

KIC 008144647

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})
008144647-01	OBS	No	141.742915	152.627238	858.5	2.562	16.1	5.9	0.70	5238	2.25	1.38
008144647-02	OBS	No	467.210921	586.628217	3085.9	4.875	13.4	11.1	0.70	5238	3.80	0.28
008144647-03	OBS	No	523.337935	457.467851	1003.0	5.185	14.5	3.5	0.70	5238	2.18	0.24
008144647-05	OBS	No	458.218807	220.456725	2784.5	4.275	13.7	8.7	0.70	5238	6.10	0.29
008144647-06	OBS	No	430.153683	527.332890	1628.4	5.000	13.3	-1.0	0.70	5238	2.76	0.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008144647-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008144647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
008144647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
008144647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008144647-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

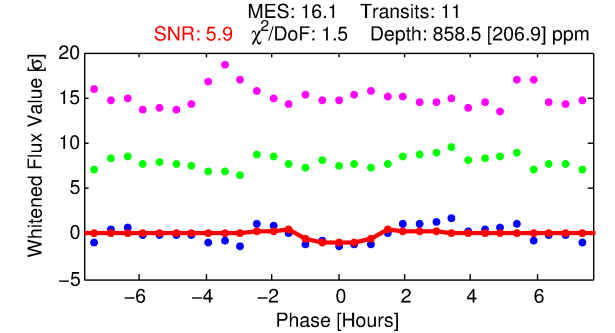
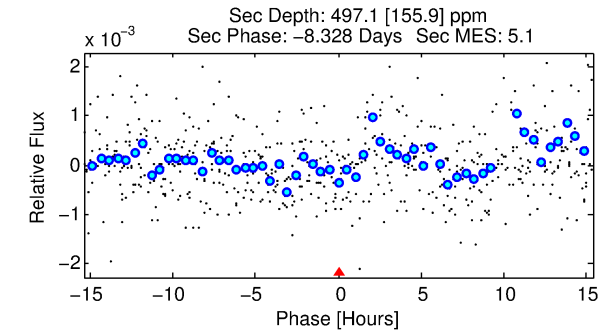
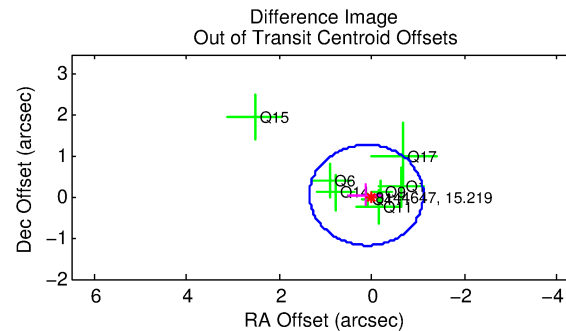
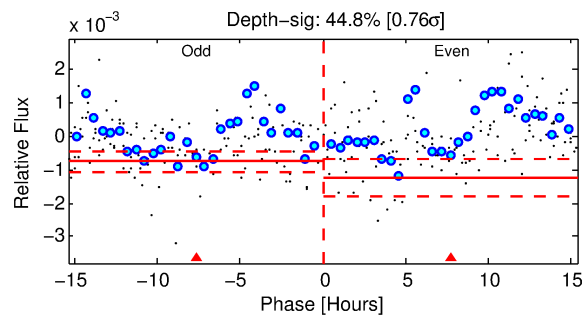
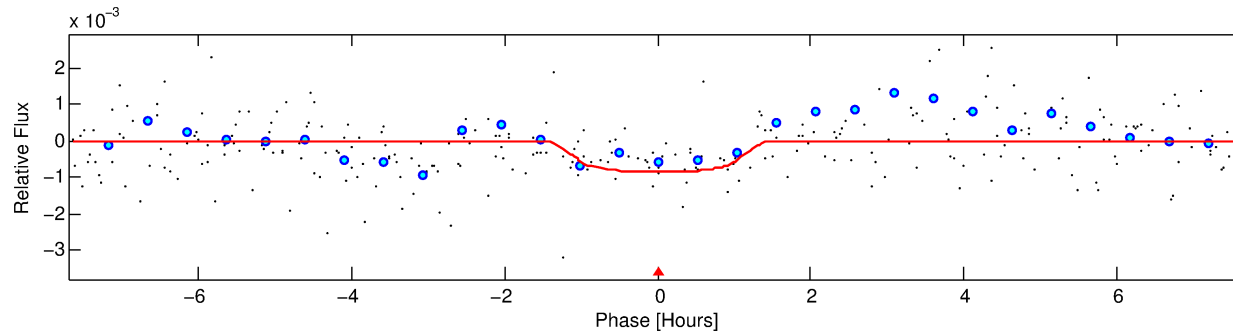
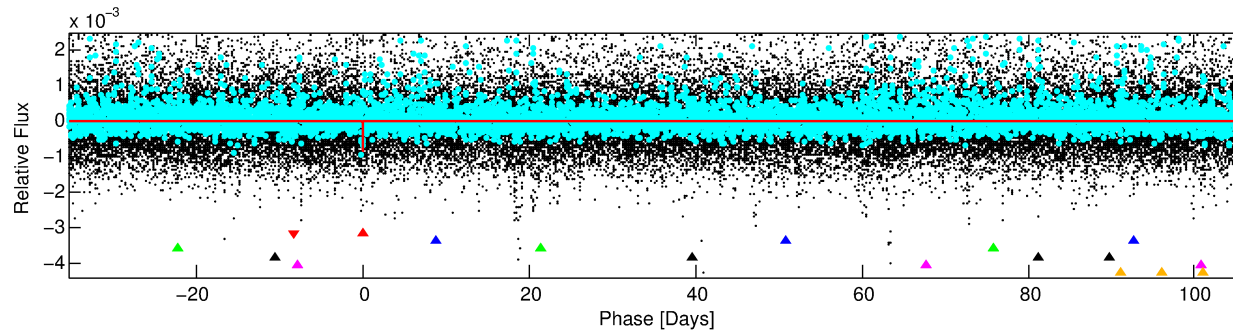
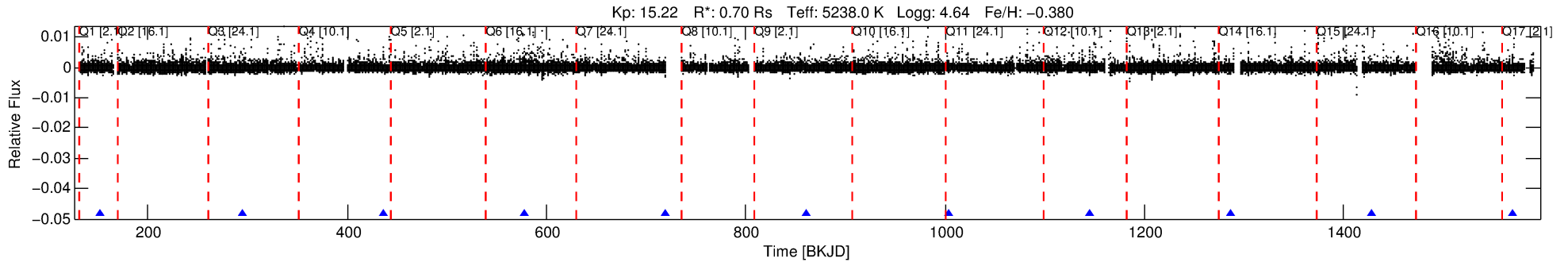
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008144647-01

No Significant Match Found

DV One-Page Summary

KIC: 8144647 Candidate: 1 of 6 Period: 141.743 d



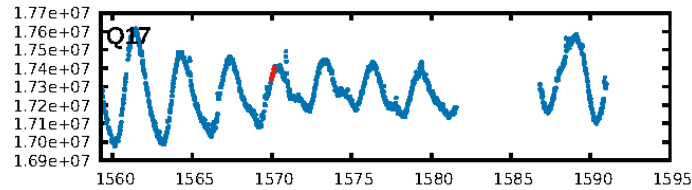
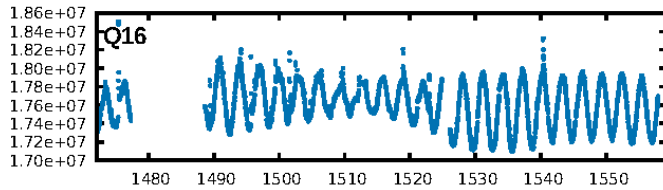
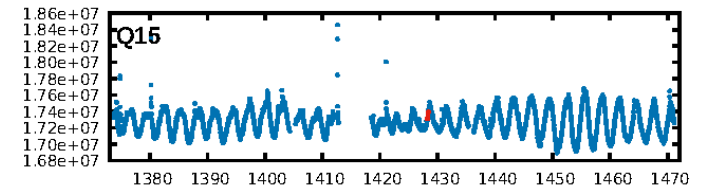
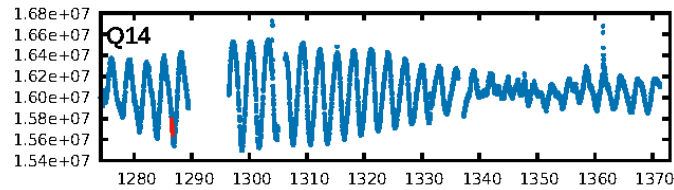
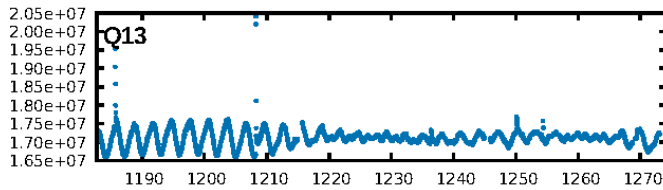
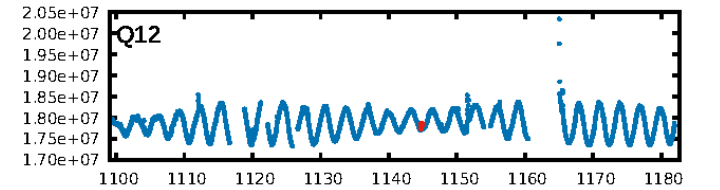
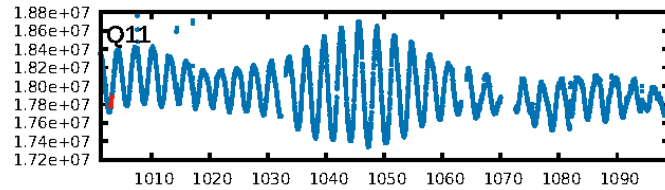
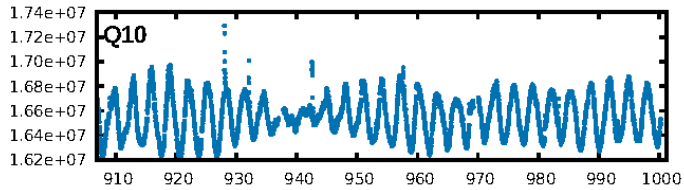
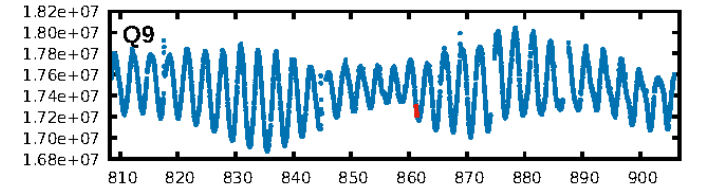
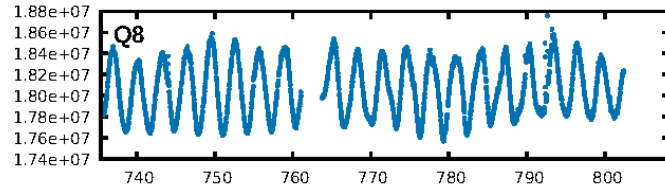
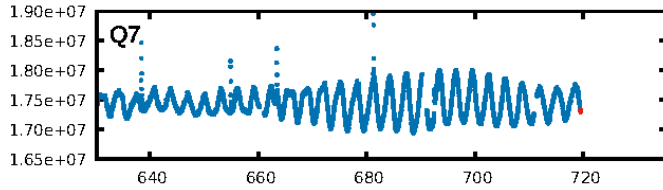
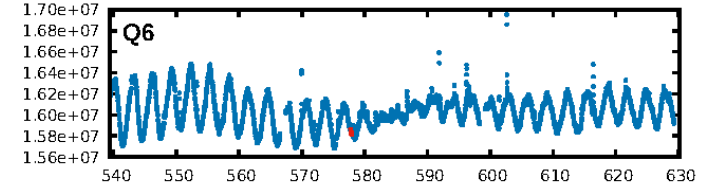
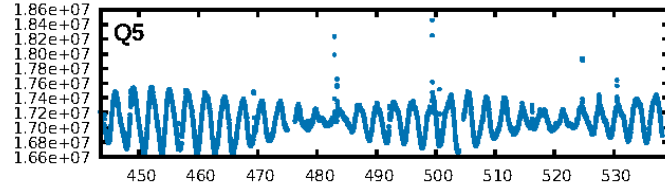
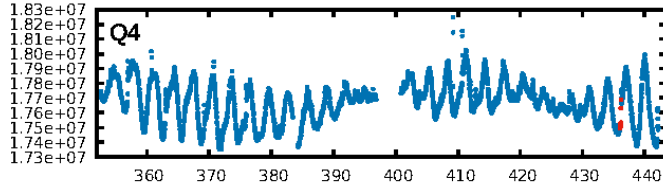
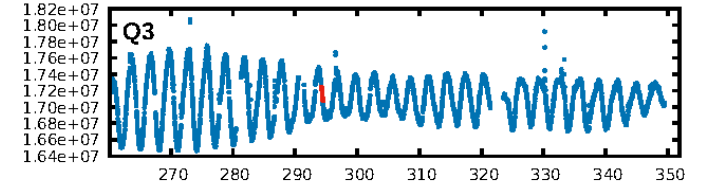
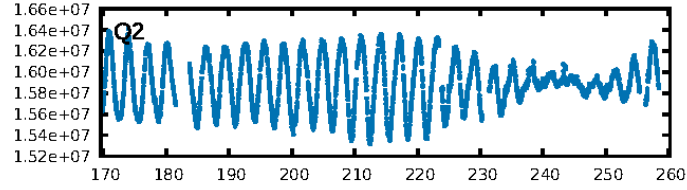
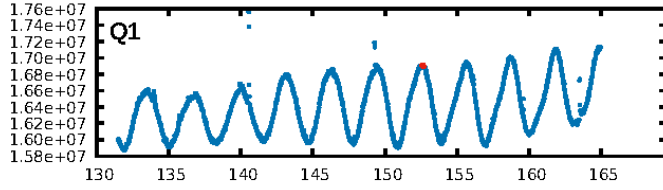
DV Fit Results:

Period = 141.74292 [0.00159] d
Epoch = 152.6272 [0.0104] BKJD
Rp/R* = 0.0296 [0.0448]
a/R* = 285.21 [1673.59]
b = 0.78 [3.06]
Seff = 1.38 [0.29]
Teq = 276 [14] K
Rp = 2.26 [3.43] Re
a = 0.4878 [0.0586] AU
Ag = 12794.16 [38978.32] [0.33σ]
Teffp = 4545 [3459] K [1.23σ]

