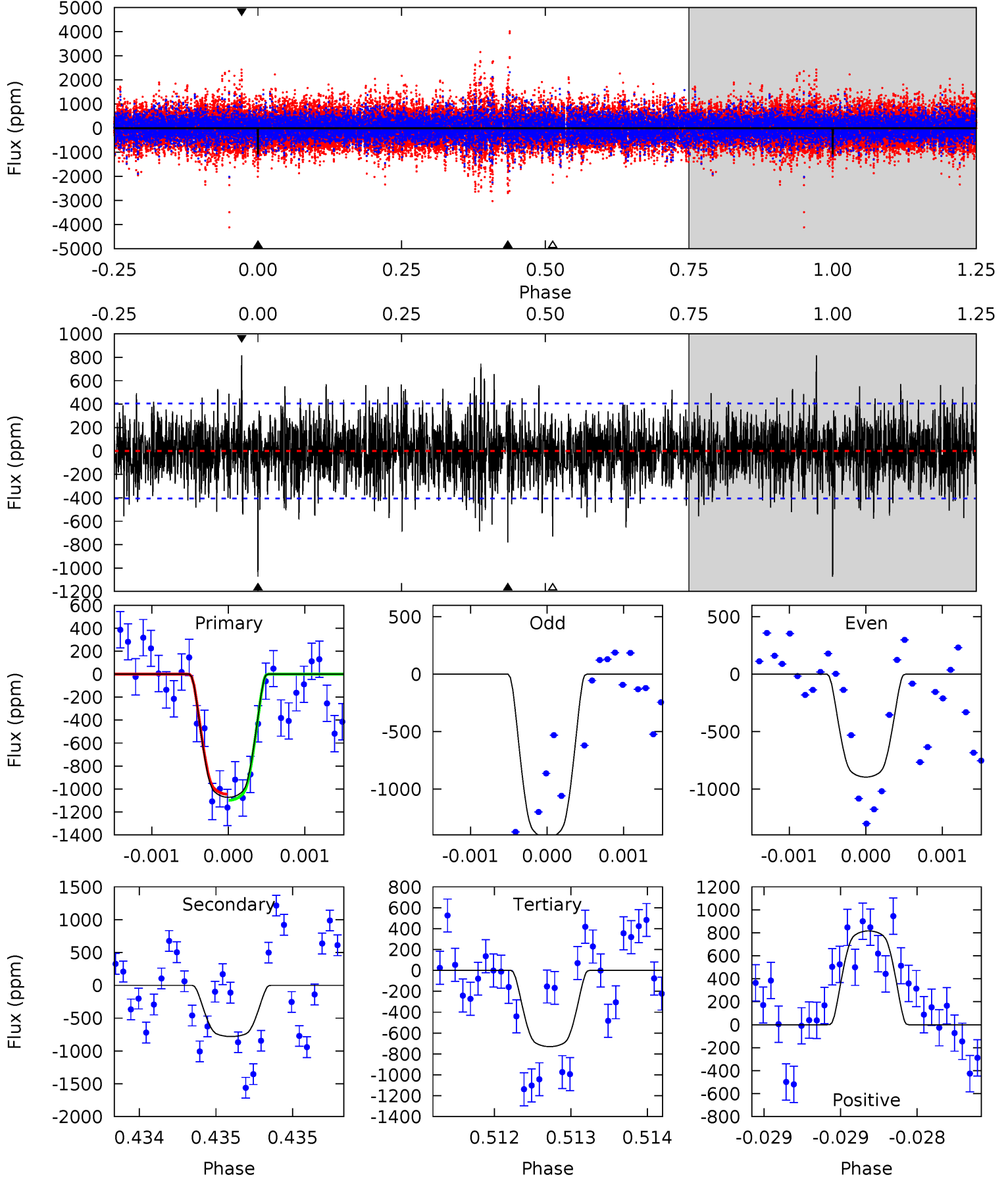
TCE 011463950-02 P=411.790724 Days $T_0=173.579228$ (BKJD)



DV Model-Shift Uniqueness Test

011463950-02, P = 411.793426 Days, E = 173.563522 Days

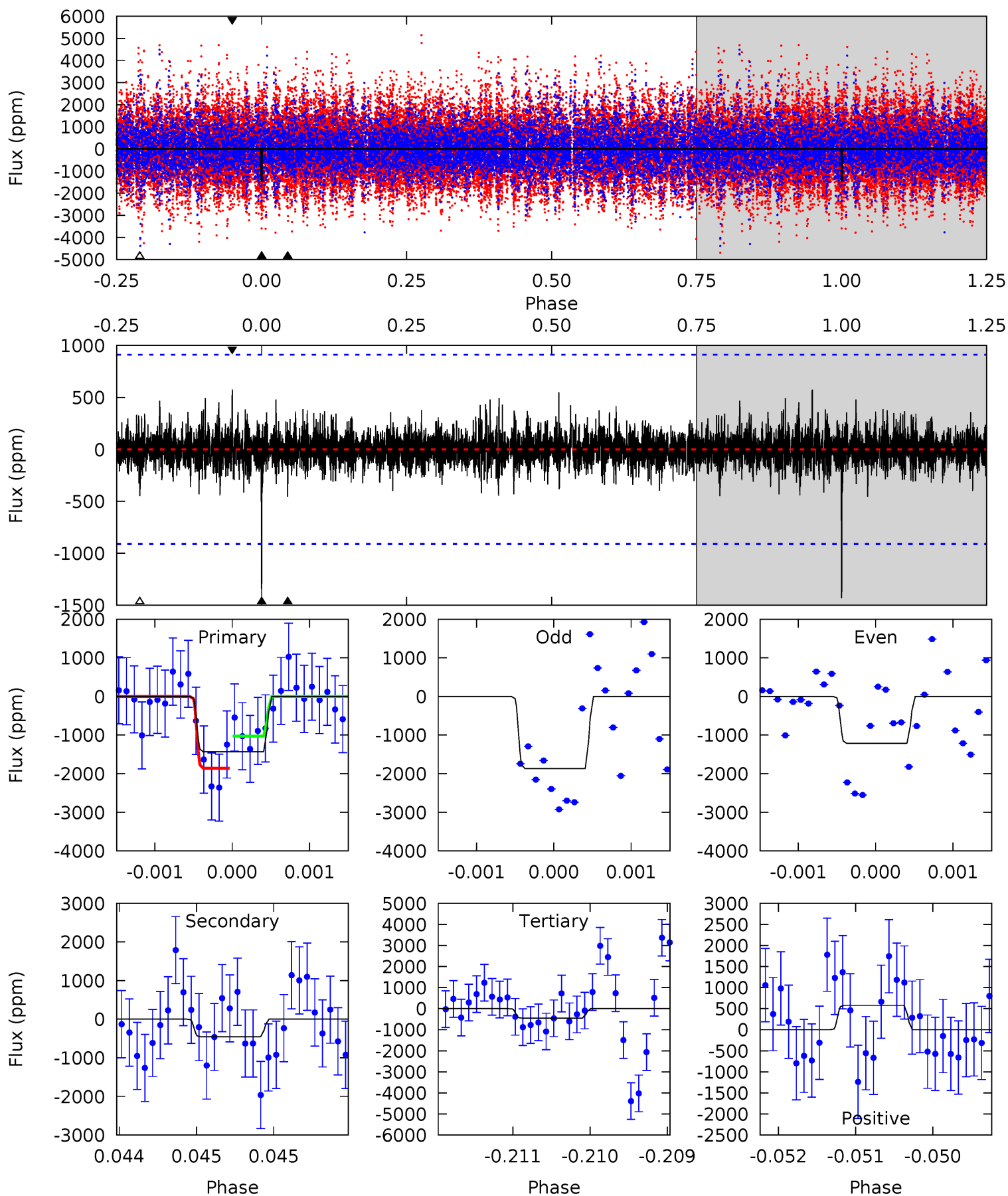
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	10.5	9.87	11.0	5.49	3.35	2.57	4.63	3.46	0.68	-0.49	3.33	0.99	0.43	0.35



Alt Model-Shift Uniqueness Test

011463950-02, P = 411.790724 Days, E = 173.579228 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.64	2.73	2.71	3.48	5.49	3.36	0.70	5.93	5.17	0.02	-0.74	1.90	0.85	0.29	2.51



Stellar Parameters For KIC 011463950

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7064^{+74}_{-95}	$3.888^{+0.182}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$2.531^{+0.405}_{-0.607}$	$1.806^{+0.090}_{-0.217}$	$0.157^{+0.156}_{-0.049}$
	+1%/-1%	+5%/-3%	+94%/-94%	+16%/-24%	+5%/-12%	+100%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011463950-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-780 ± 74	$9.59^{+1.39}_{-1.41}$	600^{+27}_{-35}	6214^{+358}_{-296}	8113^{+2752}_{-2043}
Alt.	-453 ± 166	$10.42^{+1.38}_{-1.47}$	598^{+27}_{-37}	5226^{+489}_{-530}	3909^{+2237}_{-1616}

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

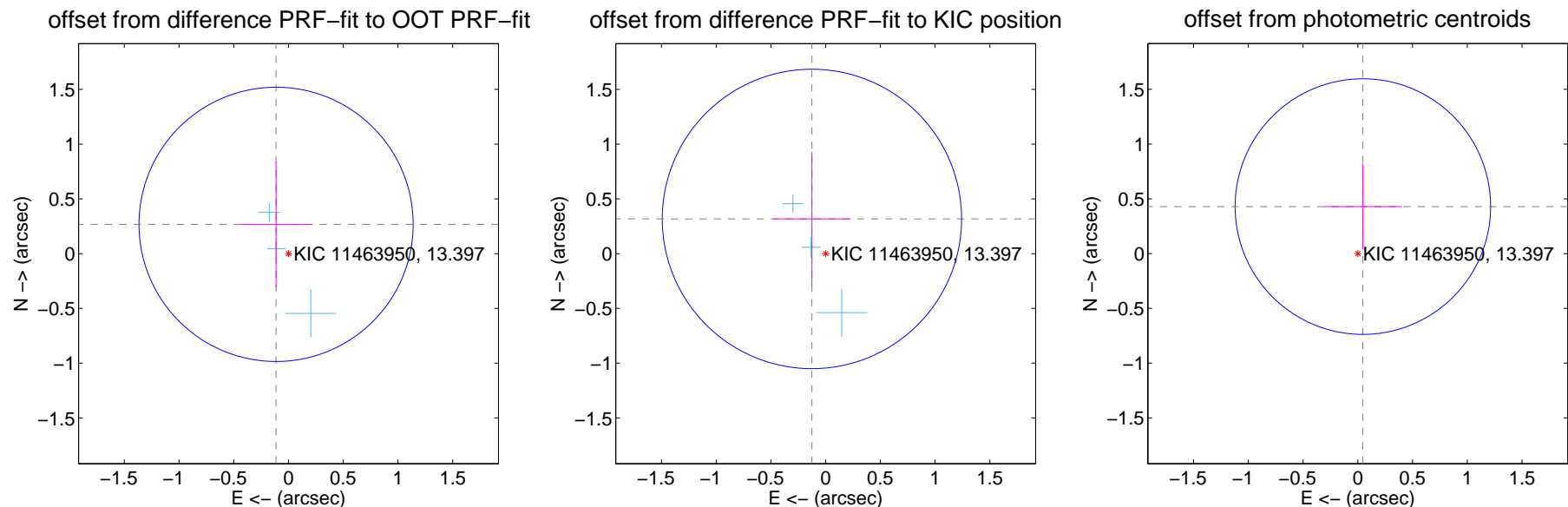
DV Centroid Data

Supplemental centroid analysis for 011463950-02. Kepler magnitude: 13.40. Transit SNR 8.69

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

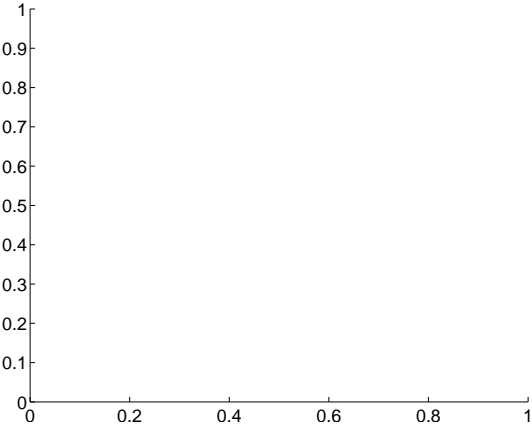
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.291 ± 0.417	0.70	0.114 ± 0.328	0.268 ± 0.576
PRF-fit source offset from KIC position	0.341 ± 0.456	0.75	0.126 ± 0.351	0.317 ± 0.611
photometric centroid source offset	0.43 ± 0.39	1.11	-0.05 ± 0.36	0.43 ± 0.39



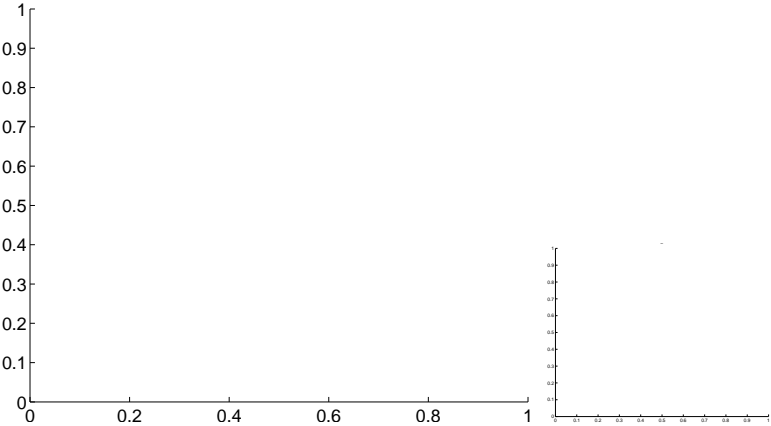
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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

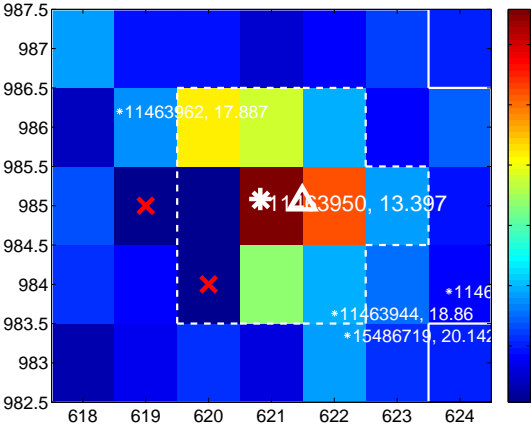
Q1 no difference image



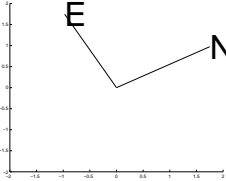
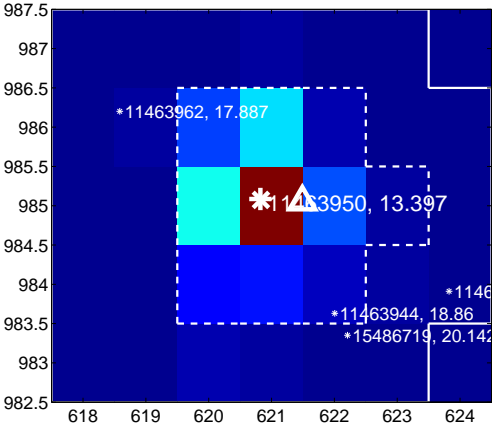
Q1 no OOT image



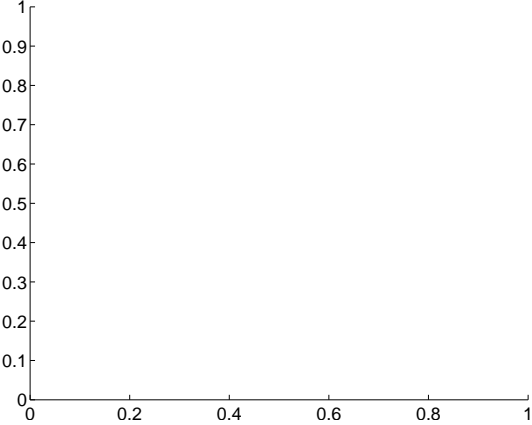
Q2 difference image



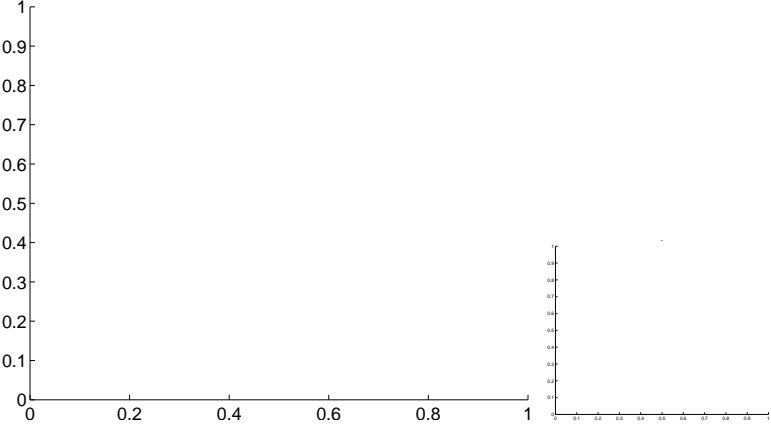
Q2 OOT image



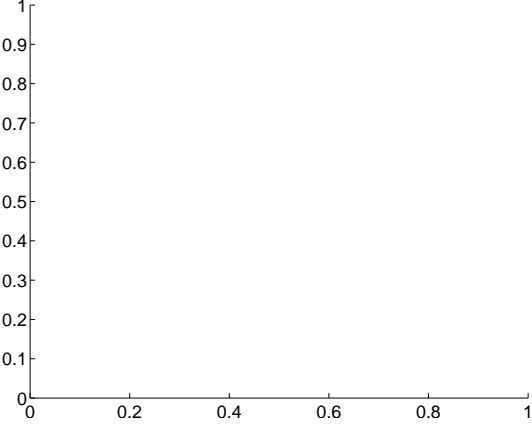
Q3 no difference image



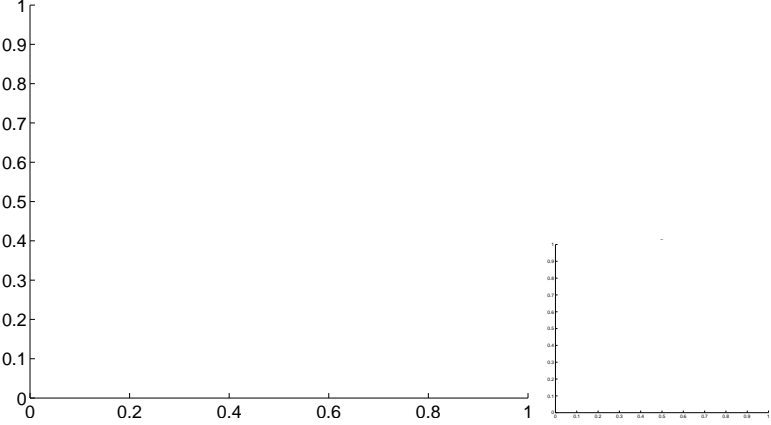
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

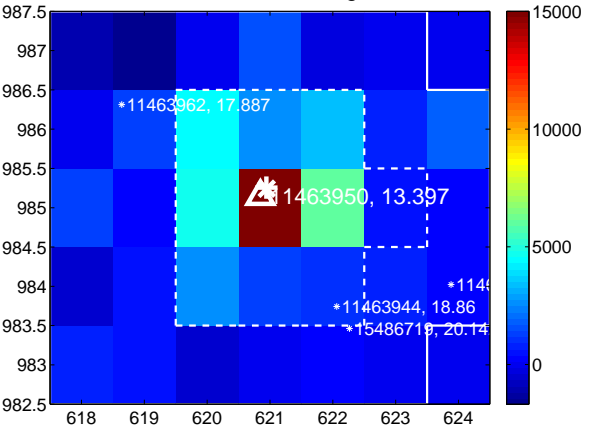
Q5 no difference image



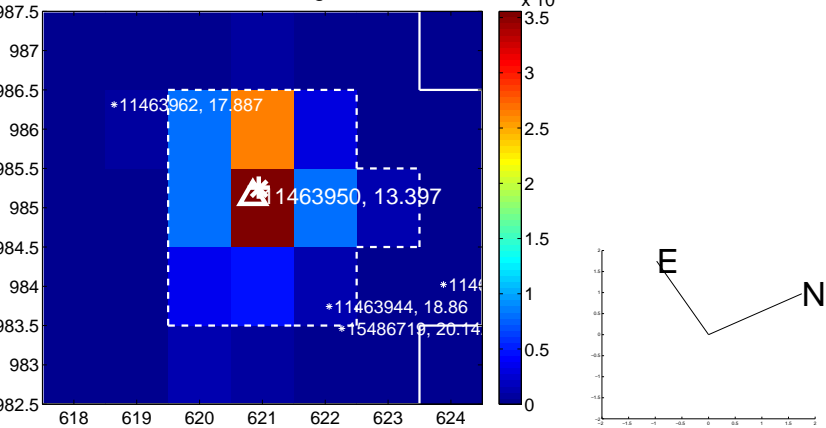
Q5 no OOT image



Q6 difference image



Q6 OOT image



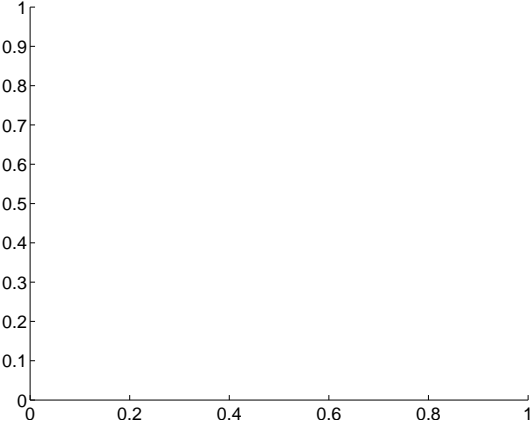
Q7 no difference image



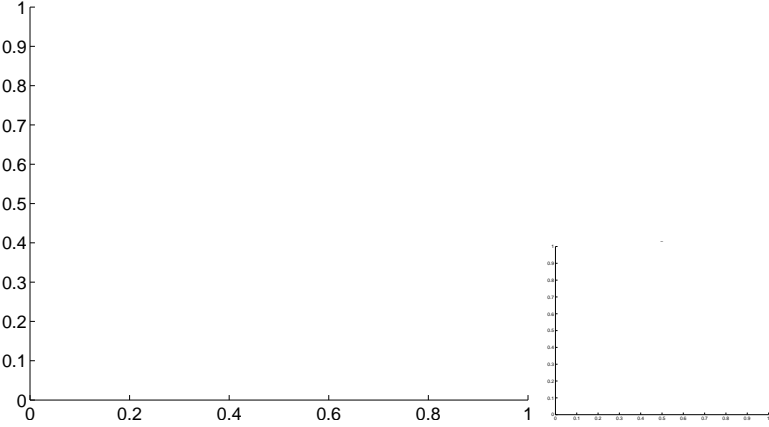
Q7 no OOT image



Q8 no difference image



Q8 no OOT image

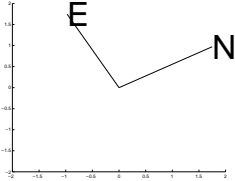
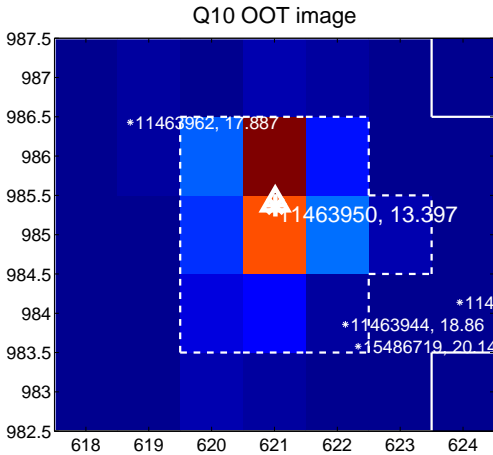
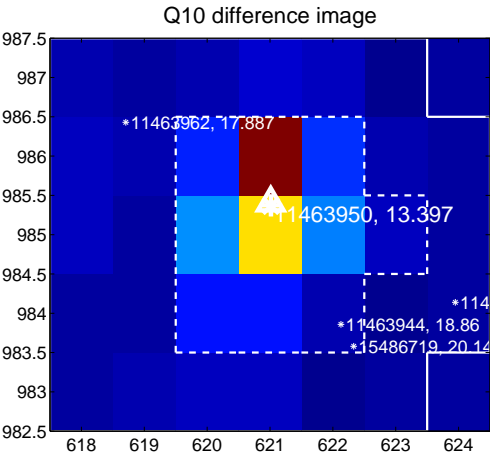
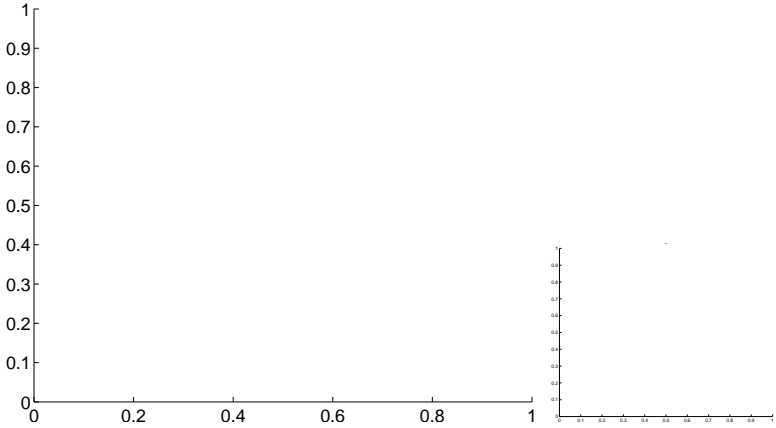


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

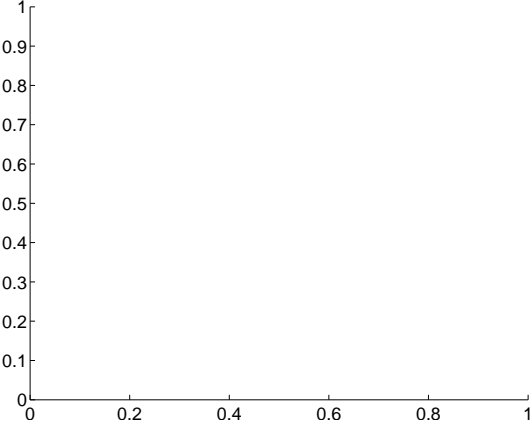
Q9 no difference image



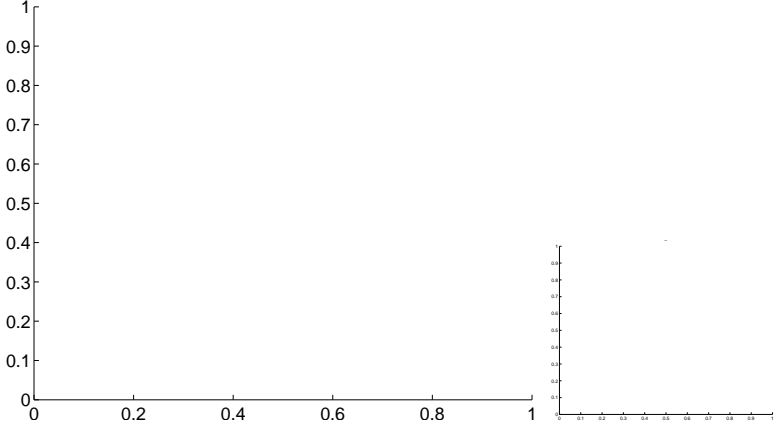
Q9 no OOT image



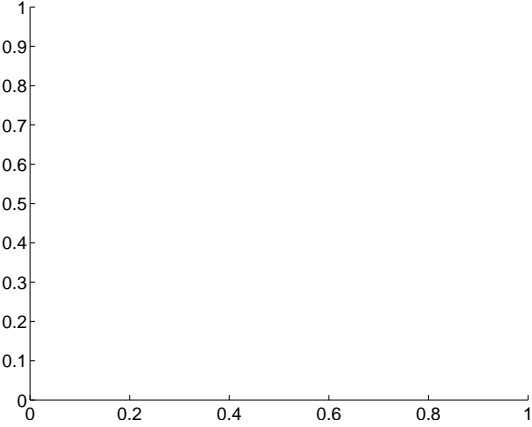
Q11 no difference image



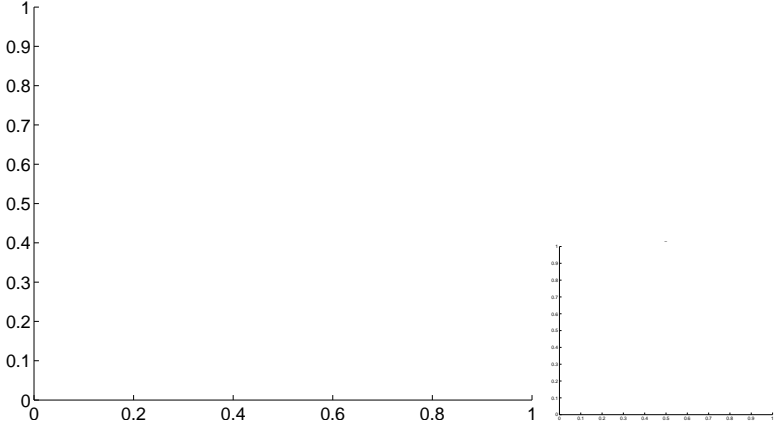
Q11 no OOT image



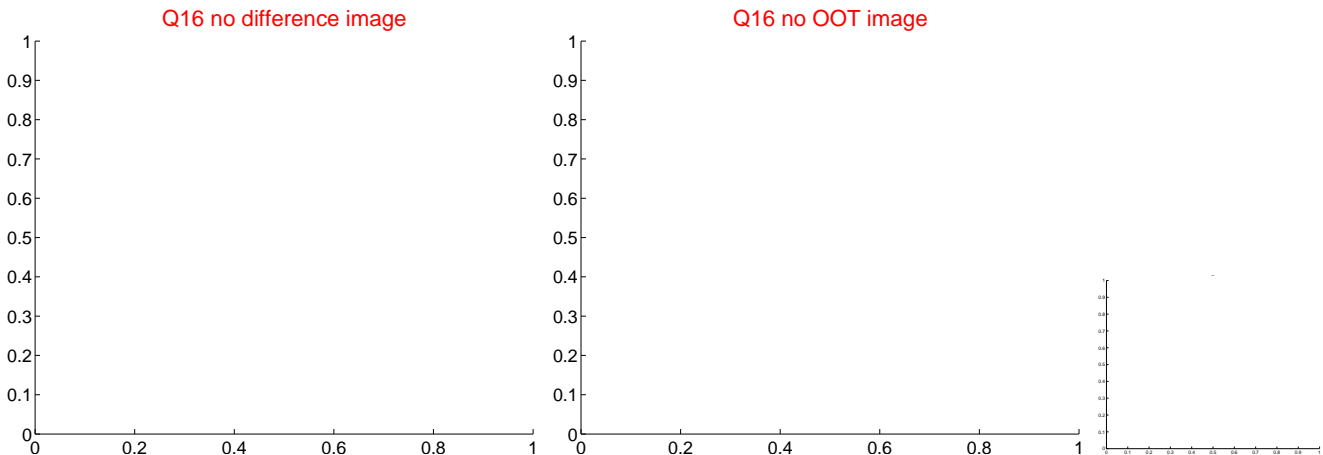
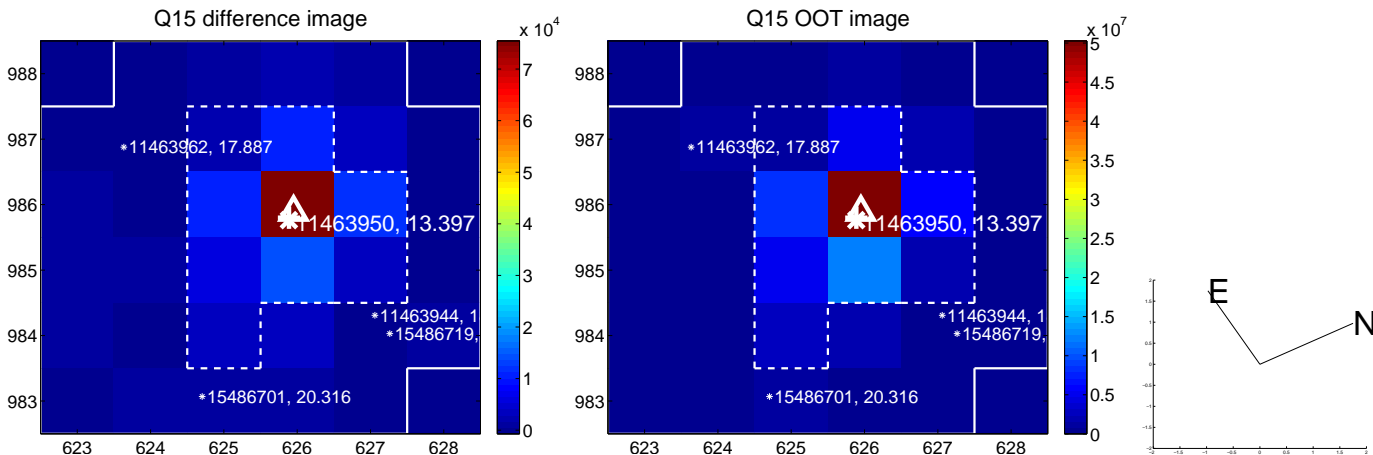
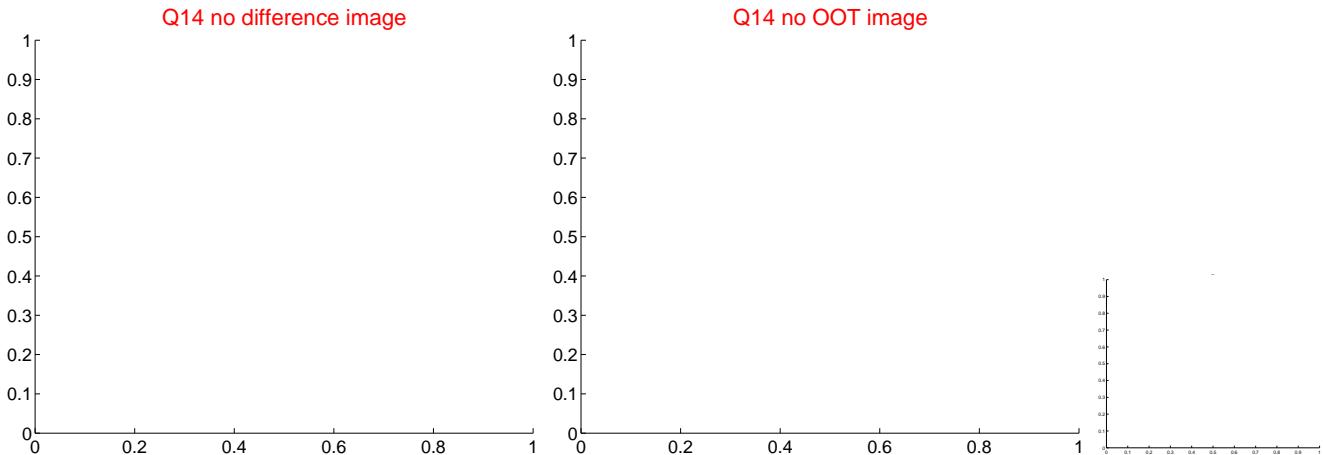
Q12 no difference image



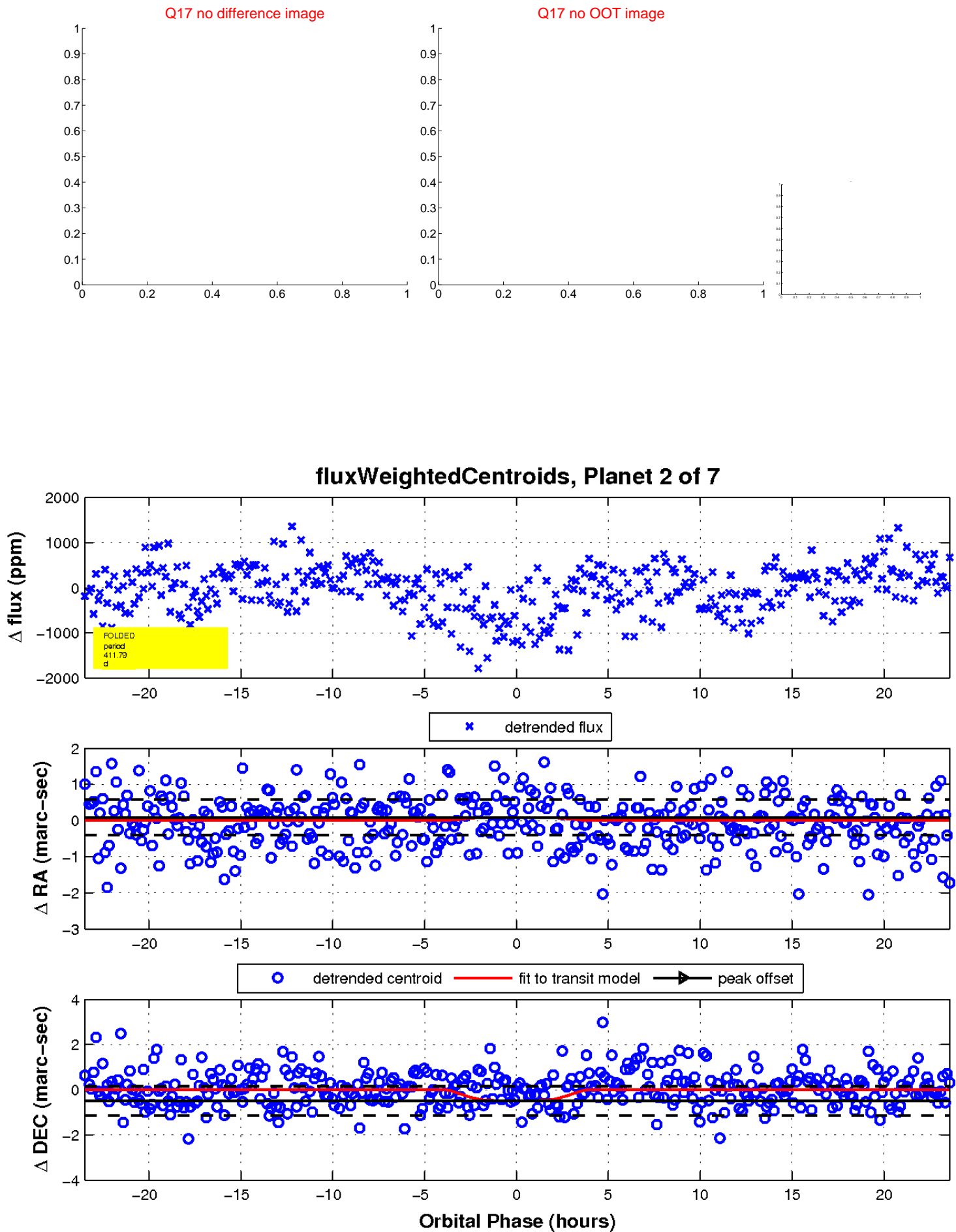
Q12 no OOT image



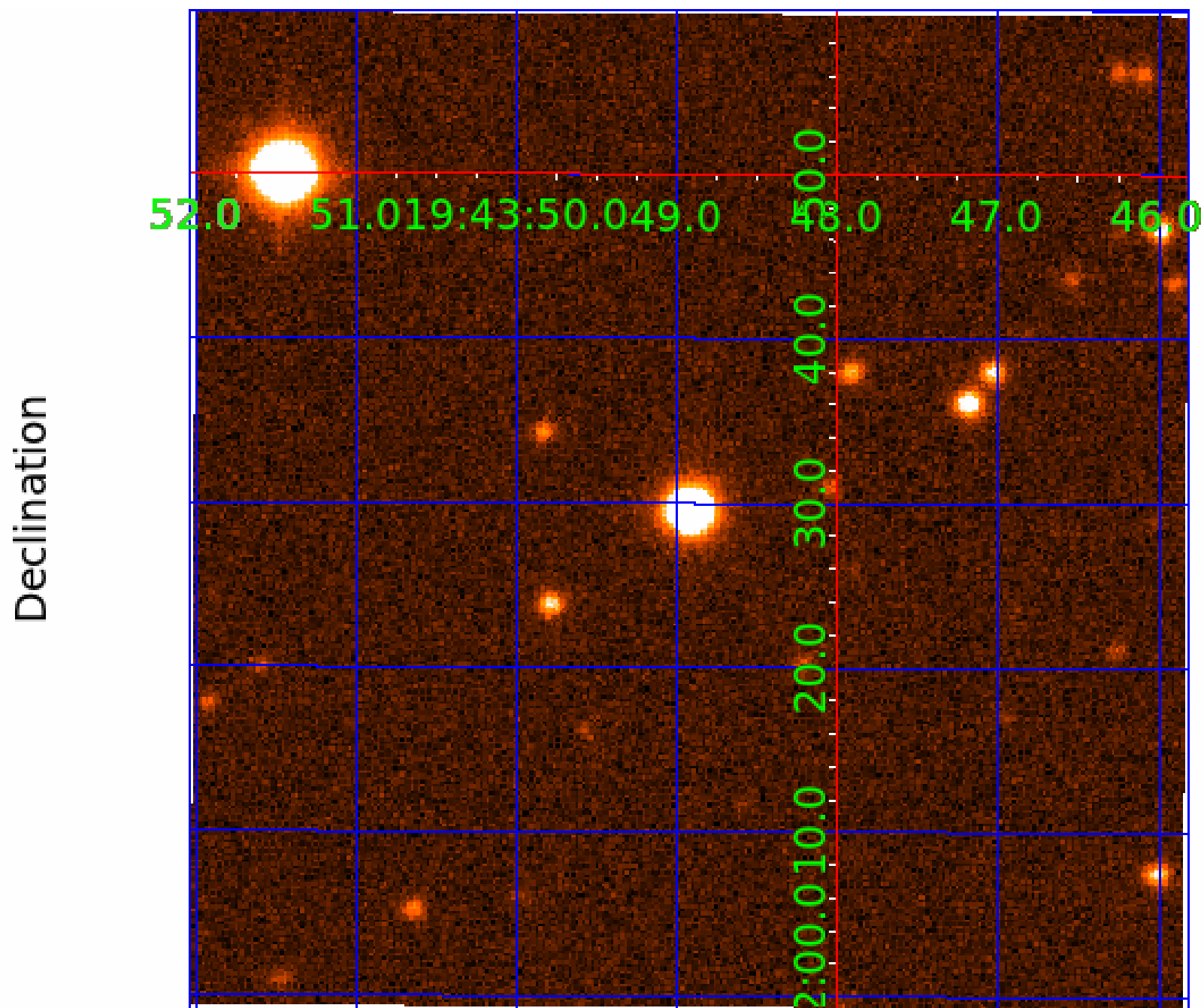
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image



KIC 011463950

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})
011463950-01	OBS	7616.01	4.054873	134.732147	148.9	12.860	11.5	12.6	2.53	7064	3.67	3890.35
011463950-02	OBS	No	411.793426	173.563522	1001.3	7.864	8.0	8.7	2.53	7064	9.78	8.21
011463950-03	OBS	No	2.929775	133.896743	71.8	16.917	8.2	7.3	2.53	7064	2.21	6000.39
011463950-04	OBS	No	130.650429	144.142290	838.2	15.440	11.1	13.8	2.53	7064	8.18	37.94
011463950-05	OBS	No	80.209254	153.167289	387.1	12.016	11.6	6.8	2.53	7064	5.32	72.72
011463950-06	OBS	No	401.186630	416.895102	605.9	7.249	8.7	8.8	2.53	7064	7.10	8.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011463950-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL
011463950-03	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
011463950-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011463950-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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 011463950-03

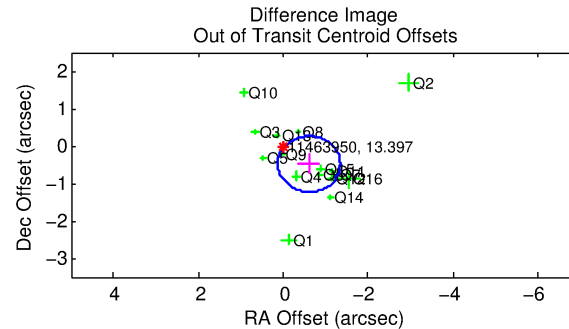
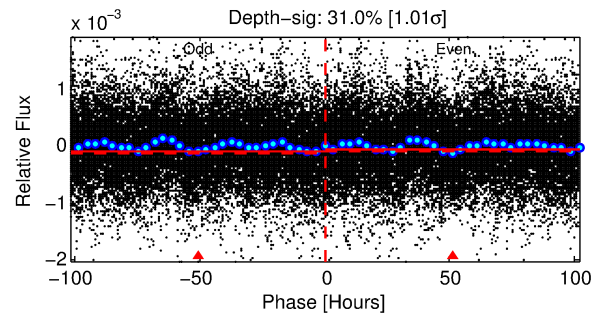
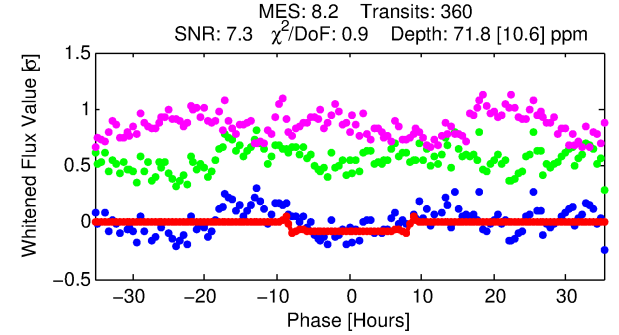
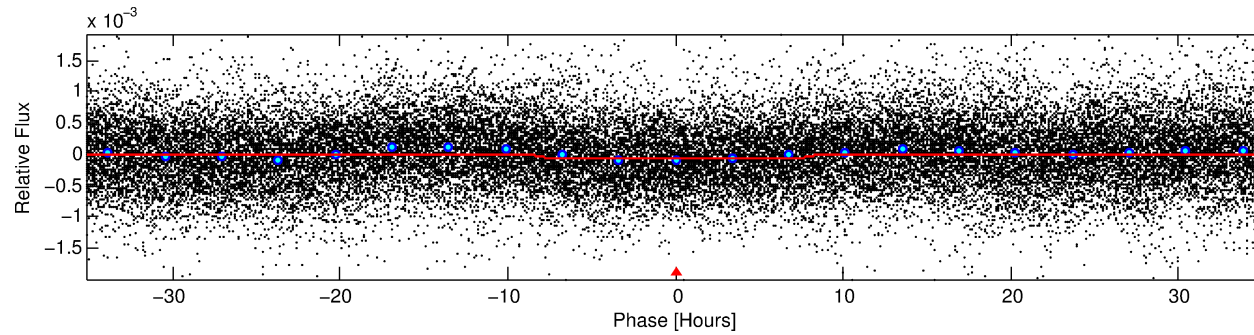
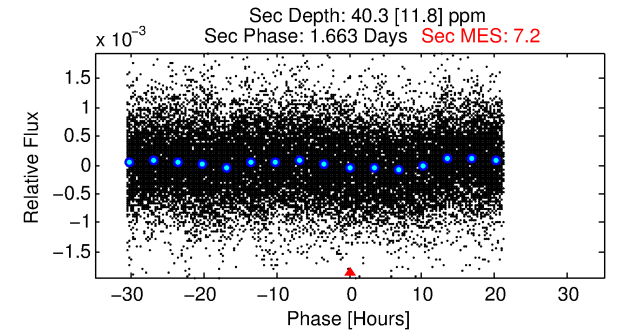
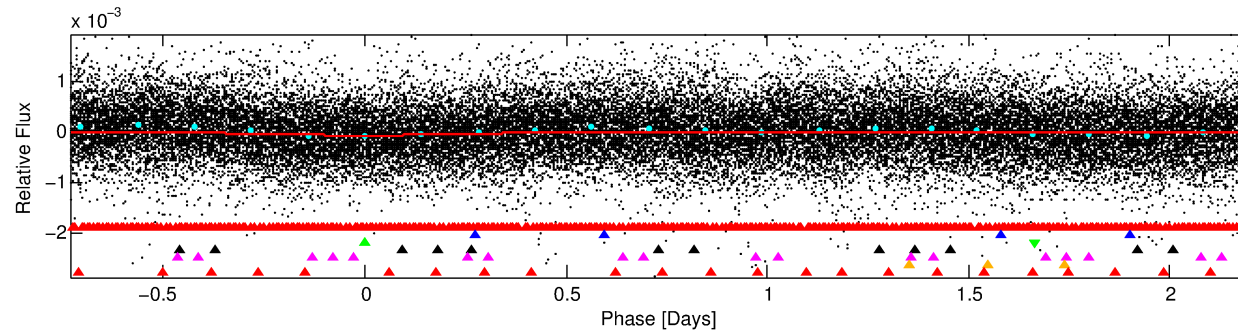
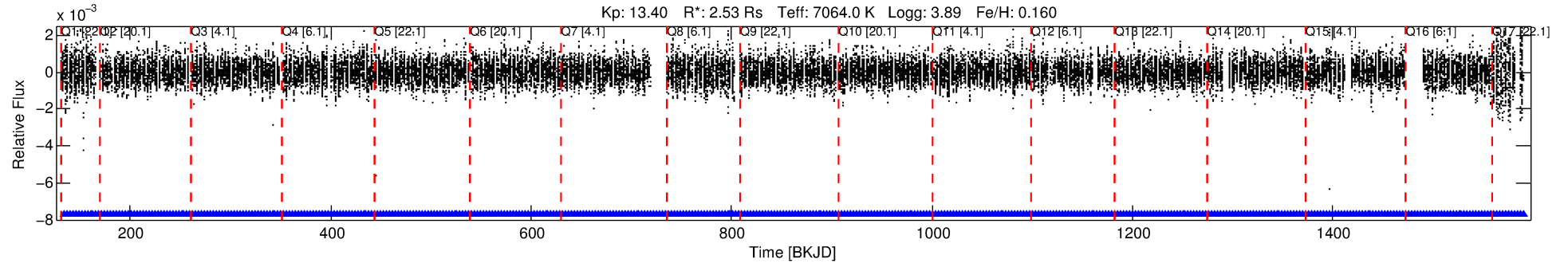
No Significant Match Found

DV One-Page Summary

KIC: 11463950 Candidate: 3 of 7 Period: 2.930 d

KOI: K07616 Corr: No Ephemeris Match

Kp: 13.40 R*: 2.53 Rs Teff: 7064.0 K Logg: 3.89 Fe/H: 0.160



DV Fit Results:

Period = 2.92977 [0.00004] d
Epoch = 133.8967 [0.0064] BKJD
Rp/R* = 0.0080 [0.0036]
a/R* = 1.39 [1.76]
b = 0.44 [4.79]
Seff = 6000.39 [1958.28]
Teff = 2244 [183] K
Rp = 2.21 [1.13] Re
a = 0.0488 [0.0104] AU
Ag = 10.83 [10.89] [0.90σ]
Teffp = 6294 [1502] K [2.68σ]

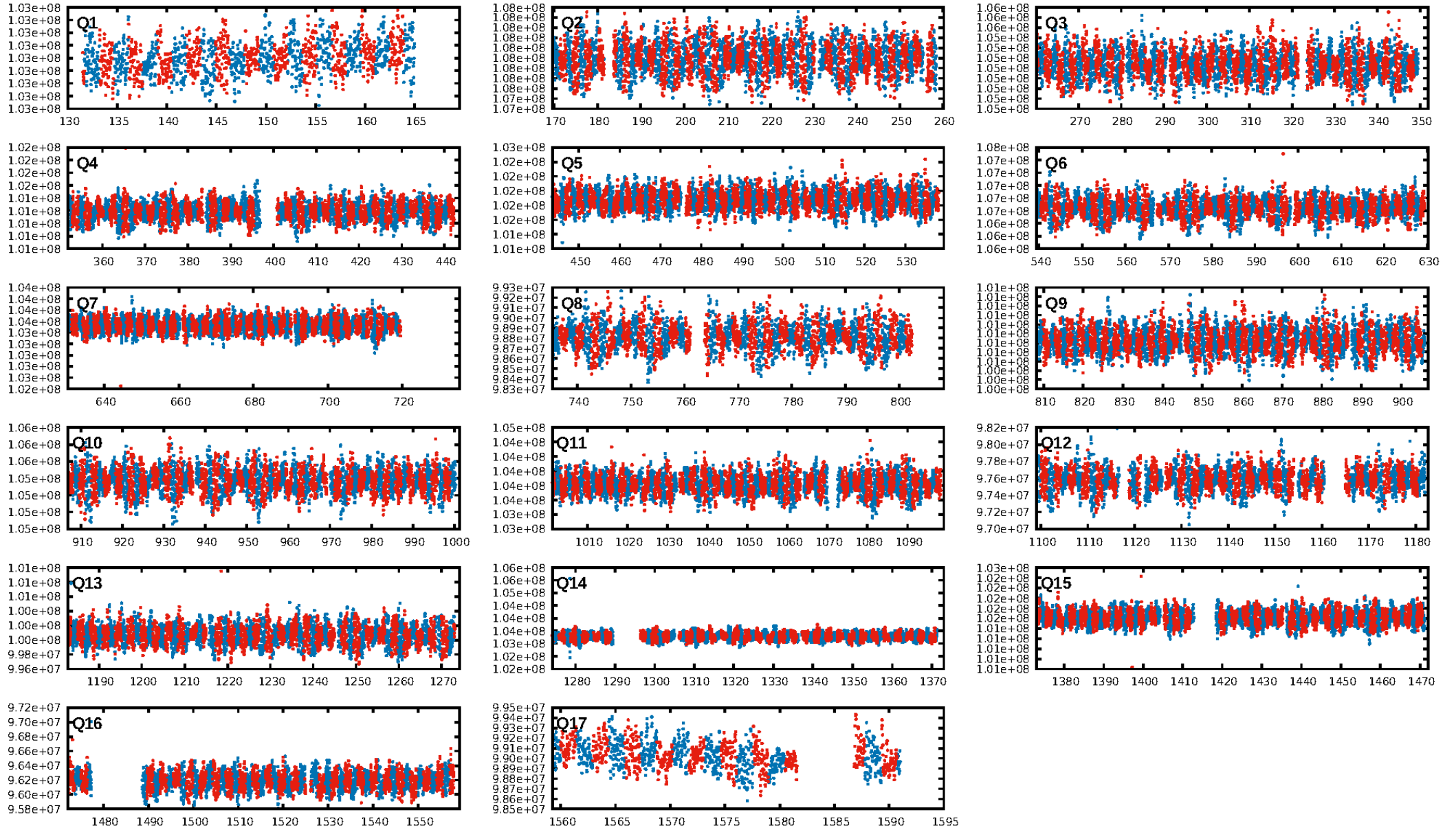
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 79.6% [1.27σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [344/344]
GhostDiagnostic-chr: 4.224
Centroid-sig: 59.5%
Centroid-so: 0.097 arcsec [0.32σ]
OotOffset-rm: 0.779 arcsec [3.15σ]
KicOffset-rm: 0.710 arcsec [2.85σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

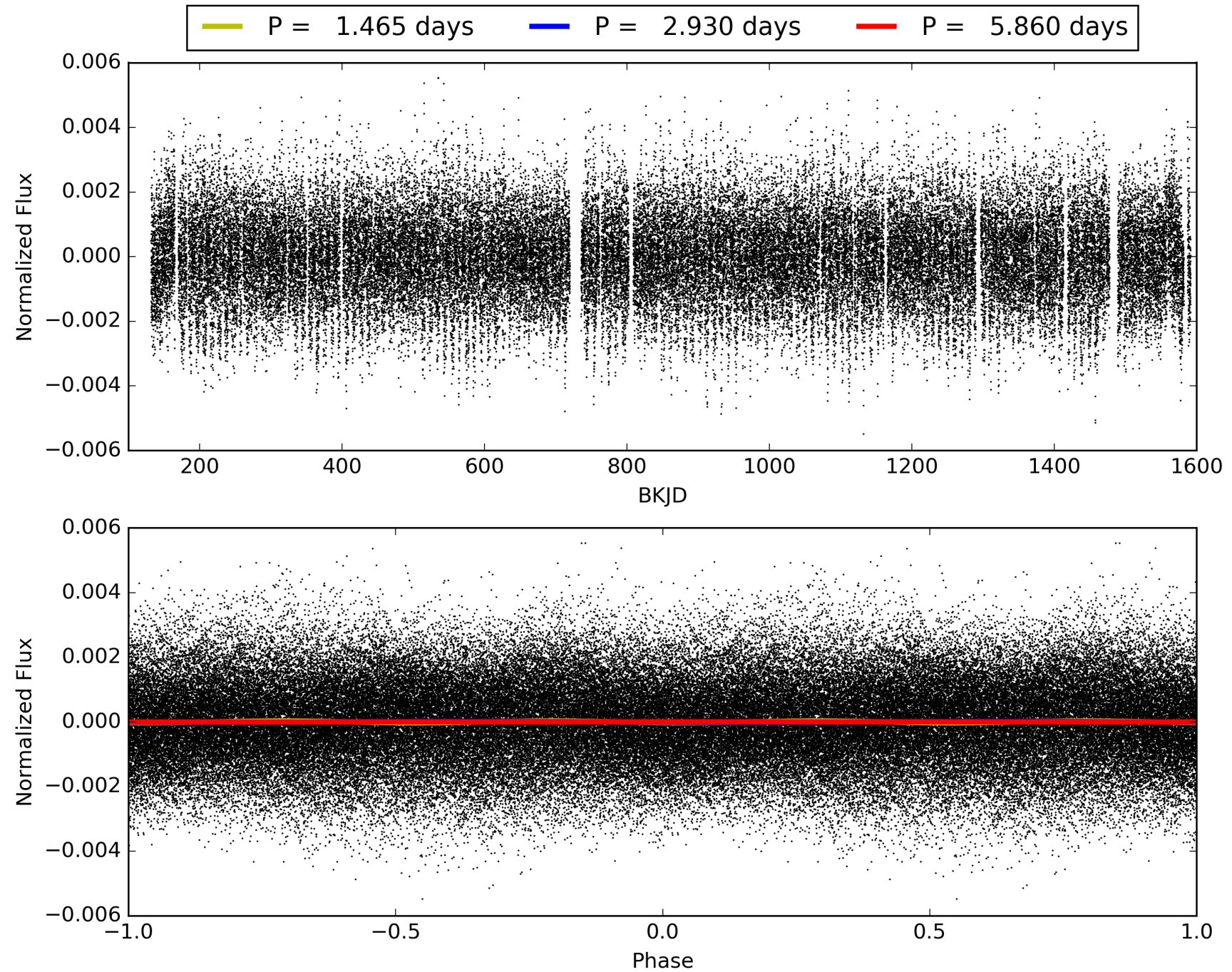
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:21 Z

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

TCE 011463950-03, PDC Light Curves

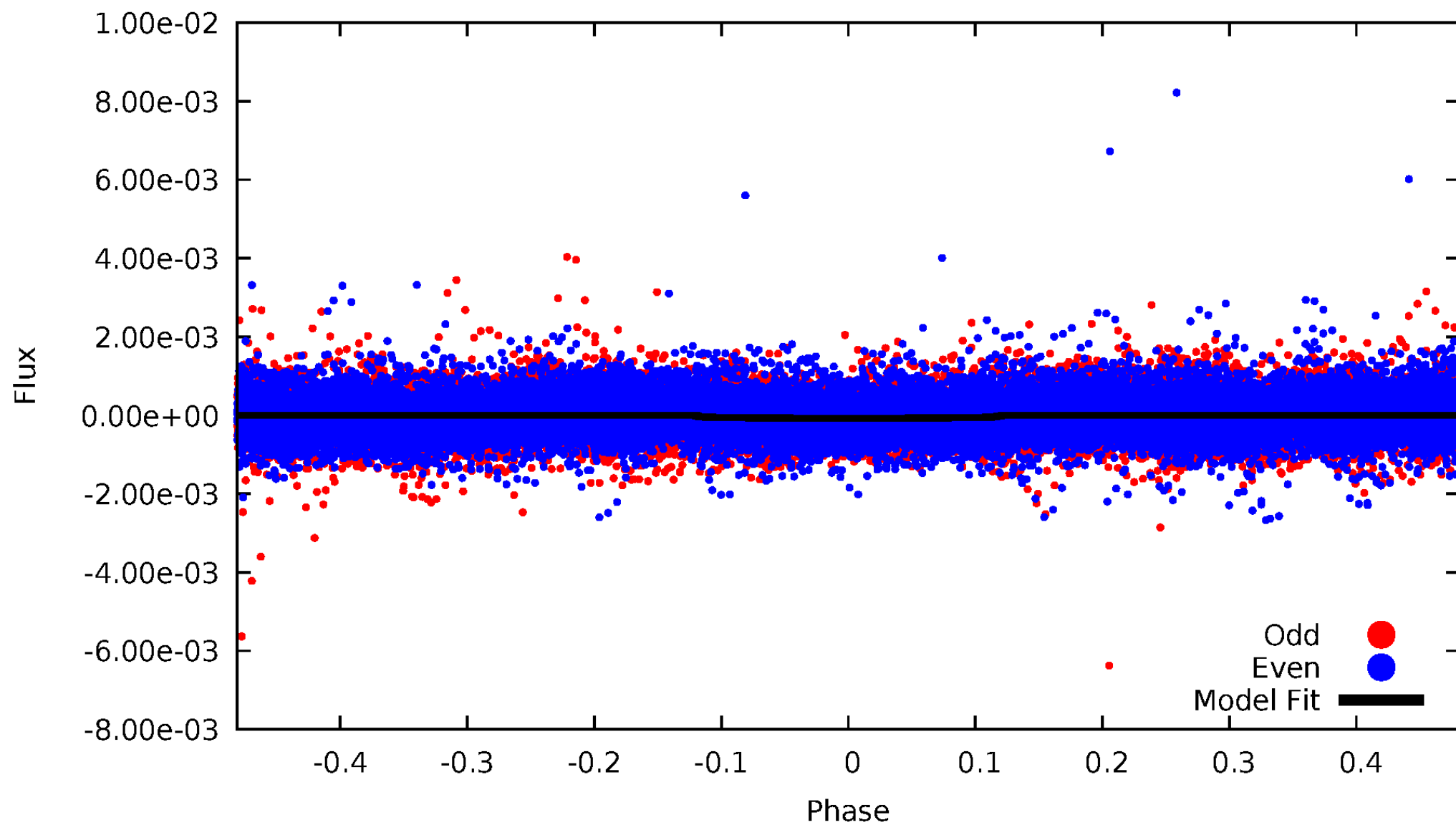


TCE 011463950-03



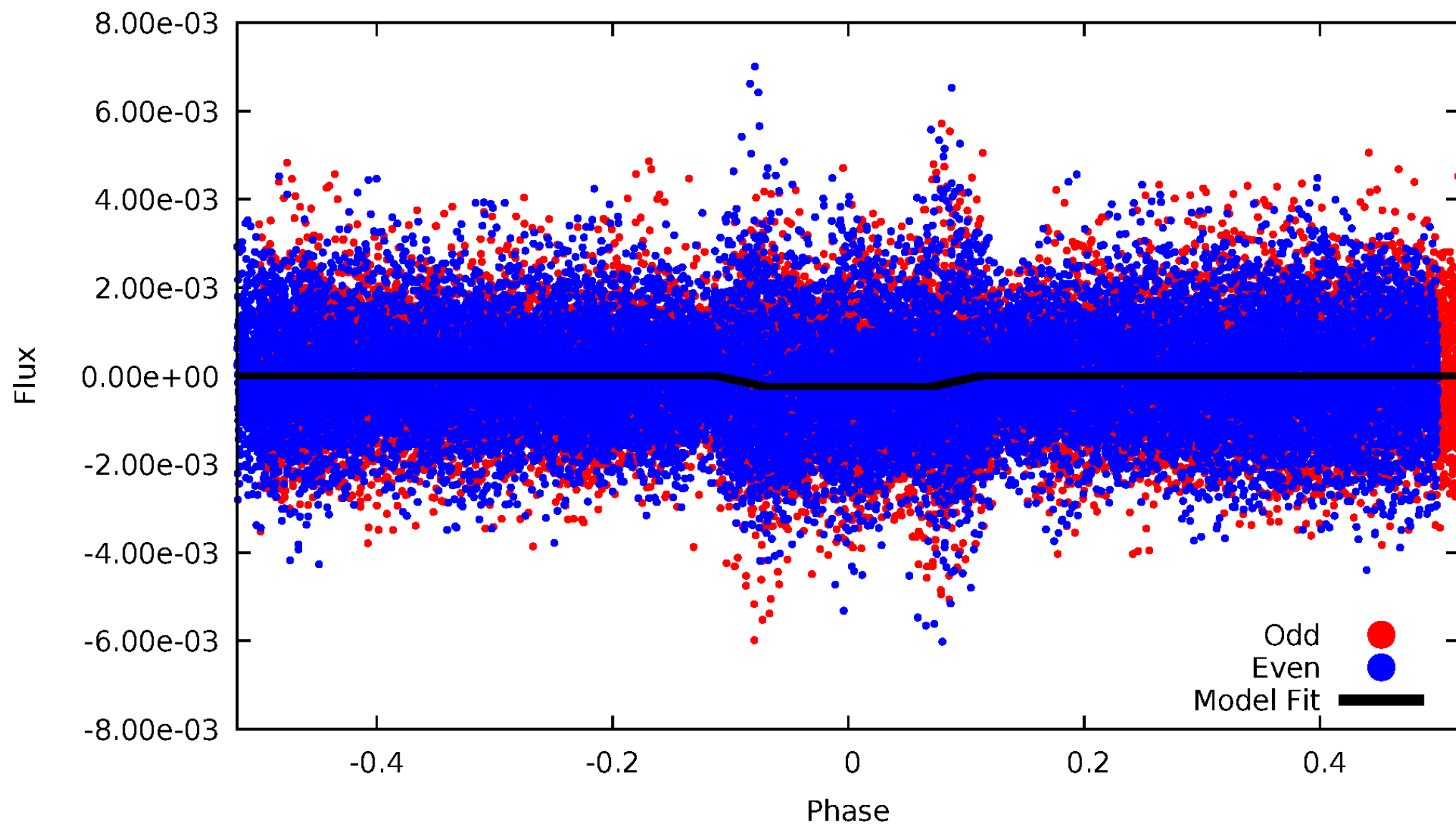
DV Odd/Even

TCE 011463950-03



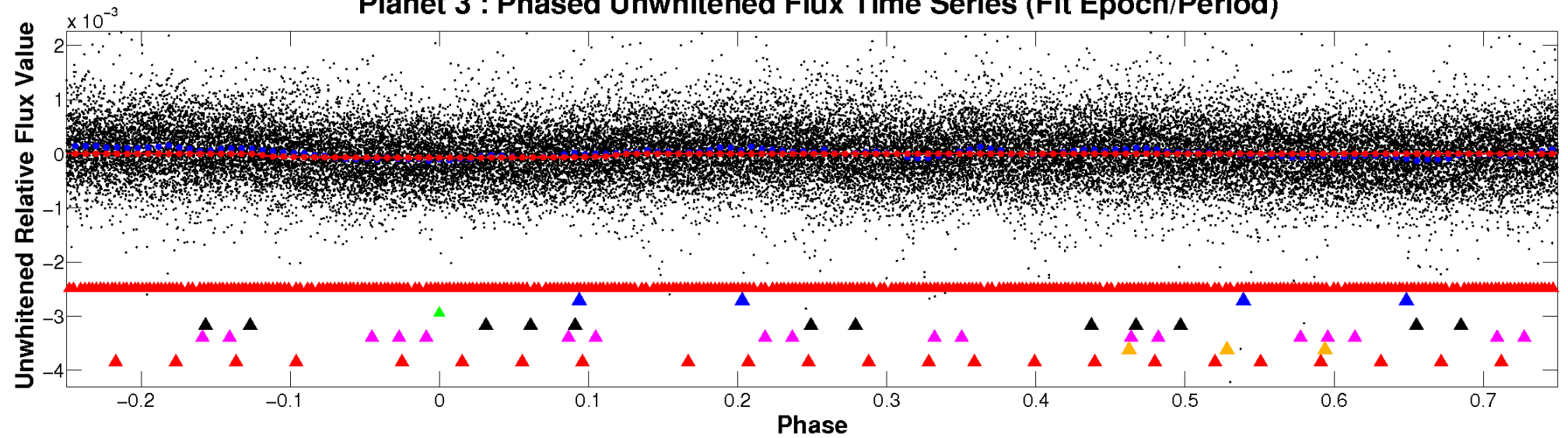
ALT Odd/Even

TCE 011463950-03

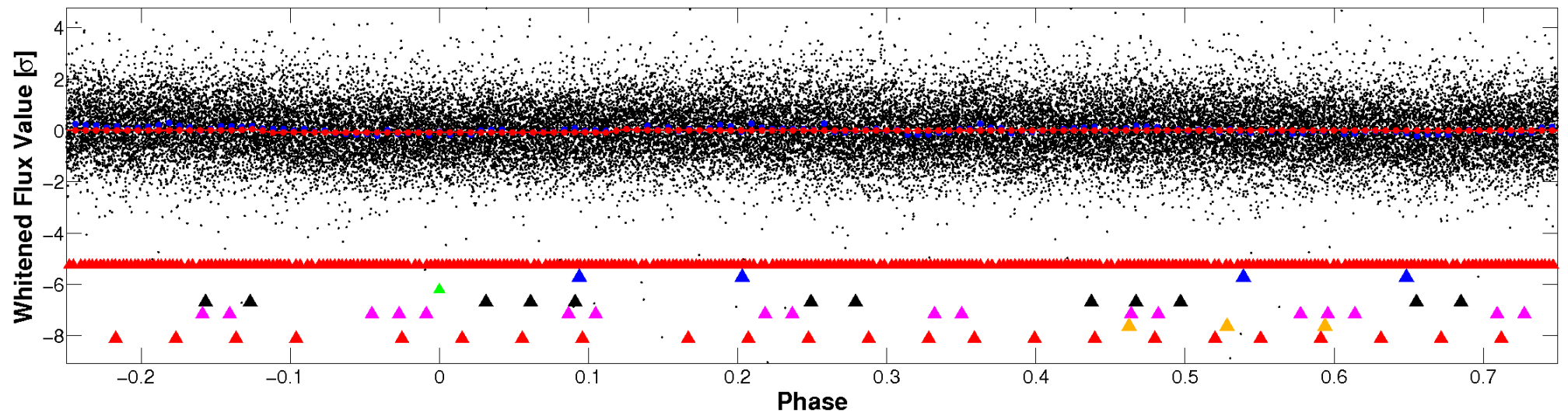


Non-Whitened Vs. Whitened Light Curve

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

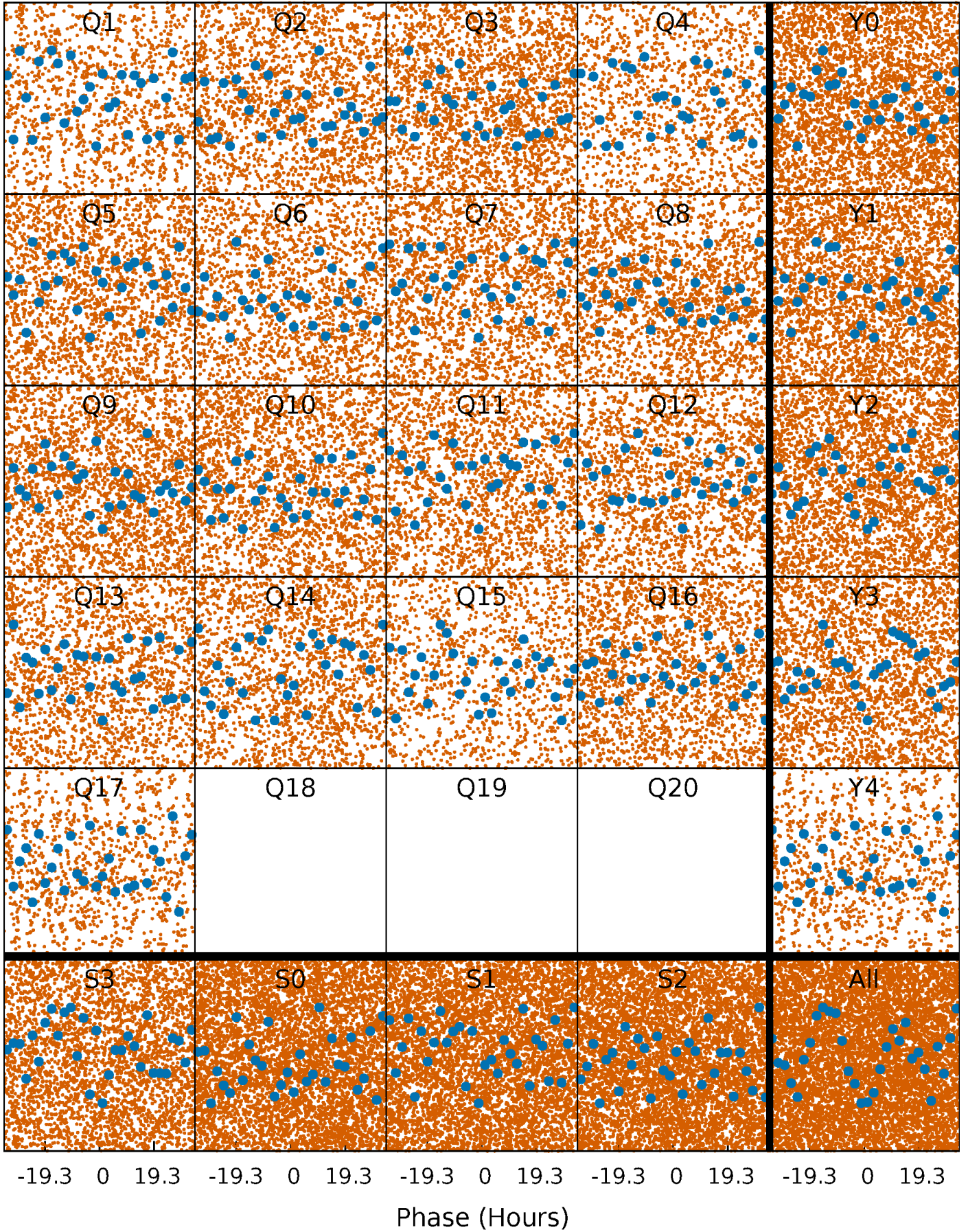


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



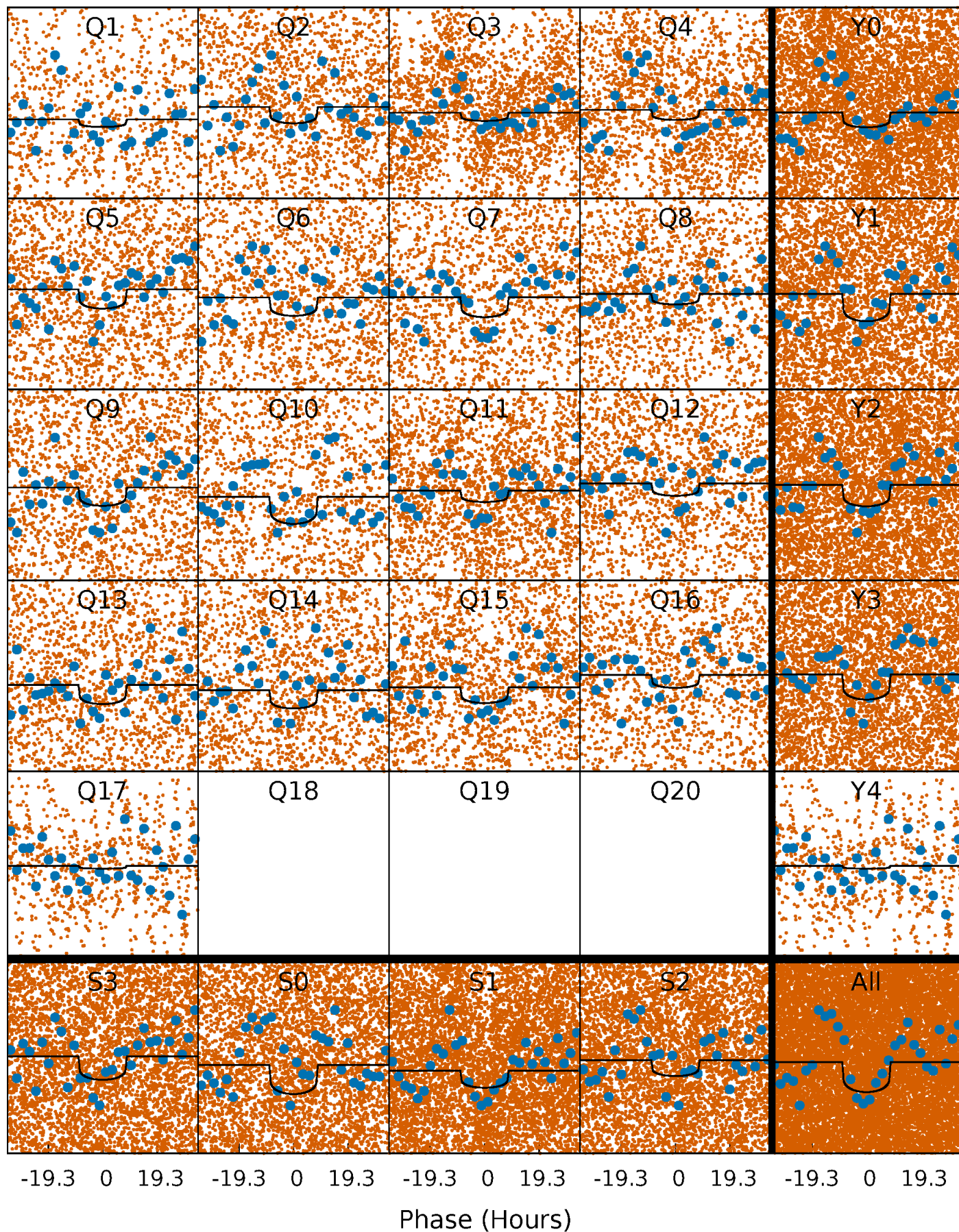
PDC Quarter-Phased Transit Curves

TCE 011463950-03 P= 2.929775 Days $T_0=133.896743$ (BKJD)



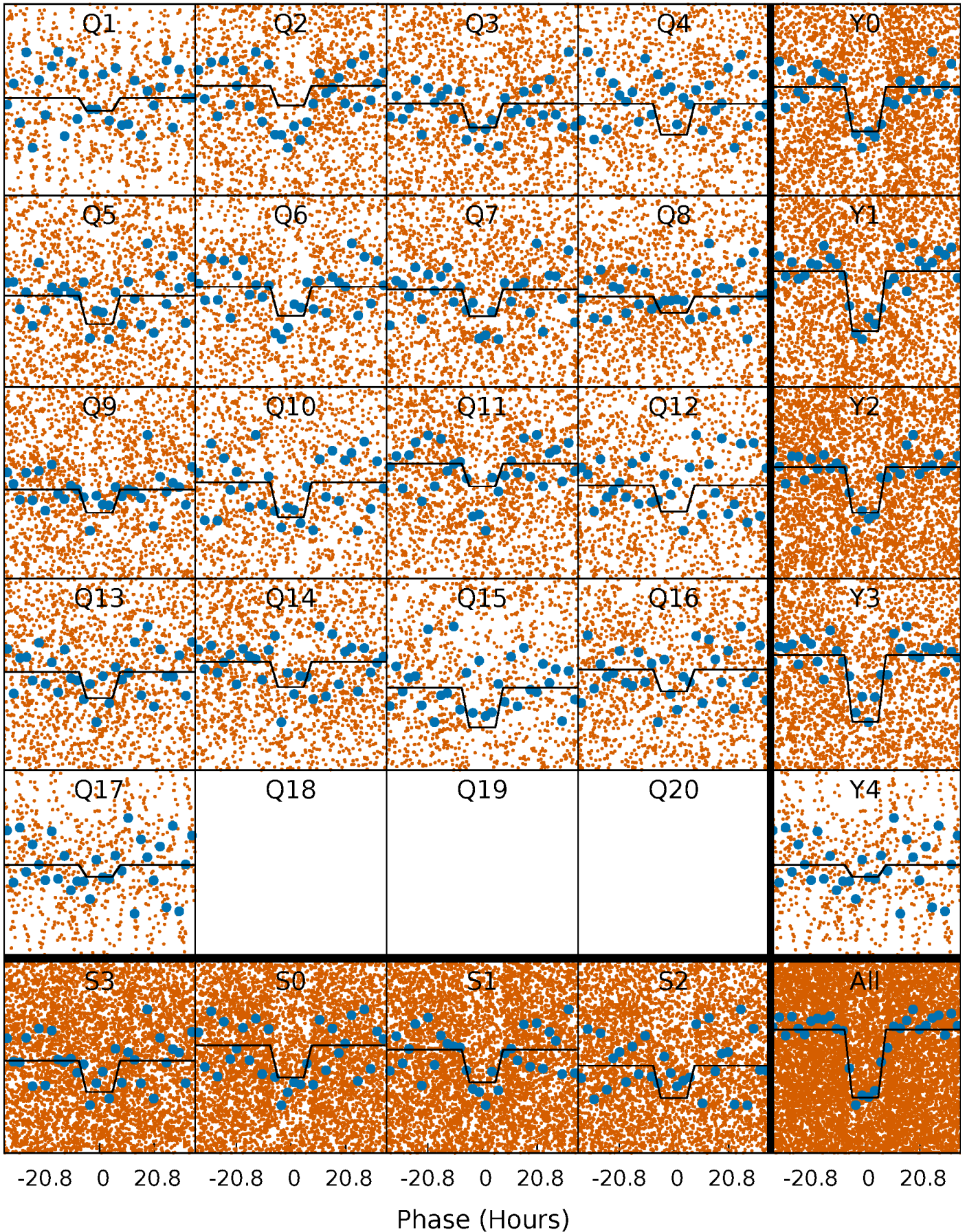
DV Quarter-Phased Transit Curves

TCE 011463950-03 P= 2.929775 Days $T_0=133.896743$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

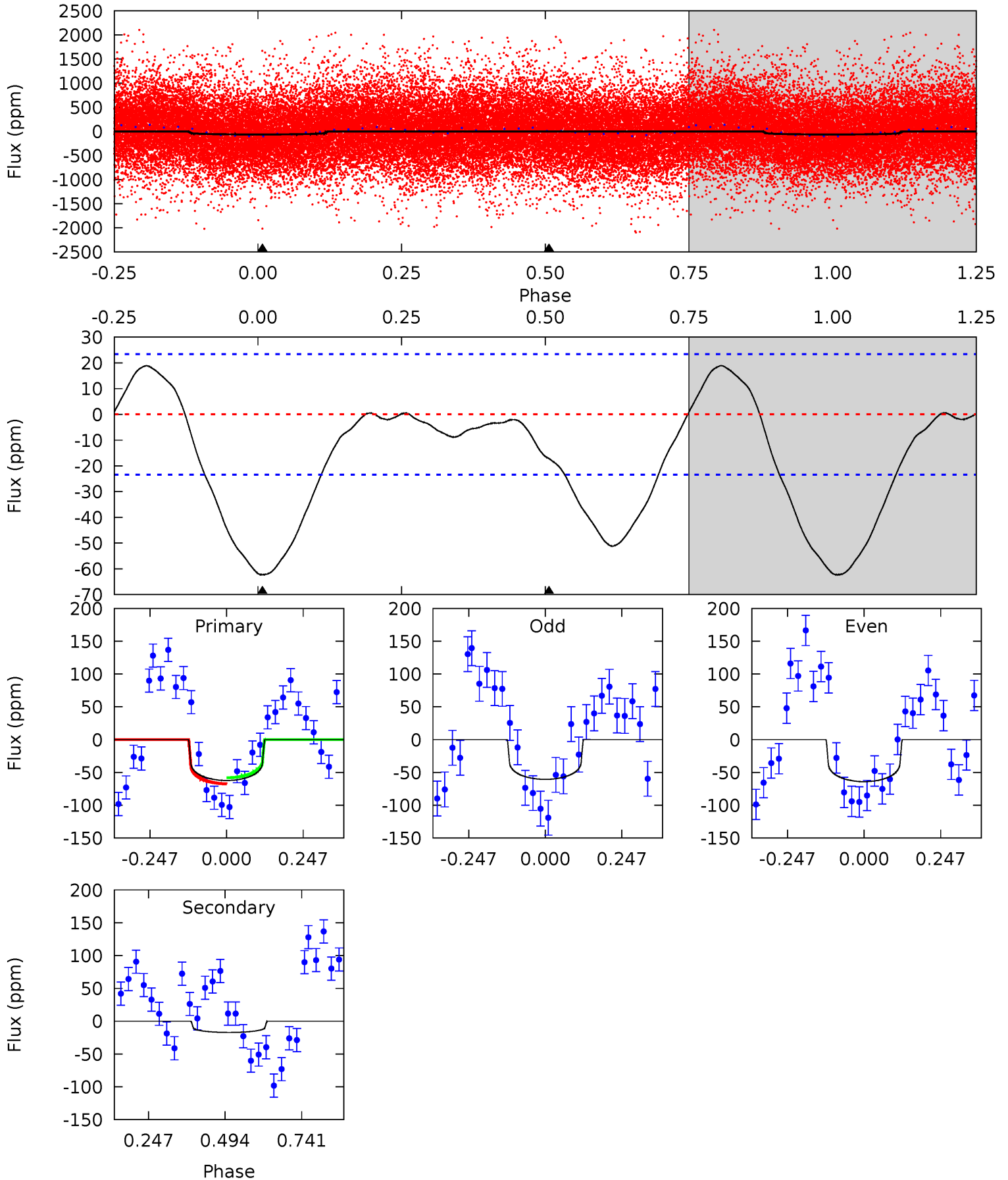
TCE 011463950-03 P= 2.929519 Days $T_0=133.923292$ (BKJD)



DV Model-Shift Uniqueness Test

011463950-03, P = 2.929775 Days, E = 130.966968 Days

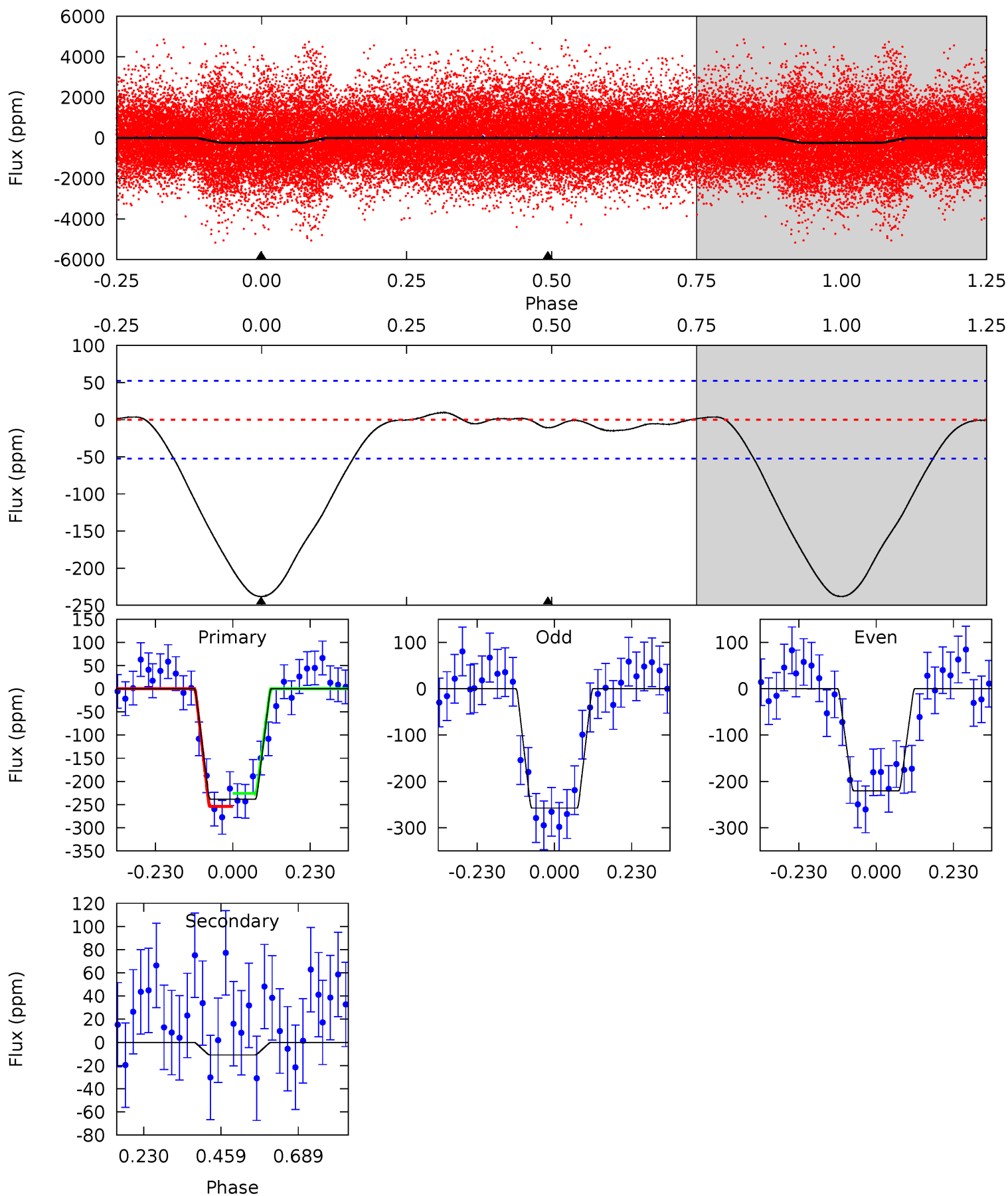
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	3.20	0	0	4.37	1.16	0.96	11.6	11.6	3.20	3.20	0.33	1.12	0.23	0.90