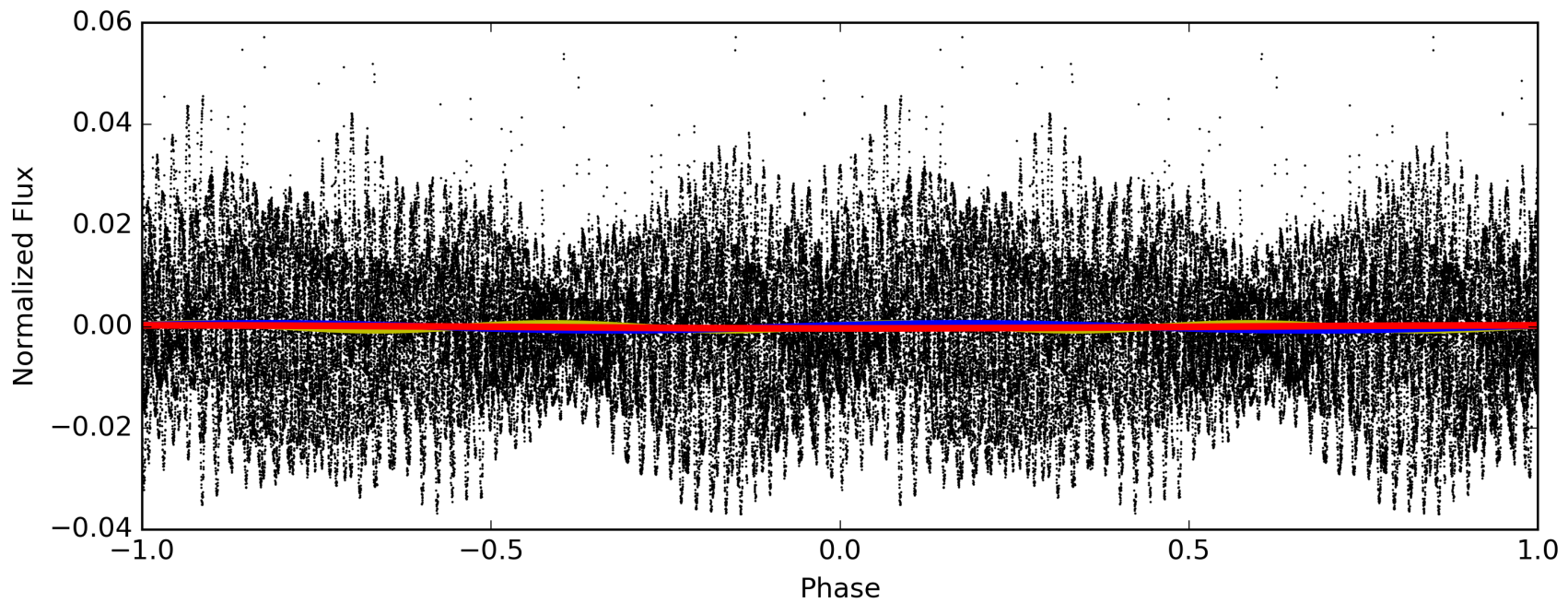
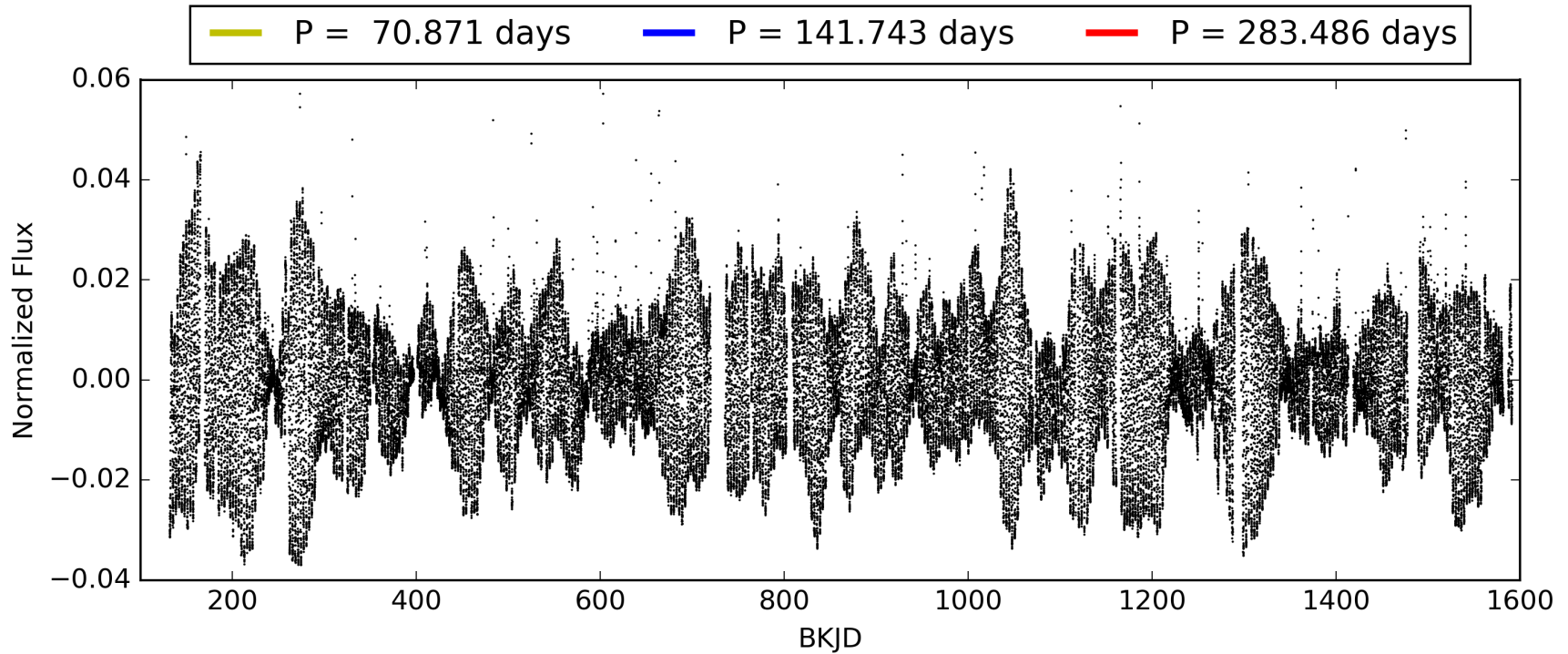
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [752.11σ]
ModelChiSquare2-sig: 6.7%
ModelChiSquareGof-sig: 93.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 11.45
Centroid-sig: 21.3%
Centroid-so: 2.034 arcsec [1.50σ]
OotOffset-rm: 0.126 arcsec [0.31σ]
OotOffset-st: 2/2/1/3 [8]
KicOffset-rm: 0.213 arcsec [0.62σ]
KicOffset-st: 2/2/1/3 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 1.00 [10/10]

TCE 008144647-01, PDC Light Curves

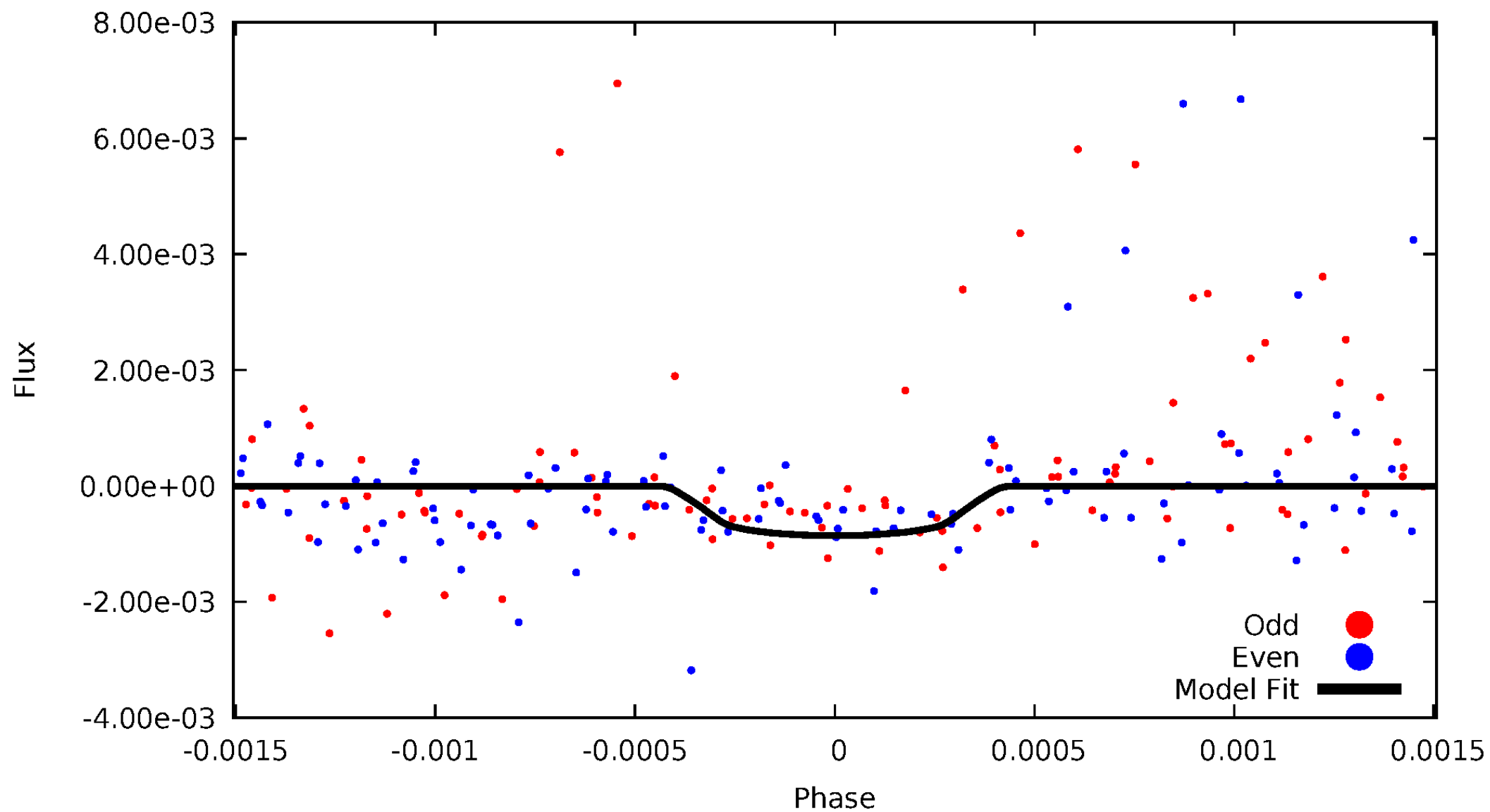


TCE 008144647-01



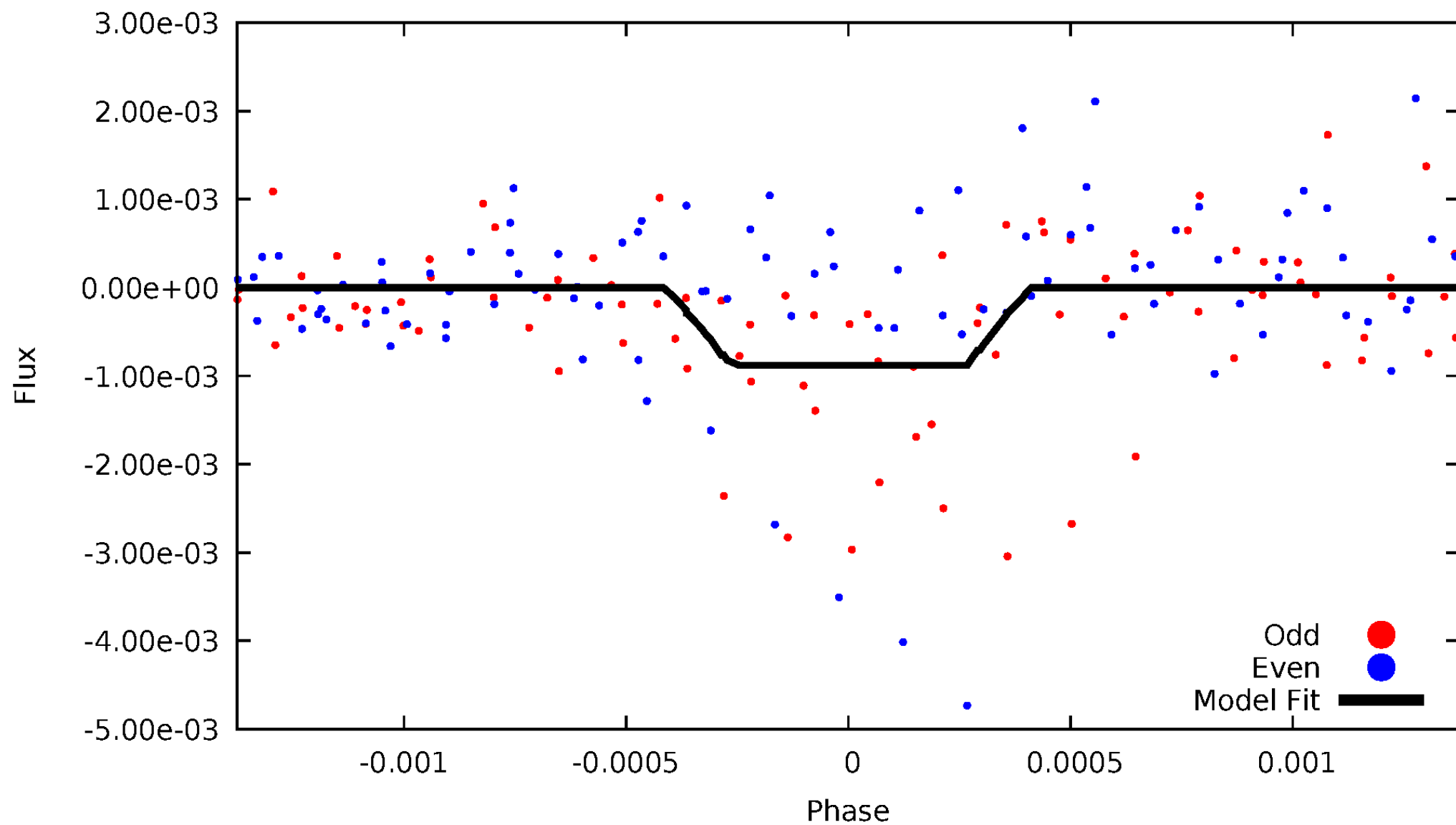
DV Odd/Even

TCE 008144647-01



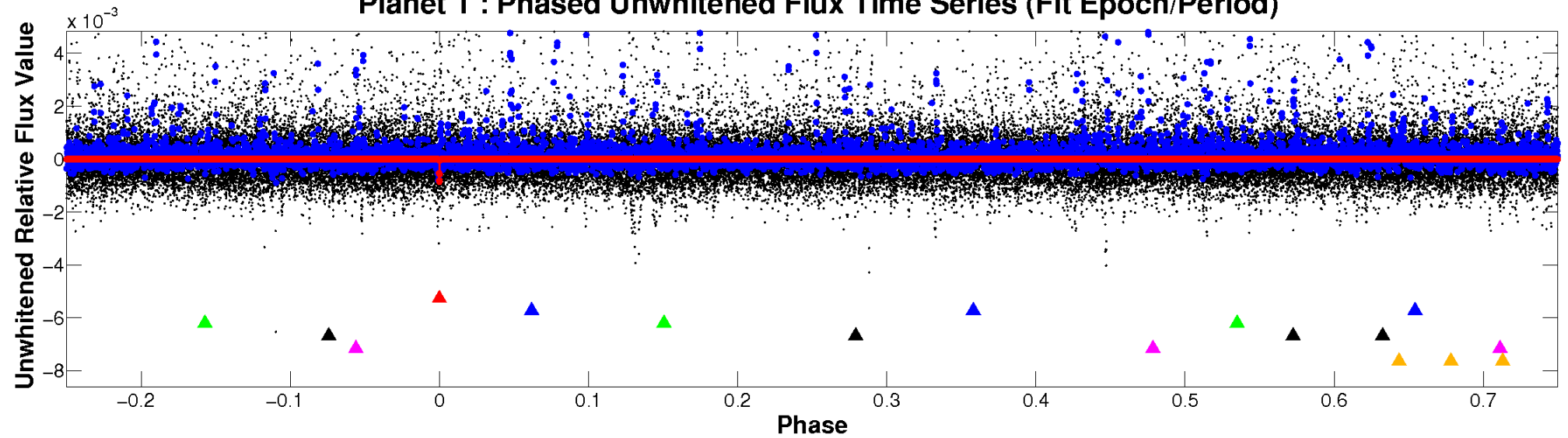
ALT Odd/Even

TCE 008144647-01

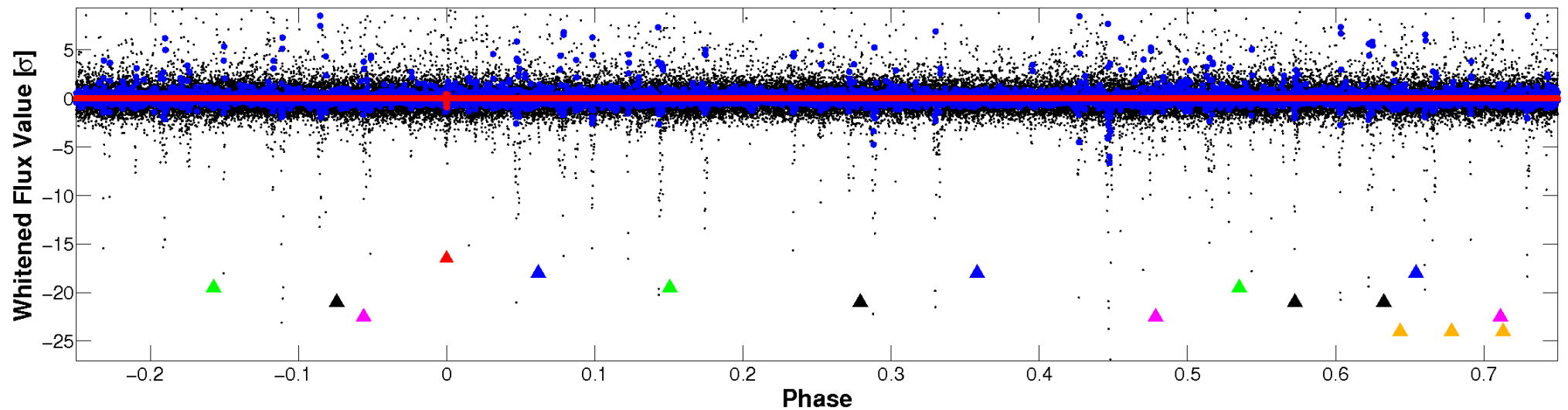


Non-Whitened Vs. Whitened Light Curve

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

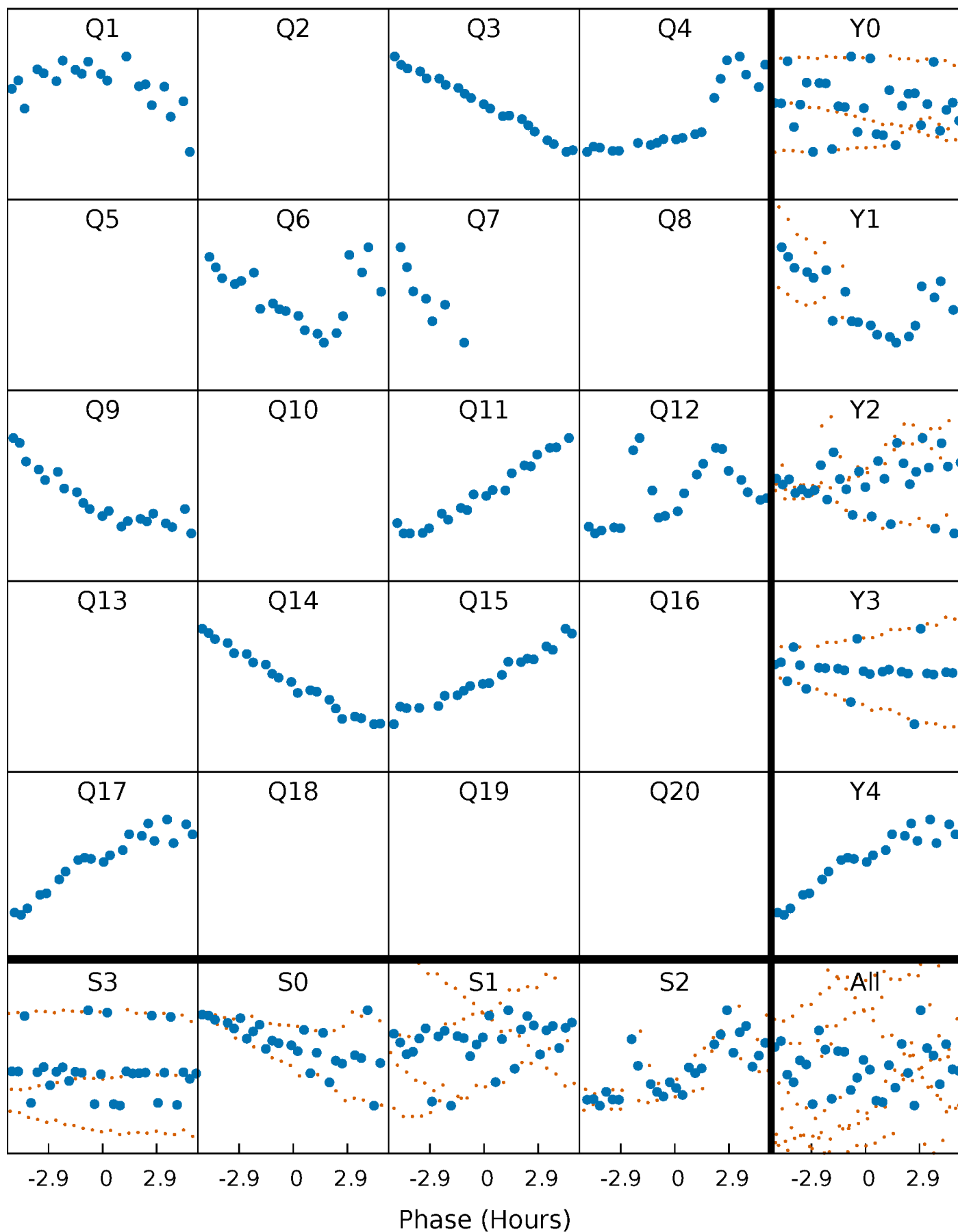


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



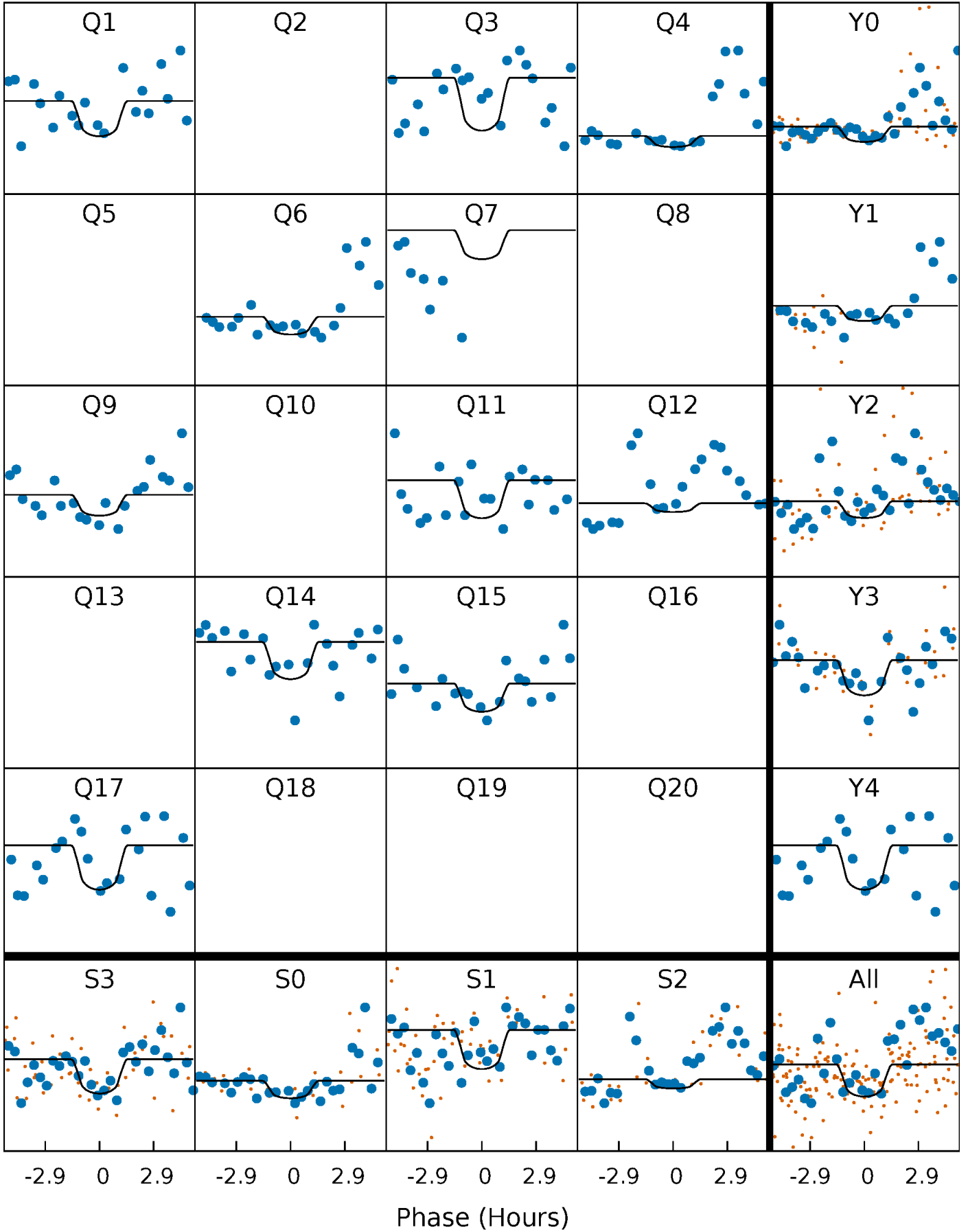
PDC Quarter-Phased Transit Curves

TCE 008144647-01 P=141.742916 Days $T_0=152.627238$ (BKJD)



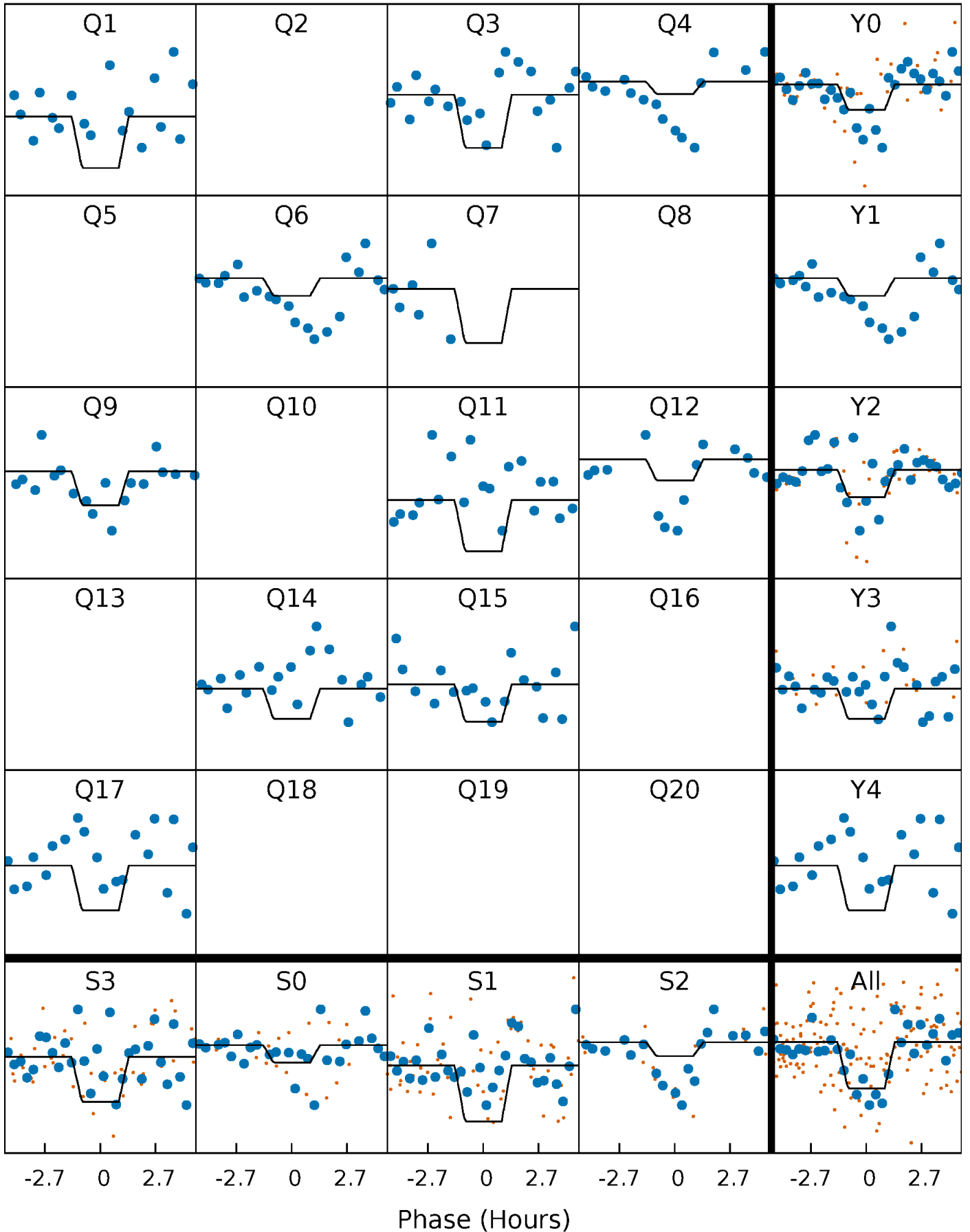
DV Quarter-Phased Transit Curves

TCE 008144647-01 P=141.742916 Days $T_0=152.627238$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

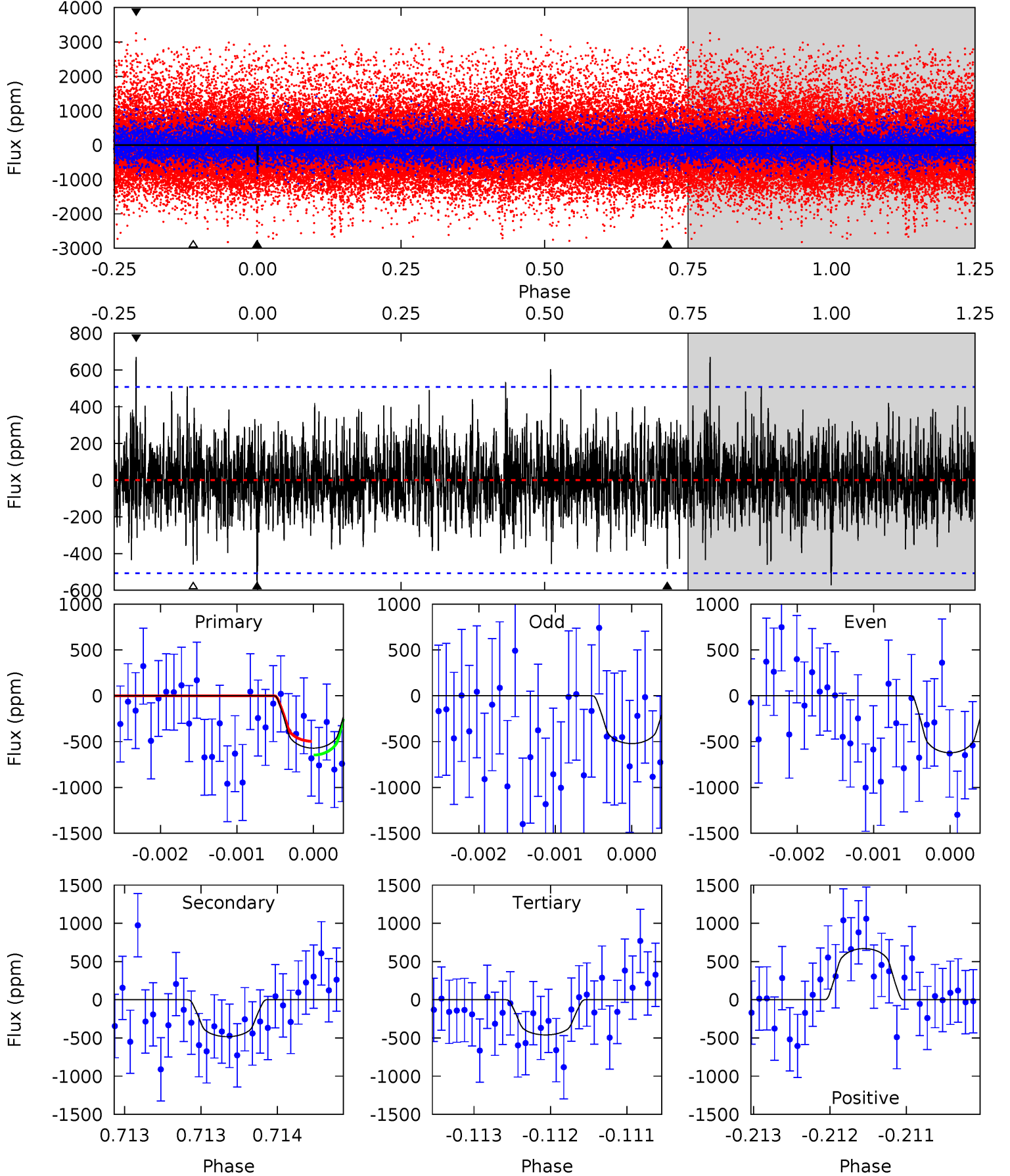
TCE 008144647-01 P=141.738711 Days $T_0=152.660059$ (BKJD)



DV Model-Shift Uniqueness Test

008144647-01, $P = 141.742916$ Days, $E = 10.884322$ Days

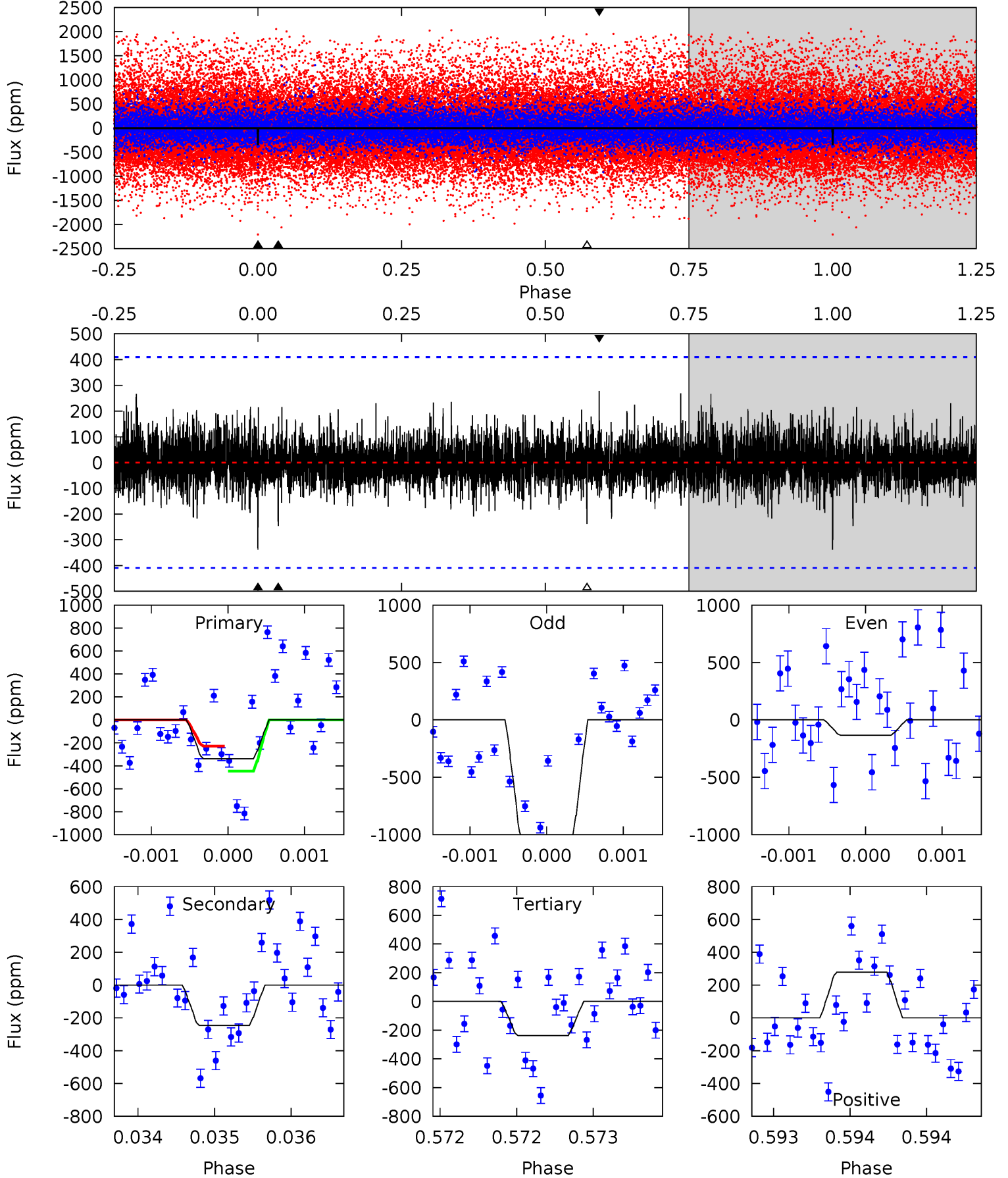
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.17	5.21	4.97	7.23	5.48	3.33	1.53	1.20	-1.07	0.24	-2.02	0.54	0.88	0.54	0.81



Alt Model-Shift Uniqueness Test

008144647-01, $P = 141.738711$ Days, $E = 10.921348$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.54	3.31	3.20	3.74	5.50	3.37	0.84	1.34	0.81	0.11	-0.43	6.40	2.66	0.45	0



Stellar Parameters For KIC 008144647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5238^{+157}_{-141}	$4.637^{+0.030}_{-0.090}$	$-0.380^{+0.300}_{-0.300}$	$0.698^{+0.103}_{-0.055}$	$0.777^{+0.068}_{-0.083}$	$3.221^{+0.501}_{-0.922}$
	+3%/-3%	+1%/-2%	+79%/-79%	+15%/-8%	+9%/-11%	+16%/-29%
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 008144647-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-483 ± 93	$3.31^{+3.01}_{-2.14}$	392^{+16}_{-14}	4023^{+2162}_{-791}	5547^{+39602}_{-4065}
Alt.	-246 ± 74	$3.47^{+3.09}_{-2.24}$	391^{+16}_{-14}	3559^{+1630}_{-655}	2610^{+16912}_{-1930}