Alt Model-Shift Uniqueness Test

011463950-03, P = 2.929519 Days, E = 130.993773 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	0.91	0	0	4.39	1.20	0.15	19.9	19.9	0.91	0.91	1.57	0.63	0.04	1.17



Stellar Parameters For KIC 011463950

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7064^{+74}_{-95}	$3.888^{+0.182}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$2.531^{+0.405}_{-0.607}$	$1.806^{+0.090}_{-0.217}$	$0.157^{+0.156}_{-0.049}$
	+1%/-1%	+5%/-3%	+94%/-94%	+16%/-24%	+5%/-12%	+100%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011463950-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 5	$2.13^{+0.96}_{-0.93}$	3127^{+132}_{-190}	5011^{+1701}_{-806}	$4.579^{+10.373}_{-2.502}$
Alt.	-11 ± 12	$4.22^{+1.05}_{-1.12}$	3115^{+131}_{-169}	3245^{+862}_{-6627}	$0.682^{+1.240}_{-0.866}$

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

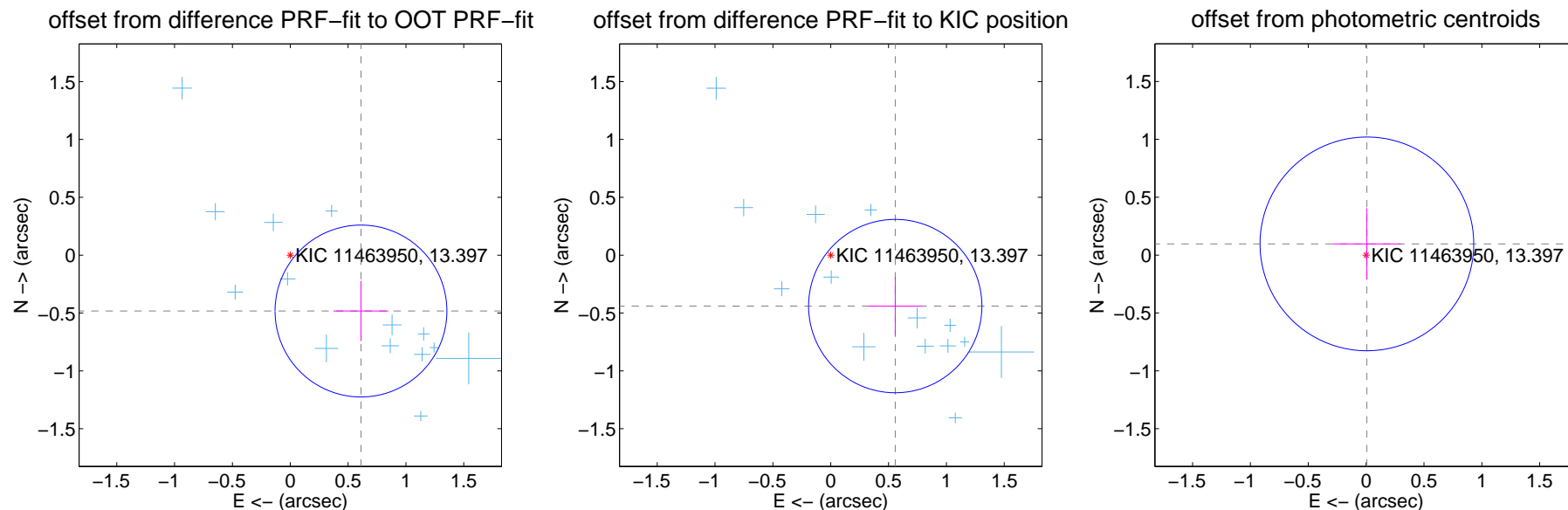
DV Centroid Data

Supplemental centroid analysis for 011463950-03. Kepler magnitude: 13.40. Transit SNR 7.32

There are 15 quarters with good PRF difference image offsets

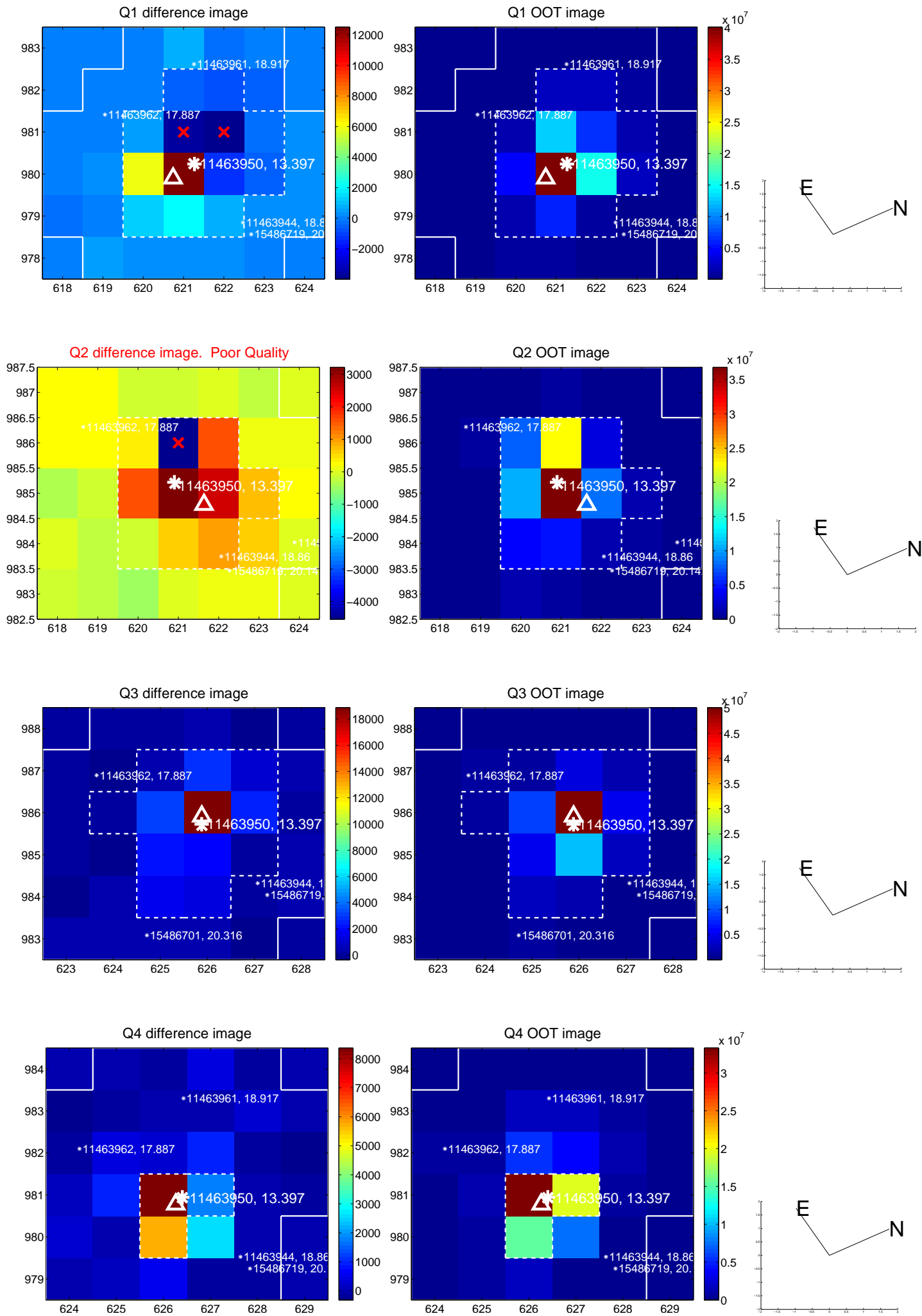
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.779 ± 0.248	3.15	-0.611 ± 0.236	-0.483 ± 0.260
PRF-fit source offset from KIC position	0.710 ± 0.250	2.85	-0.558 ± 0.237	-0.440 ± 0.252
photometric centroid source offset	0.10 ± 0.31	0.32	-0.01 ± 0.29	0.10 ± 0.31

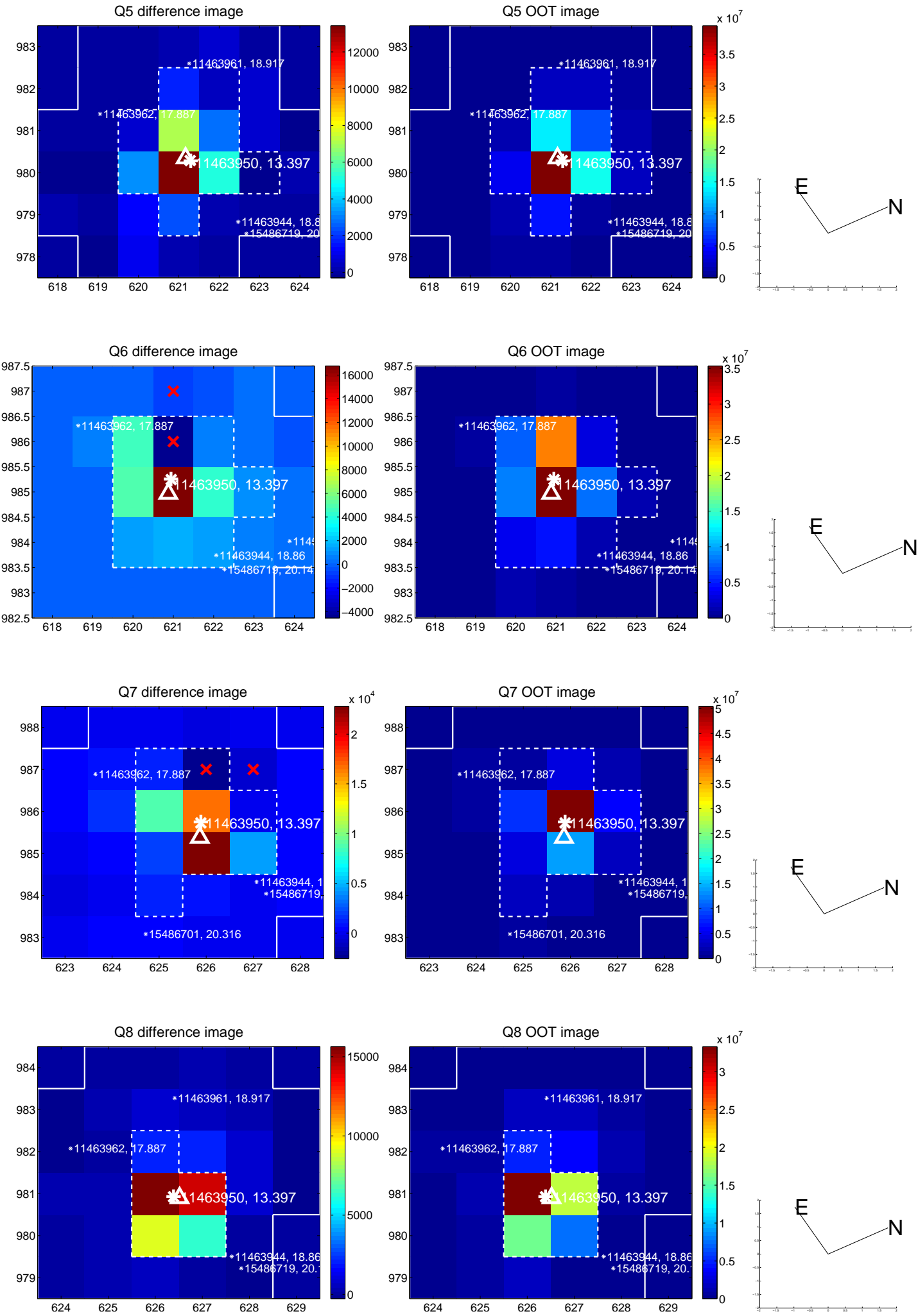


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

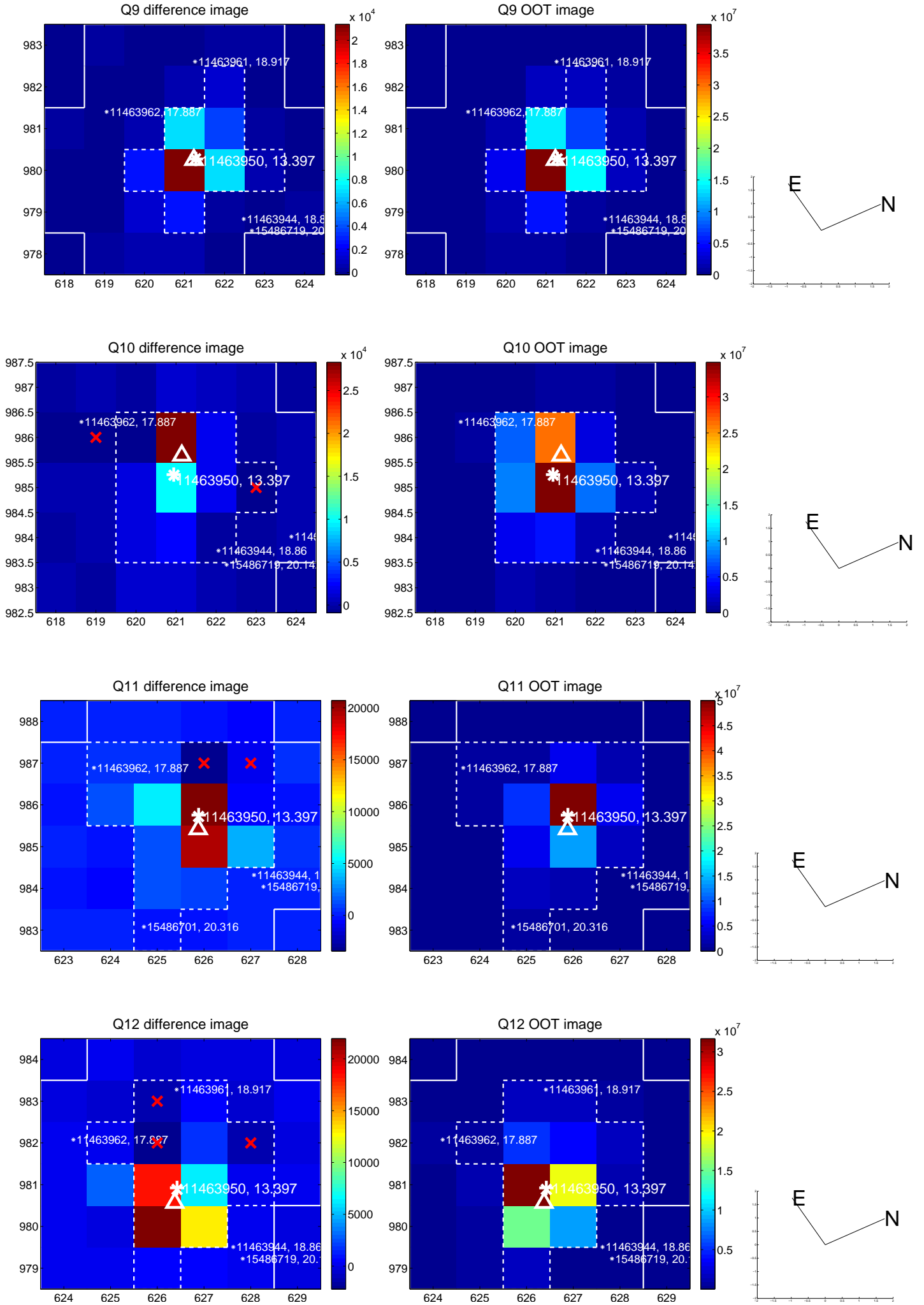
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



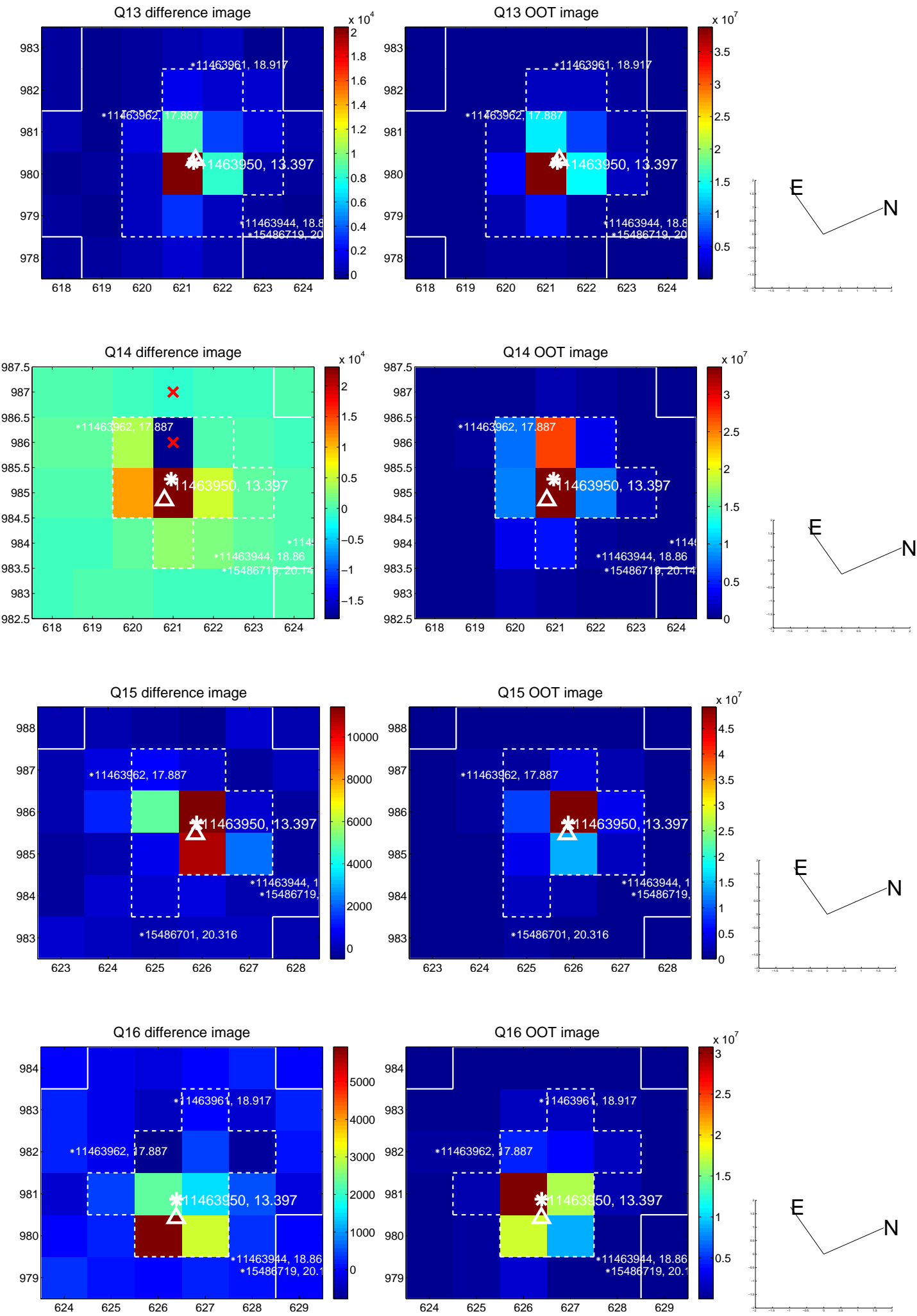
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



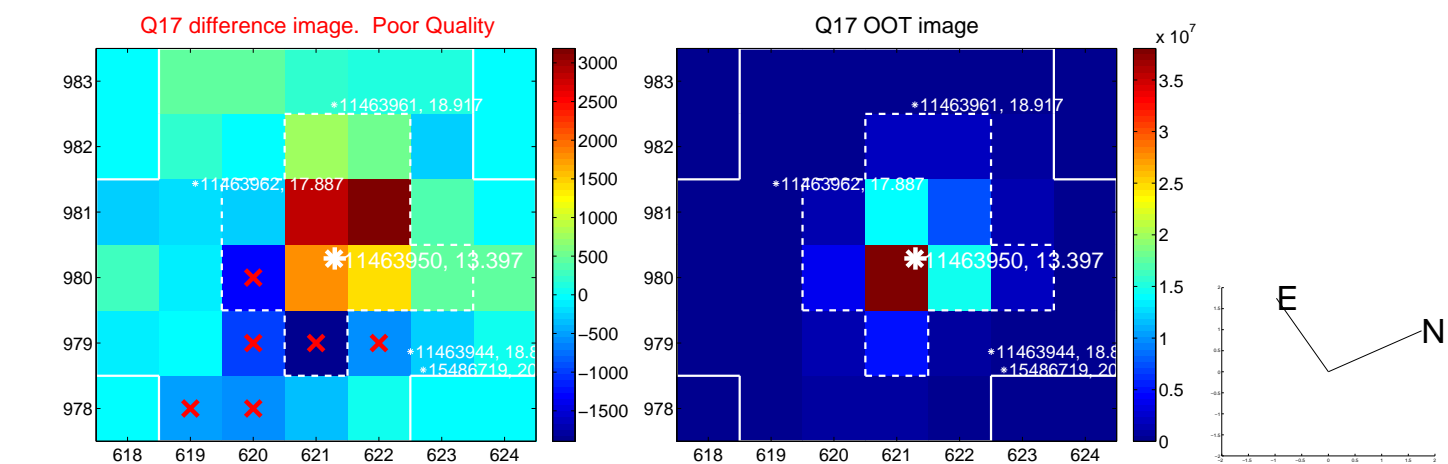
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



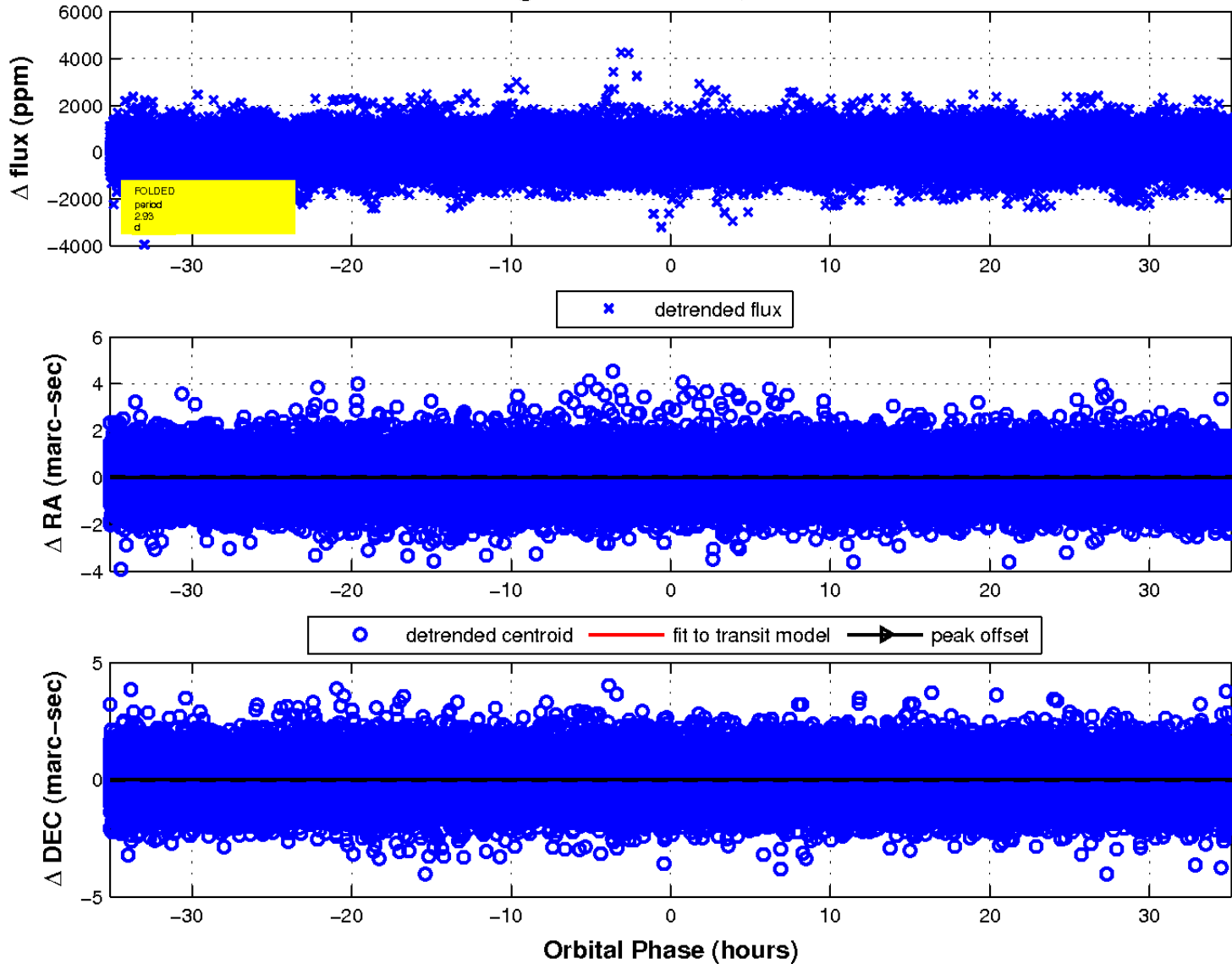
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



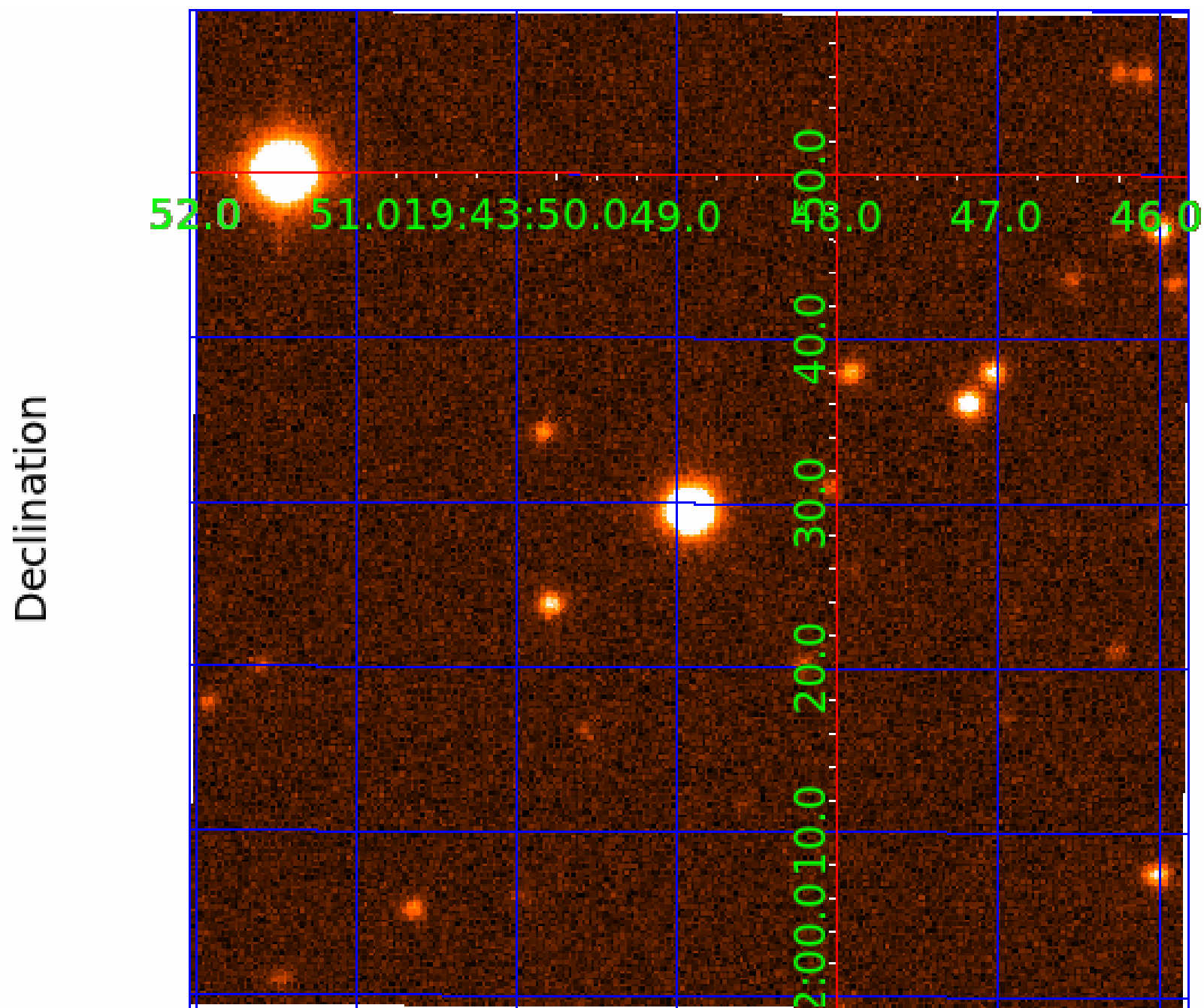
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 3 of 7



UKIRT Image



KIC 011463950

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})
011463950-01	OBS	7616.01	4.054873	134.732147	148.9	12.860	11.5	12.6	2.53	7064	3.67	3890.35
011463950-02	OBS	No	411.793426	173.563522	1001.3	7.864	8.0	8.7	2.53	7064	9.78	8.21
011463950-03	OBS	No	2.929775	133.896743	71.8	16.917	8.2	7.3	2.53	7064	2.21	6000.39
011463950-04	OBS	No	130.650429	144.142290	838.2	15.440	11.1	13.8	2.53	7064	8.18	37.94
011463950-05	OBS	No	80.209254	153.167289	387.1	12.016	11.6	6.8	2.53	7064	5.32	72.72
011463950-06	OBS	No	401.186630	416.895102	605.9	7.249	8.7	8.8	2.53	7064	7.10	8.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011463950-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL
011463950-03	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
011463950-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011463950-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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 011463950-04

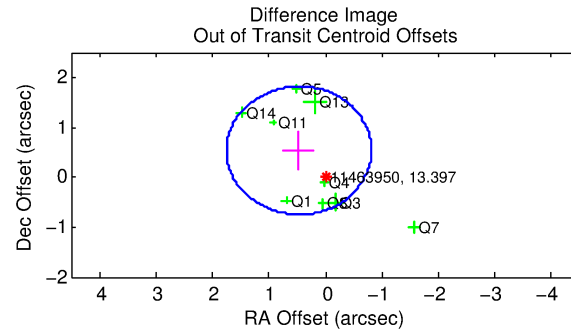
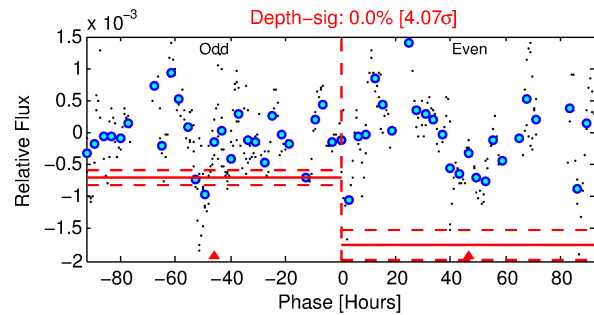
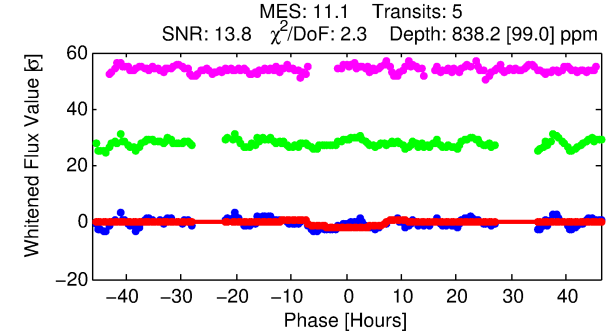
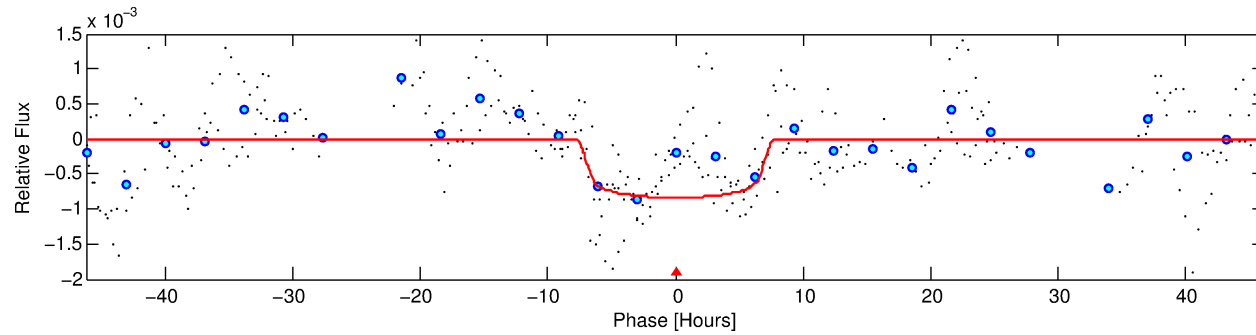
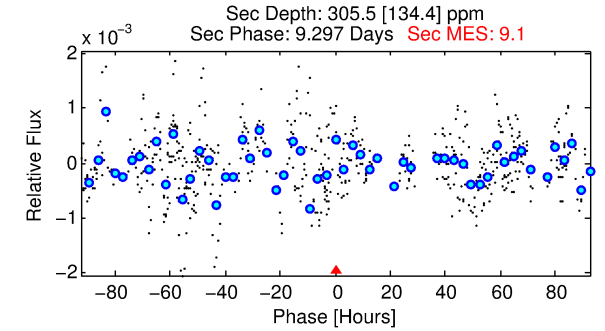
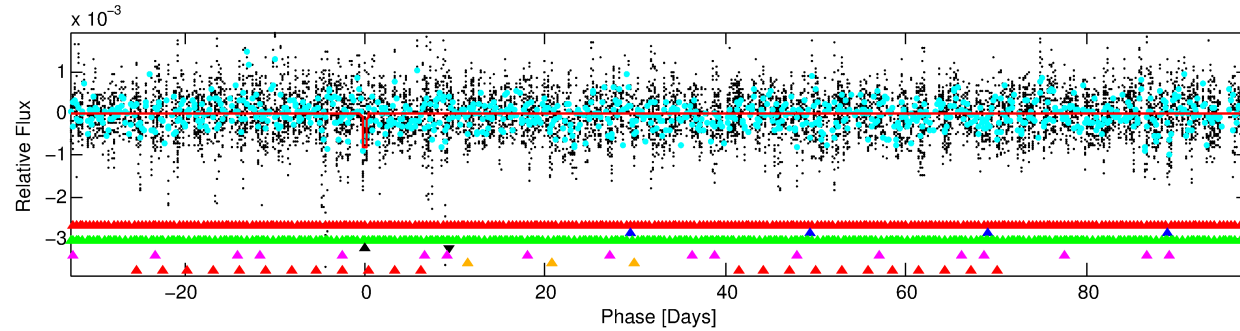
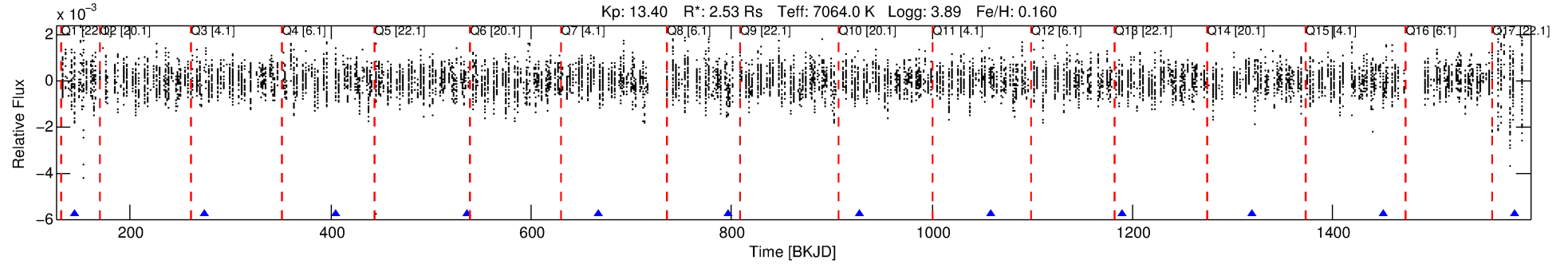
No Significant Match Found

DV One-Page Summary

KIC: 11463950 Candidate: 4 of 7 Period: 130.650 d

KOI: K07616 Corr: No Ephemeris Match

Kp: 13.40 R*: 2.53 Rs Teff: 7064.0 K Logg: 3.89 Fe/H: 0.160



DV Fit Results:

Period = 130.65043 [0.00299] d
Epoch = 144.1423 [0.0167] BKJD
Rp/R* = 0.0296 [0.0027]
a/R* = 39.48 [15.25]
b = 0.83 [0.15]
Seff = 37.94 [12.38]
Teff = 633 [52] K
Rp = 8.18 [2.10] Re
a = 0.6137 [0.1303] AU
Ag = 946.85 [544.68] [1.74]
Teffp = 5428 [651] K [7.34]

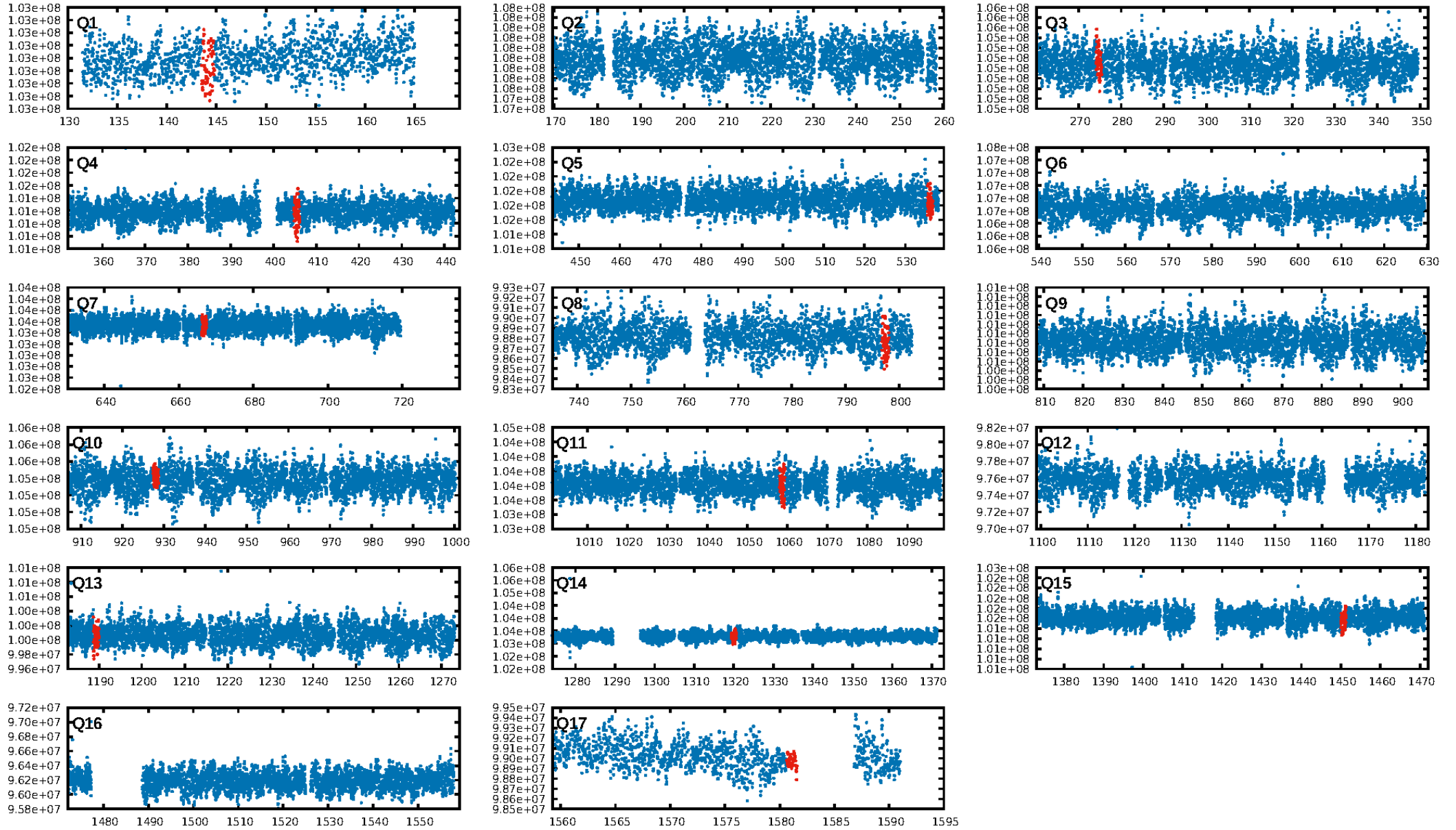
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.88]
LongPeriod-sig: 100.0% [380.67]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 57.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4781
Centroid-sig: 9.9%
Centroid-so: 0.219 arcsec [1.40]
OotOffset-rm: 0.710 arcsec [1.66]
KicOffset-rm: 0.758 arcsec [1.65]
OotOffset-st: 1/3/2/3 [9]
KicOffset-st: 1/3/2/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.00 [0/10]

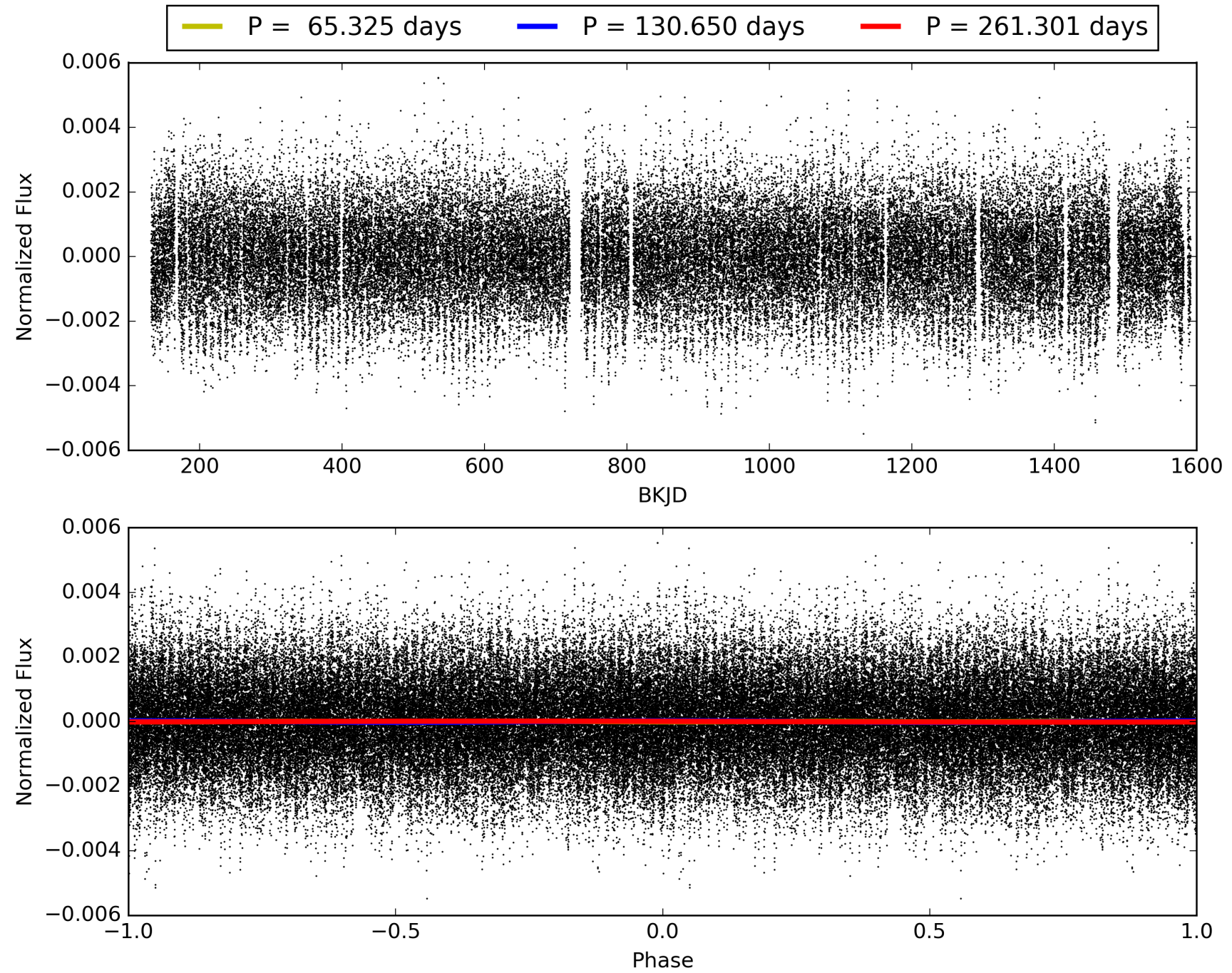
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:30 Z

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

TCE 011463950-04, PDC Light Curves

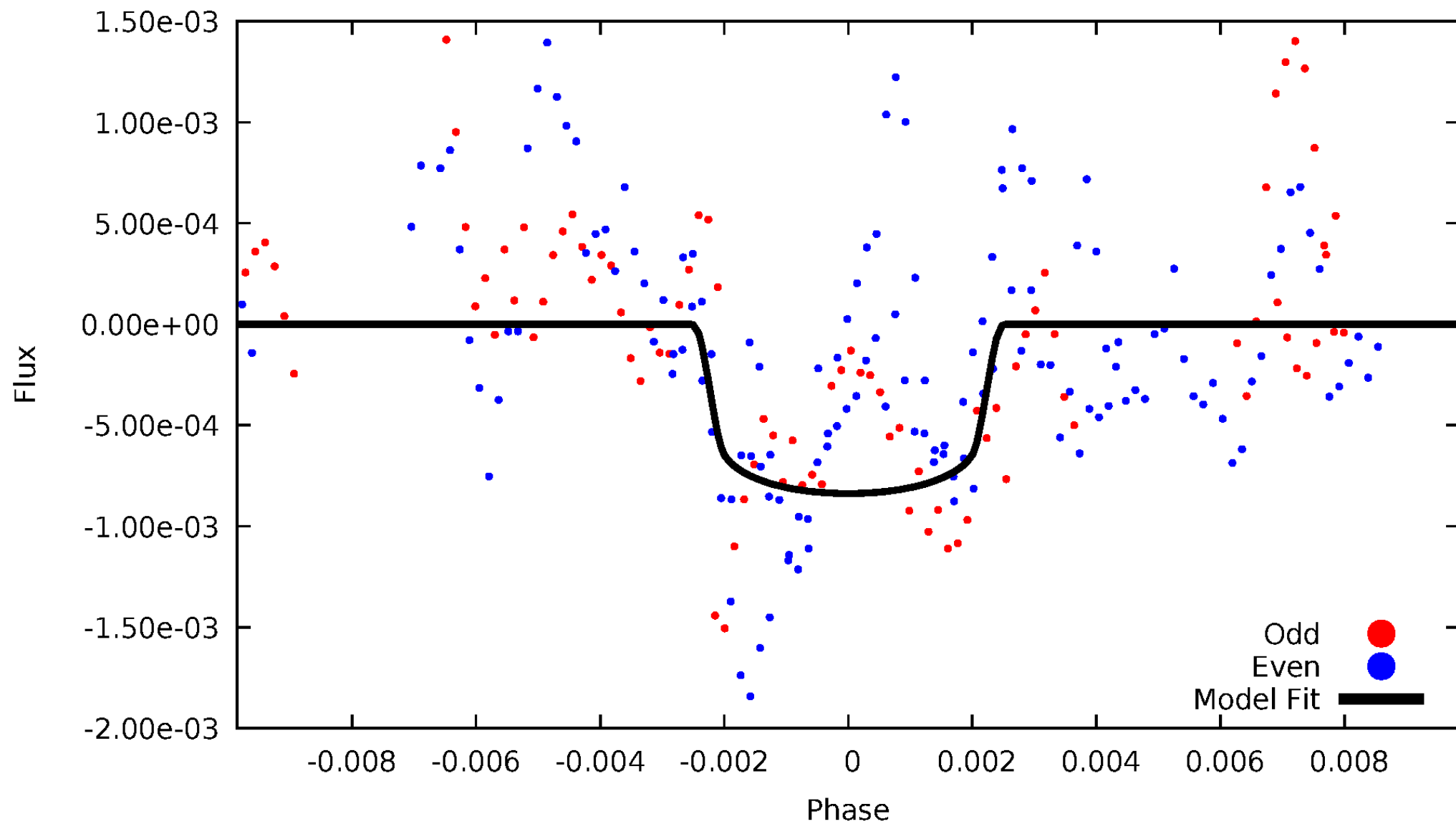


TCE 011463950-04



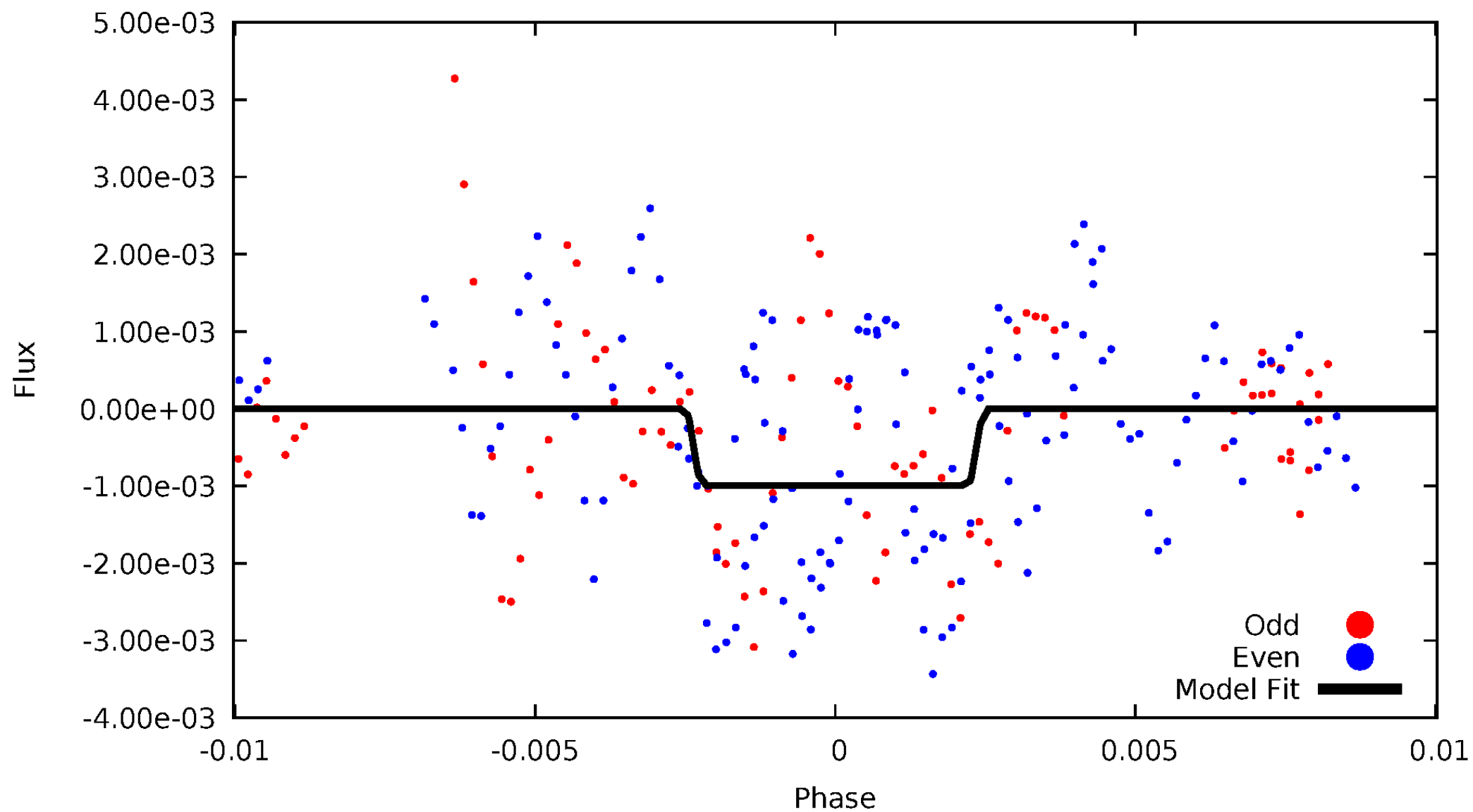
DV Odd/Even

TCE 011463950-04



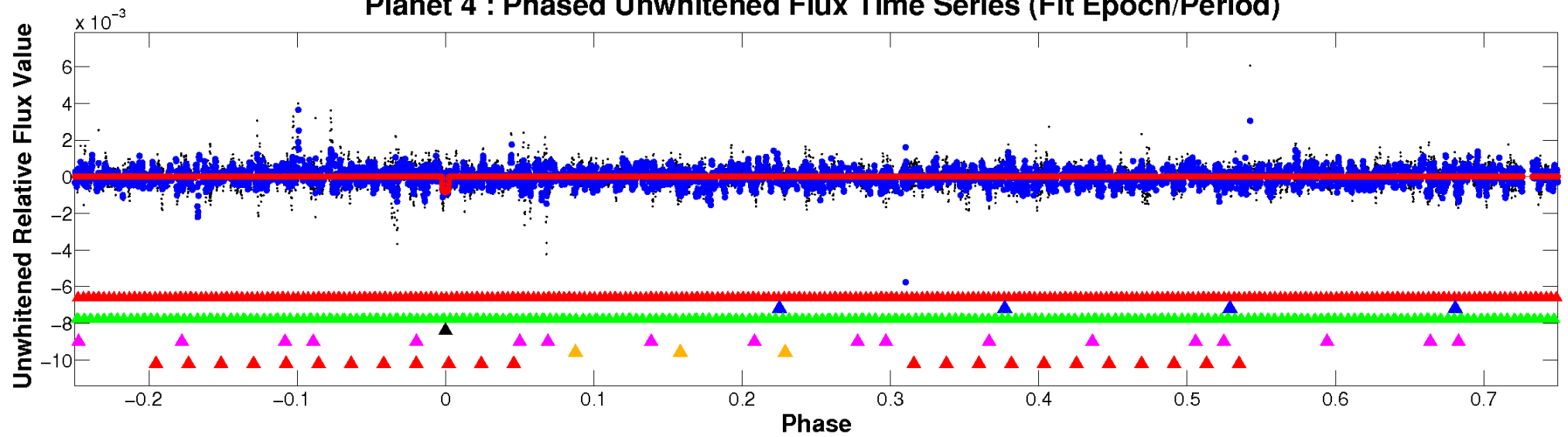
ALT Odd/Even

TCE 011463950-04

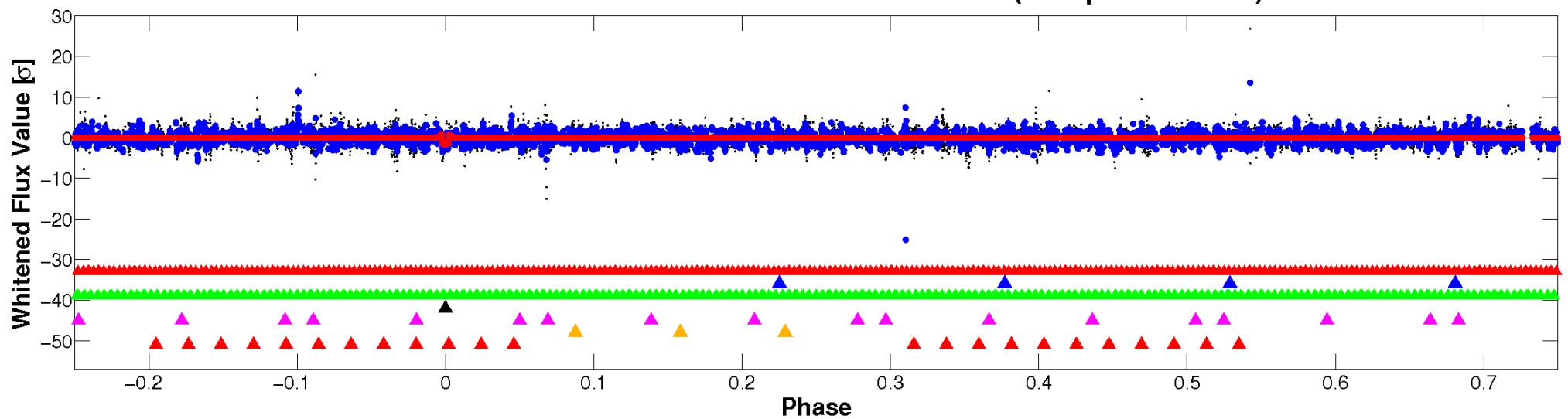


Non-Whitened Vs. Whitened Light Curve

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

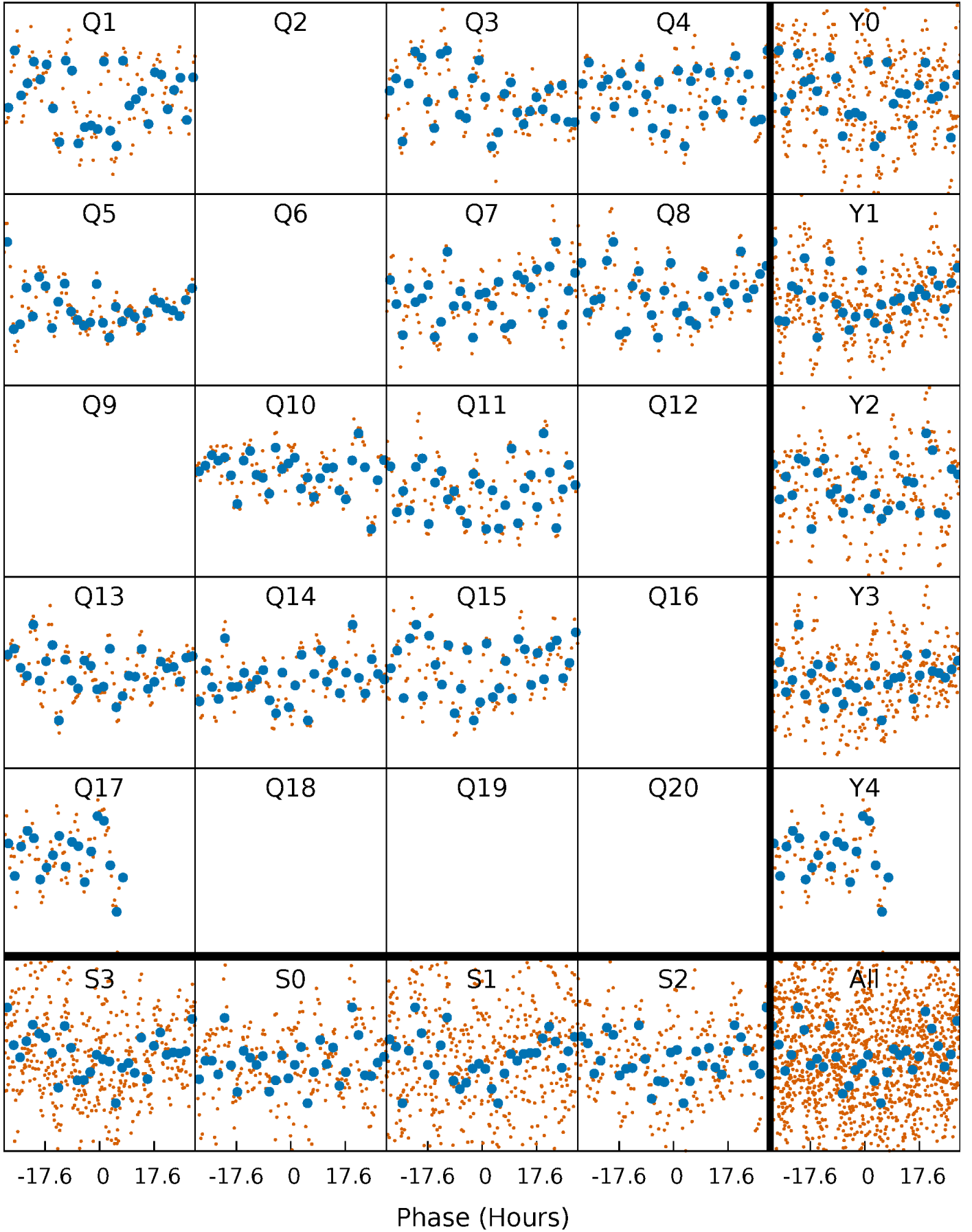


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



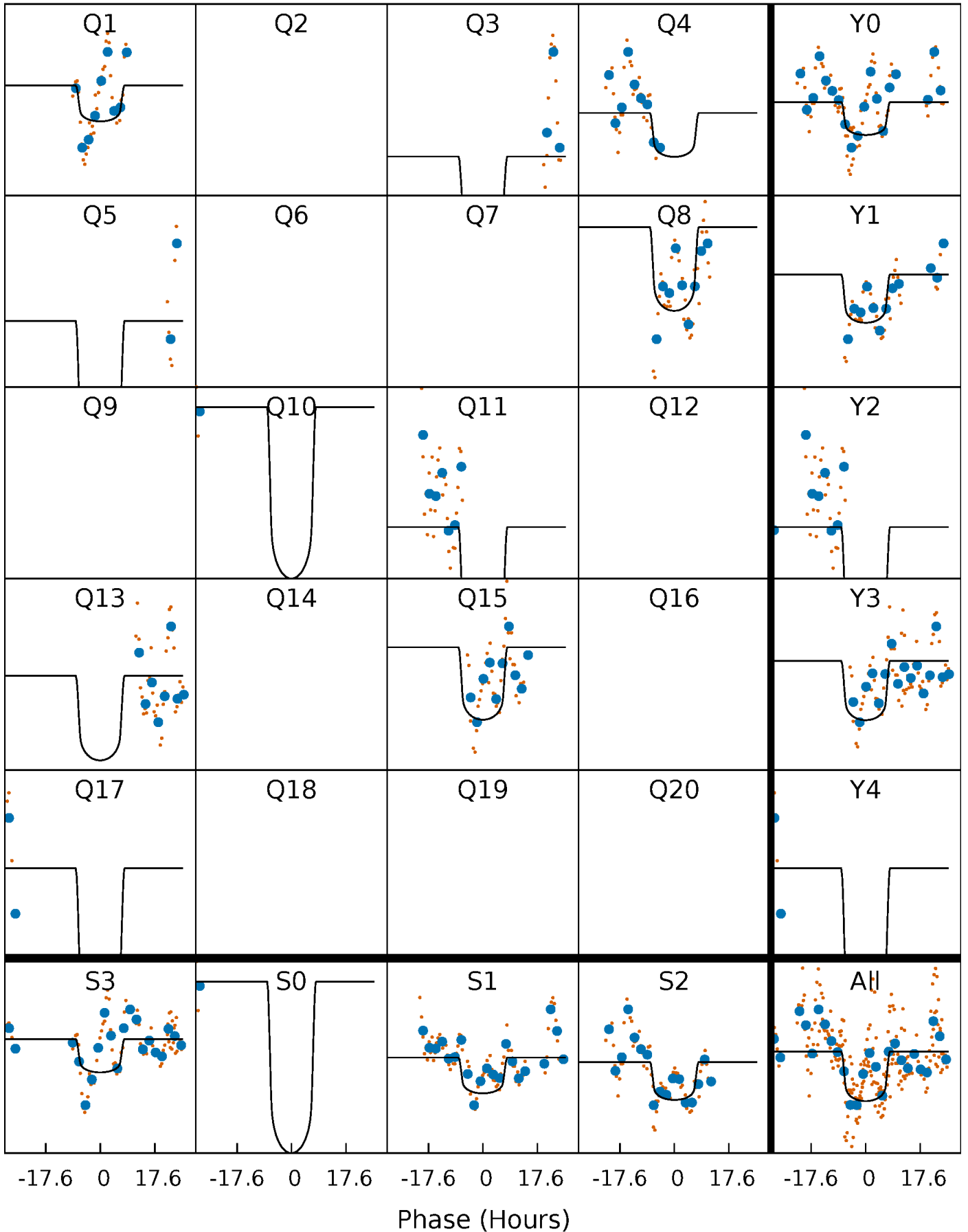
PDC Quarter-Phased Transit Curves

TCE 011463950-04 $P=130.650429$ Days $T_0=144.142290$ (BKJD)



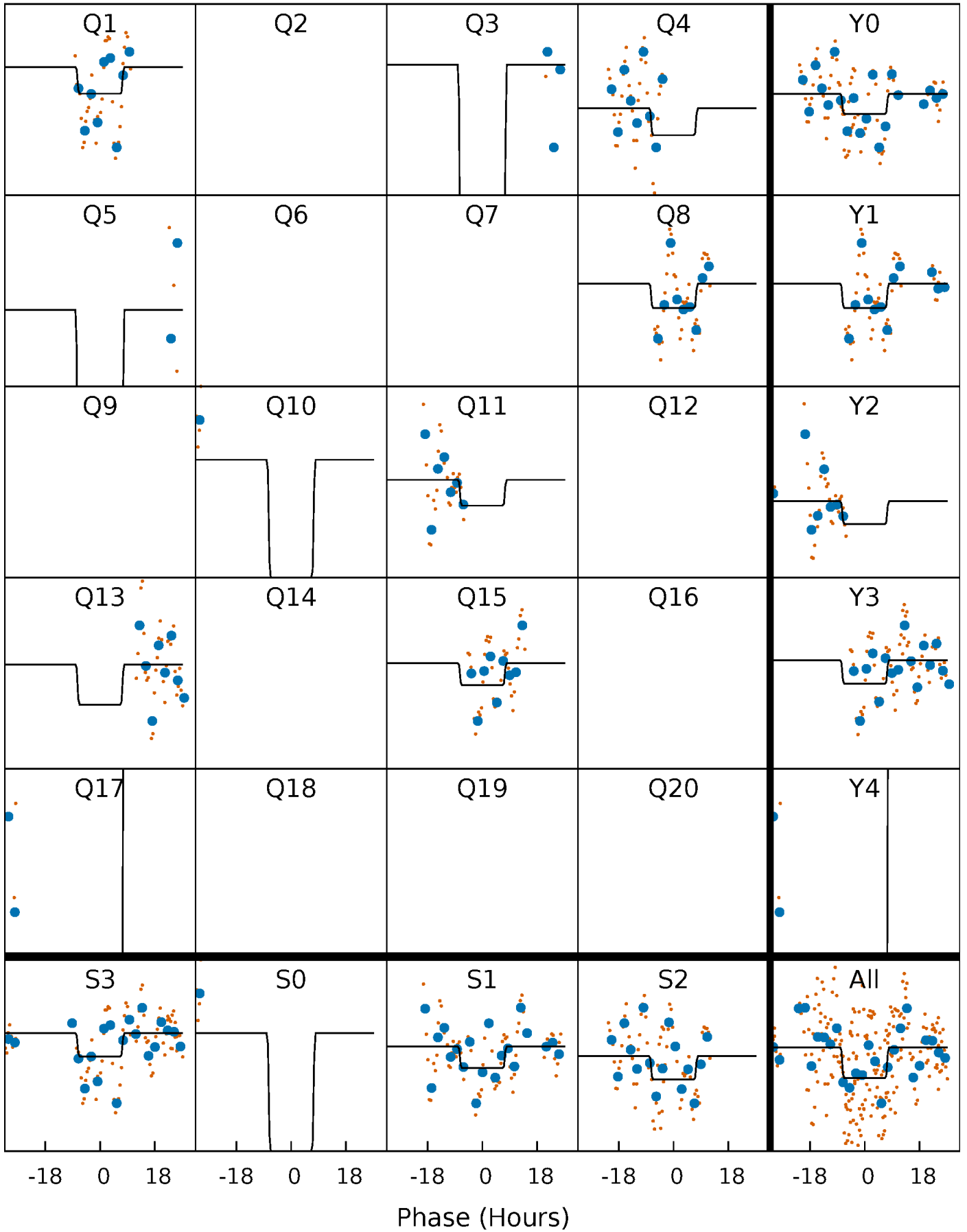
DV Quarter-Phased Transit Curves

TCE 011463950-04 P=130.650429 Days $T_0=144.142290$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

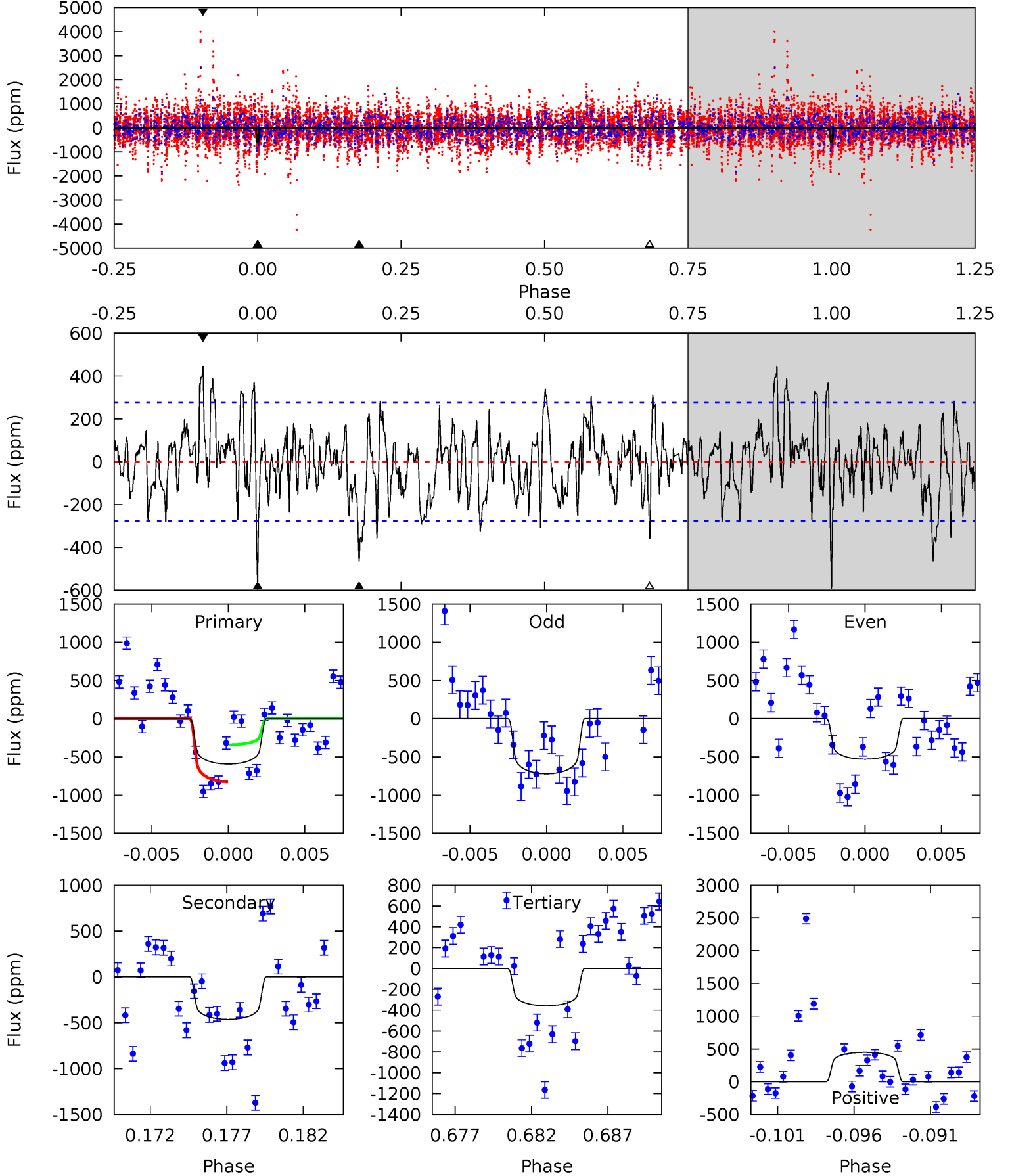
TCE 011463950-04 P=130.652183 Days $T_0=144.111480$ (BKJD)



DV Model-Shift Uniqueness Test

011463950-04, $P = 130.650429$ Days, $E = 13.491861$ Days

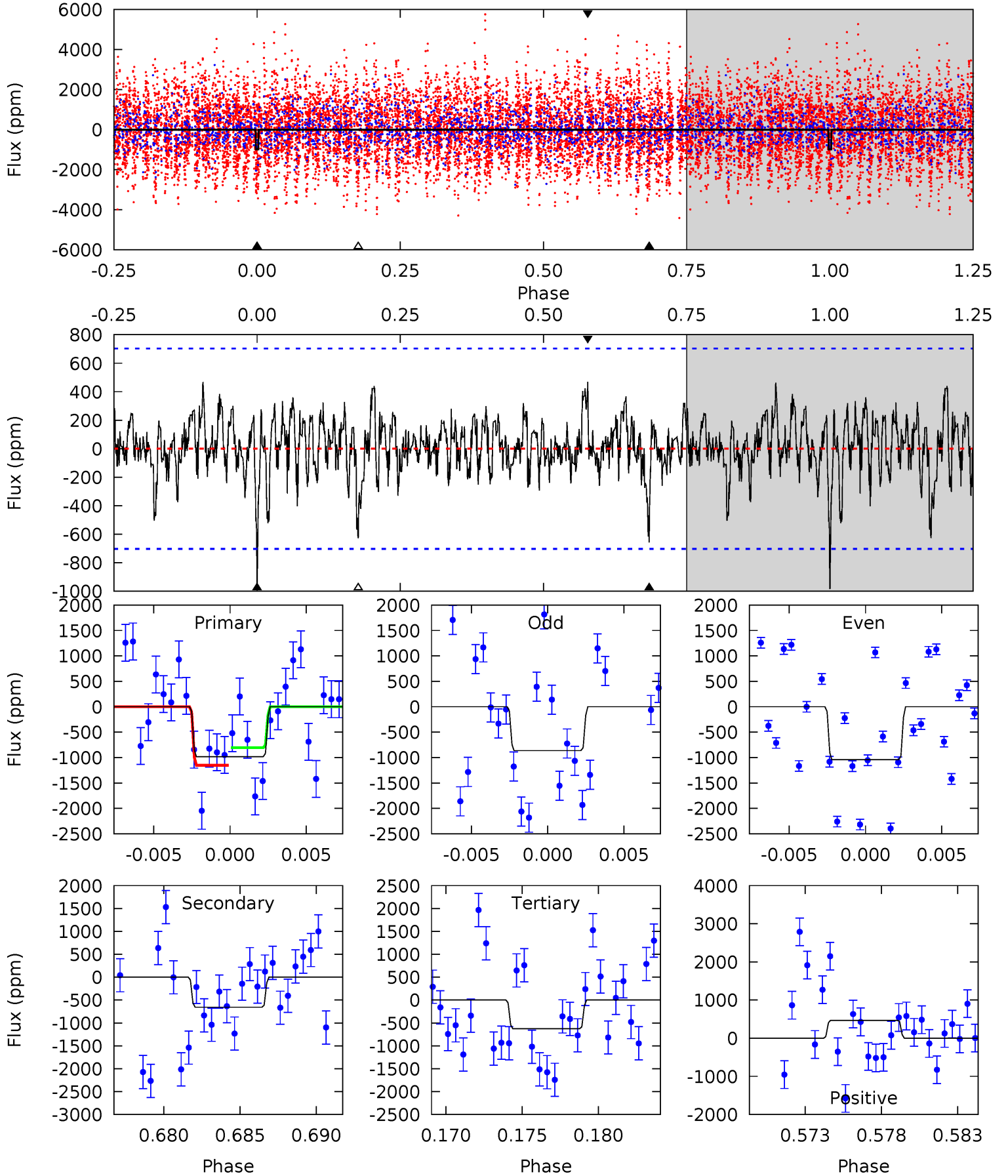
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	8.67	6.67	8.36	5.16	2.80	2.42	4.42	2.73	2.00	0.31	1.64	0.76	0.43	4.55



Alt Model-Shift Uniqueness Test

011463950-04, $P = 130.652183$ Days, $E = 13.459297$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.22	4.82	4.60	3.45	5.16	2.82	1.14	2.62	3.77	0.22	1.38	0.63	1.06	0.32	1.28



Stellar Parameters For KIC 011463950

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7064^{+74}_{-95}	$3.888^{+0.182}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$2.531^{+0.405}_{-0.607}$	$1.806^{+0.090}_{-0.217}$	$0.157^{+0.156}_{-0.049}$
	+1%/-1%	+5%/-3%	+94%/-94%	+16%/-24%	+5%/-12%	+100%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011463950-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-464 ± 53	$7.98^{+1.13}_{-1.21}$	879^{+39}_{-51}	5987^{+352}_{-313}	1519^{+535}_{-388}
Alt.	-657 ± 136	$8.53^{+1.11}_{-1.18}$	879^{+40}_{-49}	6297^{+479}_{-458}	1839^{+793}_{-569}

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 $A_{obs} \gg 1.0$

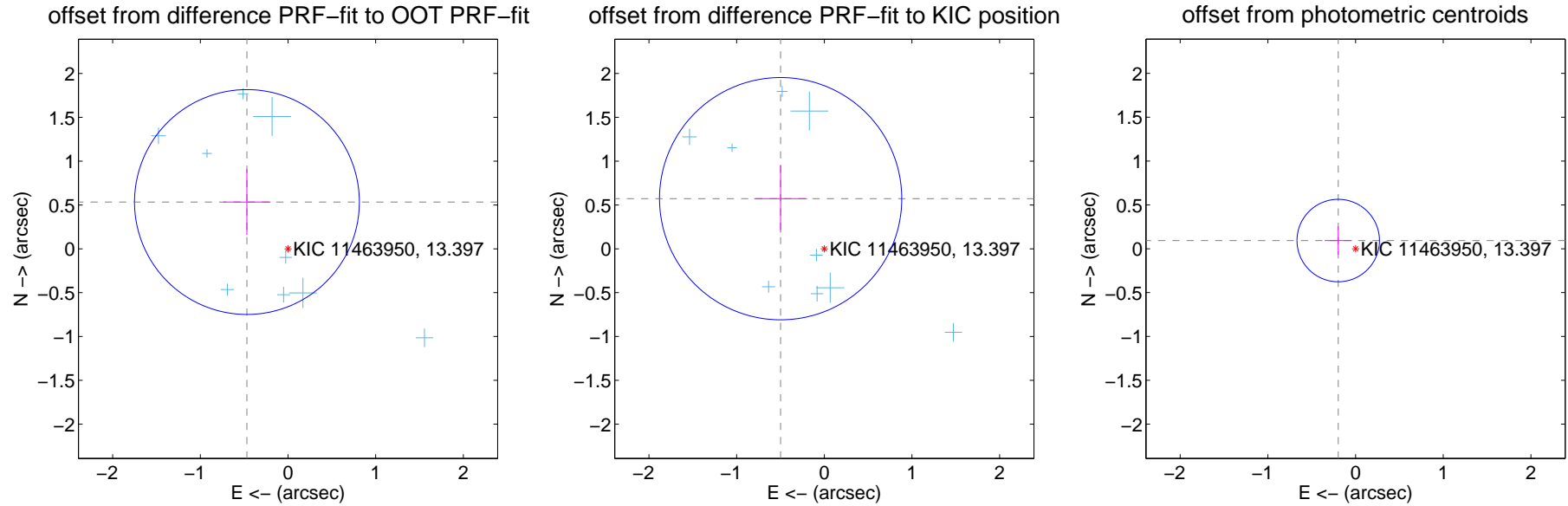
DV Centroid Data

Supplemental centroid analysis for 011463950-04. Kepler magnitude: 13.40. Transit SNR 13.81

There are 9 quarters with good PRF difference image offsets

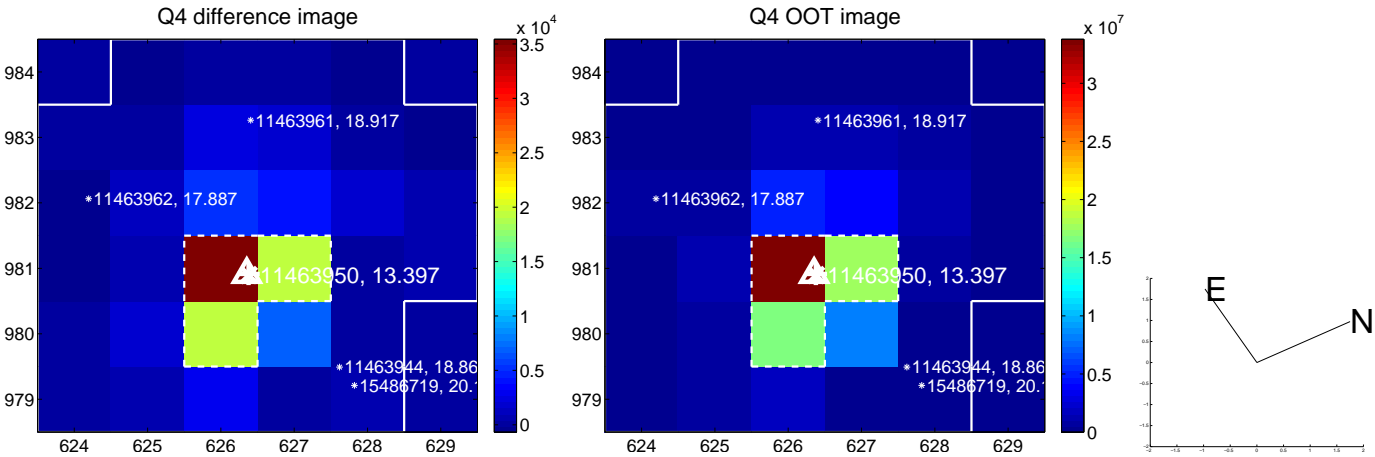
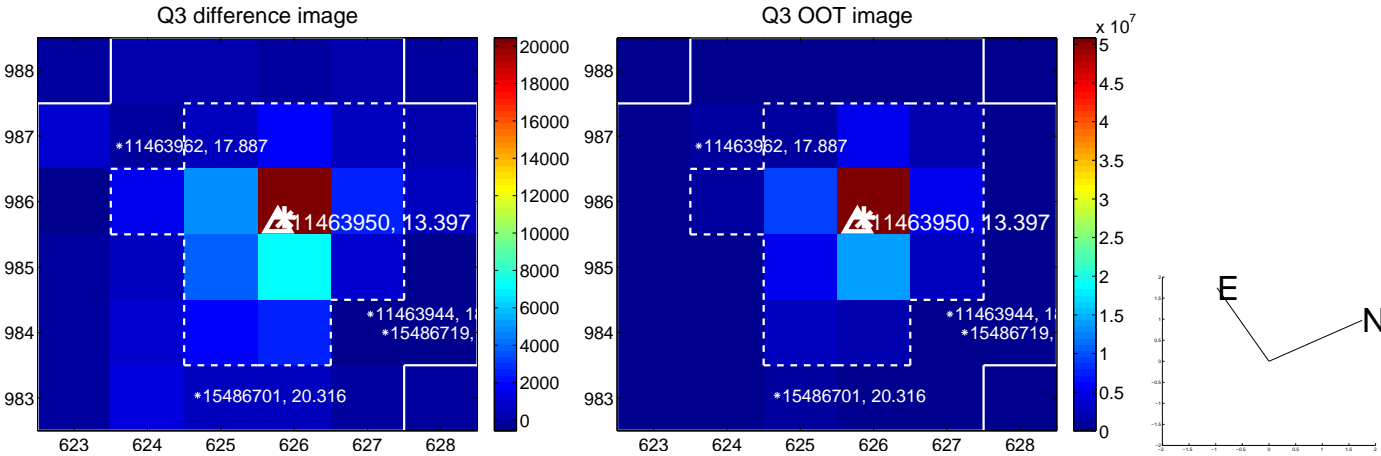
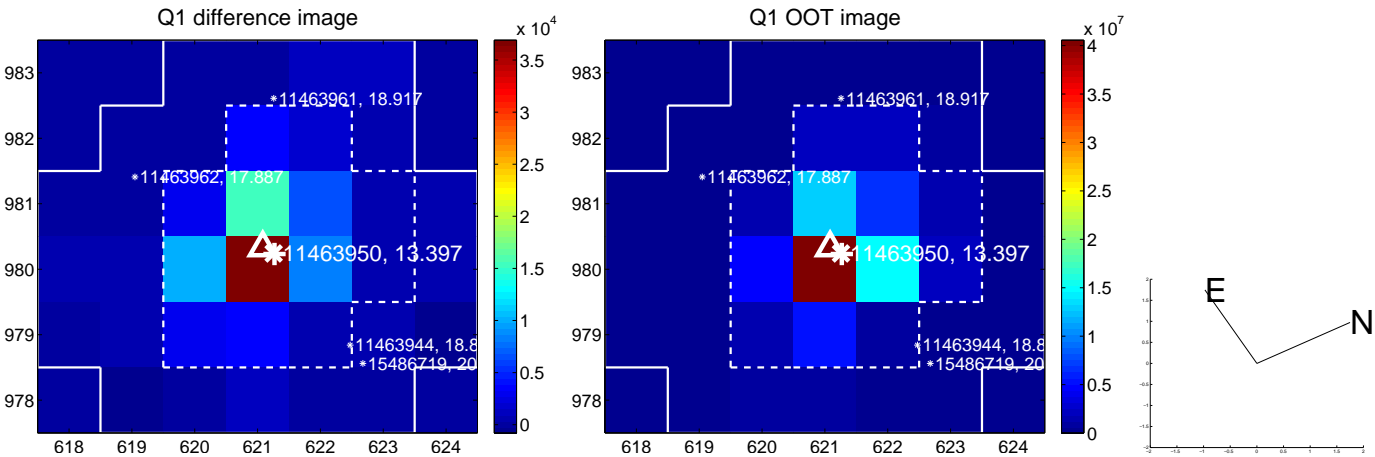
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.710 ± 0.428	1.66	0.469 ± 0.269	0.534 ± 0.376
PRF-fit source offset from KIC position	0.758 ± 0.461	1.65	0.498 ± 0.302	0.572 ± 0.386
photometric centroid source offset	0.22 ± 0.16	1.40	0.20 ± 0.16	0.09 ± 0.16