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 $A_{obs} \gg 1.0$

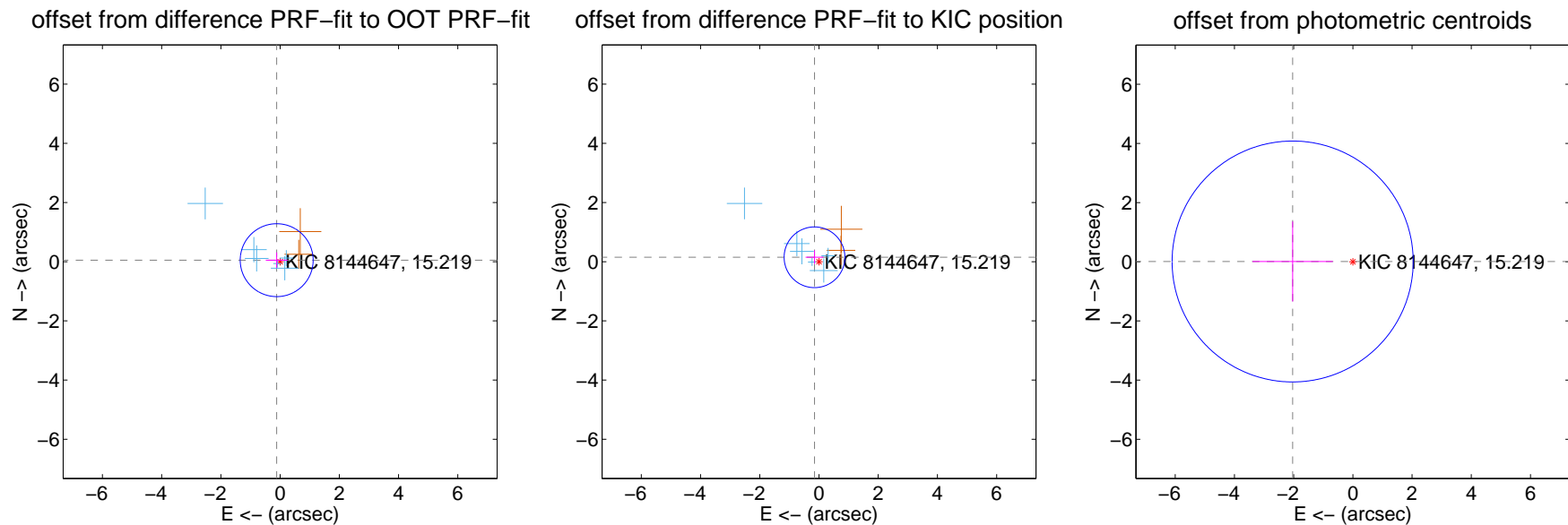
DV Centroid Data

Supplemental centroid analysis for 008144647-01. Kepler magnitude: 15.22. Transit SNR 5.89

There are 6 quarters with good PRF difference image offsets

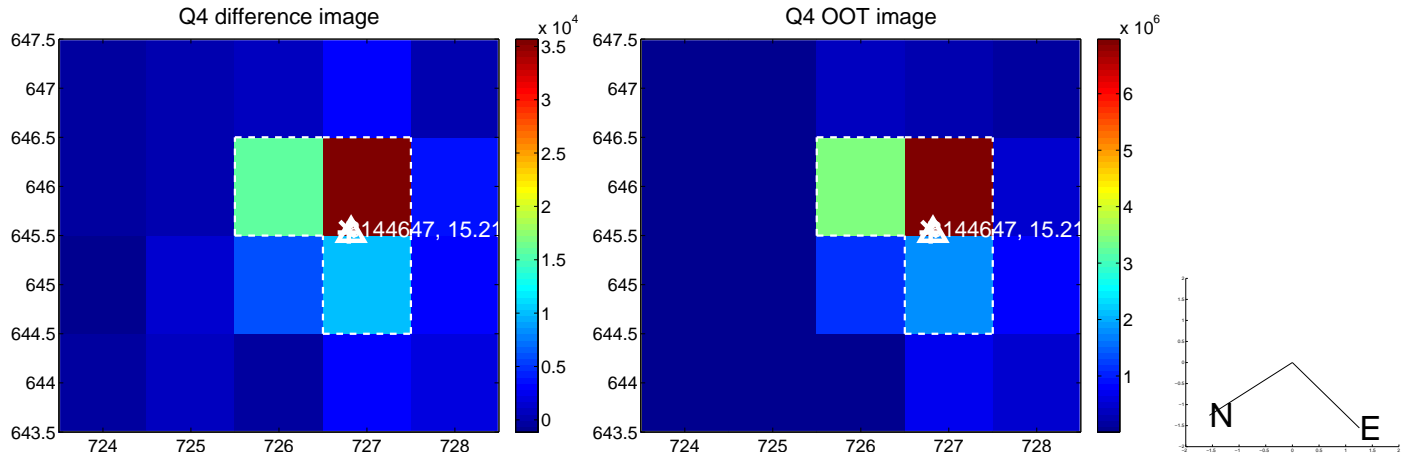
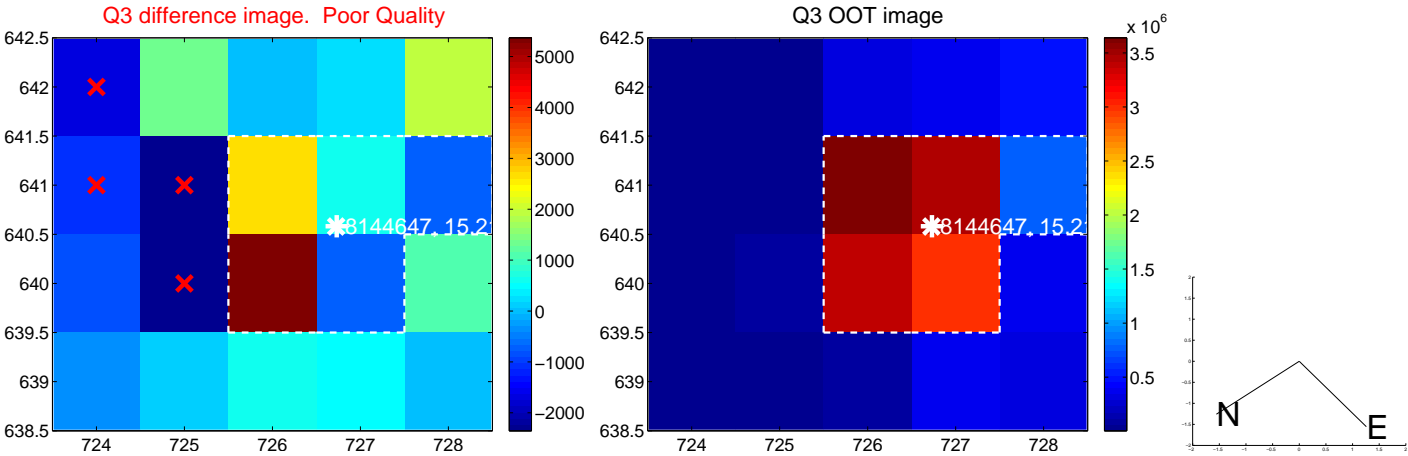
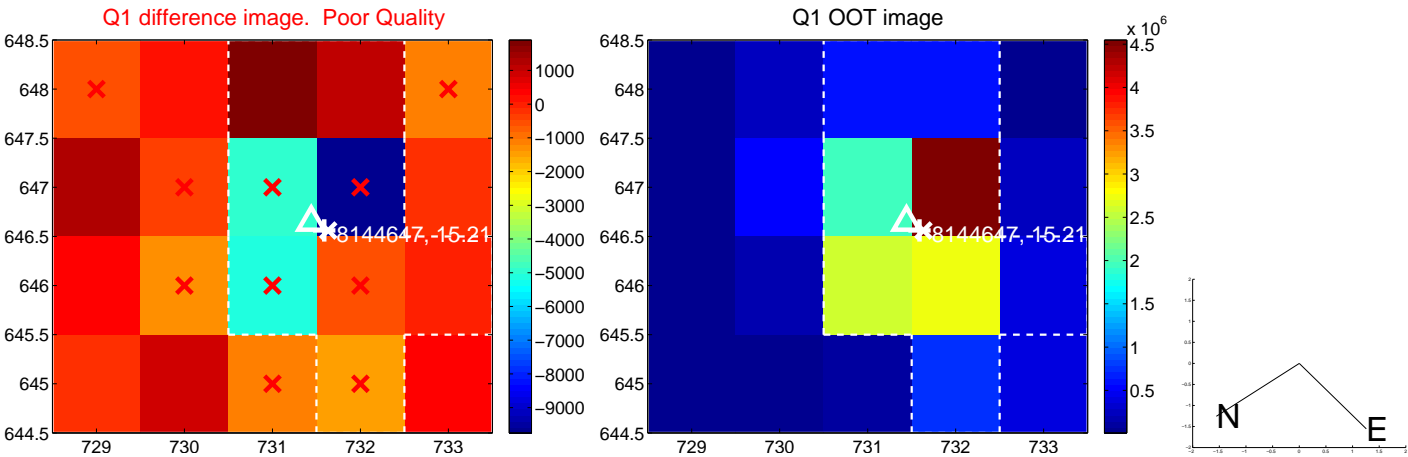
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.126 ± 0.410	0.31	0.115 ± 0.368	0.052 ± 0.263
PRF-fit source offset from KIC position	0.213 ± 0.342	0.62	0.151 ± 0.300	0.149 ± 0.232
photometric centroid source offset	2.03 ± 1.36	1.50	2.03 ± 1.36	0.01 ± 1.35

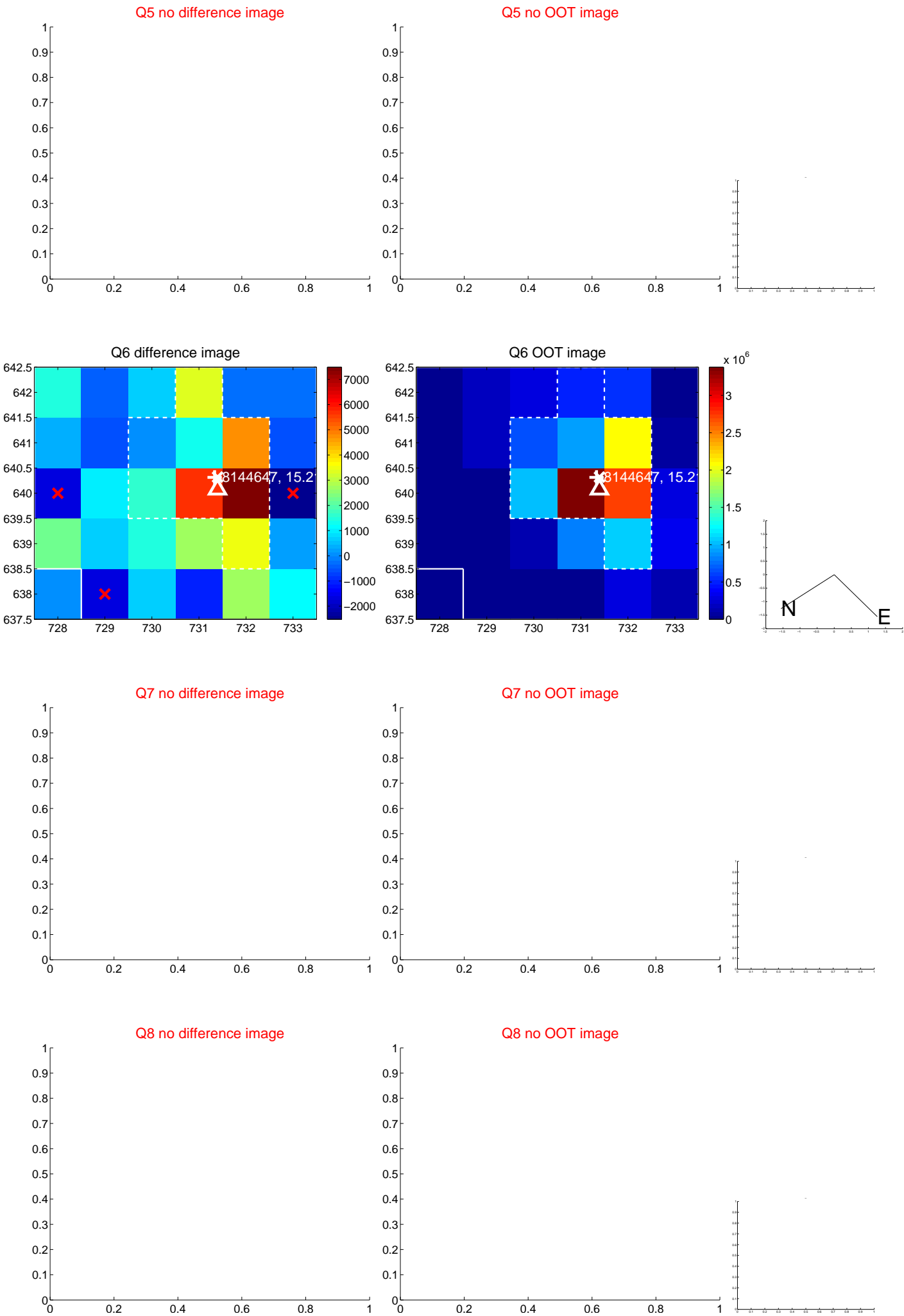


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

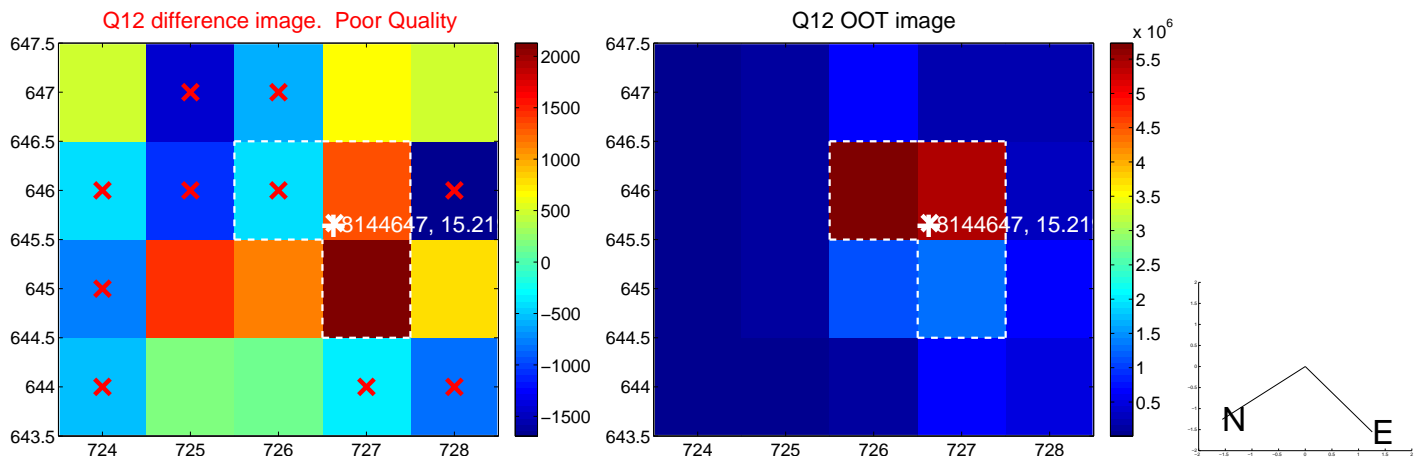
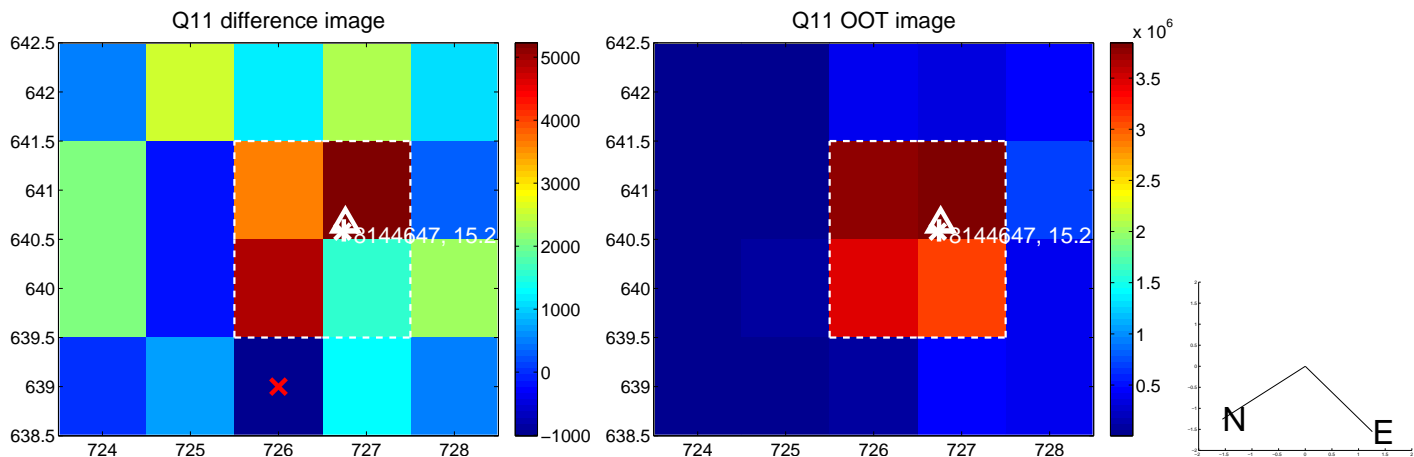
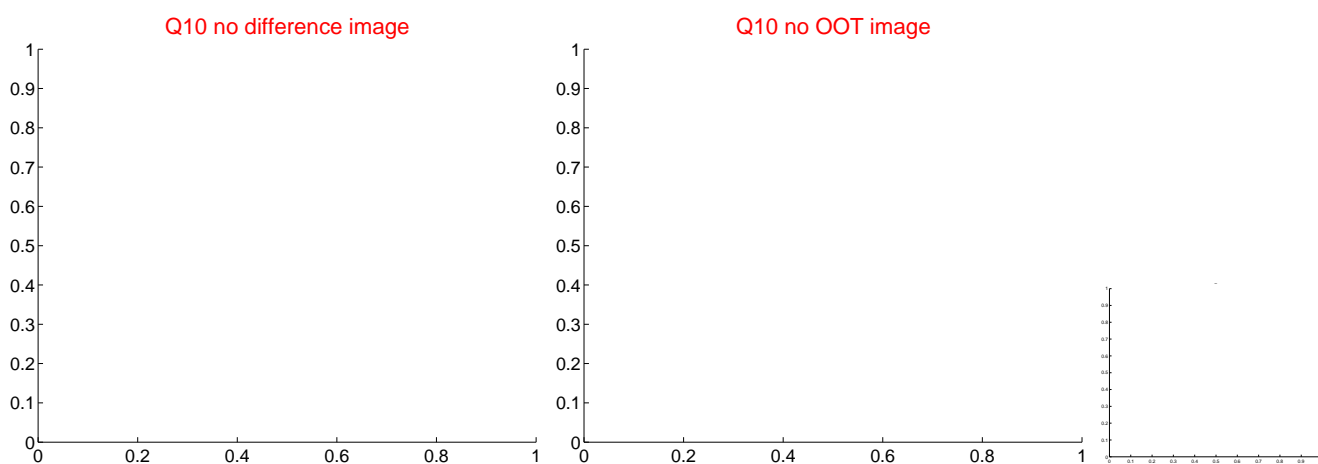
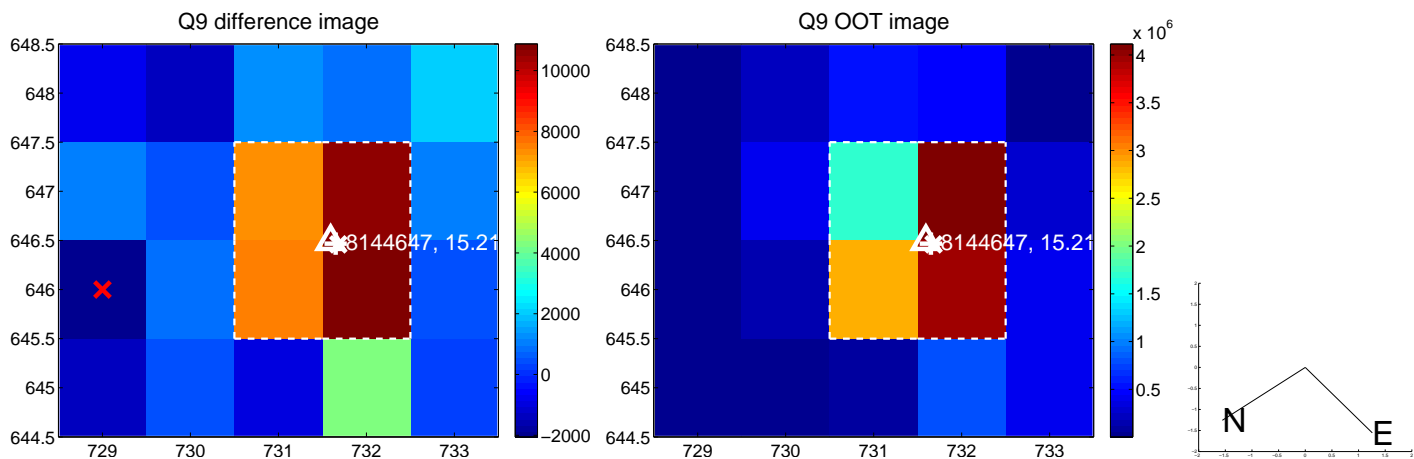
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



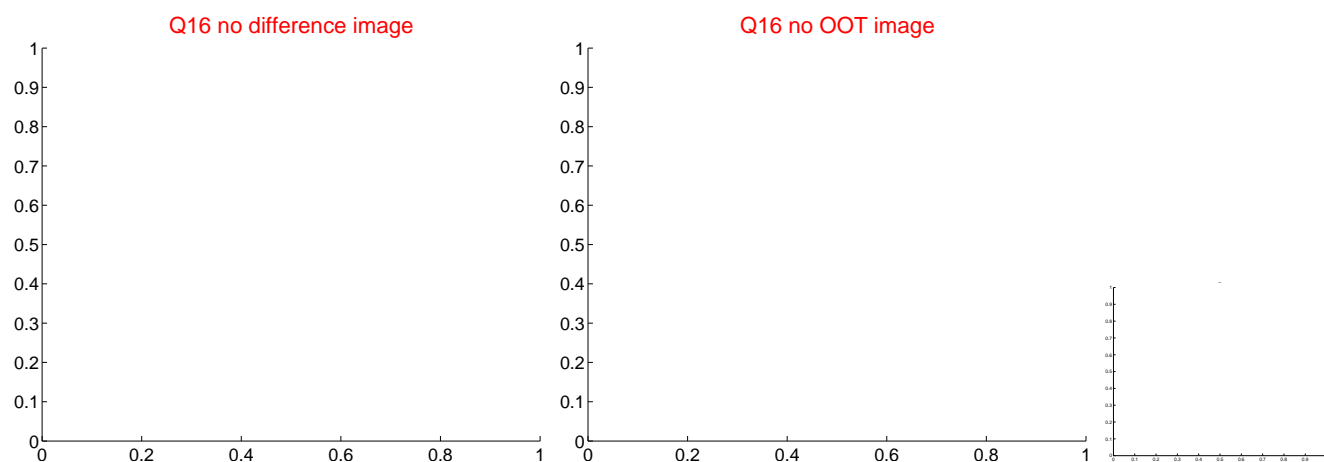
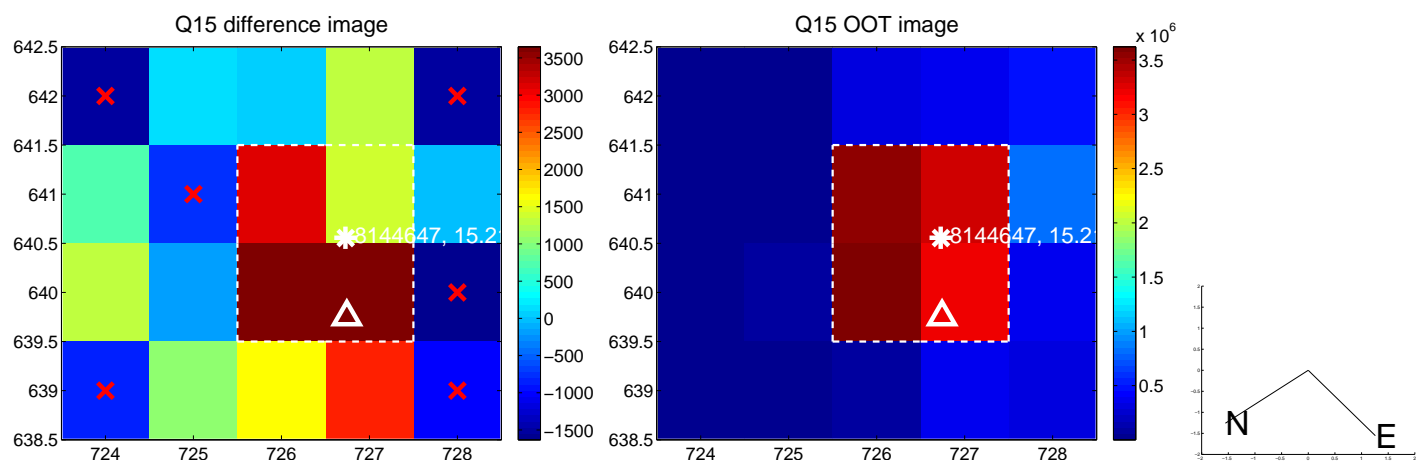
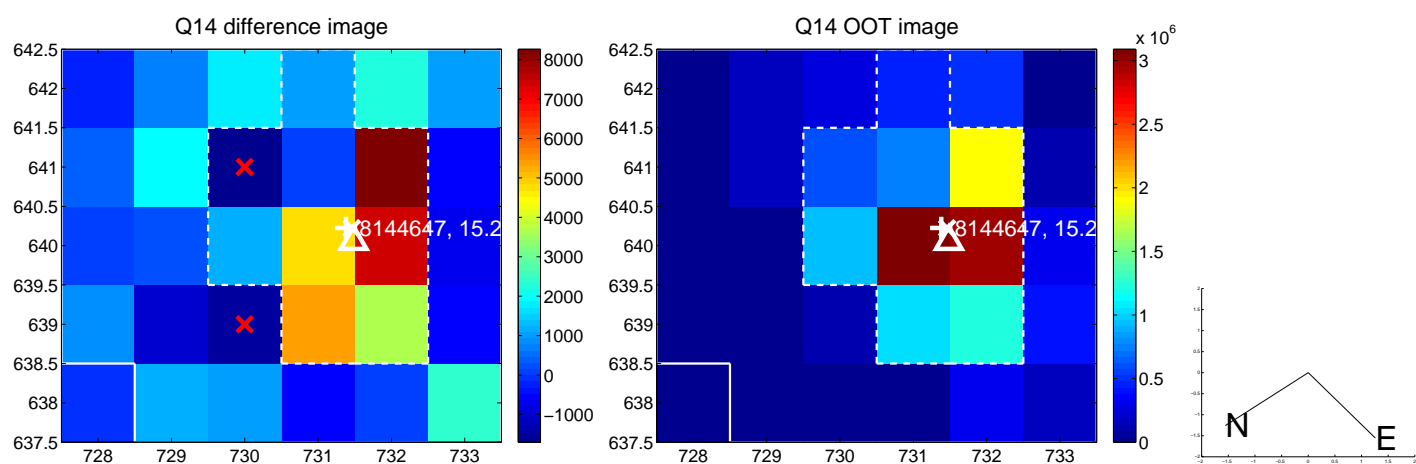
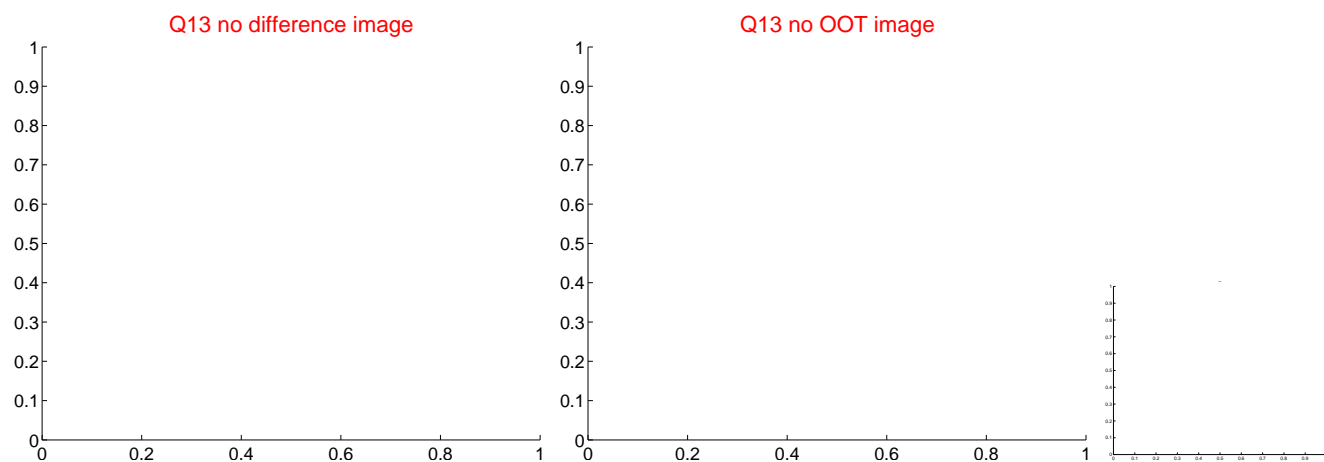
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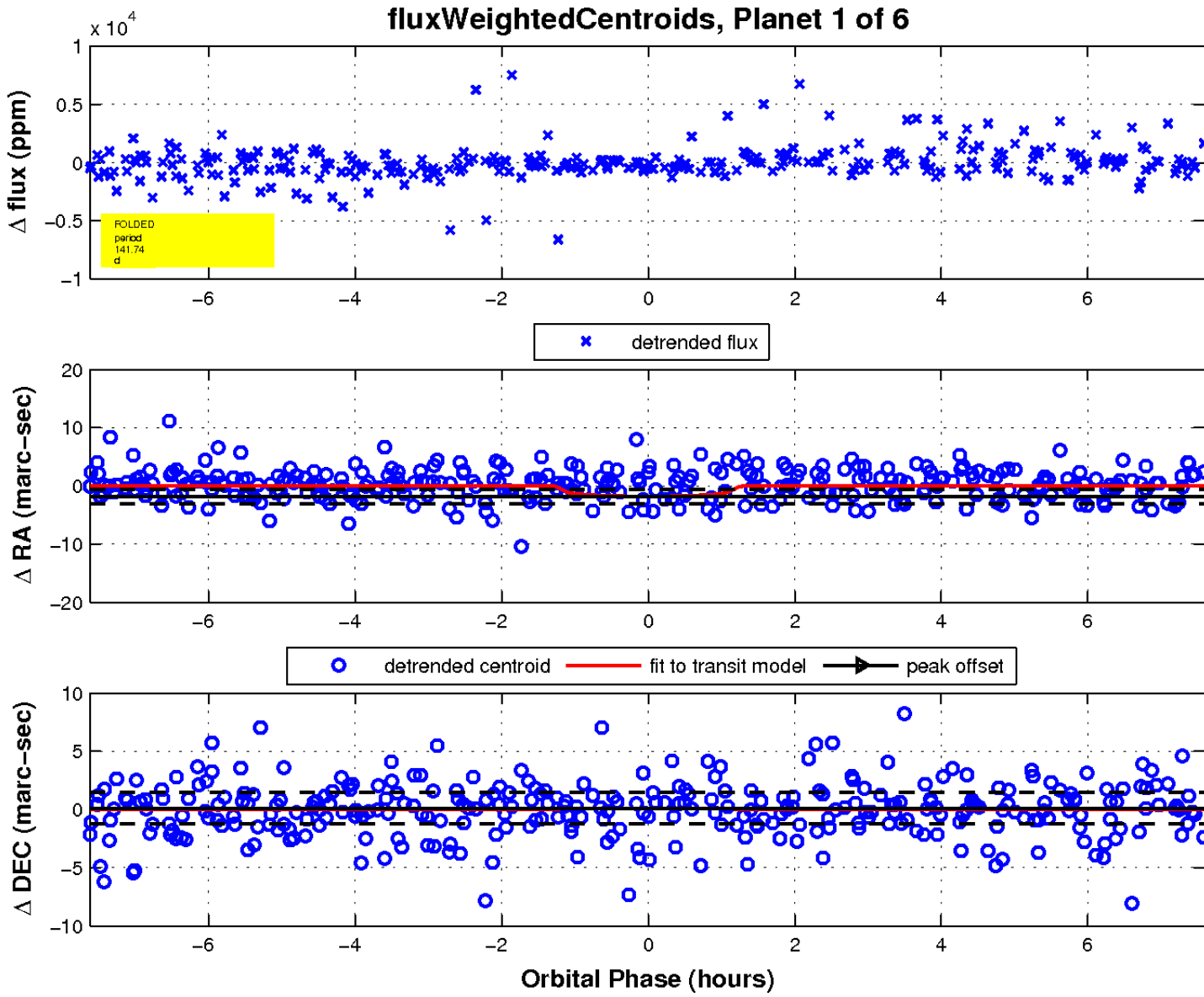
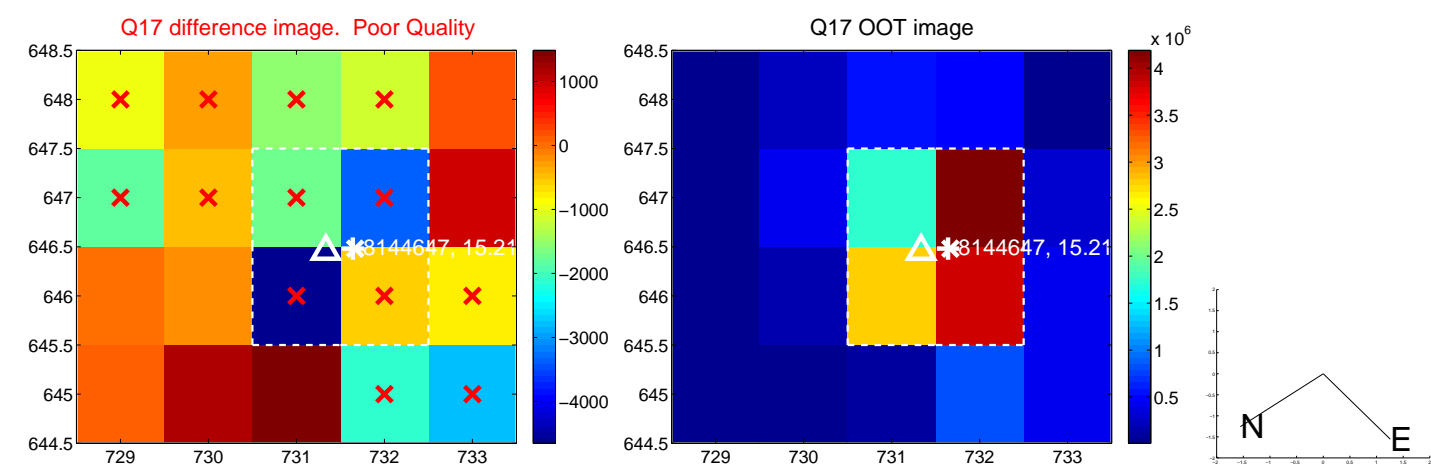
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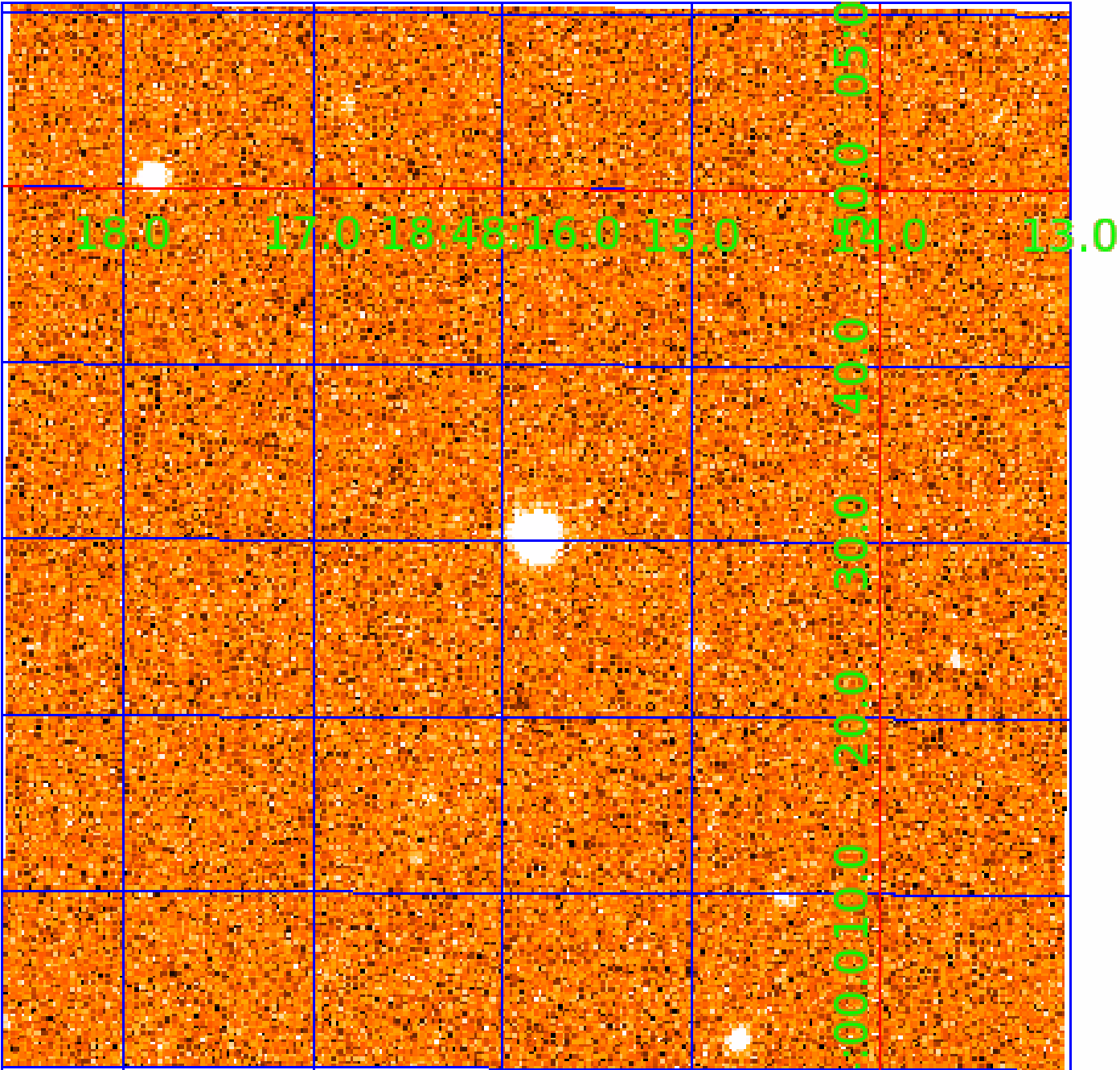