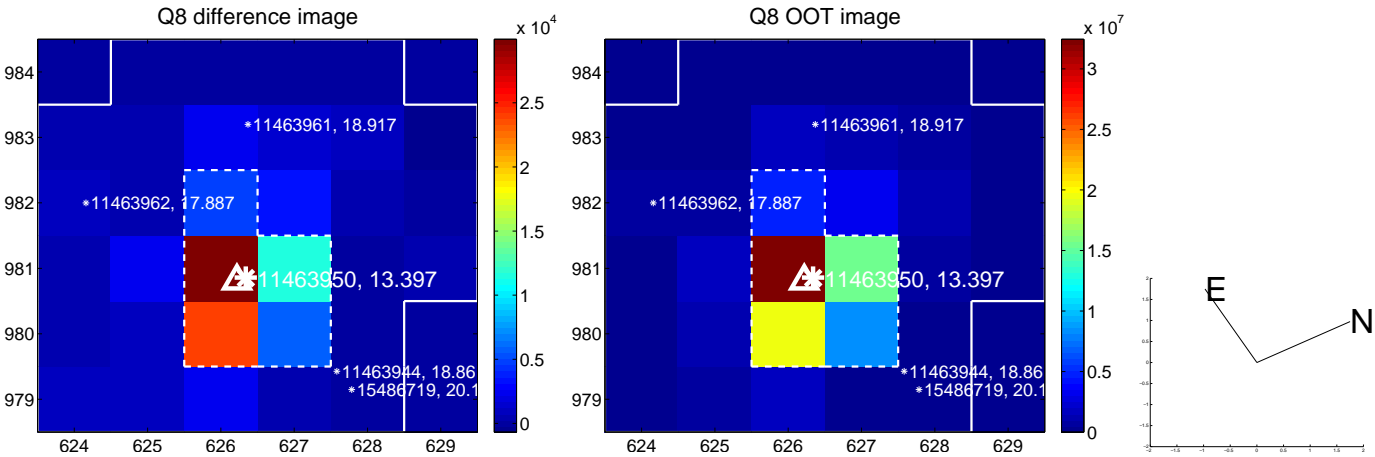
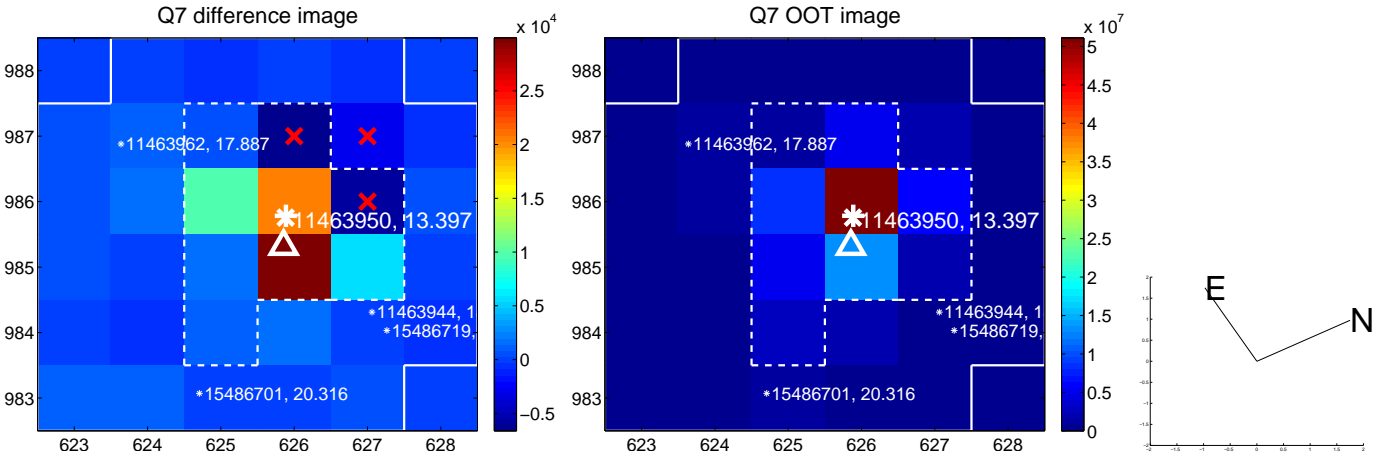
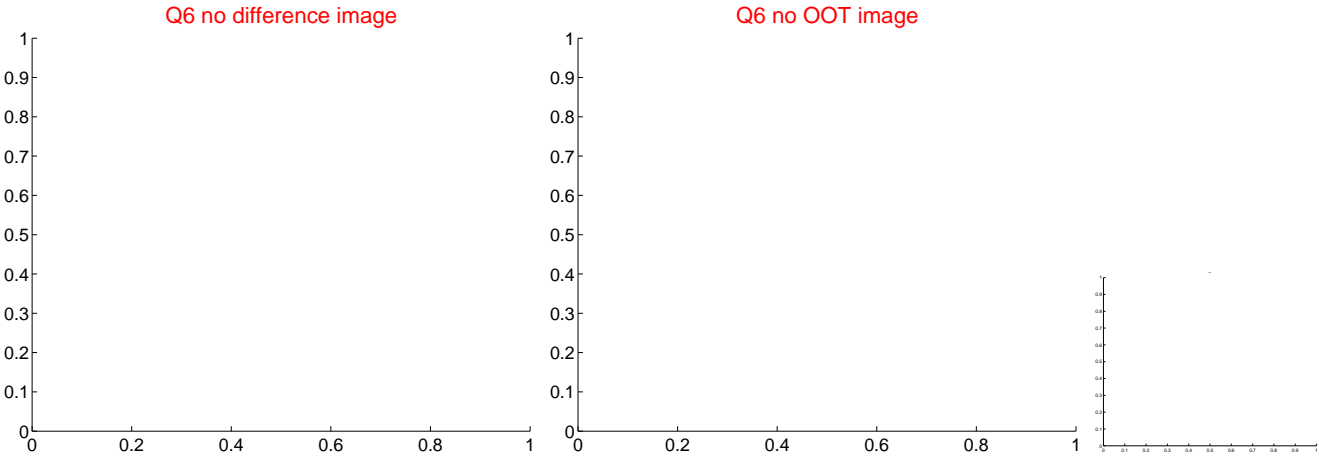
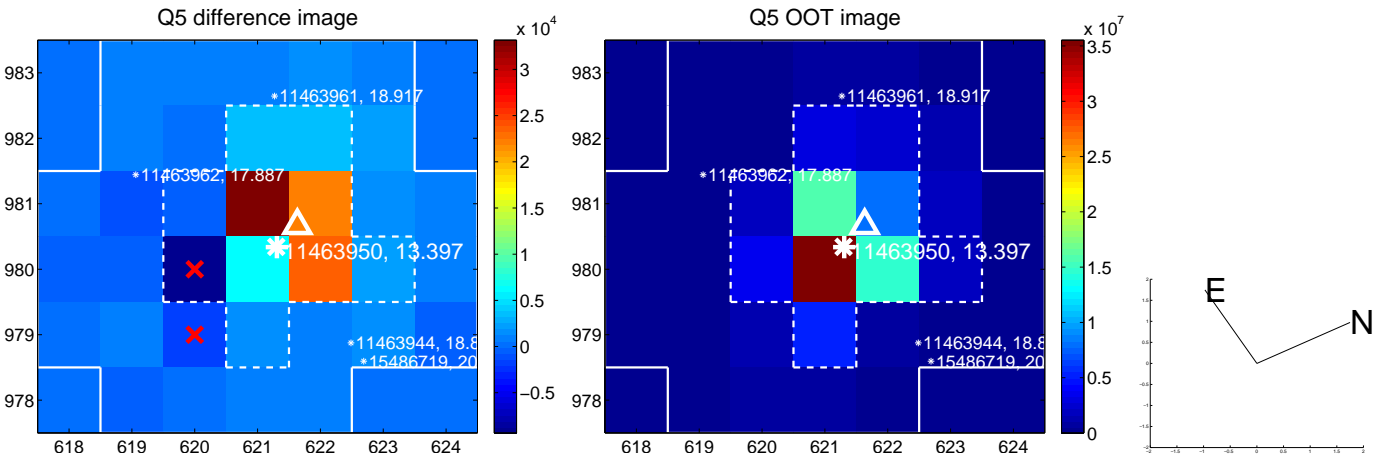


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



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



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

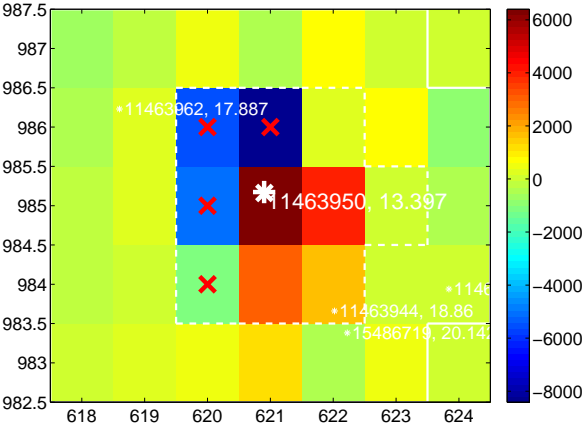
Q9 no difference image



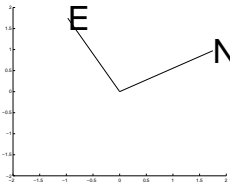
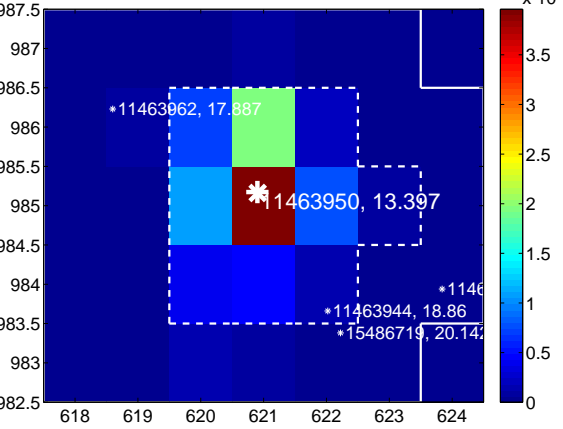
Q9 no OOT image



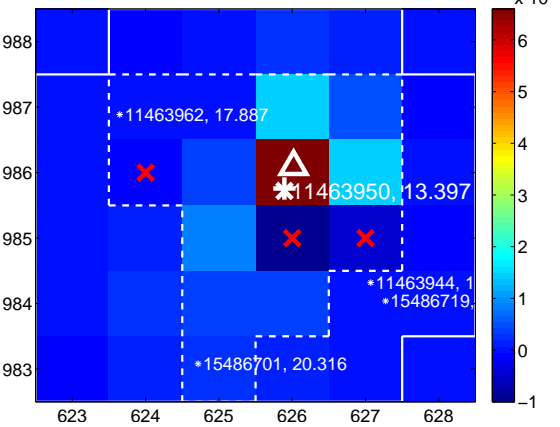
Q10 difference image. Poor Quality



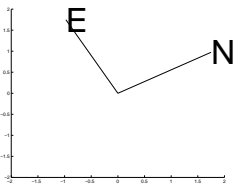
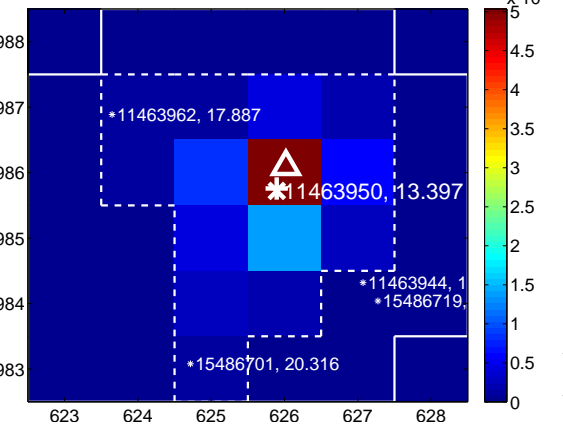
Q10 OOT image



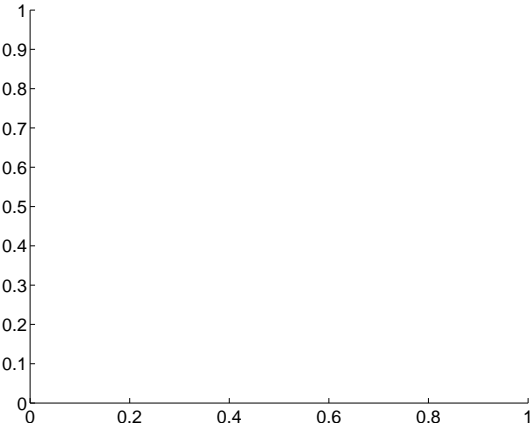
Q11 difference image



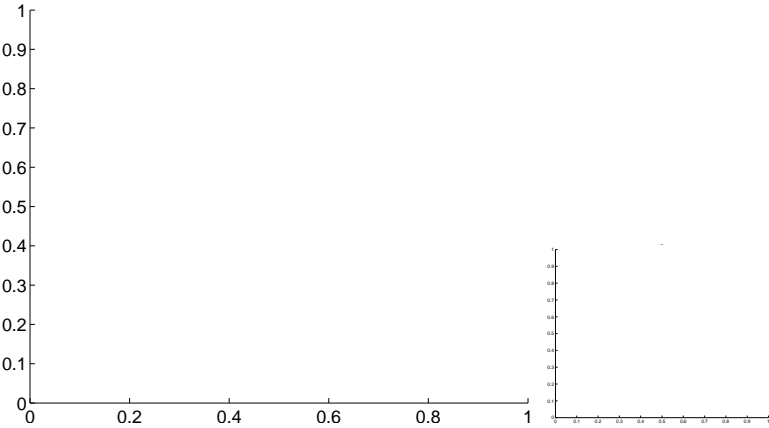
Q11 OOT image



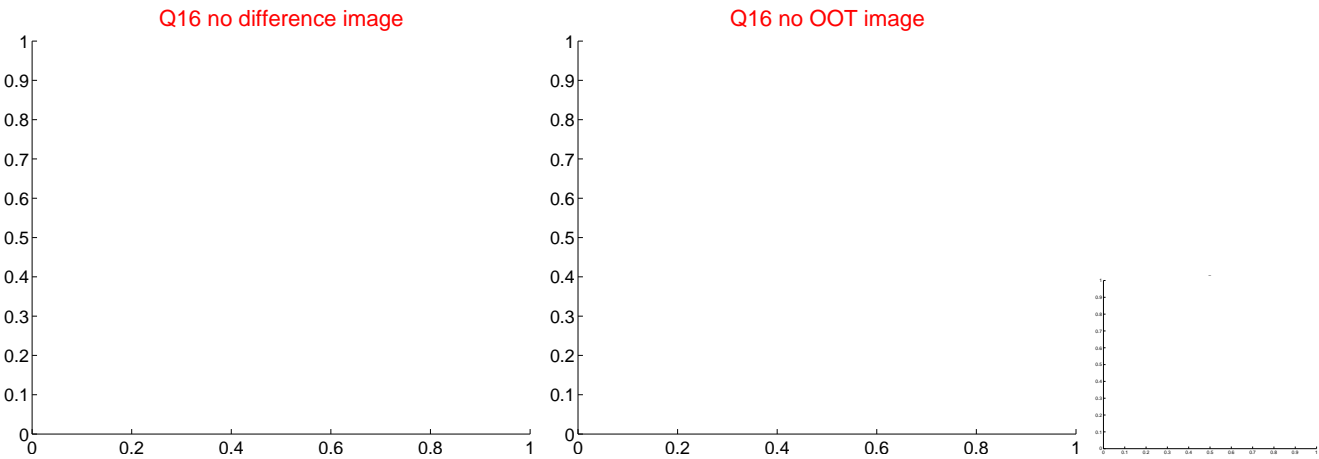
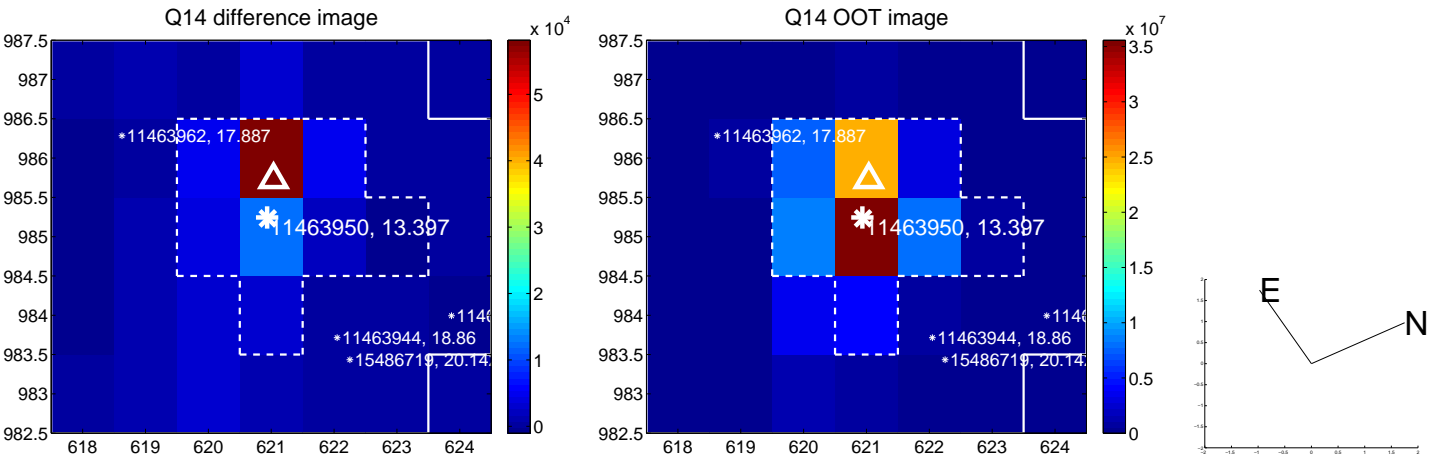
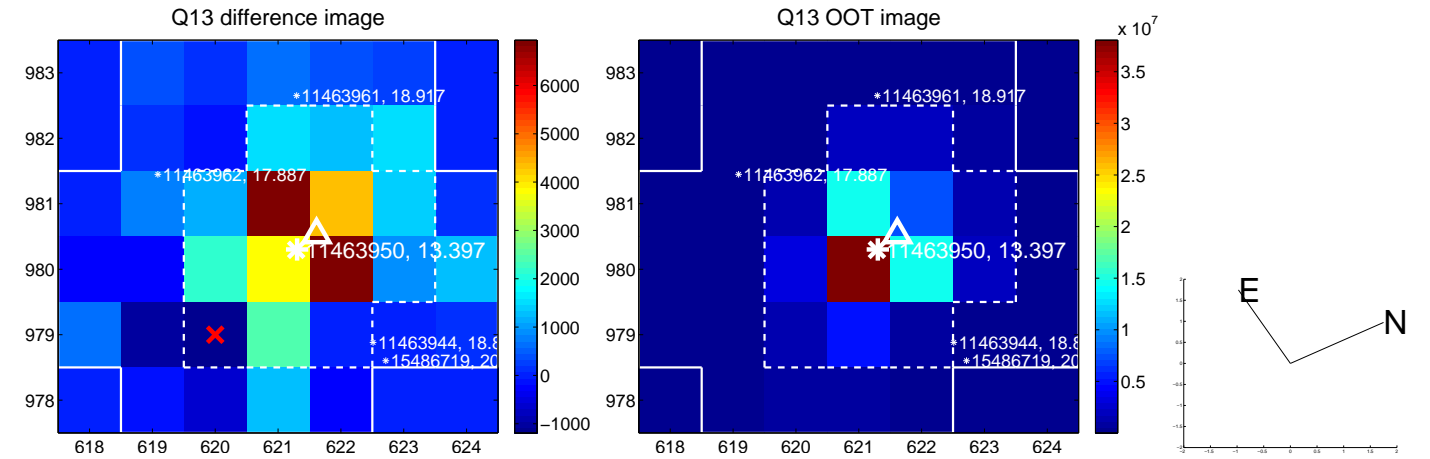
Q12 no difference image



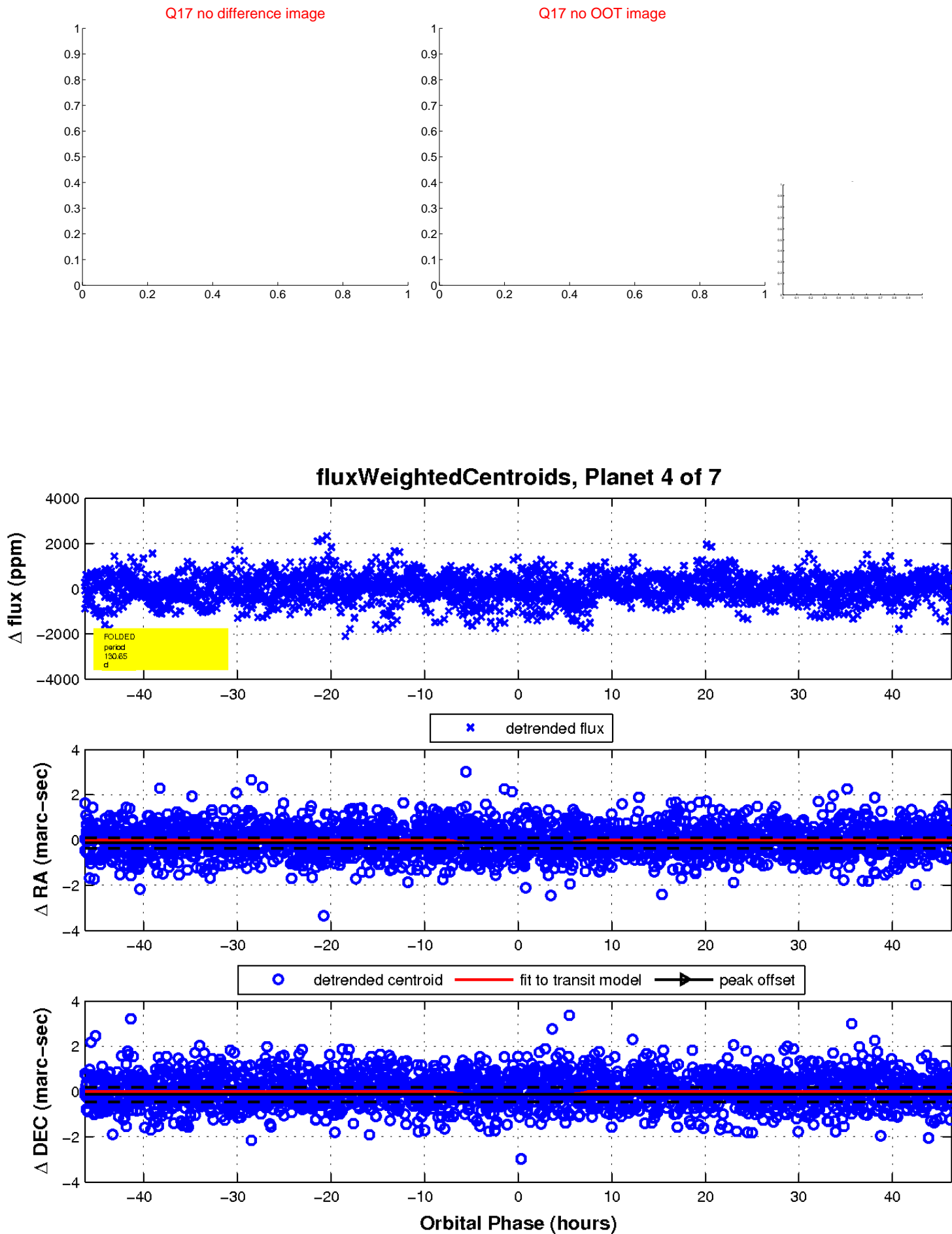
Q12 no OOT image



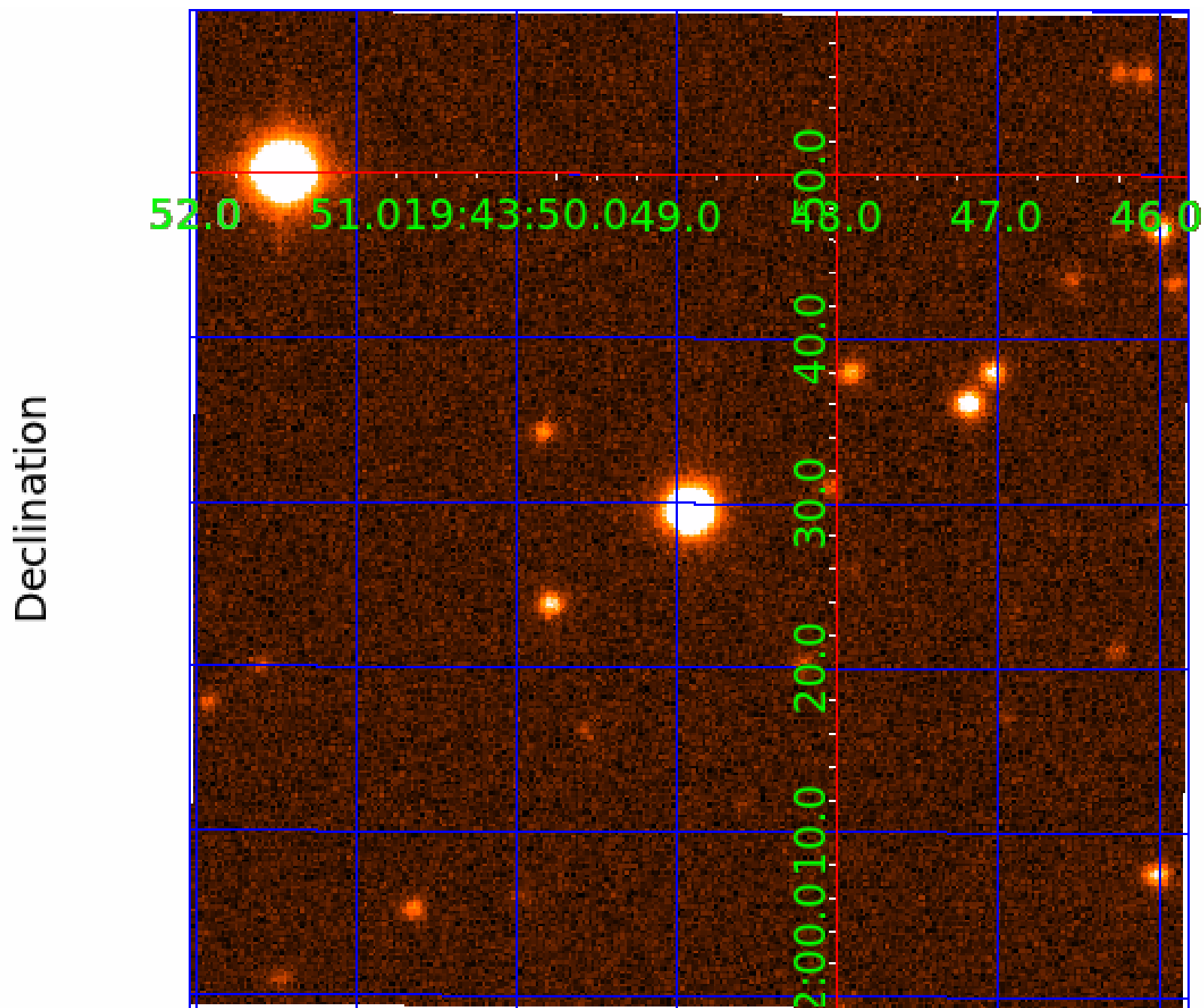
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image



KIC 011463950

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})
011463950-01	OBS	7616.01	4.054873	134.732147	148.9	12.860	11.5	12.6	2.53	7064	3.67	3890.35
011463950-02	OBS	No	411.793426	173.563522	1001.3	7.864	8.0	8.7	2.53	7064	9.78	8.21
011463950-03	OBS	No	2.929775	133.896743	71.8	16.917	8.2	7.3	2.53	7064	2.21	6000.39
011463950-04	OBS	No	130.650429	144.142290	838.2	15.440	11.1	13.8	2.53	7064	8.18	37.94
011463950-05	OBS	No	80.209254	153.167289	387.1	12.016	11.6	6.8	2.53	7064	5.32	72.72
011463950-06	OBS	No	401.186630	416.895102	605.9	7.249	8.7	8.8	2.53	7064	7.10	8.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011463950-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL
011463950-03	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
011463950-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011463950-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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 011463950-05

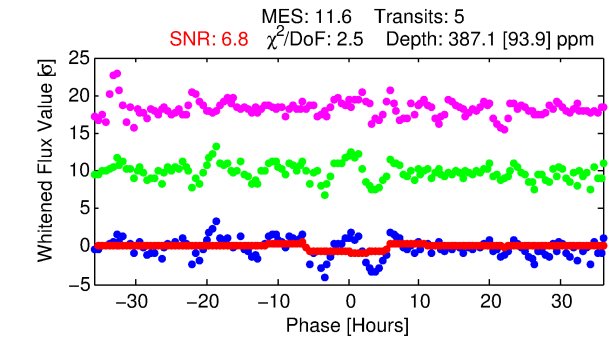
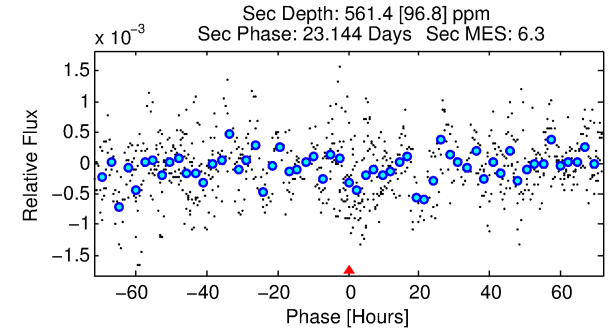
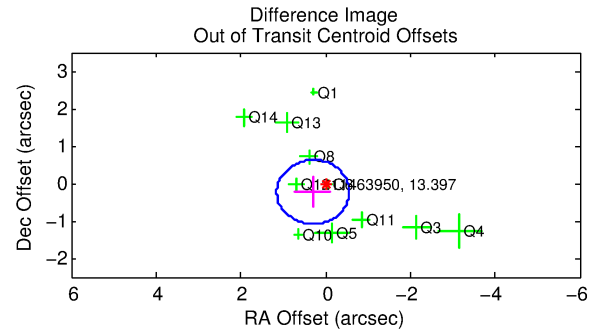
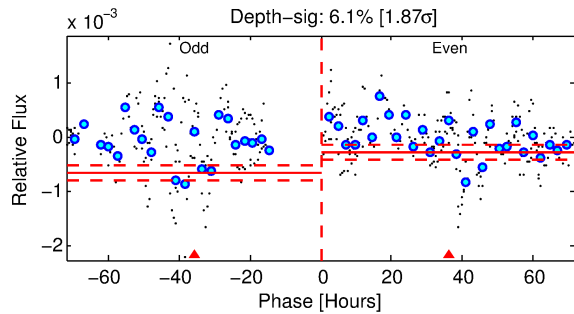
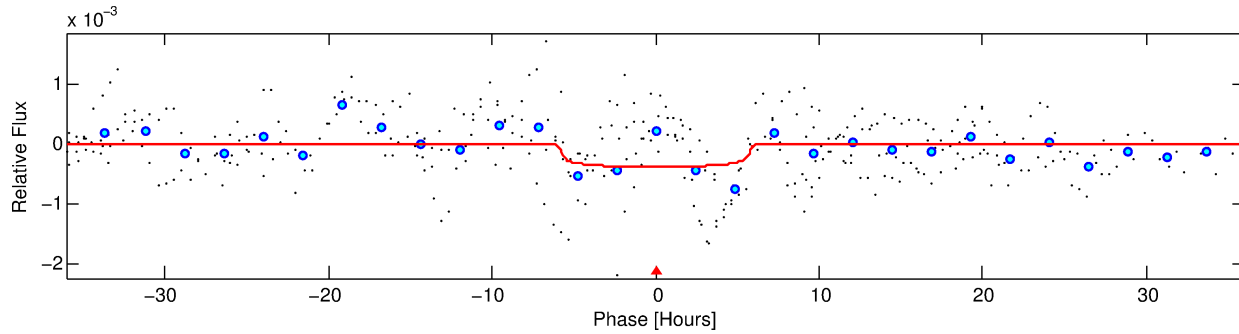
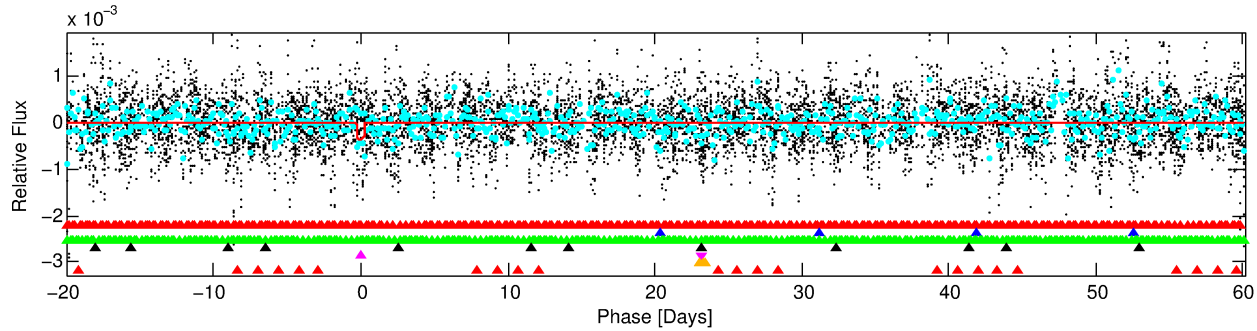
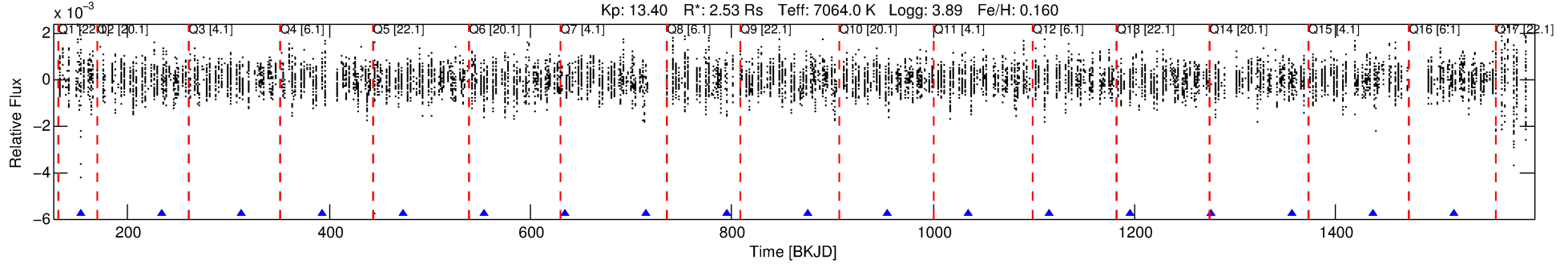
No Significant Match Found

DV One-Page Summary

KIC: 11463950 Candidate: 5 of 7 Period: 80.209 d

KOI: K07616 Corr: No Ephemeris Match

Kp: 13.40 R*: 2.53 Rs Teff: 7064.0 K Logg: 3.89 Fe/H: 0.160



DV Fit Results:

Period = 80.20925 [0.00285] d
Epoch = 153.1673 [0.0265] BKJD
Rp/R* = 0.0192 [0.0086]
a/R* = 38.47 [95.43]
b = 0.69 [1.91]
Seff = 72.72 [23.73]
Teq = 745 [61] K
Rp = 5.32 [2.68] Re
a = 0.4433 [0.0941] AU
Ag = 2147.71 [2063.53] [1.04σ]
Teffp = 7837 [1777] K [3.99σ]

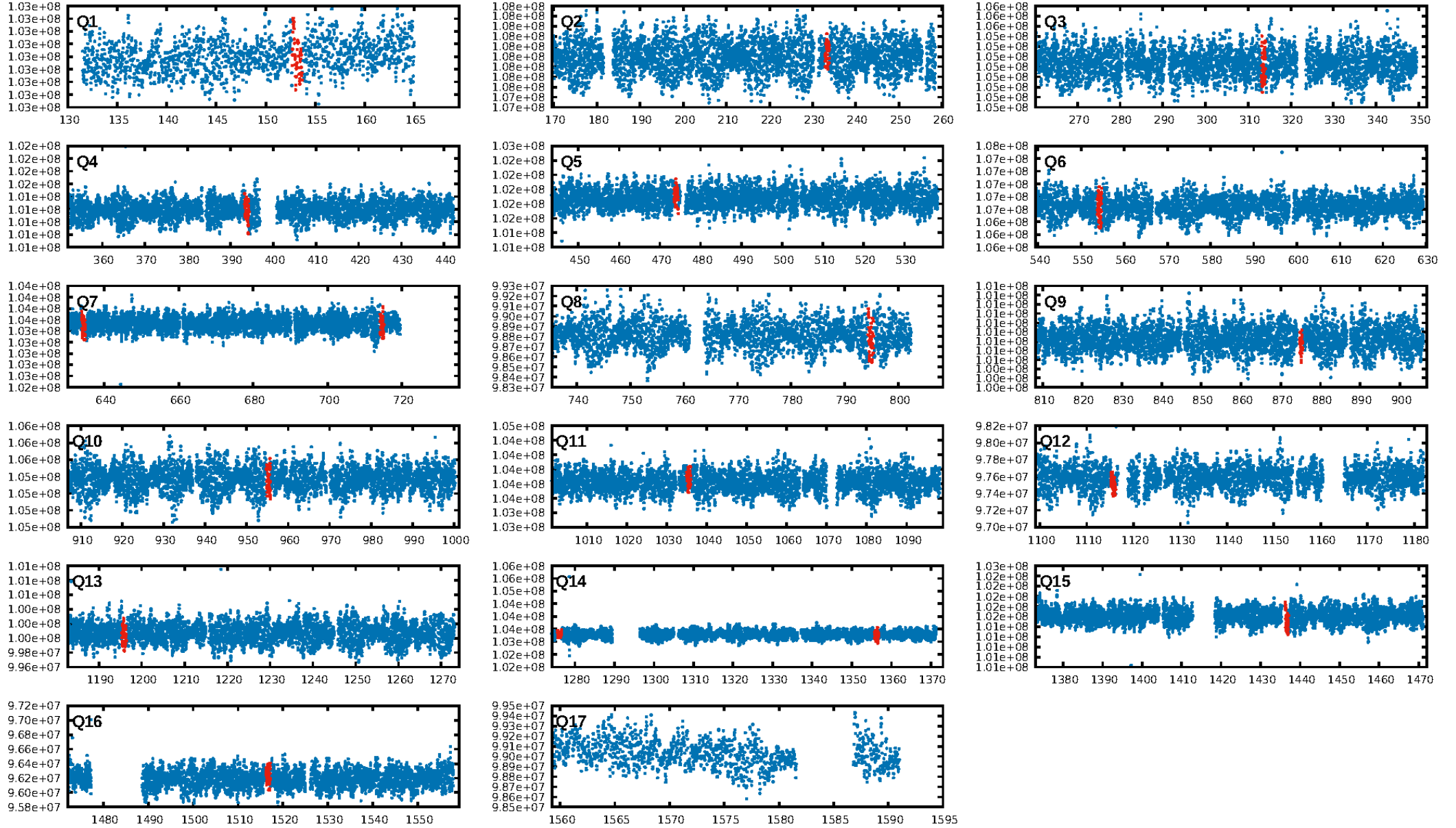
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.15σ]
LongPeriod-sig: 100.0% [61.88σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.038
Centroid-sig: 2.6%
Centroid-so: 0.546 arcsec [1.66σ]
OotOffset-rm: 0.376 arcsec [1.32σ]
KicOffset-rm: 0.377 arcsec [1.31σ]
OotOffset-st: 3/2/3/3 [11]
KicOffset-st: 3/2/3/3 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 0.17 [2/12]

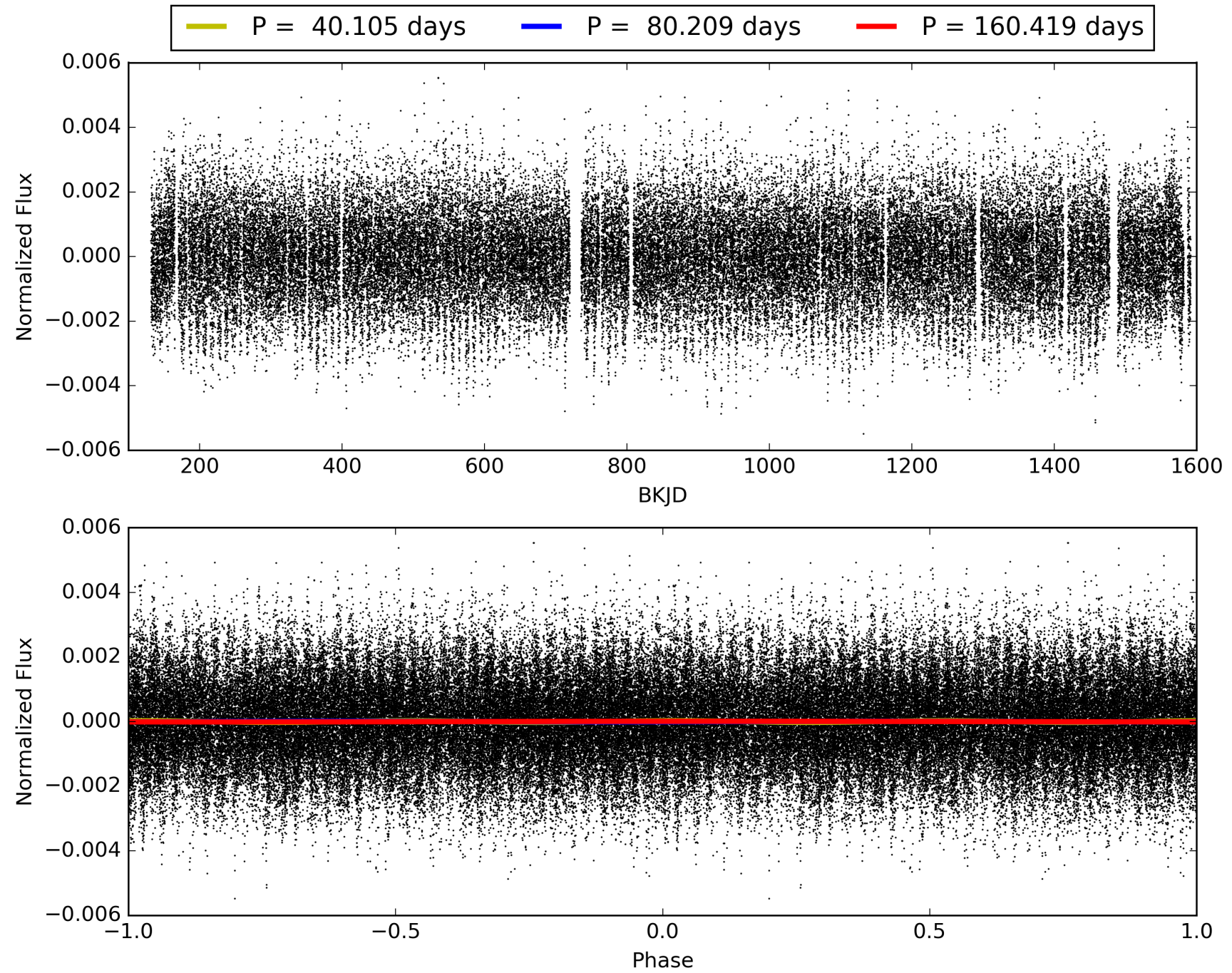
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:33 Z