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UKIRT Image

Declination



KIC 008144647

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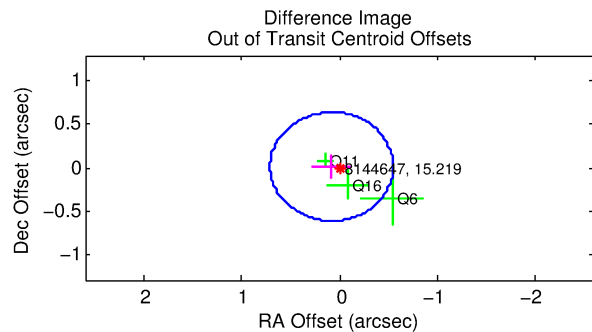
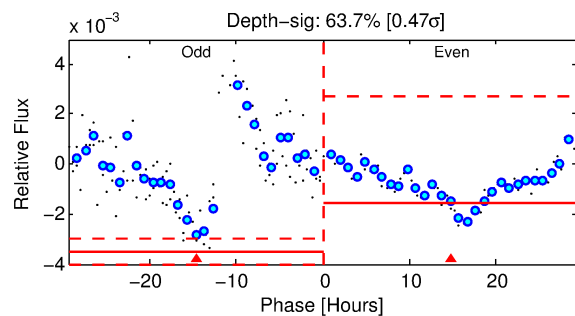
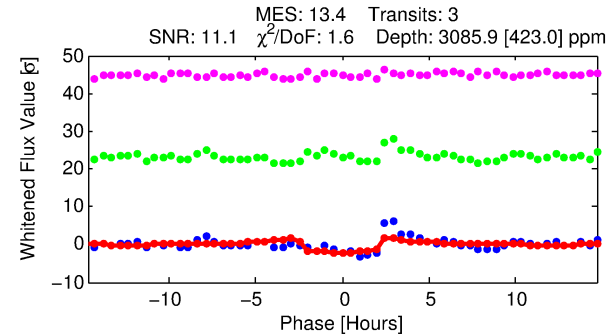
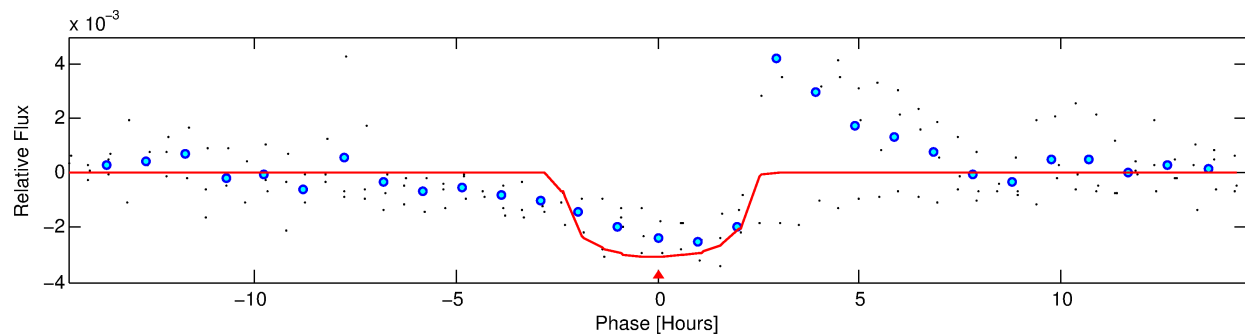
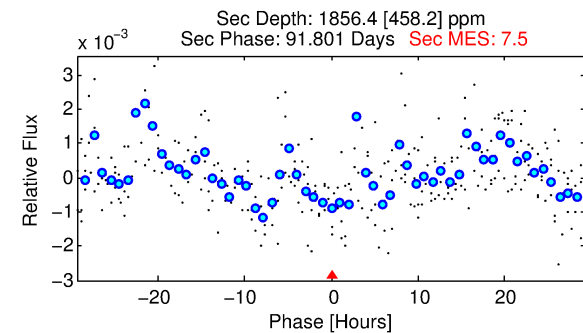
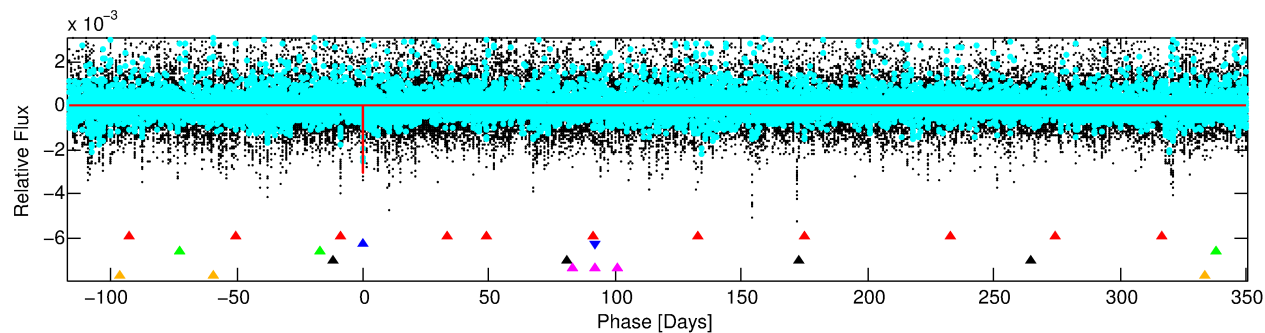
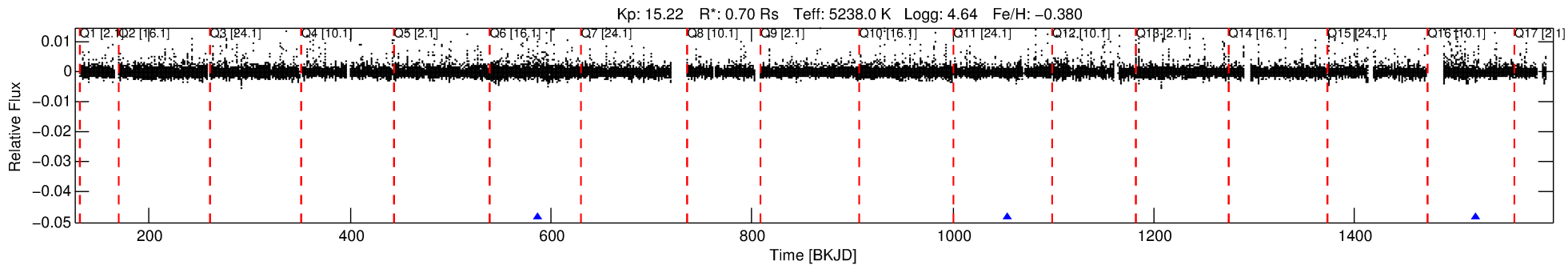
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008144647-02

No Significant Match Found

DV One-Page Summary

KIC: 8144647 Candidate: 2 of 6 Period: 467.211 d



DV Fit Results:

Period = 467.21092 [0.00519] d
Epoch = 586.6282 [0.0075] BKJD
Rp/R* = 0.0499 [0.0314]
a/R* = 768.59 [1835.95]
b = 0.01 [343.18]
Seff = 0.28 [0.06]
Teq = 186 [10] K
Rp = 3.80 [2.46] Re
a = 1.0805 [0.1299] AU
Ag = 82612.06 [107043.59] [0.77σ]
Teffp = 4868 [1570] K [2.98σ]

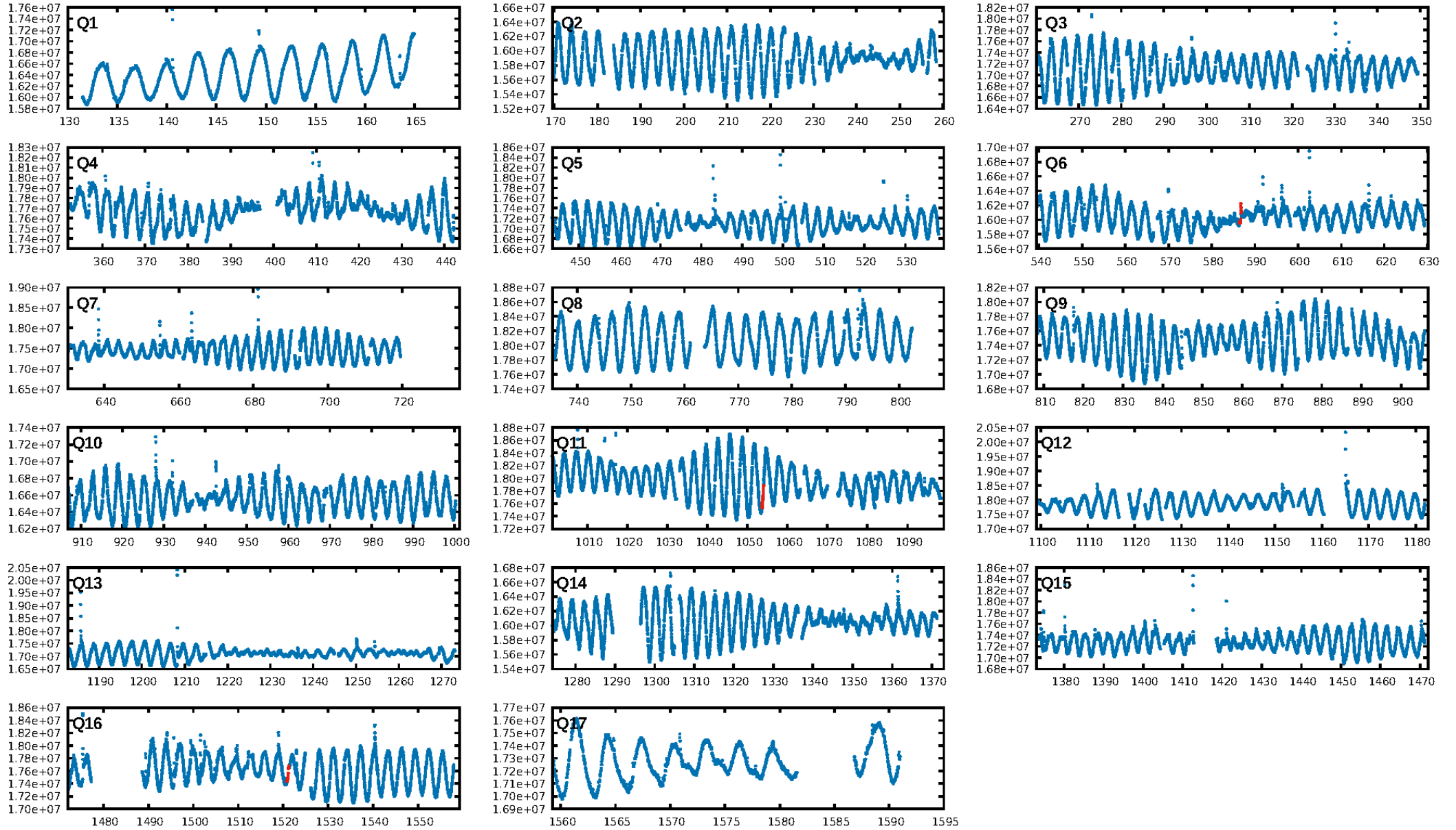
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.28σ]
LongPeriod-sig: 100.0% [189.27σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 28.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.224
Centroid-sig: 68.0%
Centroid-so: 0.350 arcsec [0.65σ]
OotOffset-rm: 0.082 arcsec [0.39σ]
KicOffset-rm: 0.074 arcsec [0.39σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

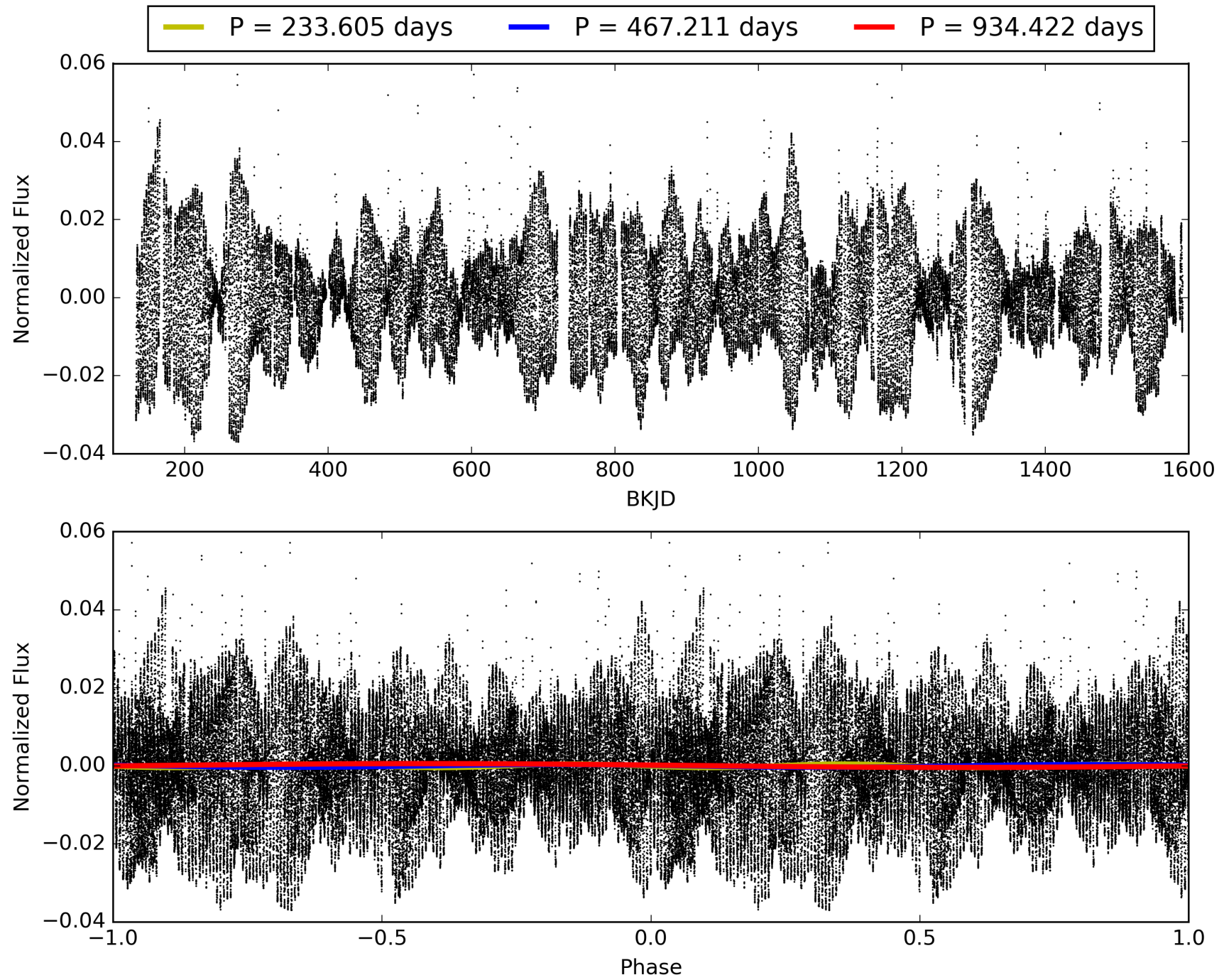
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:31:42 Z