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

TCE 011463950-05, PDC Light Curves

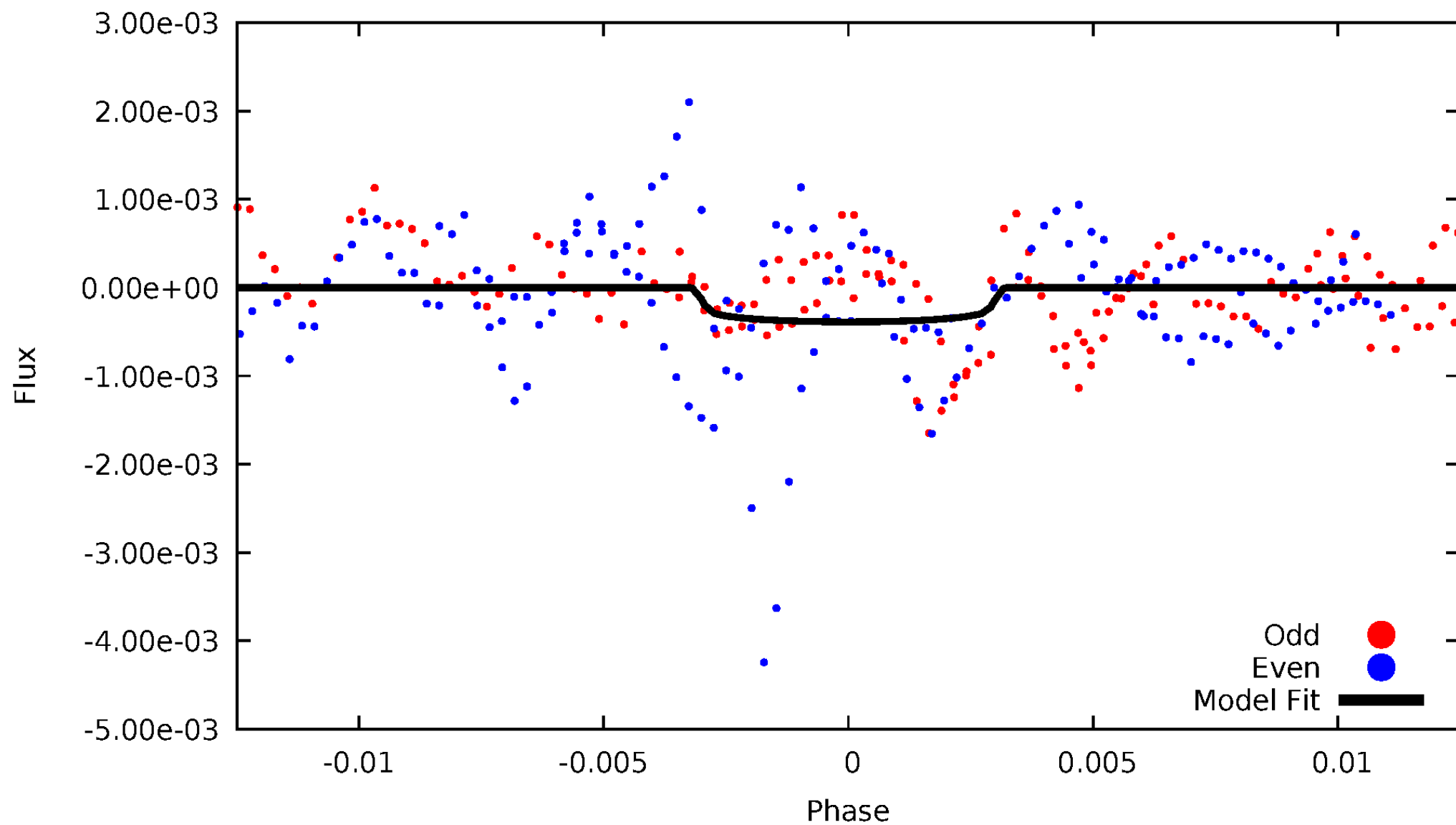


TCE 011463950-05



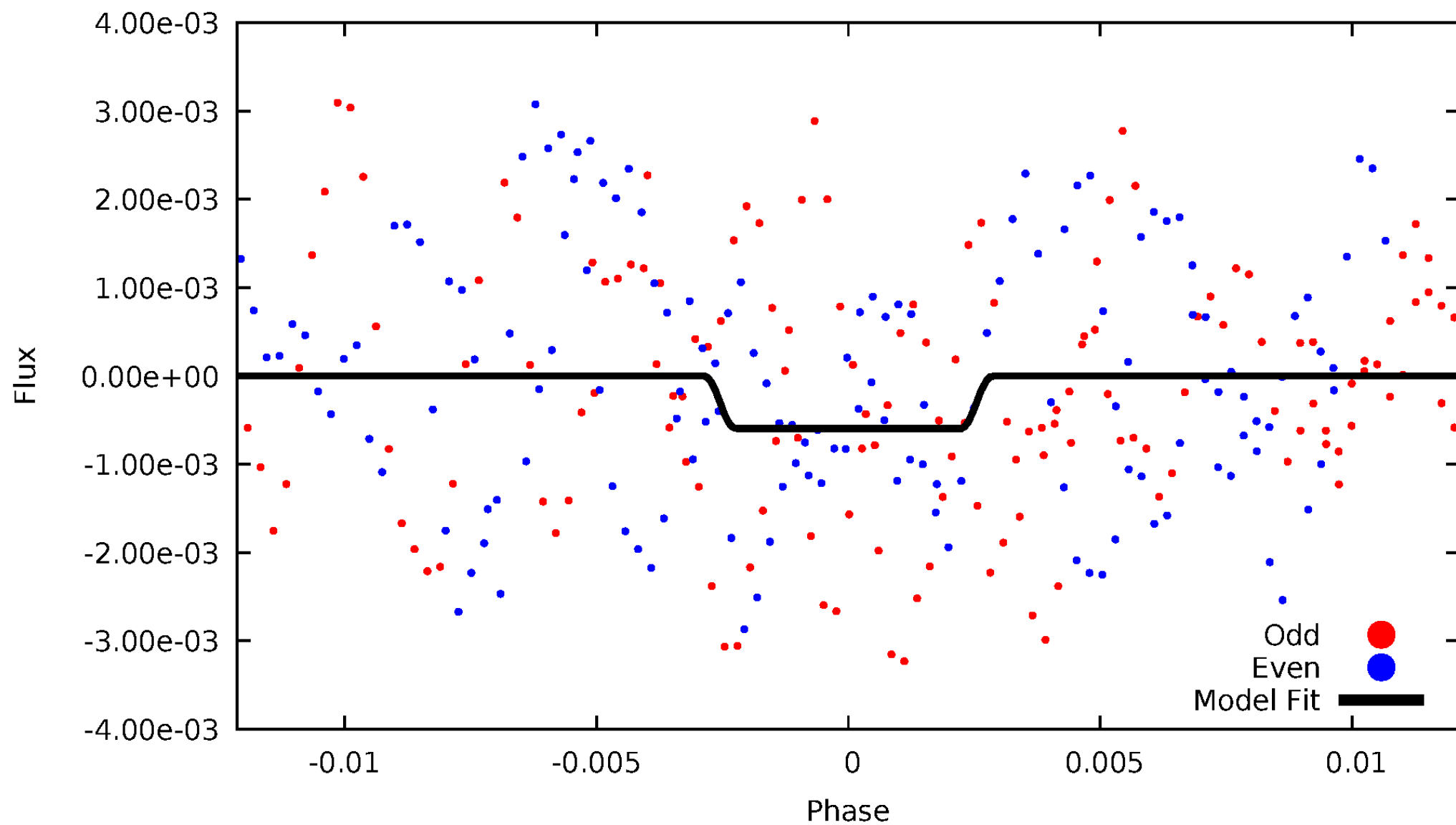
DV Odd/Even

TCE 011463950-05



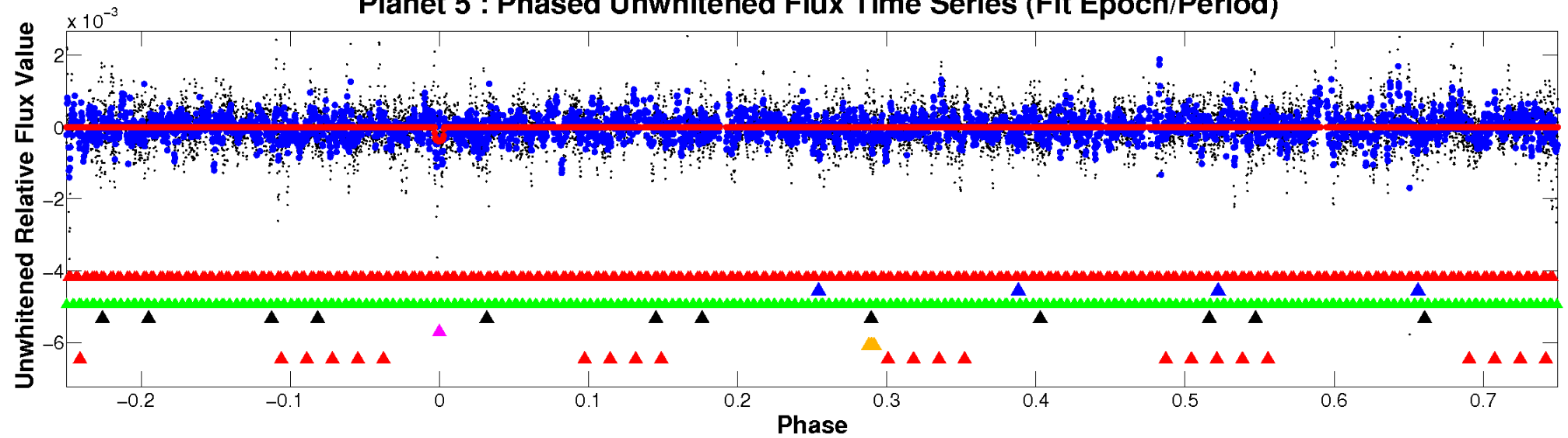
ALT Odd/Even

TCE 011463950-05

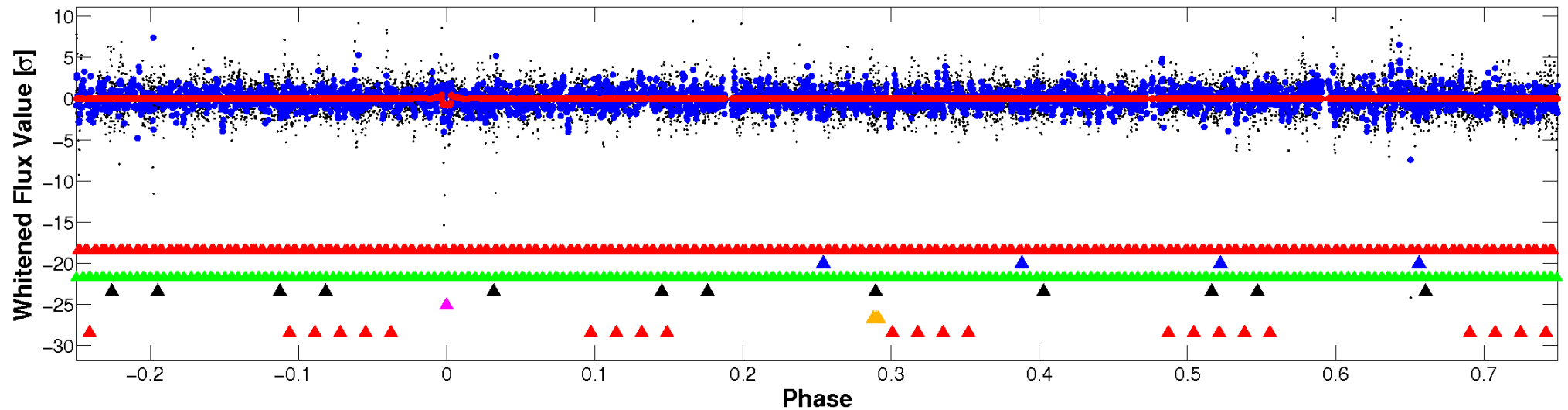


Non-Whitened Vs. Whitened Light Curve

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

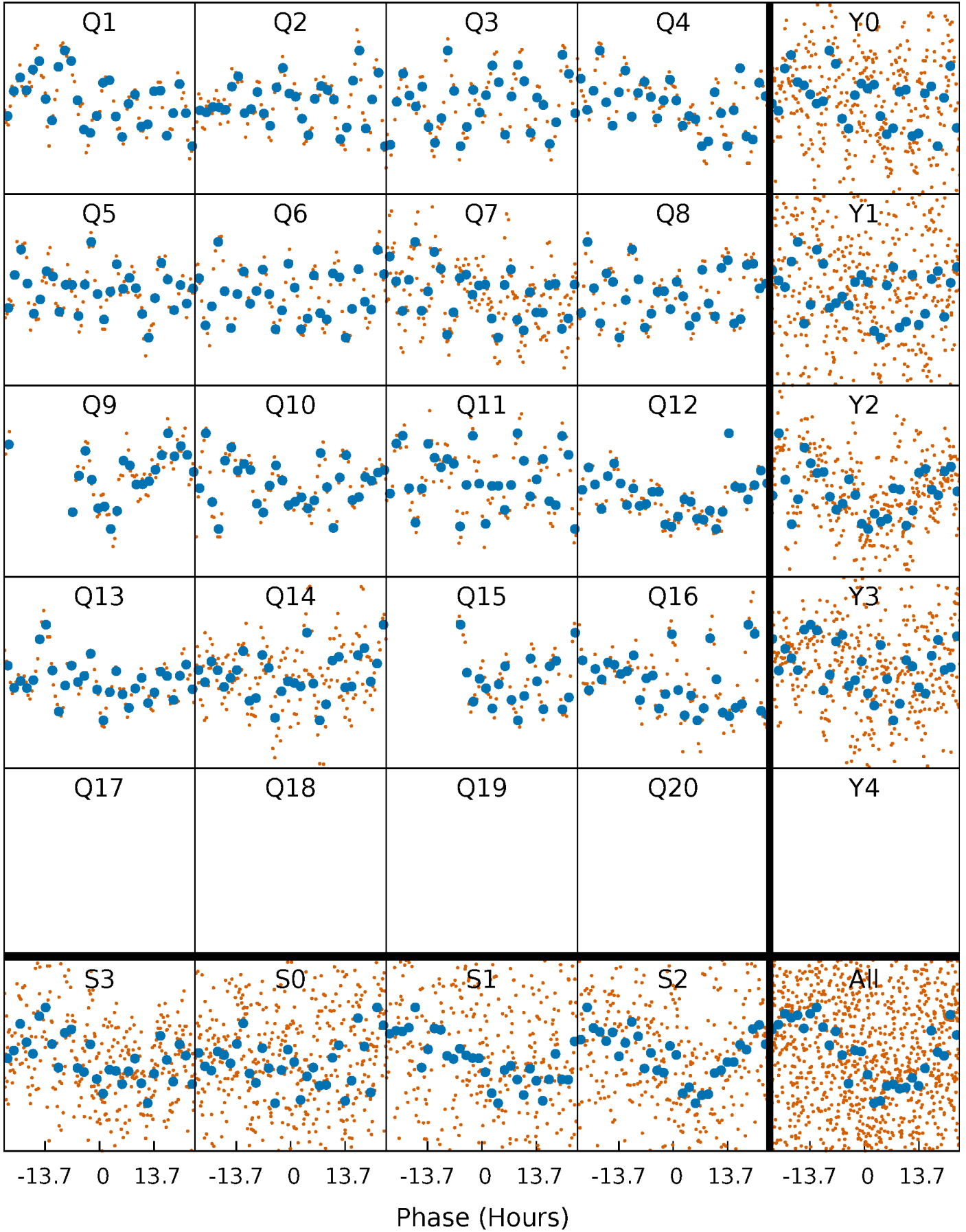


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



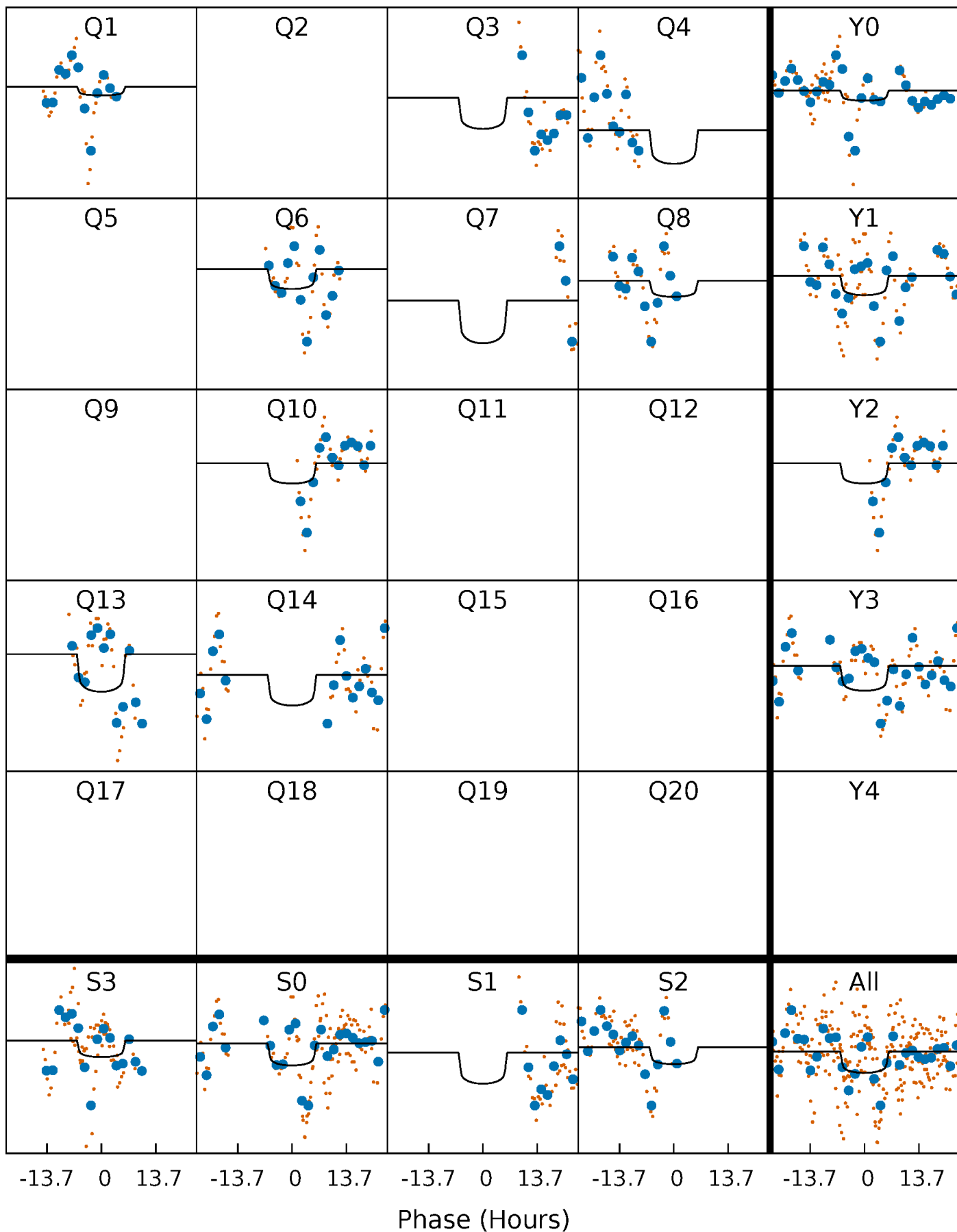
PDC Quarter-Phased Transit Curves

TCE 011463950-05 P= 80.209254 Days $T_0=153.167289$ (BKJD)



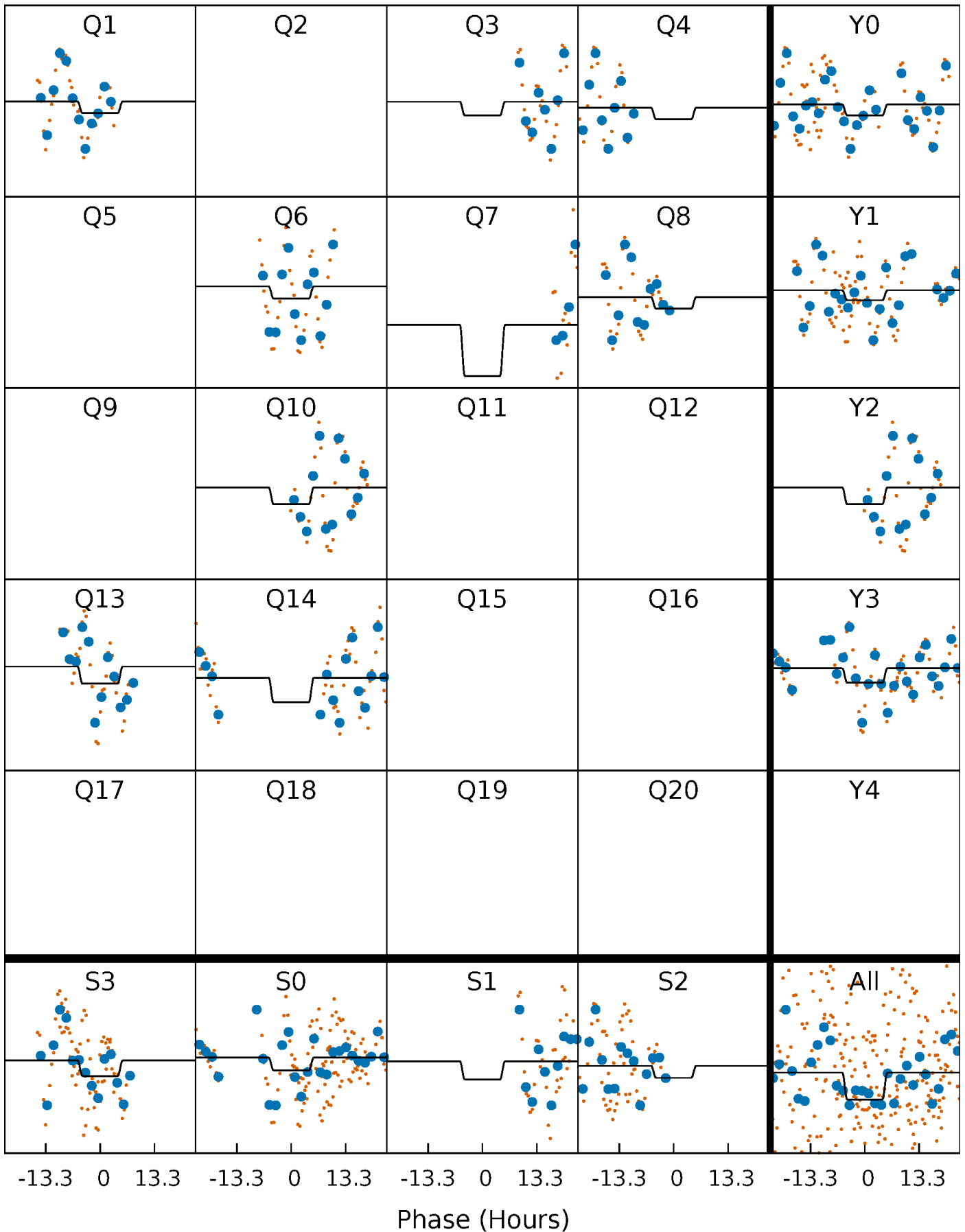
DV Quarter-Phased Transit Curves

TCE 011463950-05 $P = 80.209254$ Days $T_0 = 153.167289$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

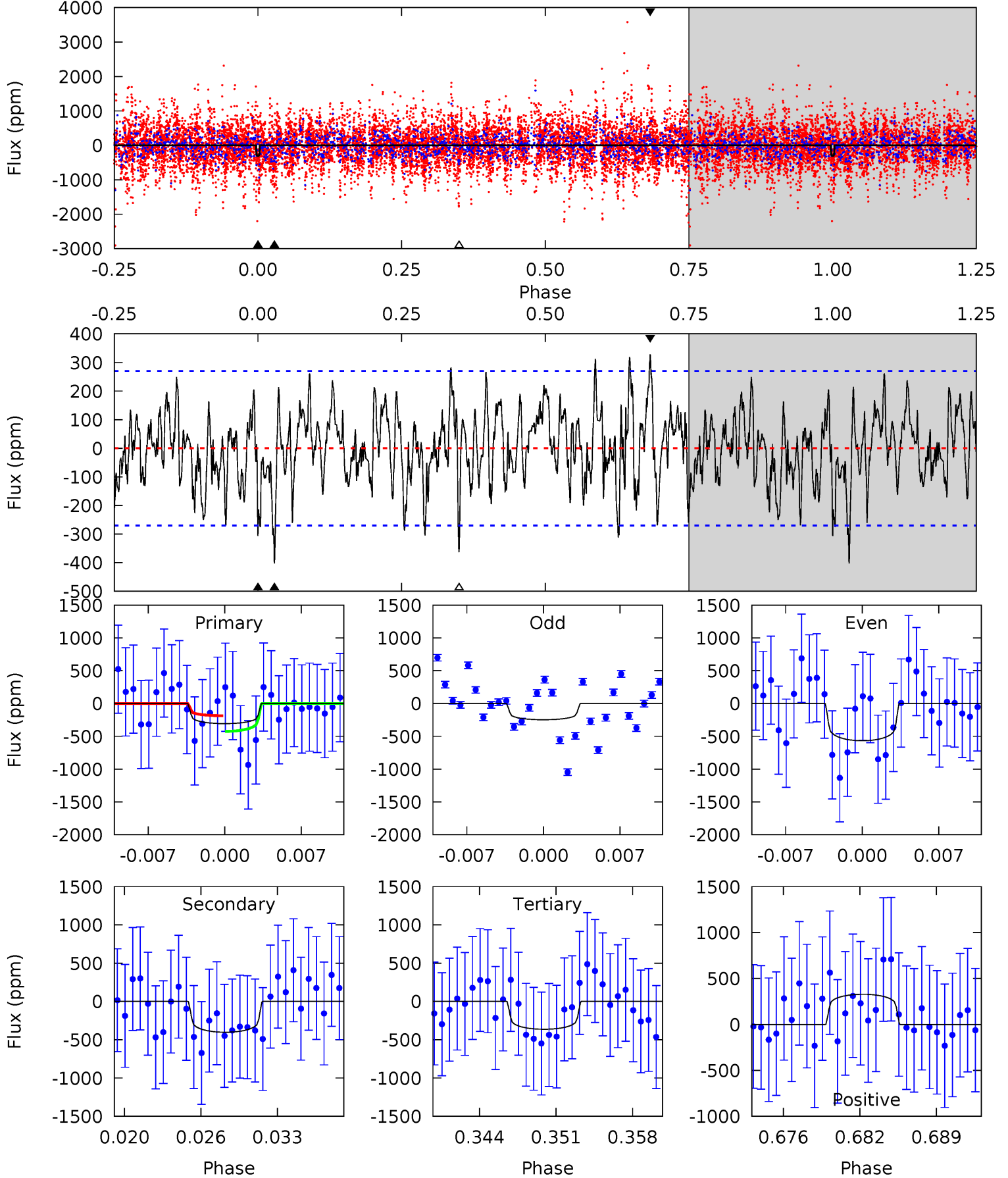
TCE 011463950-05 $P = 80.212428$ Days $T_0 = 153.194681$ (BKJD)



DV Model-Shift Uniqueness Test

011463950-05, P = 80.209254 Days, E = 72.958035 Days

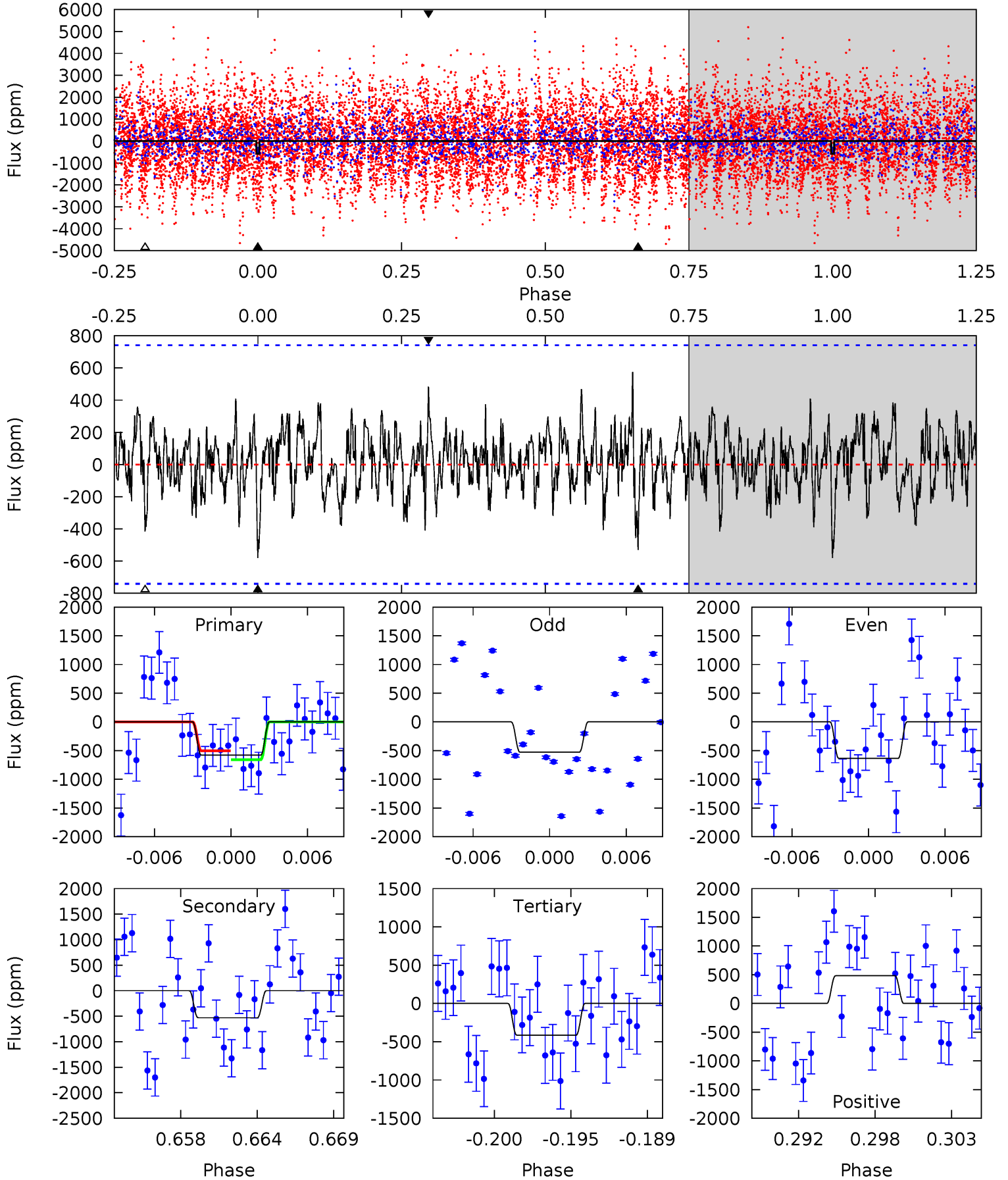
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.80	7.59	6.85	6.19	5.10	2.72	2.20	-1.06	-0.39	0.74	1.40	2.95	1.26	0.45	2.26



Alt Model-Shift Uniqueness Test

011463950-05, P = 80.212428 Days, E = 72.982253 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.01	3.67	2.87	3.35	5.13	2.76	1.06	1.14	0.66	0.80	0.33	0.37	0.78	0.50	0.53



Stellar Parameters For KIC 011463950

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7064^{+74}_{-95}	$3.888^{+0.182}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$2.531^{+0.405}_{-0.607}$	$1.806^{+0.090}_{-0.217}$	$0.157^{+0.156}_{-0.049}$
	+1%/-1%	+5%/-3%	+94%/-94%	+16%/-24%	+5%/-12%	+100%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011463950-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-402 ± 53	$5.05^{+2.68}_{-2.18}$	1036^{+47}_{-63}	7290^{+3404}_{-1345}	1703^{+3313}_{-974}
Alt.	-531 ± 144	$6.46^{+2.48}_{-2.35}$	1037^{+44}_{-69}	6794^{+2216}_{-1099}	1297^{+2077}_{-665}

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

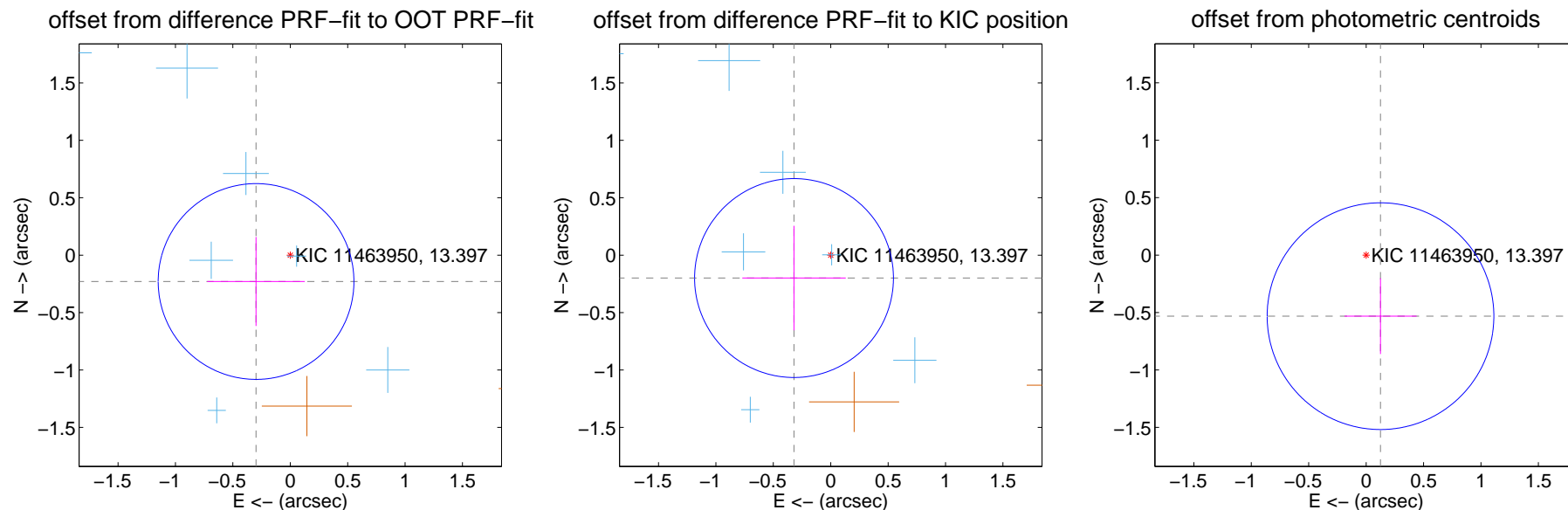
DV Centroid Data

Supplemental centroid analysis for 011463950-05. Kepler magnitude: 13.40. Transit SNR 6.84

There are 7 quarters with good PRF difference image offsets

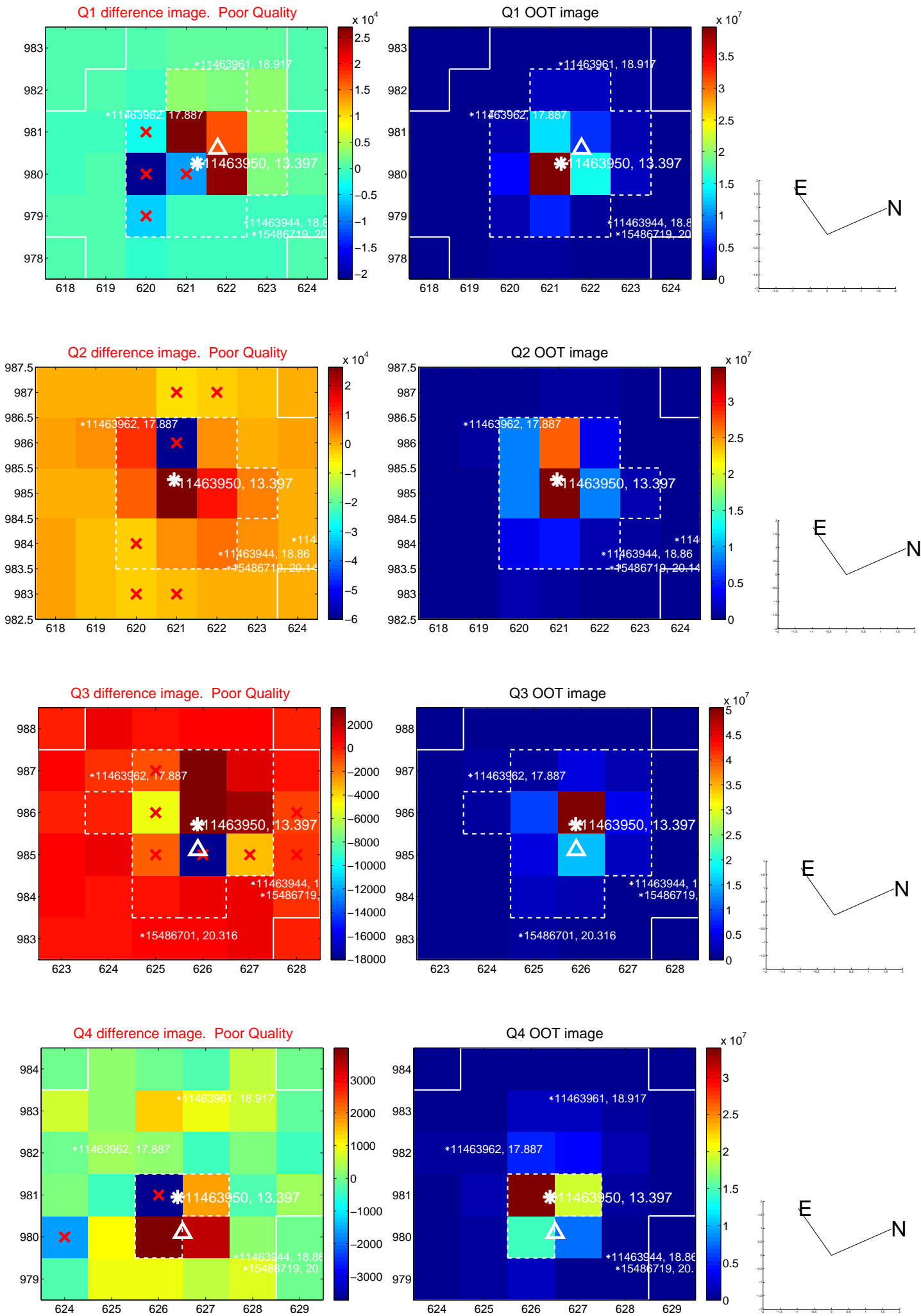
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.376 ± 0.284	1.32	0.298 ± 0.425	-0.229 ± 0.388
PRF-fit source offset from KIC position	0.377 ± 0.289	1.31	0.320 ± 0.451	-0.199 ± 0.455
photometric centroid source offset	0.55 ± 0.33	1.66	-0.13 ± 0.31	-0.53 ± 0.33

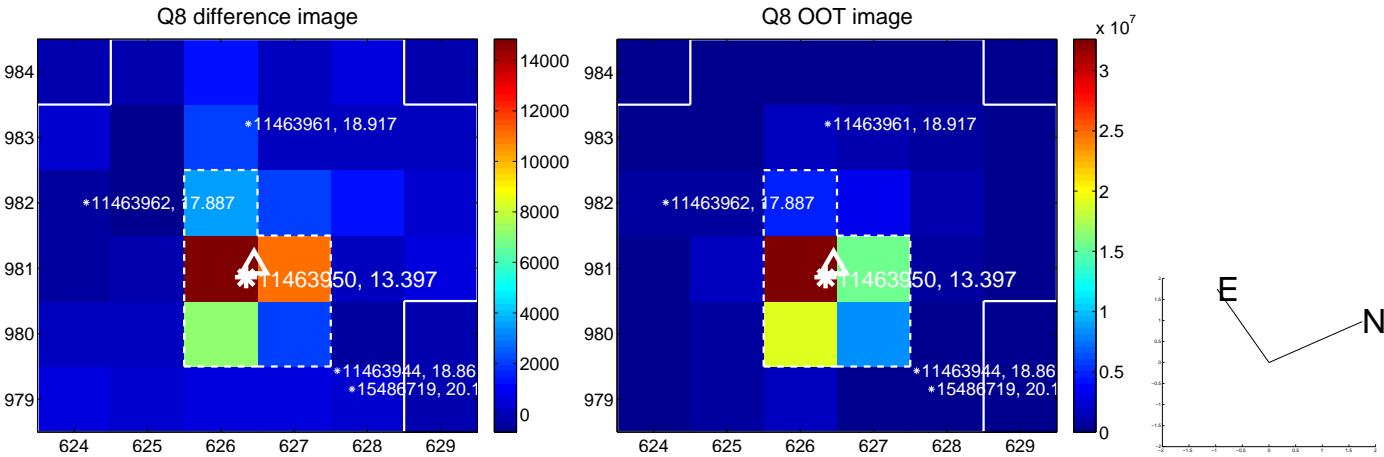
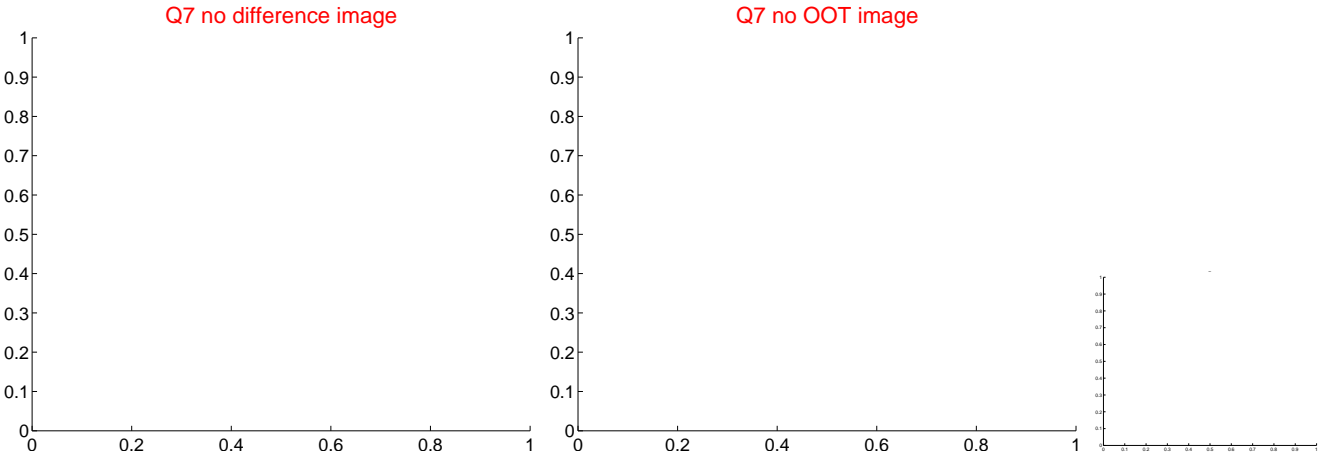
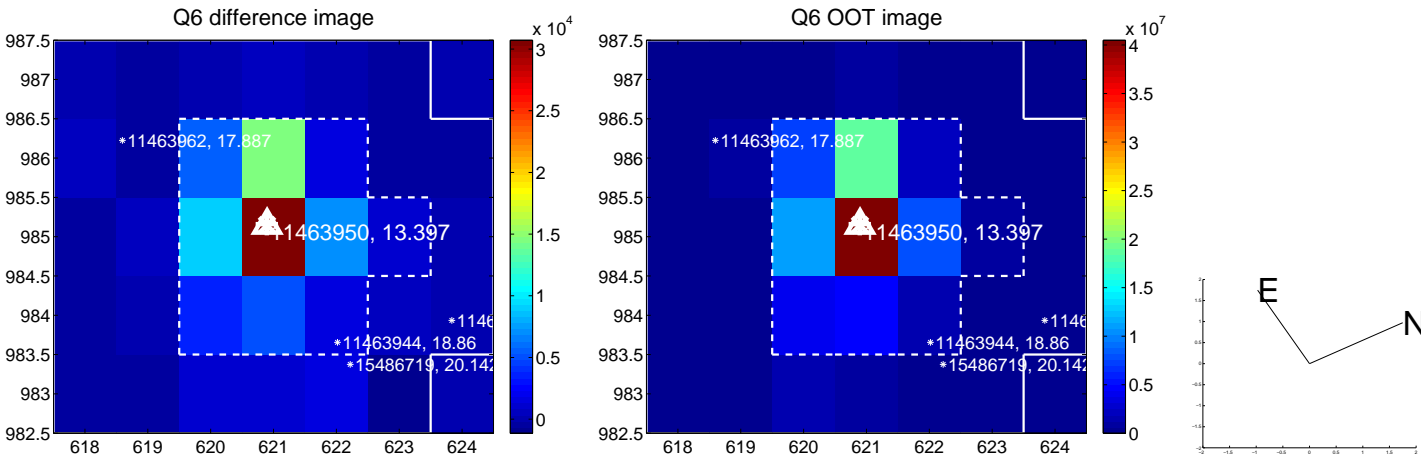
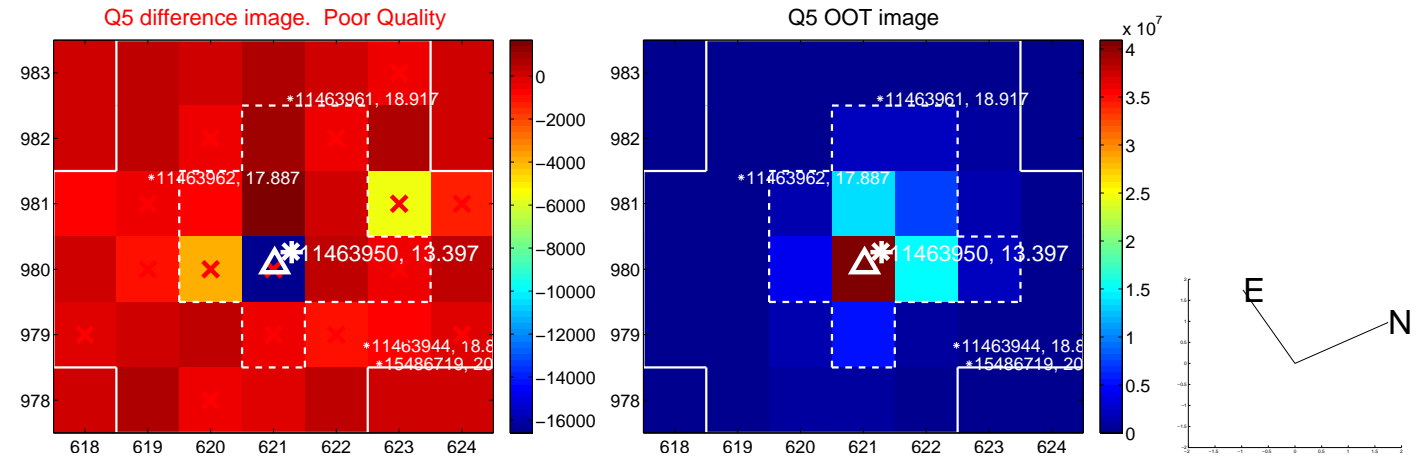


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

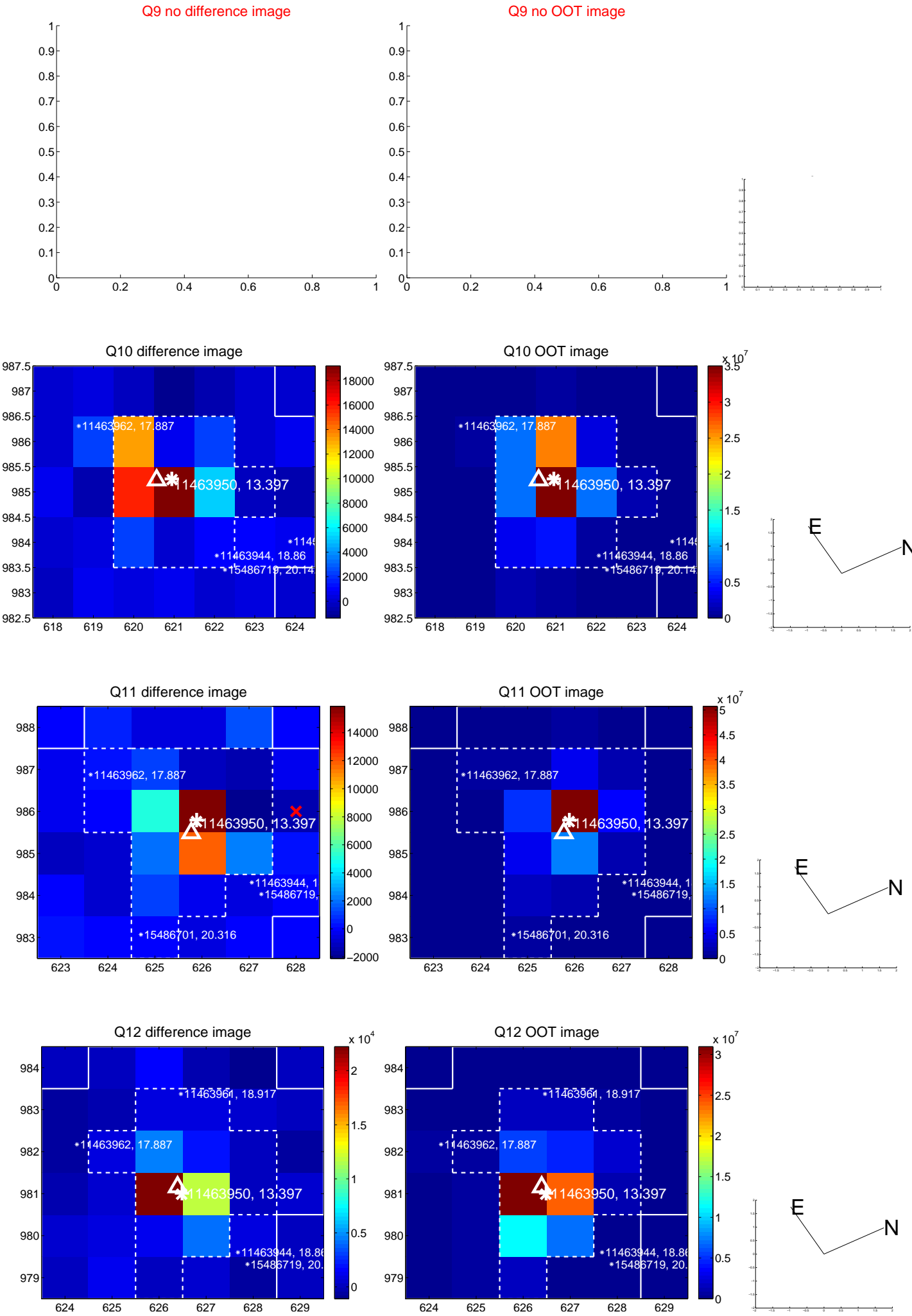
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



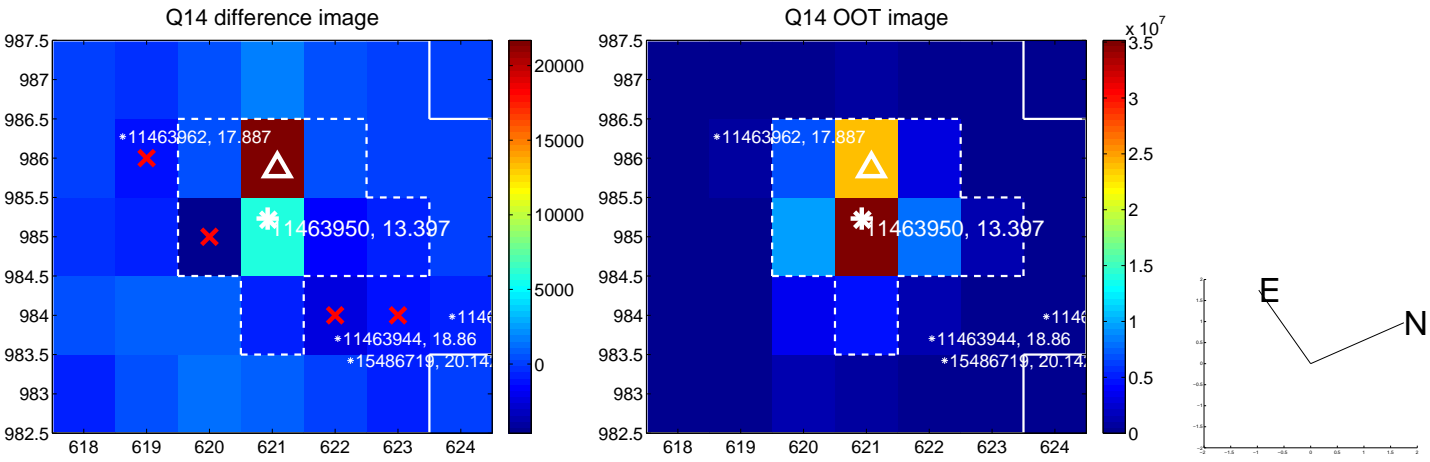
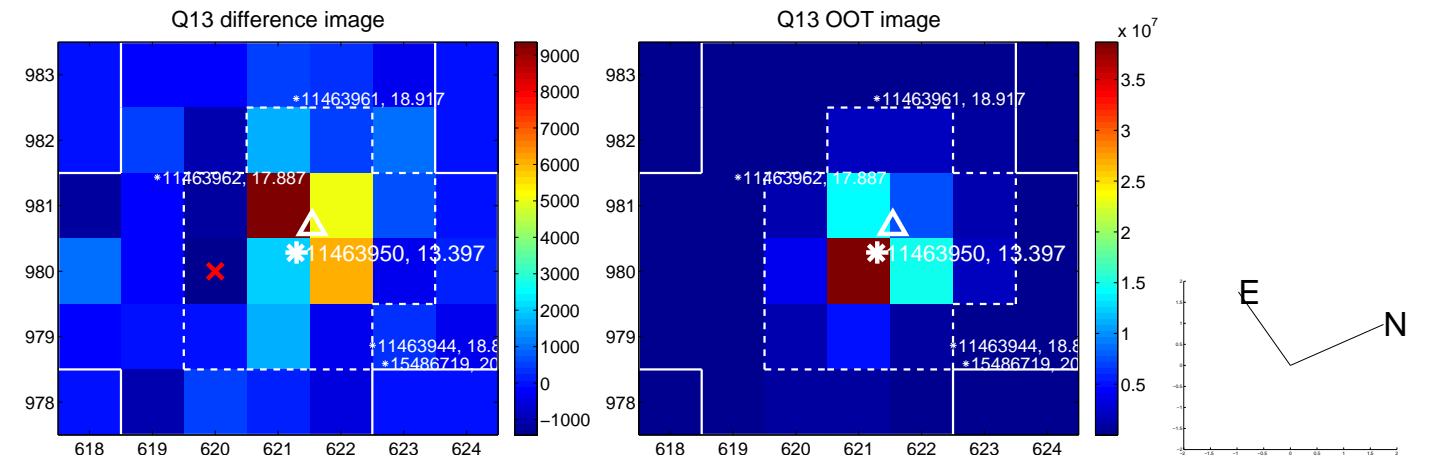
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



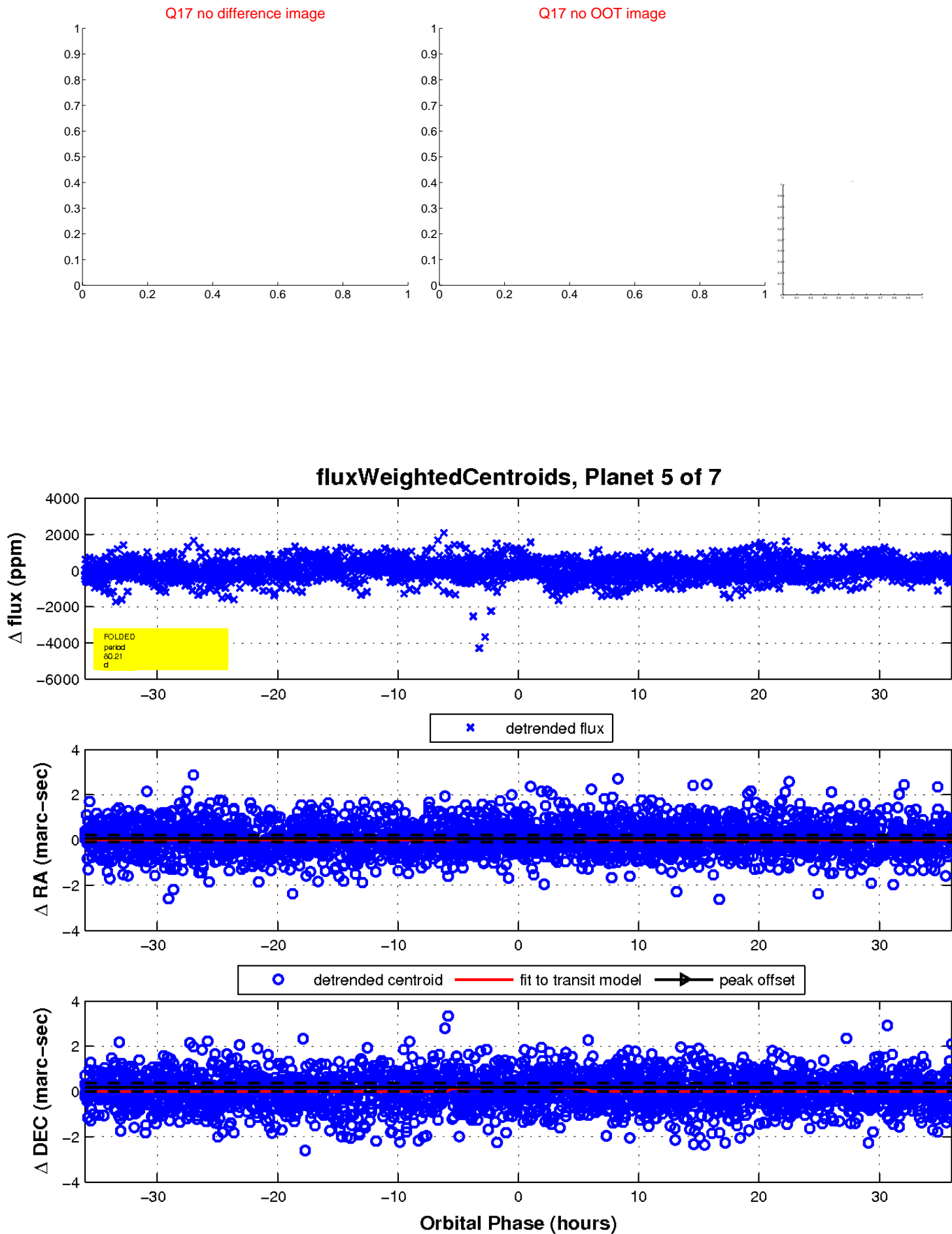
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



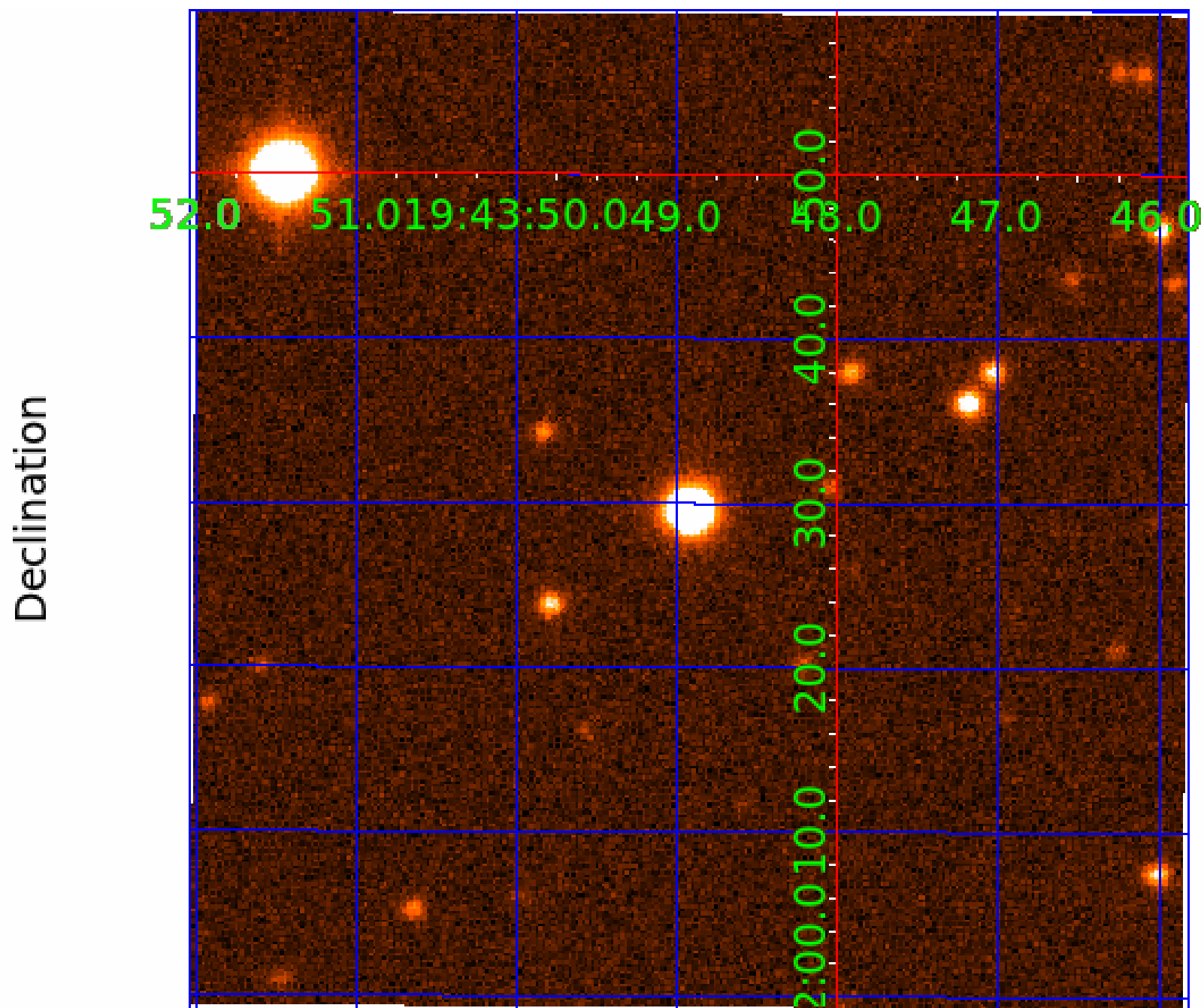
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011463950

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})
011463950-01	OBS	7616.01	4.054873	134.732147	148.9	12.860	11.5	12.6	2.53	7064	3.67	3890.35
011463950-02	OBS	No	411.793426	173.563522	1001.3	7.864	8.0	8.7	2.53	7064	9.78	8.21
011463950-03	OBS	No	2.929775	133.896743	71.8	16.917	8.2	7.3	2.53	7064	2.21	6000.39
011463950-04	OBS	No	130.650429	144.142290	838.2	15.440	11.1	13.8	2.53	7064	8.18	37.94
011463950-05	OBS	No	80.209254	153.167289	387.1	12.016	11.6	6.8	2.53	7064	5.32	72.72
011463950-06	OBS	No	401.186630	416.895102	605.9	7.249	8.7	8.8	2.53	7064	7.10	8.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011463950-01	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL
011463950-03	OBS	FP	0.00	1	0	0	0	LPP_DV
011463950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
011463950-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011463950-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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 011463950-06

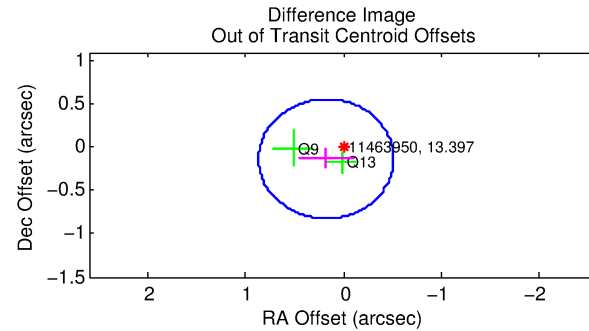
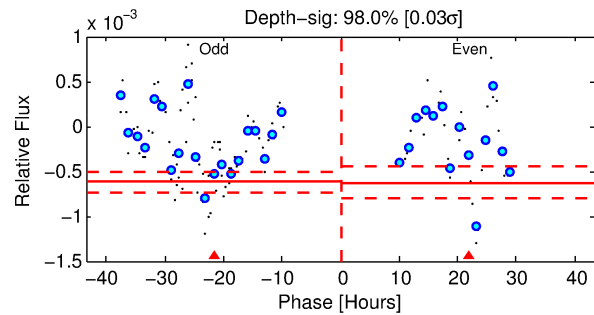
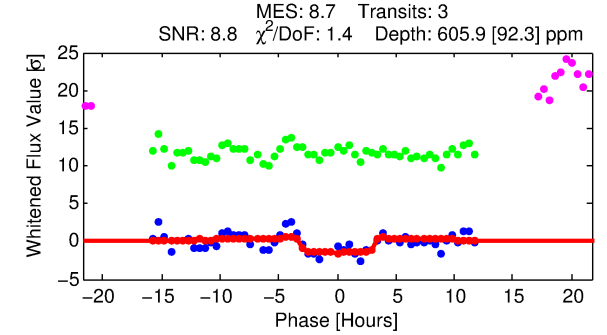
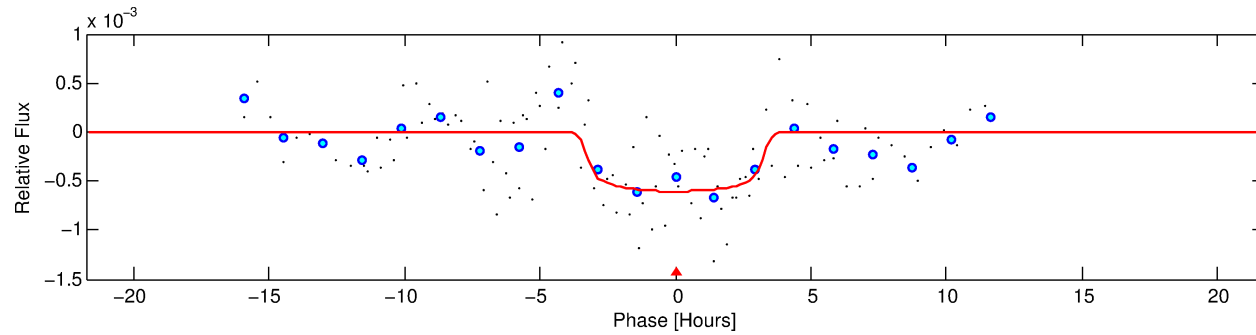
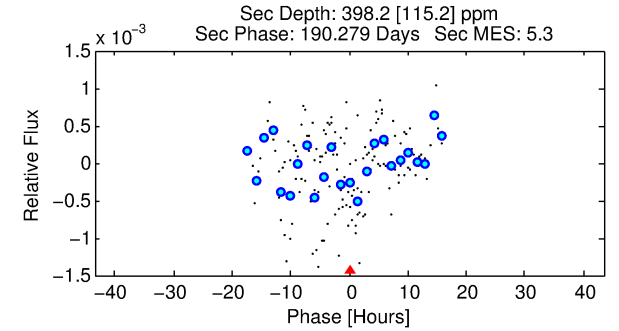
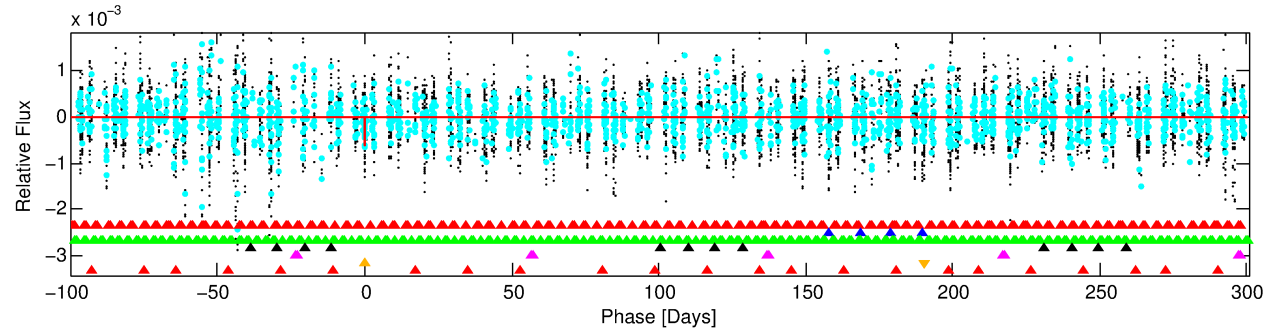
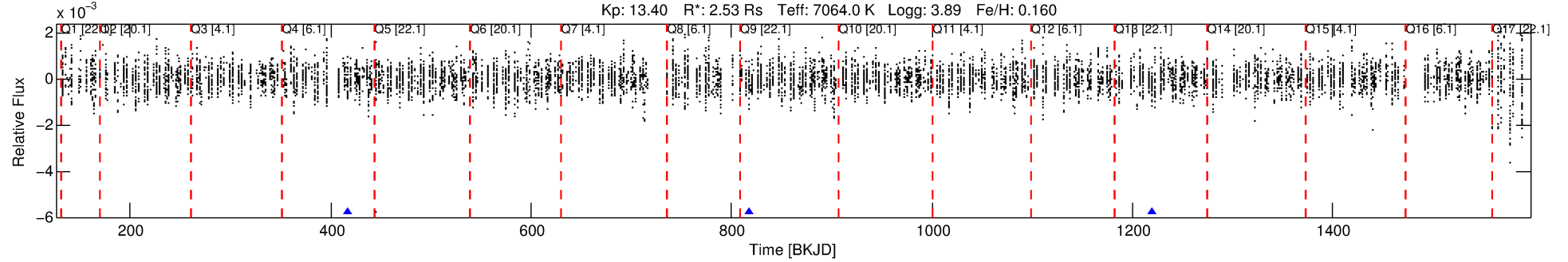
No Significant Match Found

DV One-Page Summary

KIC: 11463950 Candidate: 6 of 7 Period: 401.187 d

KOI: K07616 Corr: No Ephemeris Match

Kp: 13.40 R*: 2.53 Rs Teff: 7064.0 K Logg: 3.89 Fe/H: 0.160



DV Fit Results:

Period = 401.18663 [0.01118] d
Epoch = 416.8951 [0.0167] BKJD
Rp/R* = 0.0257 [0.0039]
a/R* = 228.50 [164.86]
b = 0.87 [0.20]
Seff = 8.50 [2.77]
Teq = 435 [36] K
Rp = 7.10 [2.01] Re
a = 1.2966 [0.2753] AU
Ag = 7296.68 [3848.31] [1.90σ]
Teffp = 6222 [655] K [8.82σ]

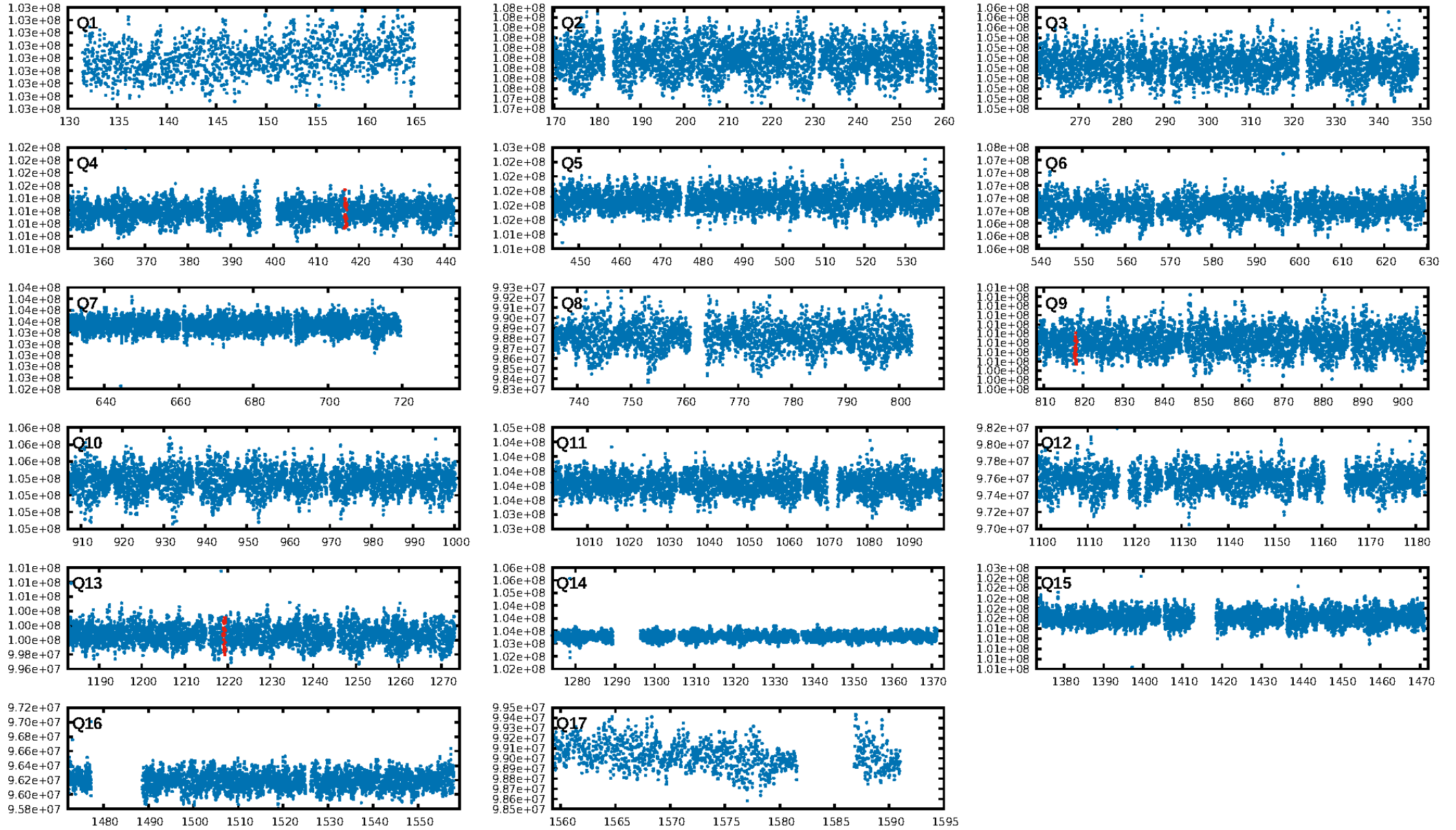
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [380.67σ]
LongPeriod-sig: 100.0% [23.80σ]
ModelChiSquare2-sig: 76.1%
ModelChiSquareGof-sig: 56.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.889
Centroid-sig: 17.3%
Centroid-so: 0.694 arcsec [1.19σ]
OotOffset-rm: 0.222 arcsec [0.96σ]
KicOffset-rm: 0.178 arcsec [0.72σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

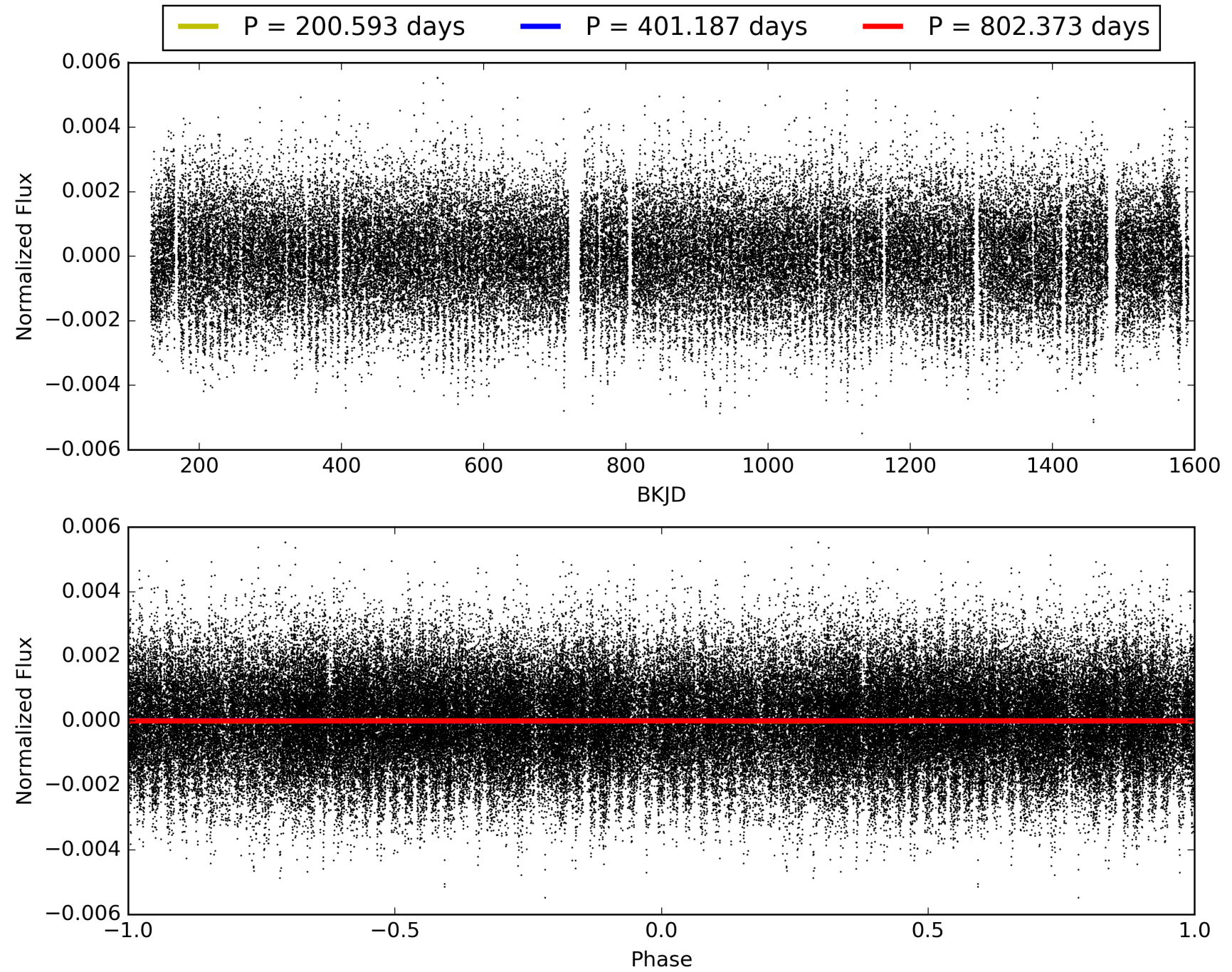
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:38 Z

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

TCE 011463950-06, PDC Light Curves

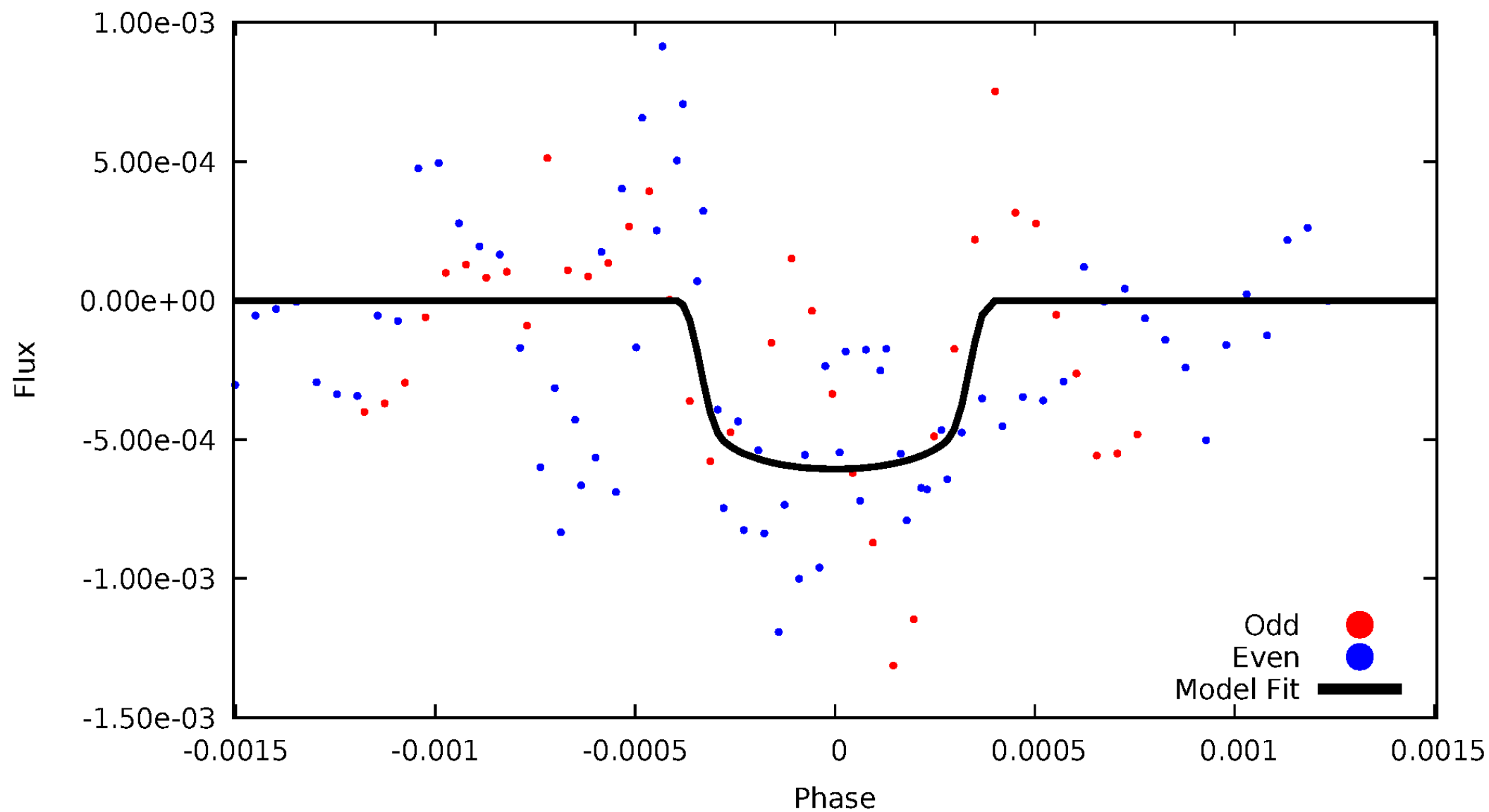


TCE 011463950-06



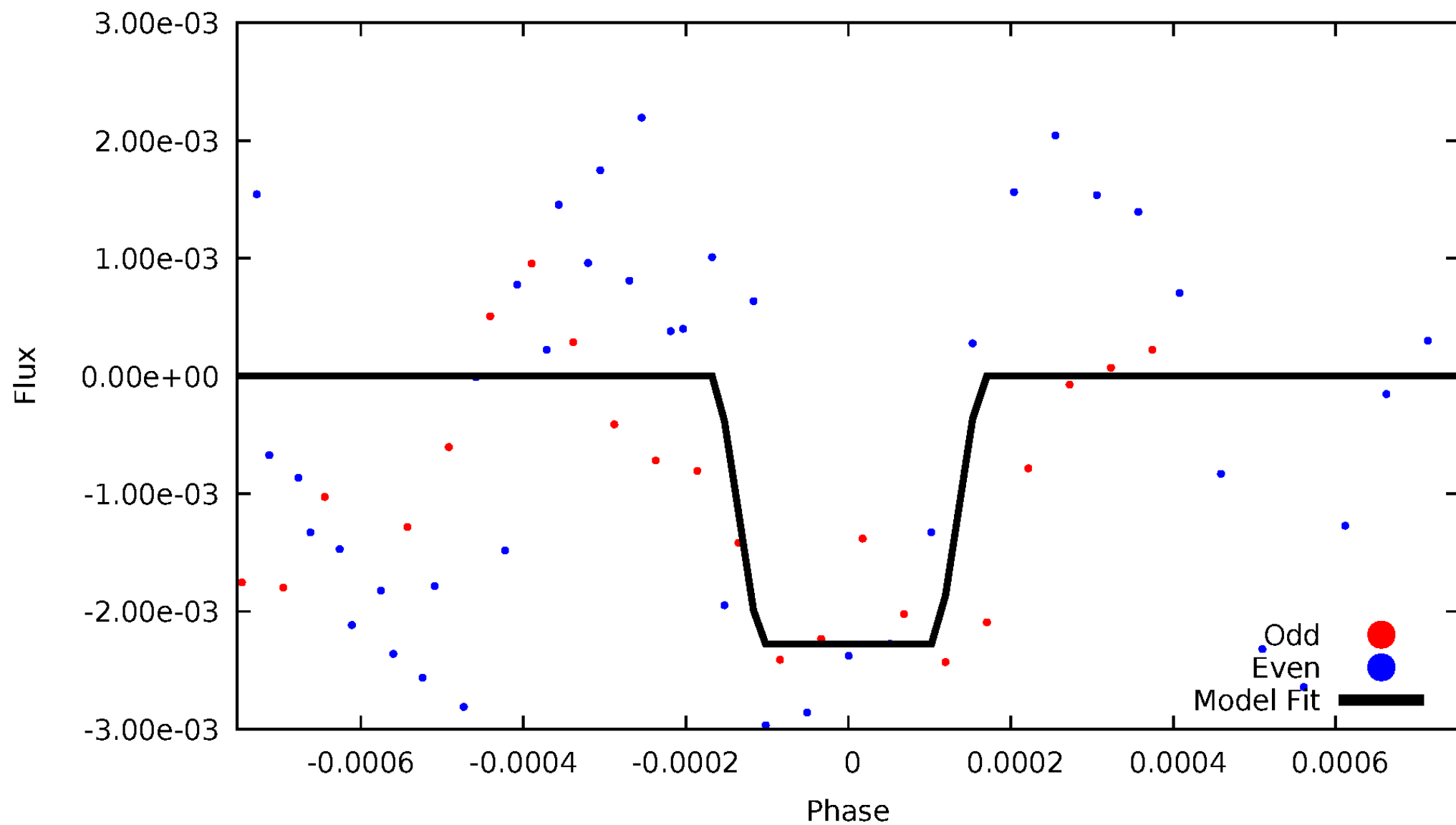
DV Odd/Even

TCE 011463950-06



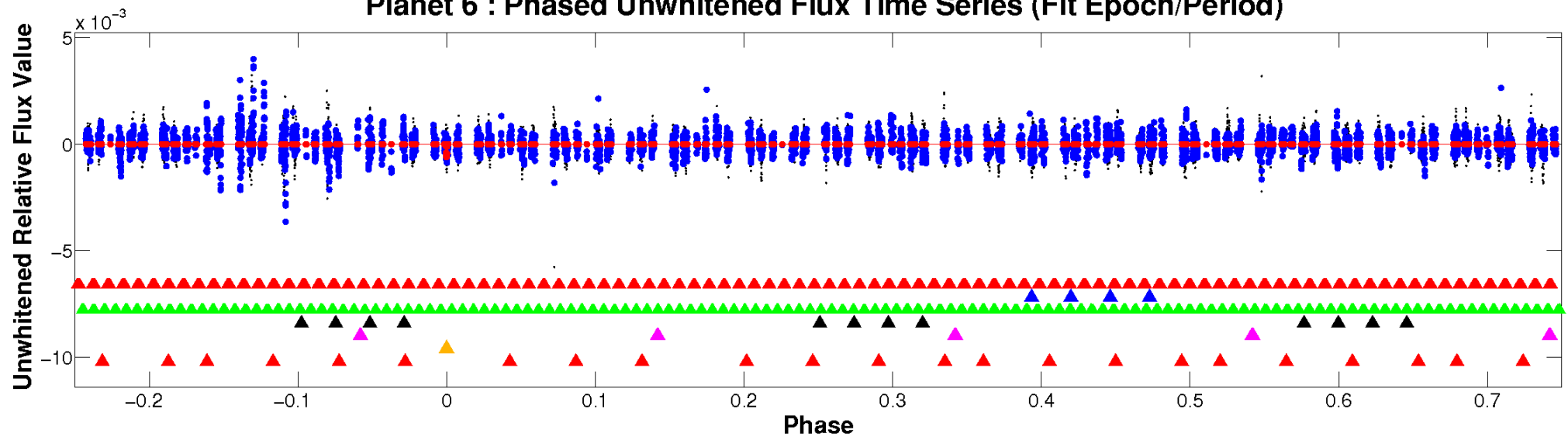
ALT Odd/Even

TCE 011463950-06

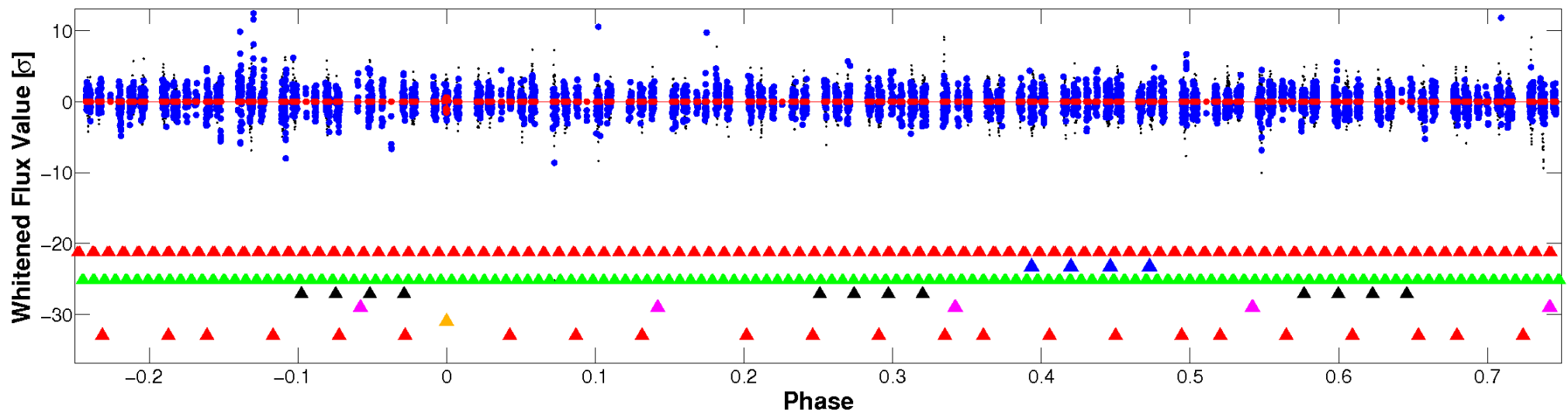


Non-Whitened Vs. Whitened Light Curve

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

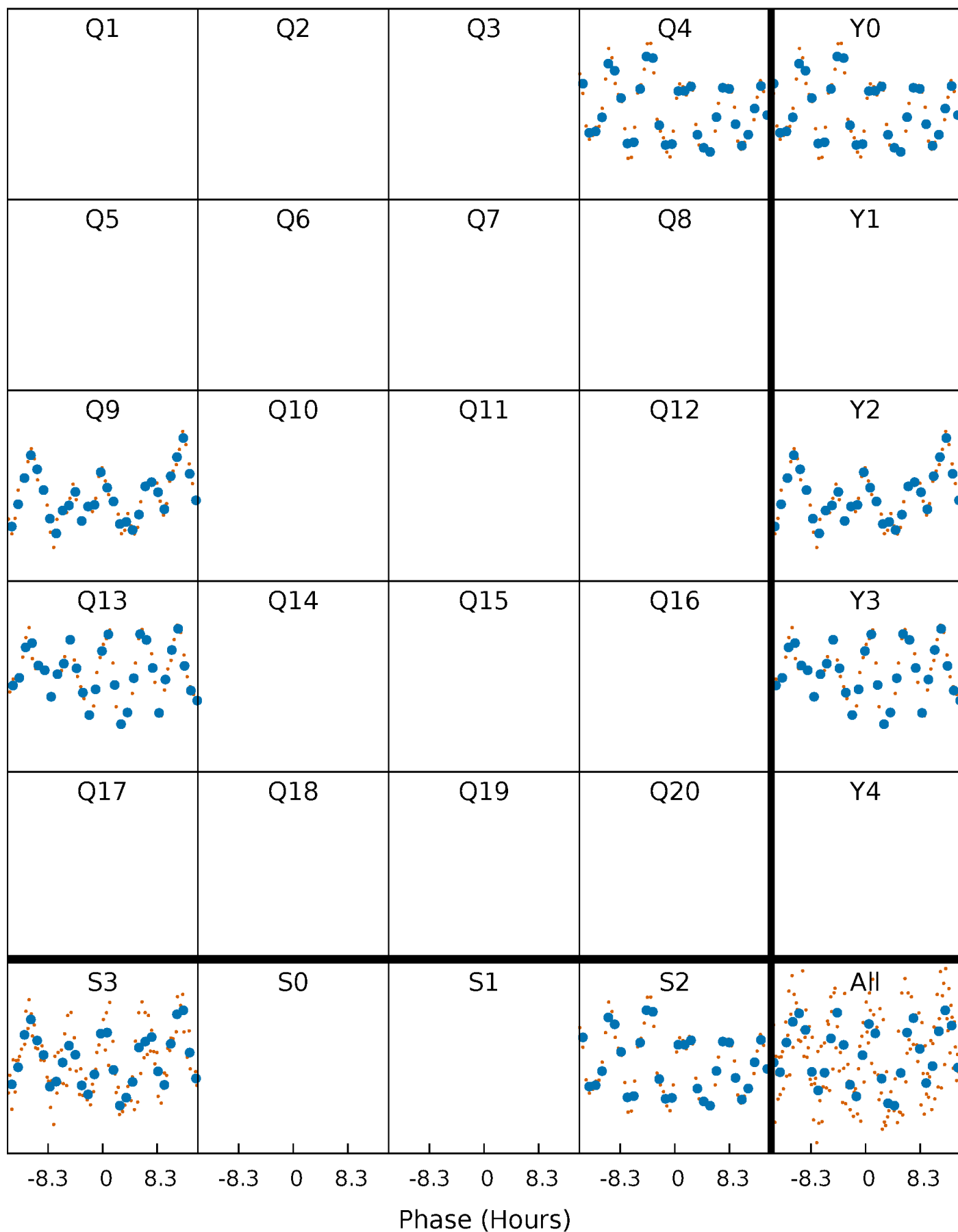


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 011463950-06 P=401.186630 Days $T_0=416.895102$ (BKJD)