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

TCE 008144647-02, PDC Light Curves

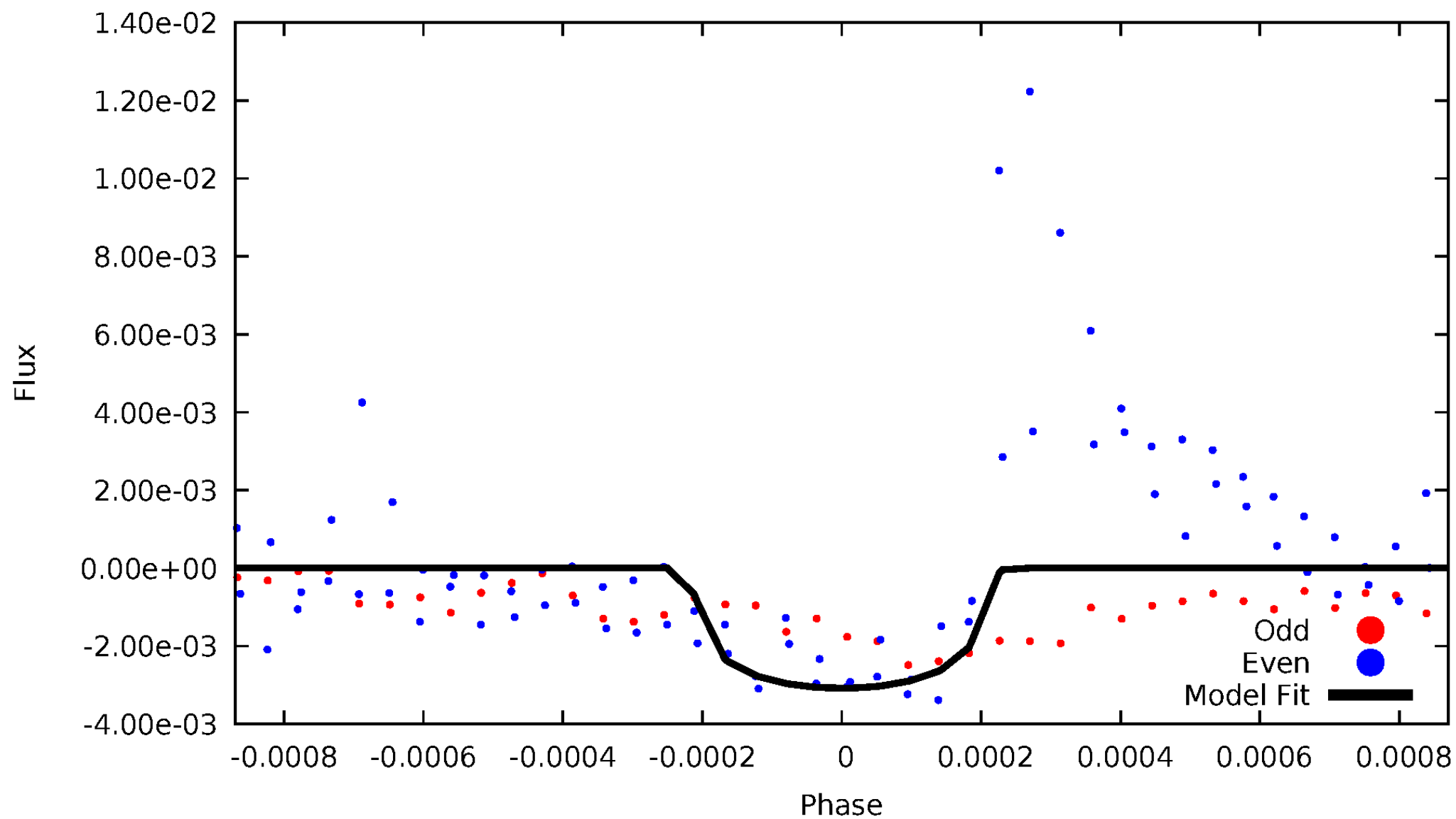


TCE 008144647-02



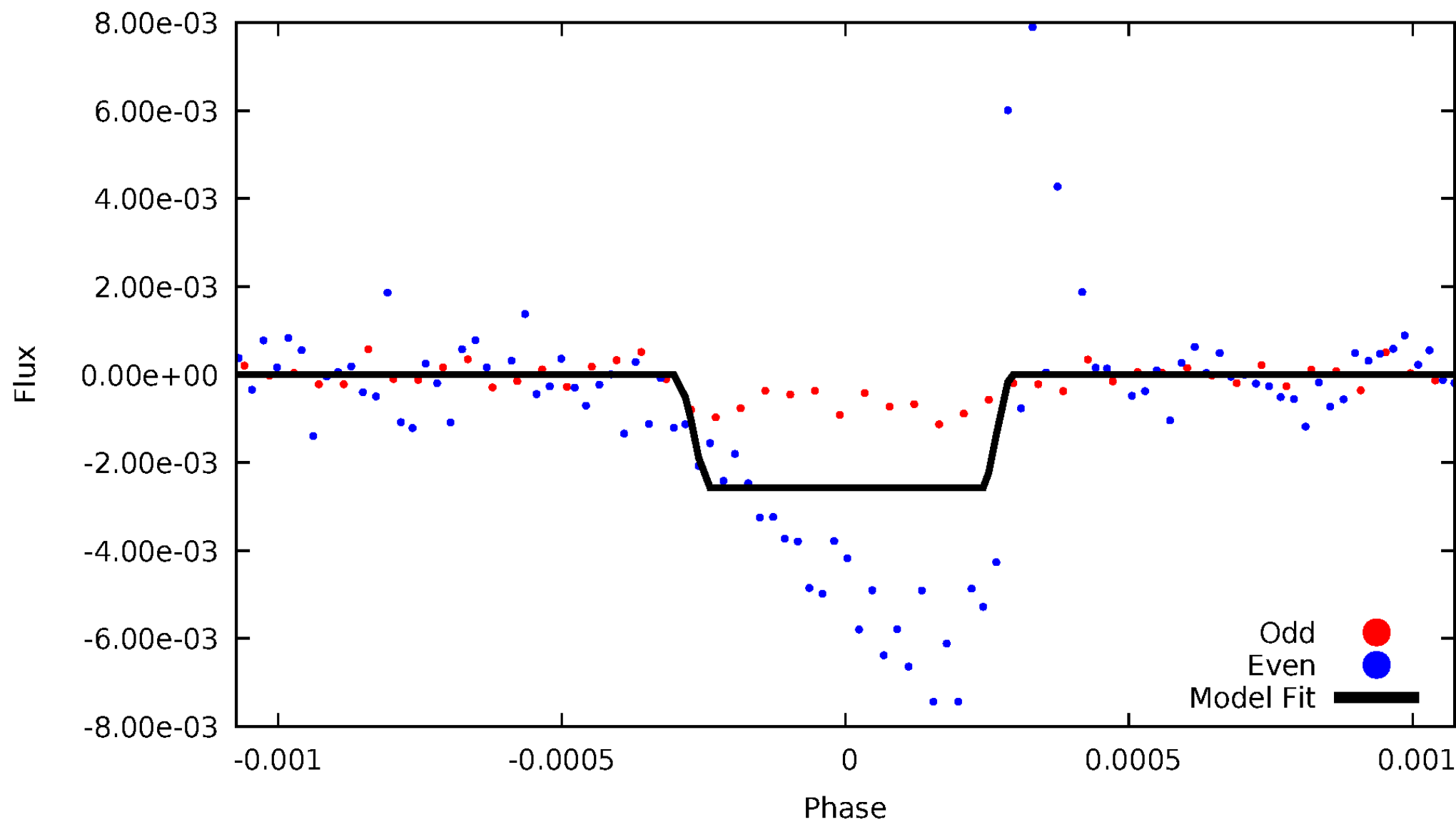
DV Odd/Even

TCE 008144647-02



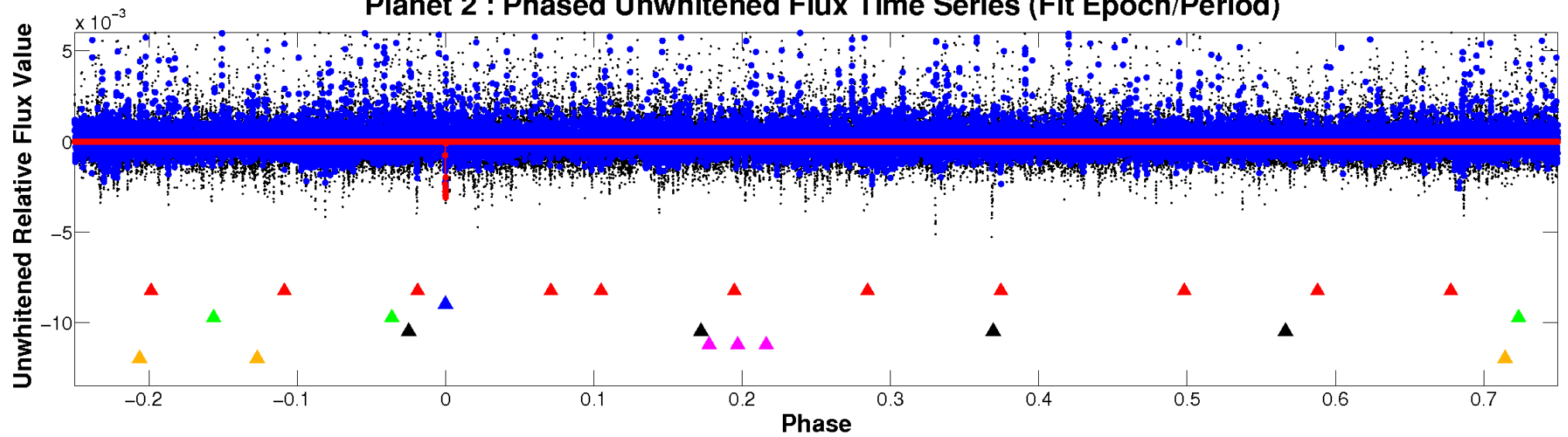
ALT Odd/Even

TCE 008144647-02

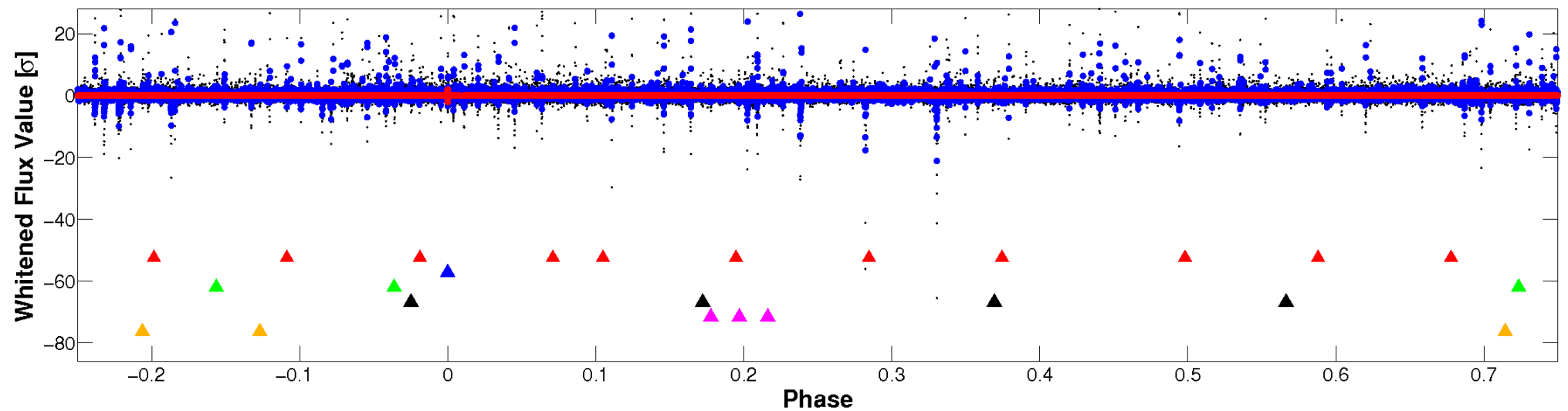


Non-Whitened Vs. Whitened Light Curve

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

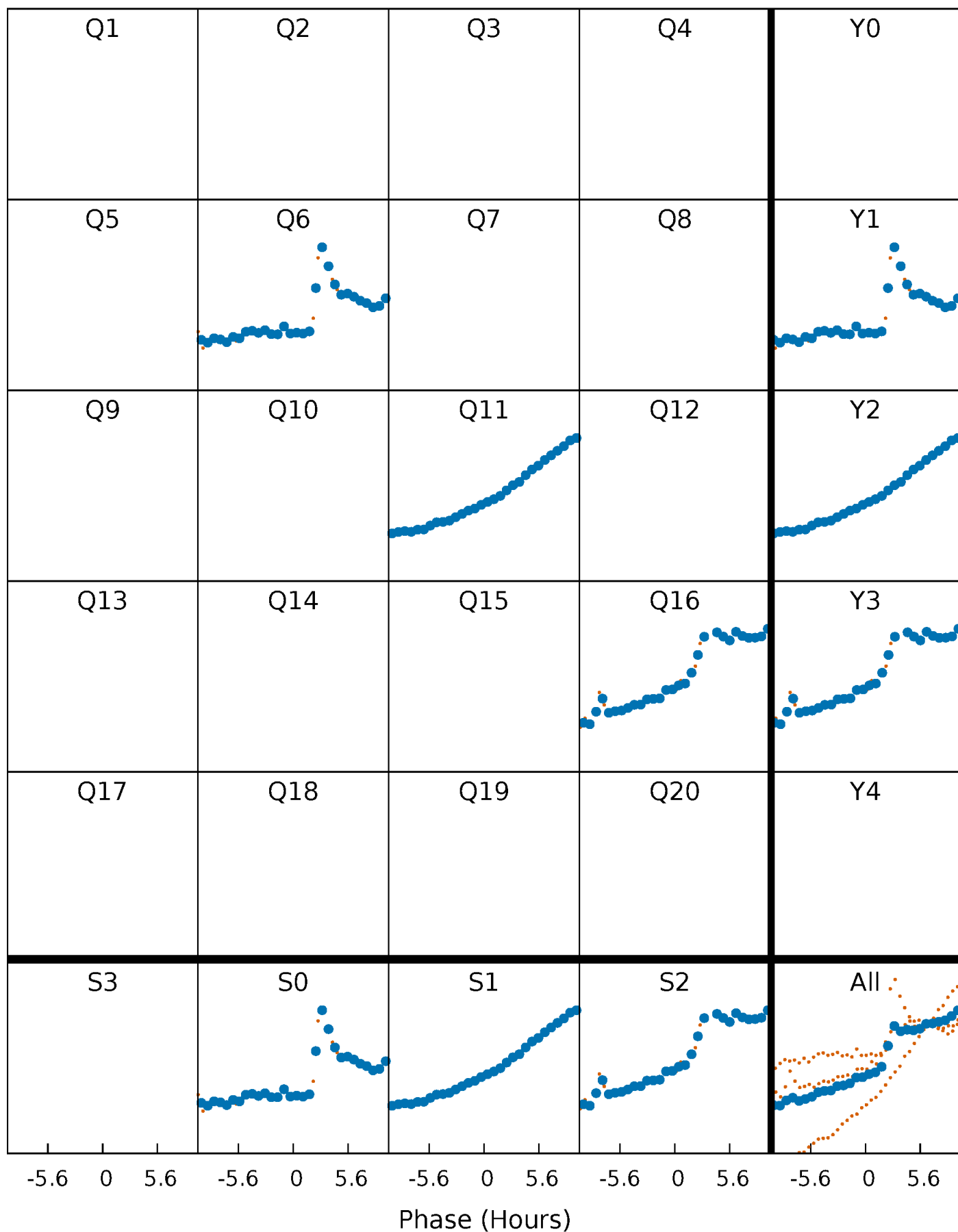


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



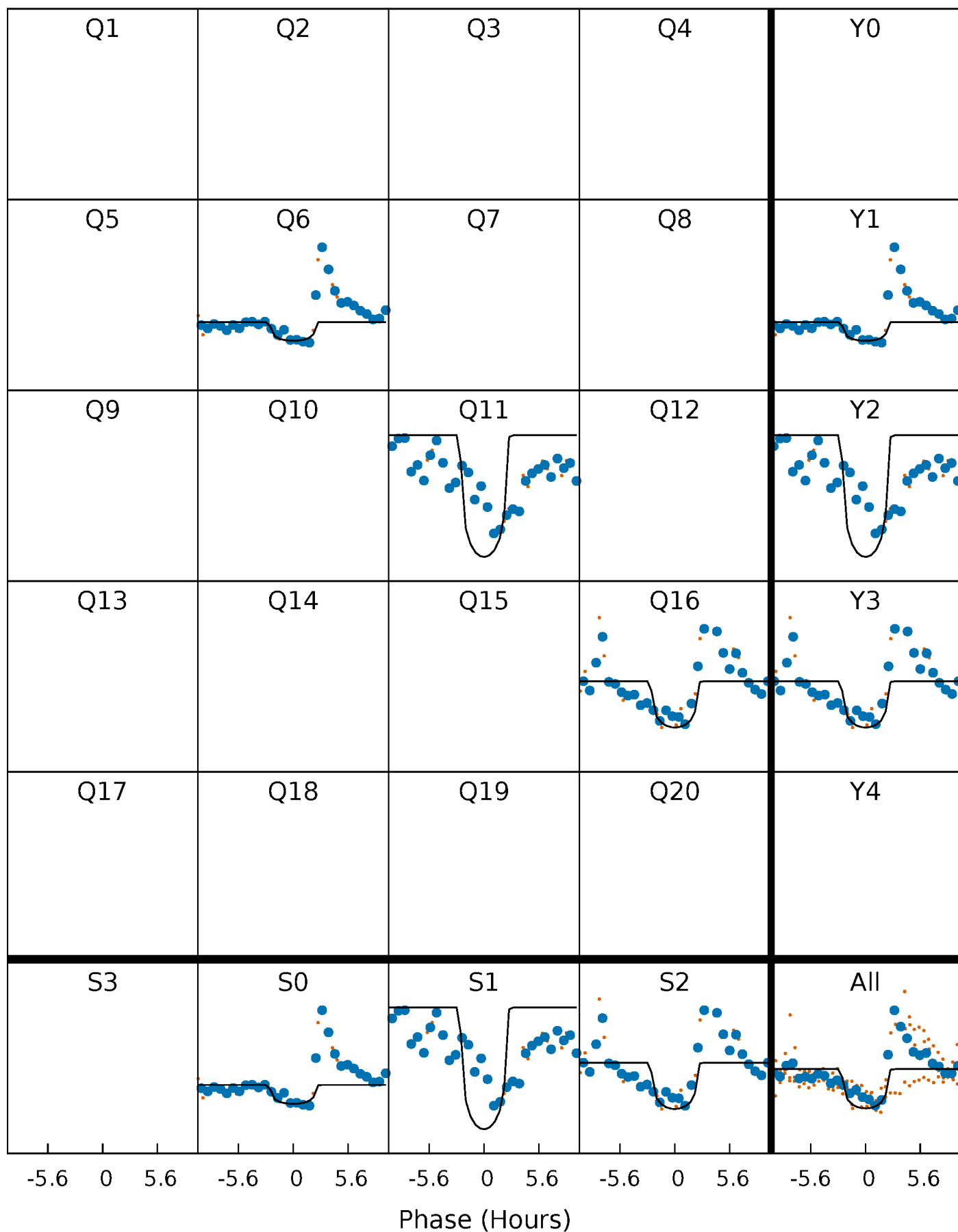
PDC Quarter-Phased Transit Curves

TCE 008144647-02 P=467.210921 Days $T_0=586.628217$ (BKJD)