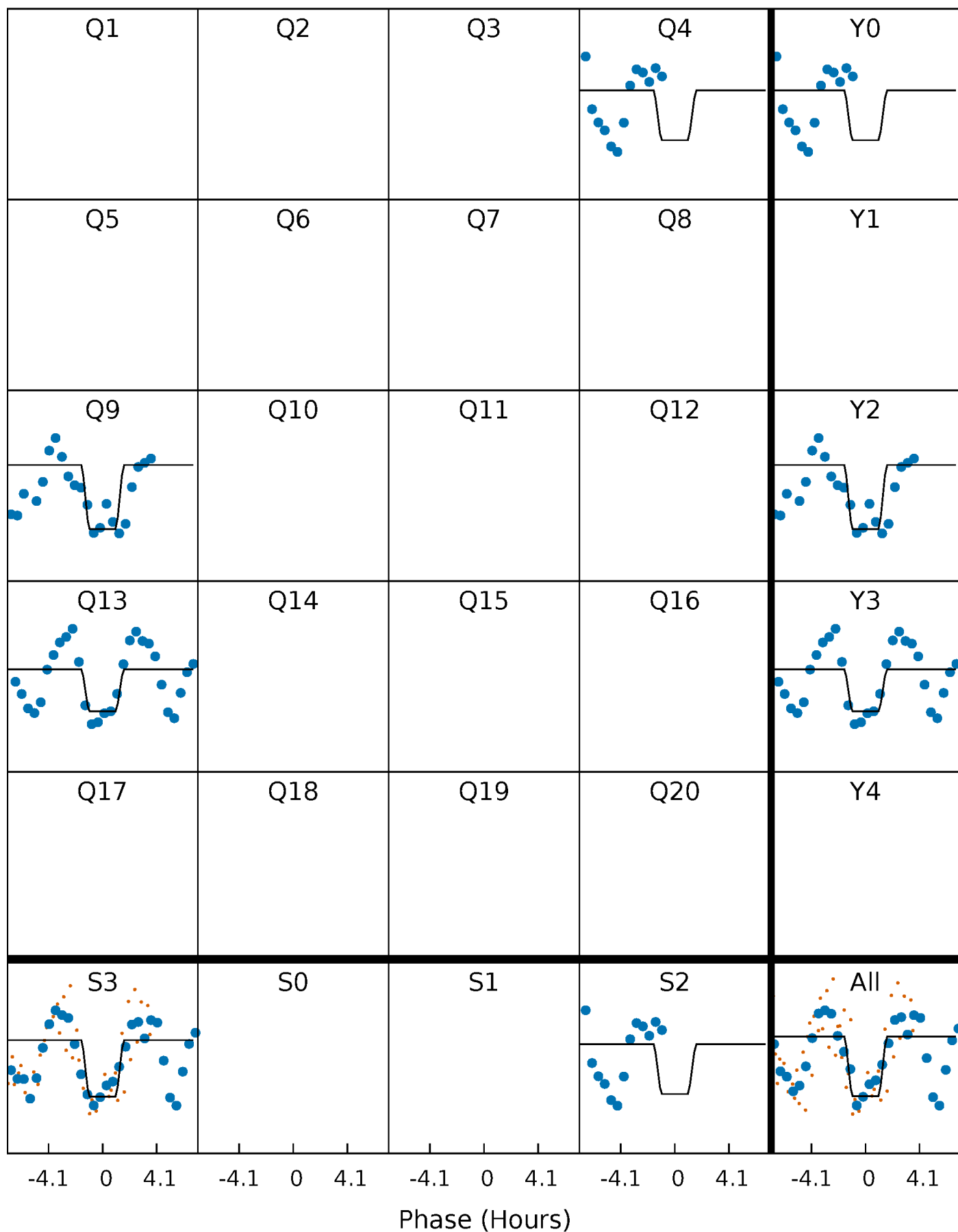
DV Quarter-Phased Transit Curves

TCE 011463950-06 $P=401.186630$ Days $T_0=416.895102$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

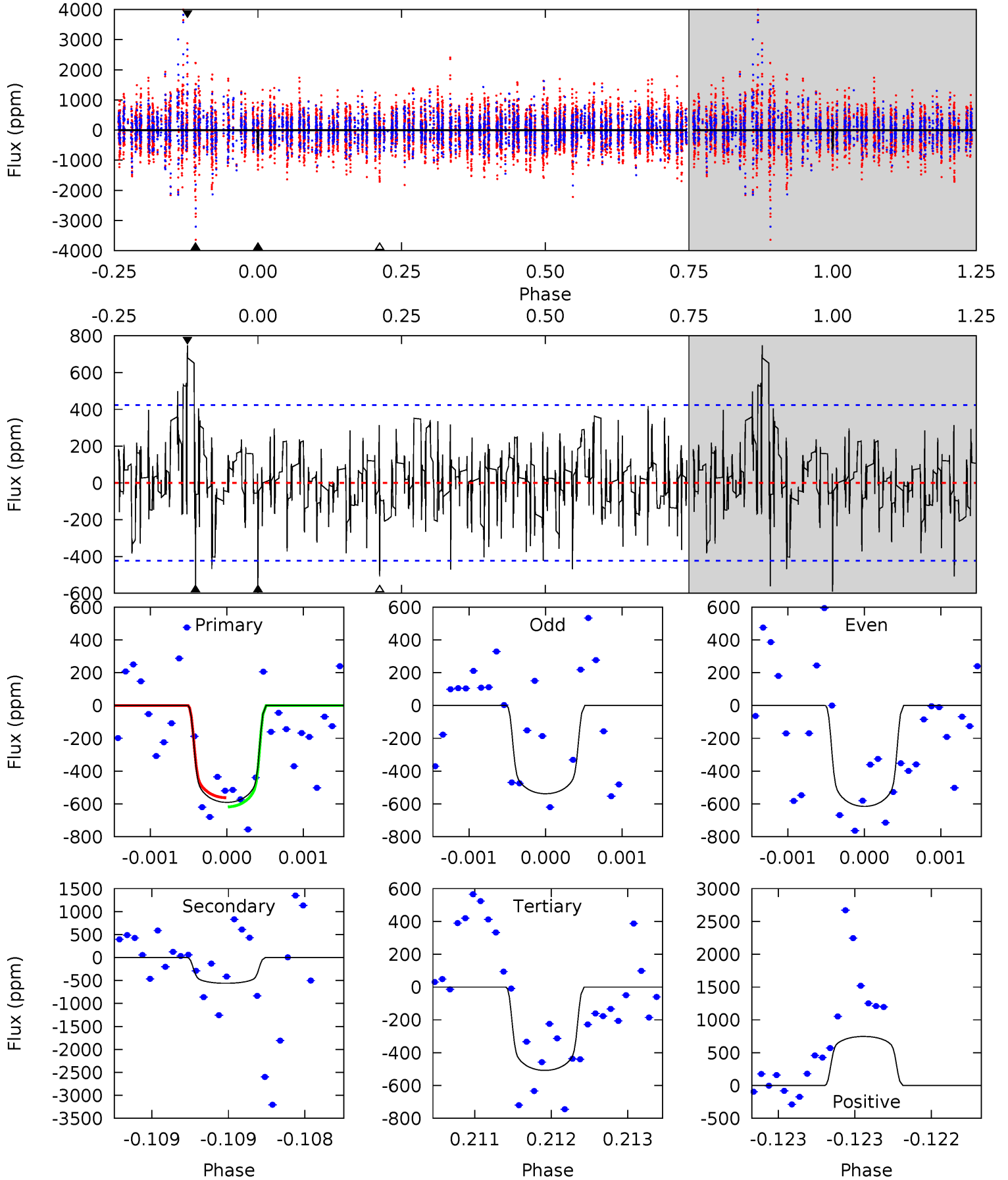
TCE 011463950-06 P=401.180643 Days $T_0=417.054675$ (BKJD)



DV Model-Shift Uniqueness Test

011463950-06, P = 401.186630 Days, E = 15.708472 Days

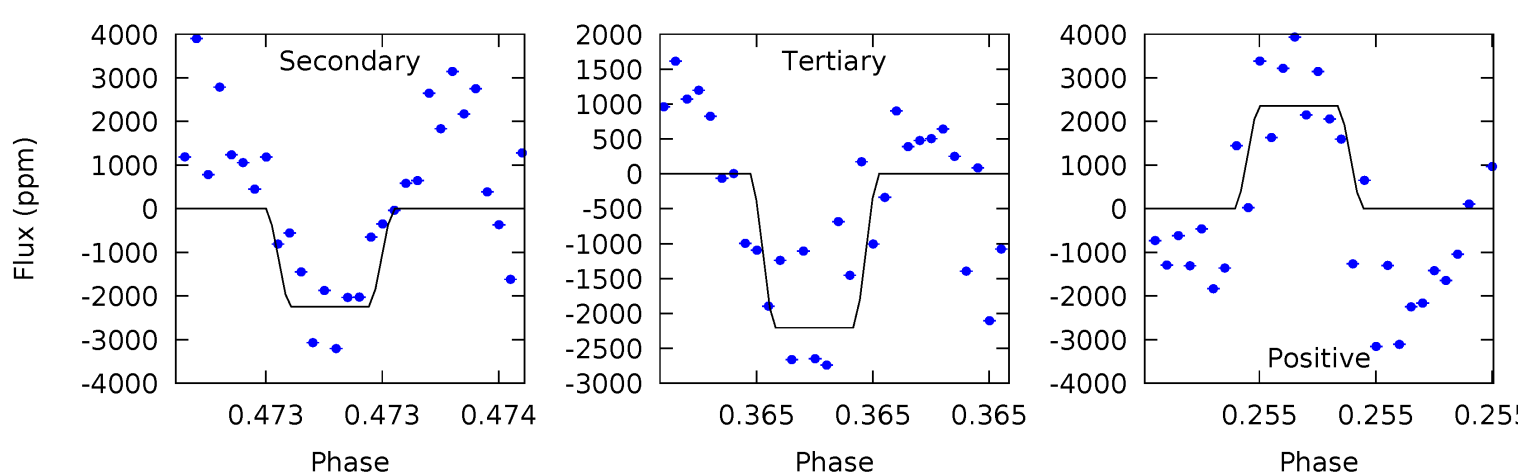
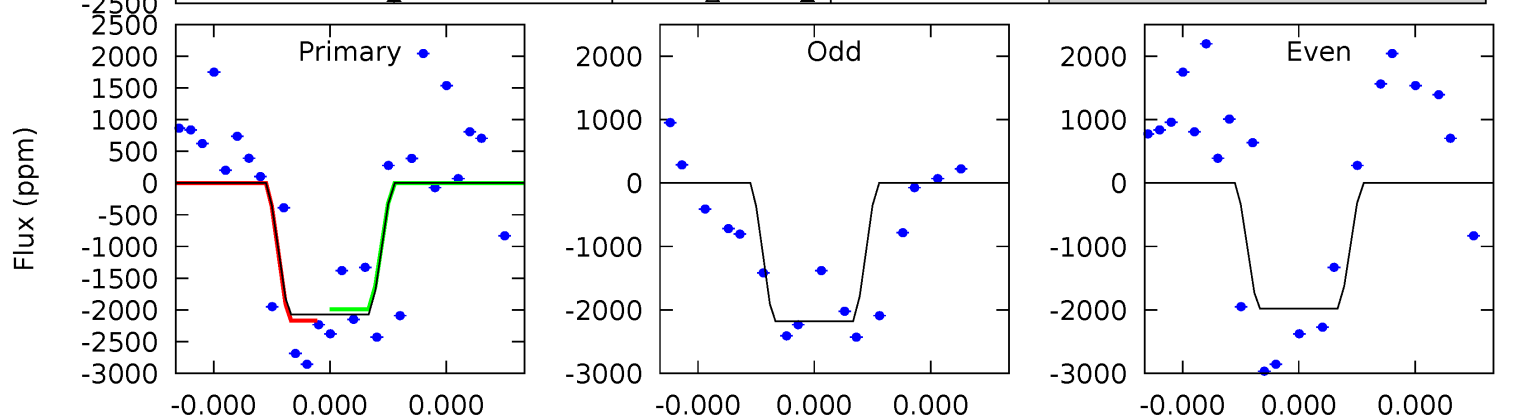
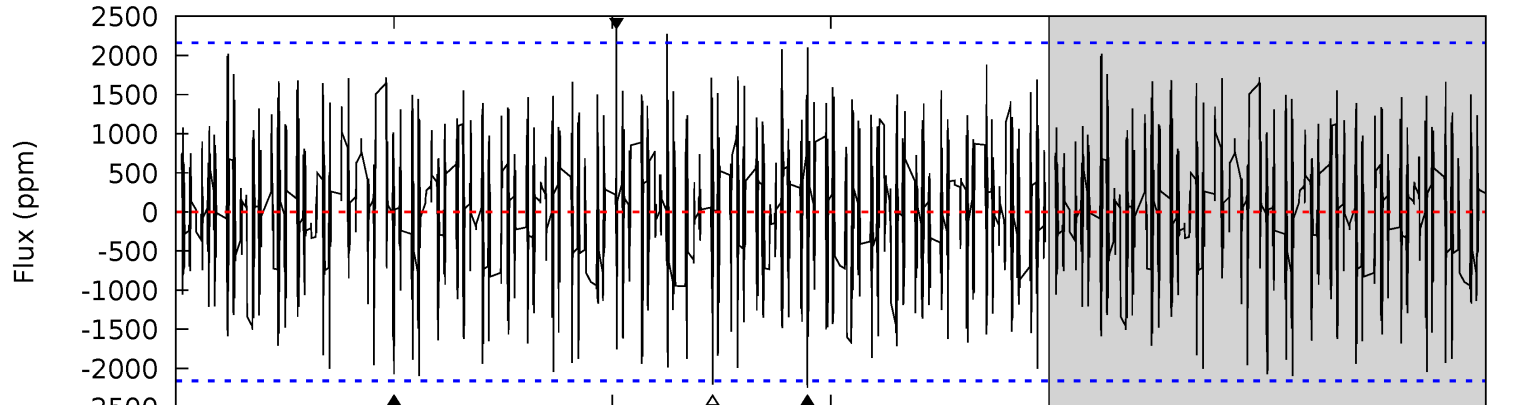
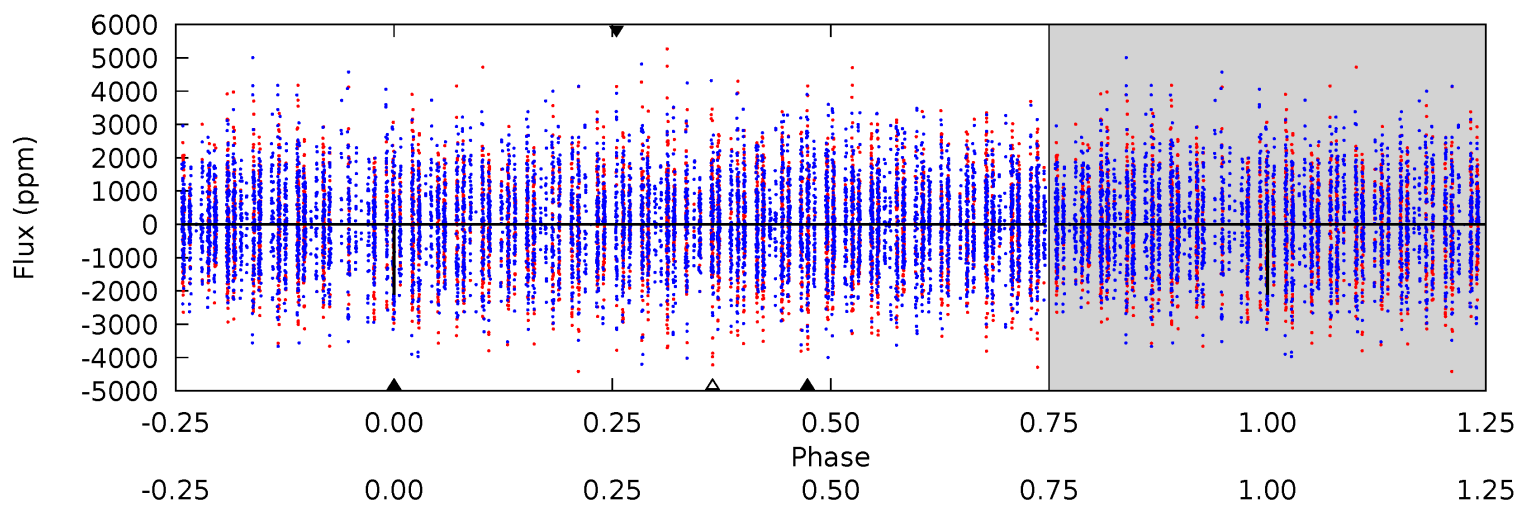
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.67	7.29	6.60	9.70	5.49	3.36	2.08	1.07	-2.03	0.69	-2.41	0.45	1.09	0.56	0.36



Alt Model-Shift Uniqueness Test

011463950-06, P = 401.180643 Days, E = 15.874032 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.43	5.88	5.77	6.16	5.66	3.61	1.90	-0.34	-0.73	0.11	-0.28	0.26	1.00	0.51	0.24



Stellar Parameters For KIC 011463950

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7064^{+74}_{-95}	$3.888^{+0.182}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$2.531^{+0.405}_{-0.607}$	$1.806^{+0.090}_{-0.217}$	$0.157^{+0.156}_{-0.049}$
	+1%/-1%	+5%/-3%	+94%/-94%	+16%/-24%	+5%/-12%	+100%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011463950-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-561 ± 77	$6.85^{+1.47}_{-1.19}$	604^{+27}_{-37}	6769^{+660}_{-574}	10806^{+5627}_{-3522}
Alt.	-2248 ± 382	$12.88^{+1.73}_{-1.62}$	606^{+26}_{-33}	7008^{+473}_{-414}	12244^{+4239}_{-3044}

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

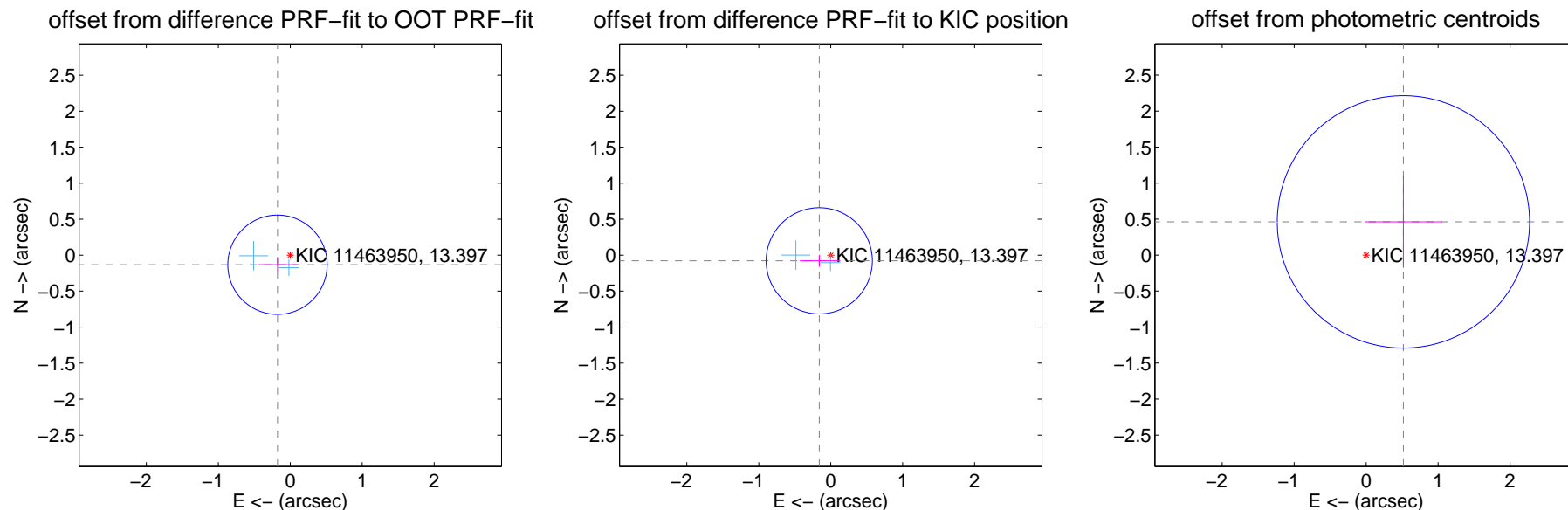
DV Centroid Data

Supplemental centroid analysis for 011463950-06. Kepler magnitude: 13.40. Transit SNR 8.83

There are 2 quarters with good PRF difference image offsets

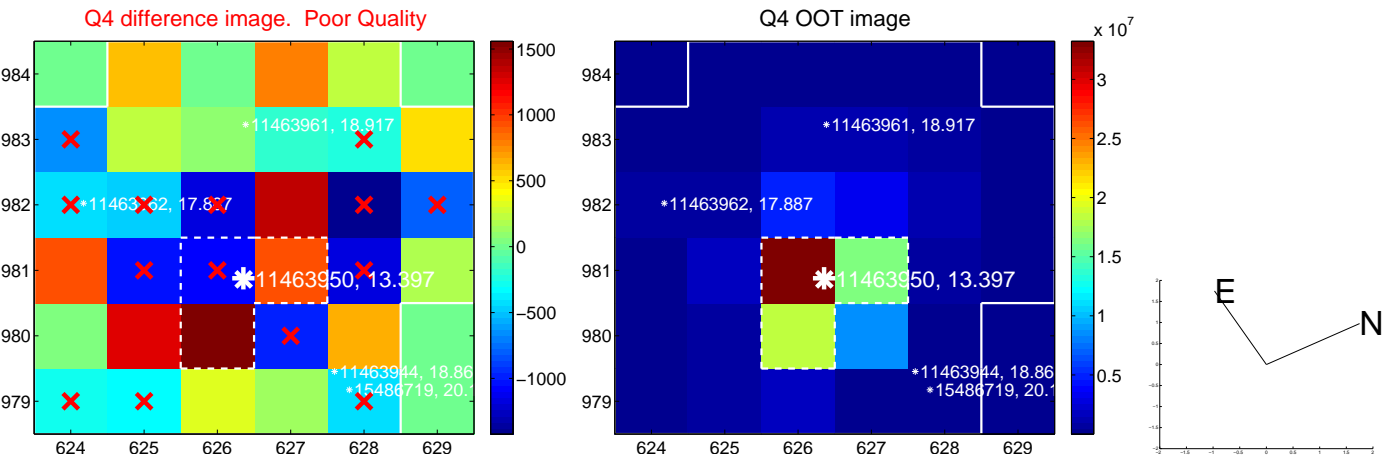
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.222 ± 0.230	0.96	0.178 ± 0.276	-0.133 ± 0.107
PRF-fit source offset from KIC position	0.178 ± 0.246	0.72	0.159 ± 0.271	-0.079 ± 0.085
photometric centroid source offset	0.69 ± 0.58	1.19	-0.52 ± 0.54	0.46 ± 0.64



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

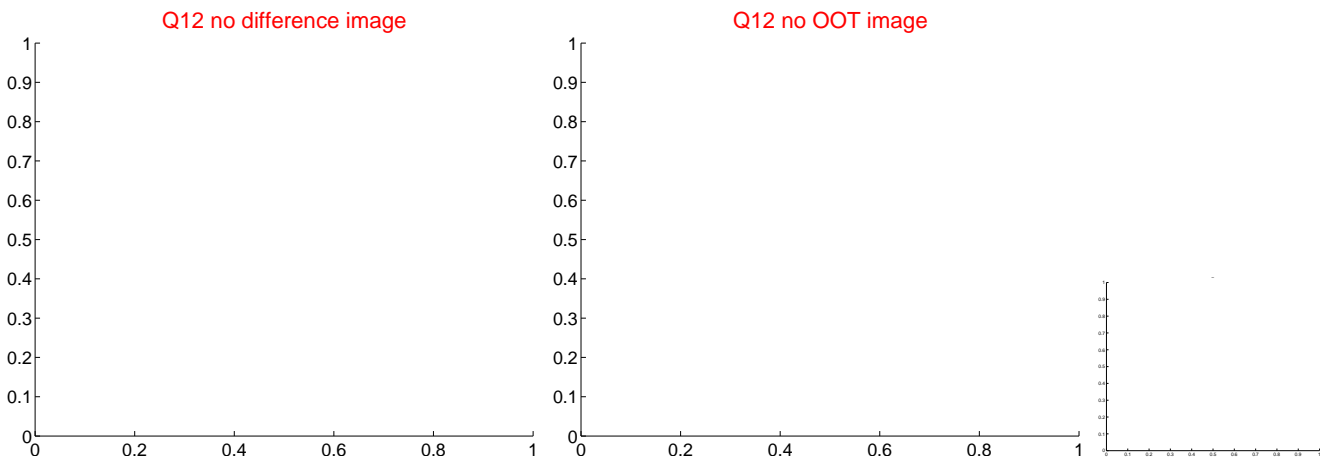
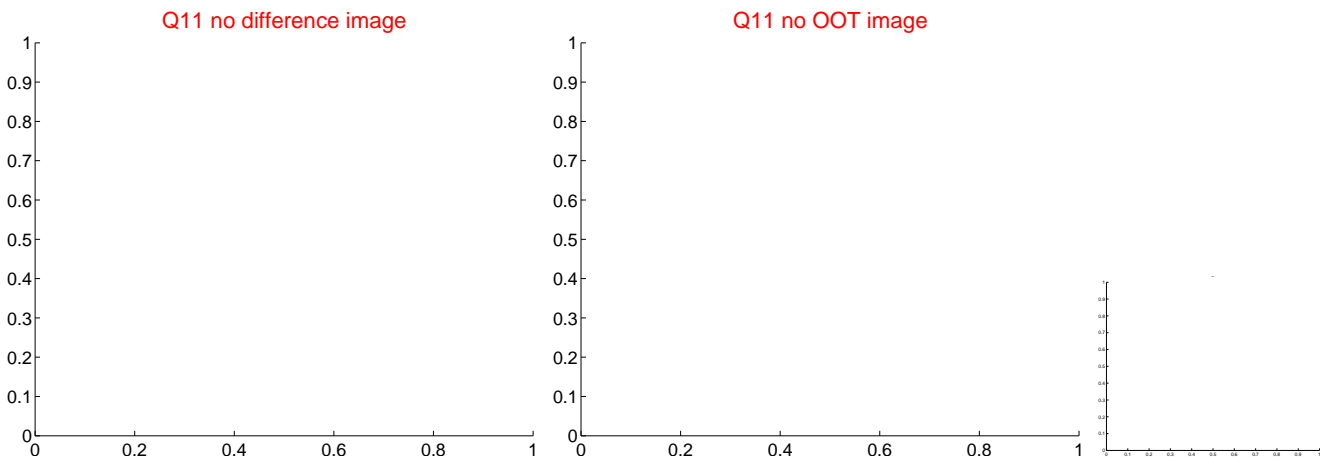
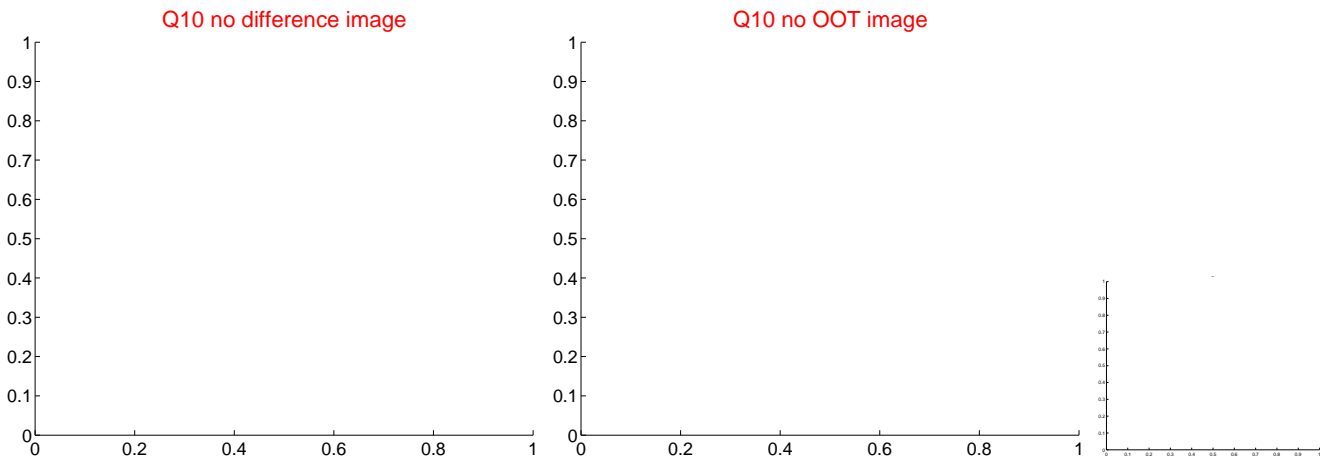
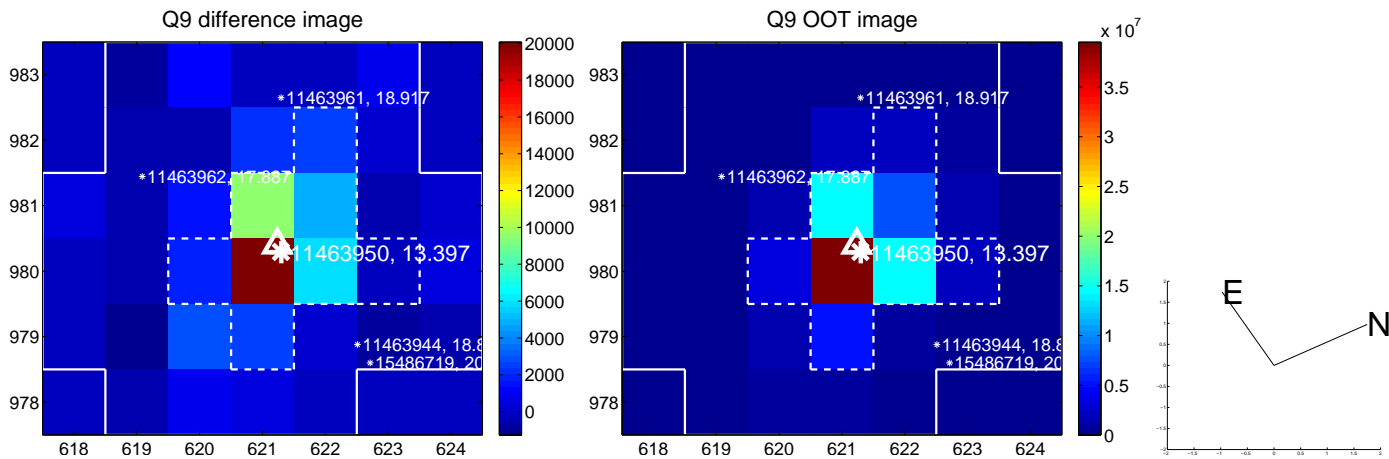
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



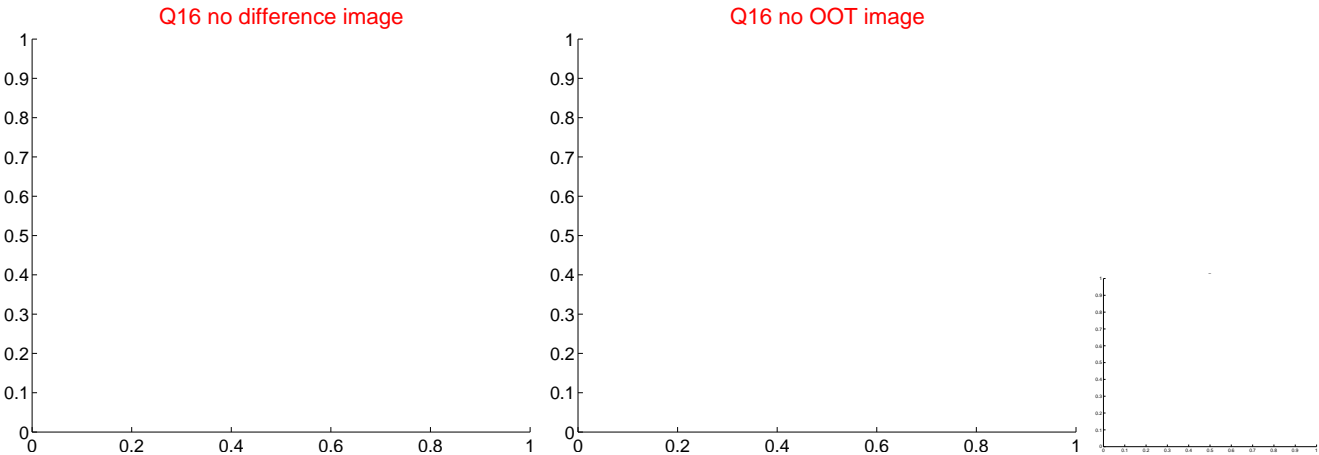
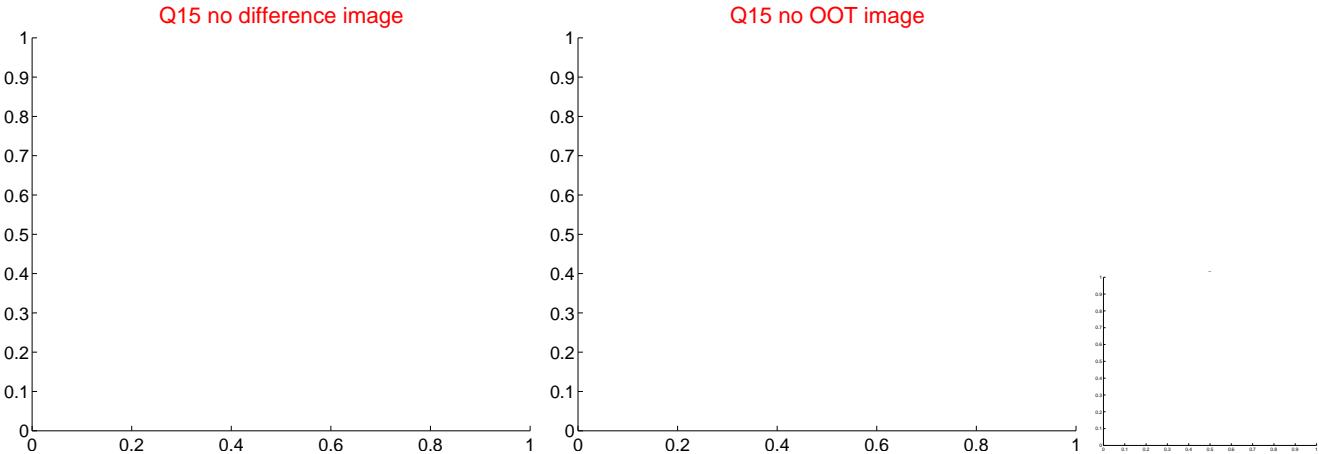
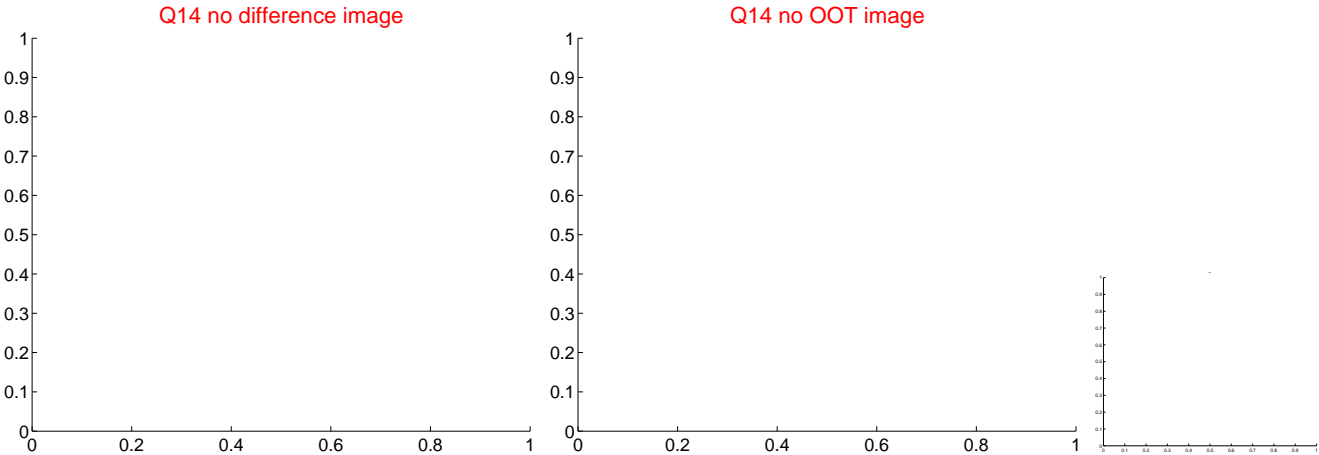
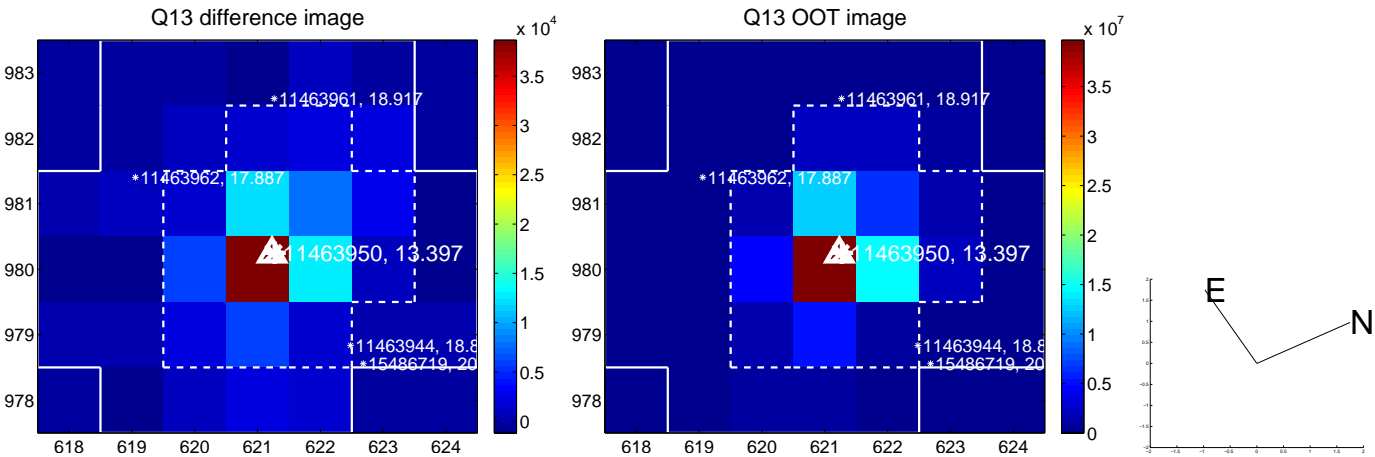
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



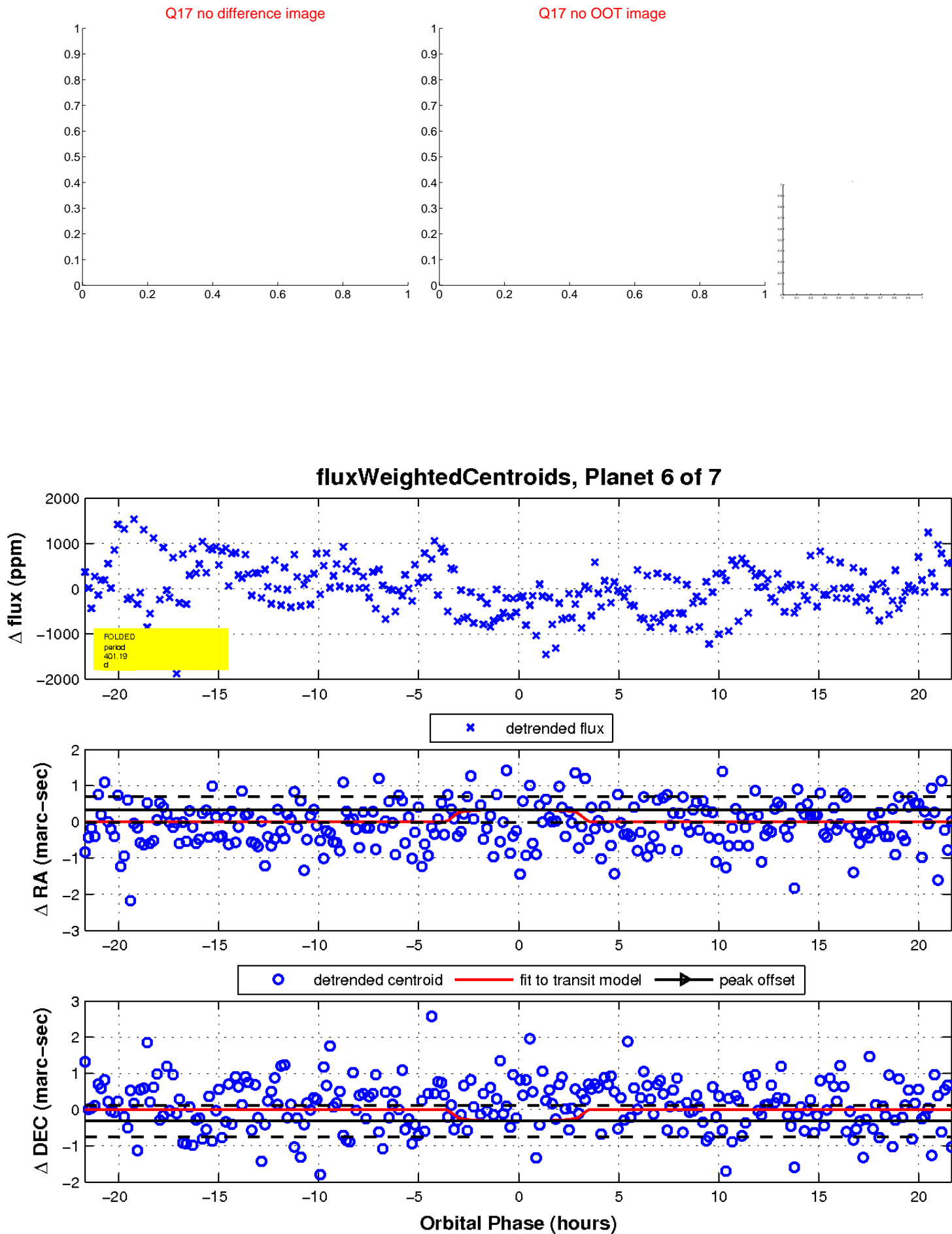
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



UKIRT Image