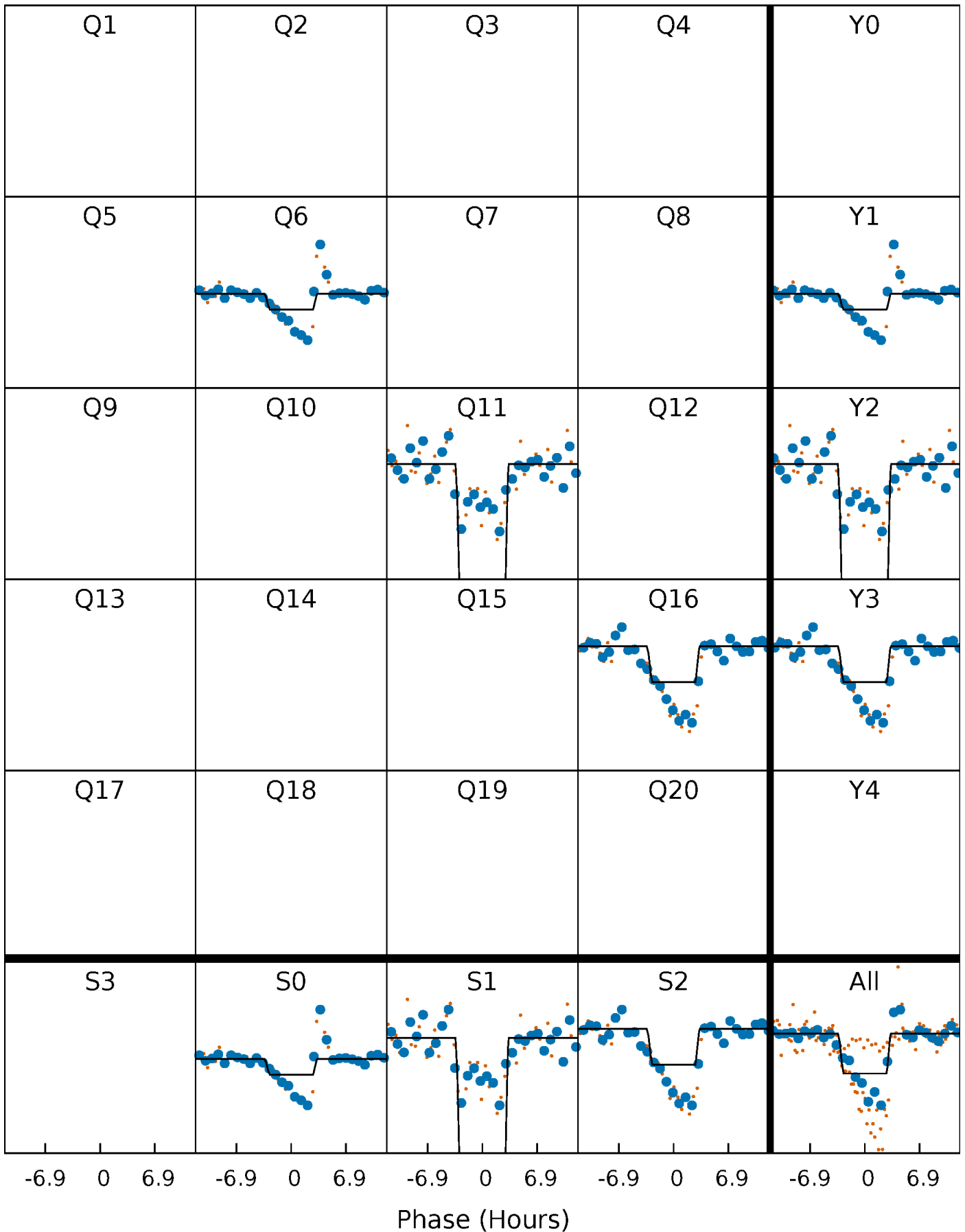
DV Quarter-Phased Transit Curves

TCE 008144647-02 P=467.210921 Days $T_0=586.628217$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

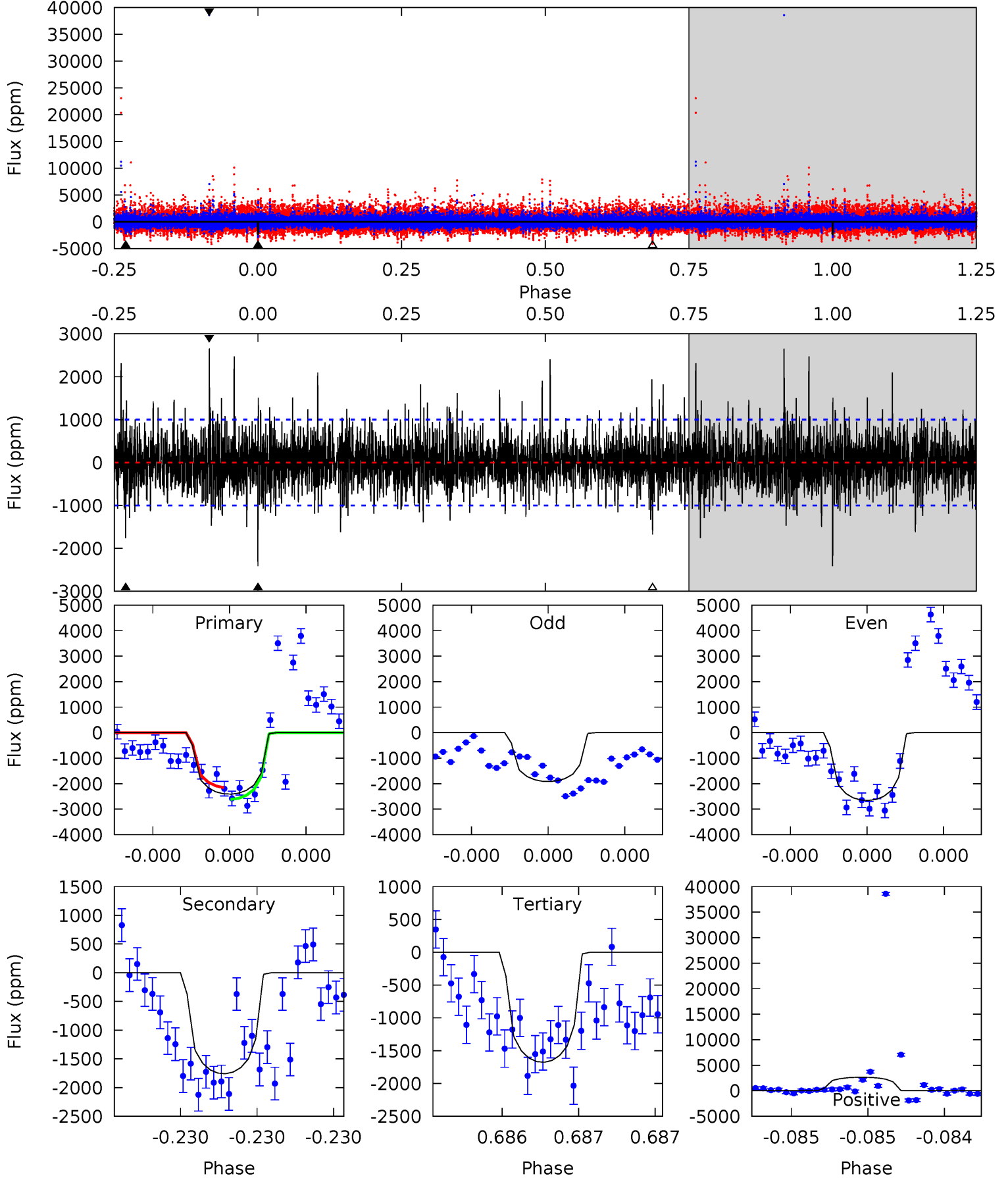
TCE 008144647-02 P=467.206538 Days $T_0=586.600002$ (BKJD)



DV Model-Shift Uniqueness Test

008144647-02, P = 467.210921 Days, E = 119.417296 Days

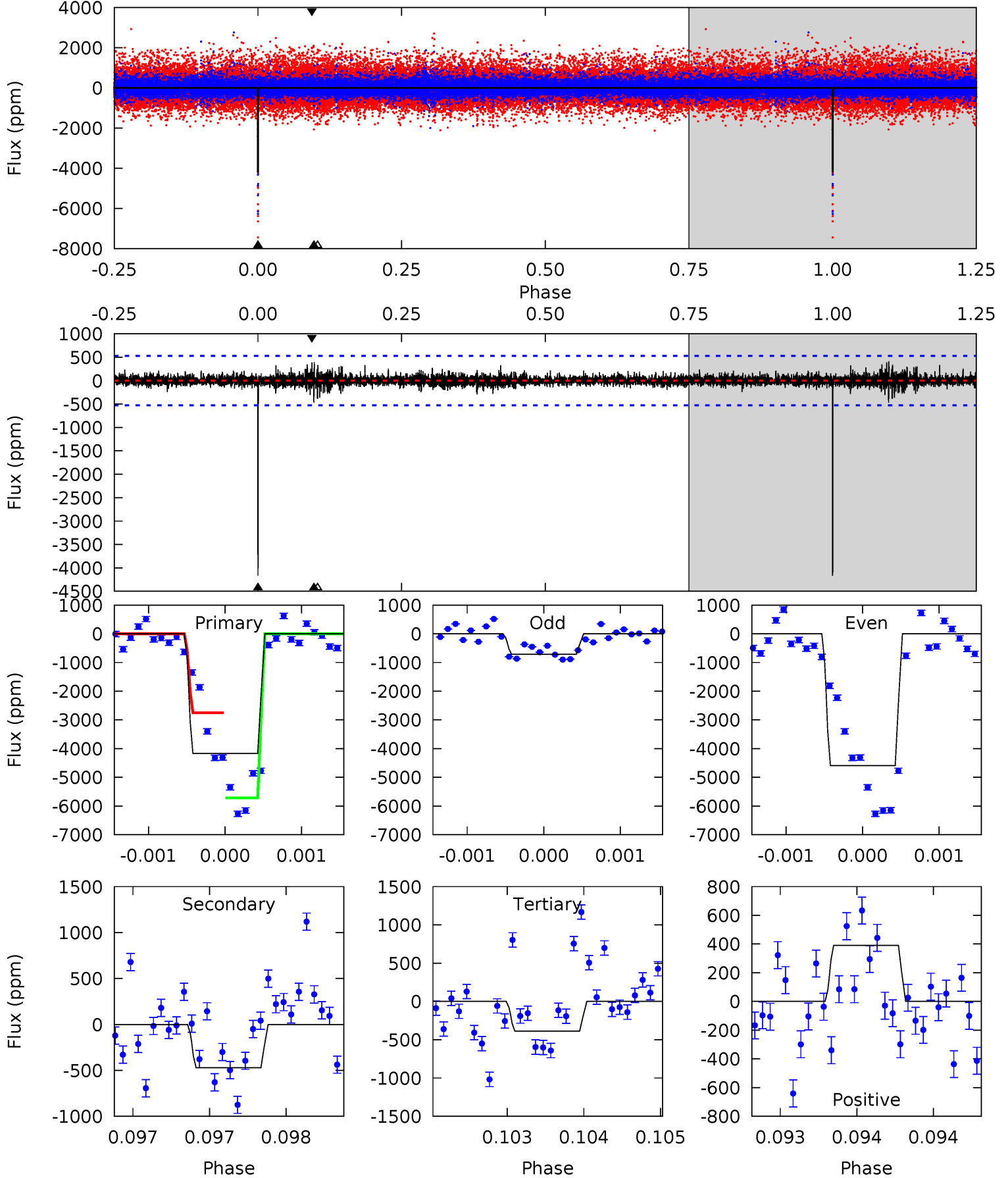
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	9.84	9.38	14.9	5.59	3.51	2.41	4.10	-1.37	0.46	-5.02	1.41	0.95	0.52	1.29



Alt Model-Shift Uniqueness Test

008144647-02, P = 467.206538 Days, E = 119.393464 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.8	4.95	4.08	4.10	5.55	3.45	0.66	39.7	39.7	0.88	0.86	22.4	0.76	0.09	15.7



Stellar Parameters For KIC 008144647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5238^{+157}_{-141}	$4.637^{+0.030}_{-0.090}$	$-0.380^{+0.300}_{-0.300}$	$0.698^{+0.103}_{-0.055}$	$0.777^{+0.068}_{-0.083}$	$3.221^{+0.501}_{-0.922}$
	+3%/-3%	+1%/-2%	+79%/-79%	+15%/-8%	+9%/-11%	+16%/-29%
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 008144647-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1758 ± 179	$4.06^{+2.51}_{-2.04}$	264^{+11}_{-10}	4786^{+1820}_{-772}	$68240^{+188981}_{-42162}$
Alt.	-471 ± 95	$4.01^{+2.41}_{-2.09}$	264^{+11}_{-10}	3764^{+1232}_{-547}	18336^{+61586}_{-11488}

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

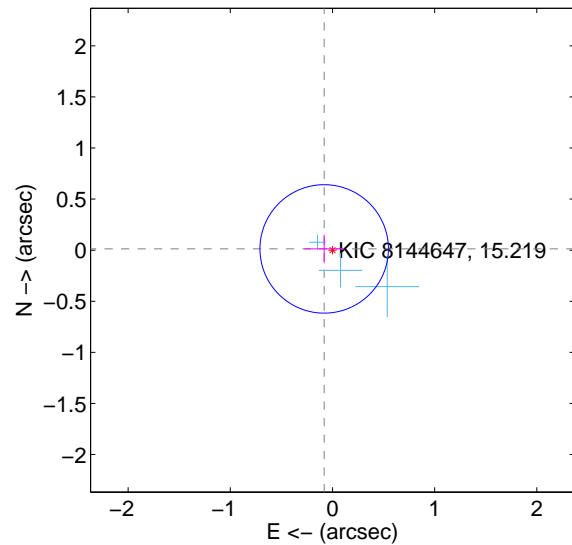
Supplemental centroid analysis for 008144647-02. Kepler magnitude: 15.22. Transit SNR 11.11

There are 3 quarters with good PRF difference image offsets

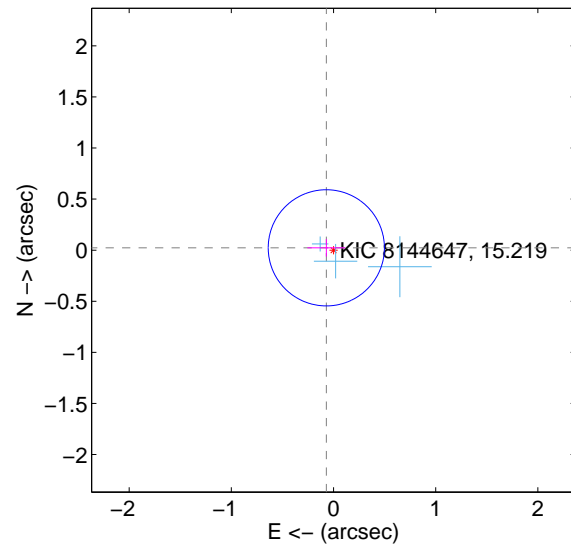
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.082 ± 0.210	0.39	0.081 ± 0.195	0.012 ± 0.137
PRF-fit source offset from KIC position	0.074 ± 0.190	0.39	0.071 ± 0.186	0.023 ± 0.085
photometric centroid source offset	0.35 ± 0.54	0.65	-0.35 ± 0.54	-0.01 ± 0.52

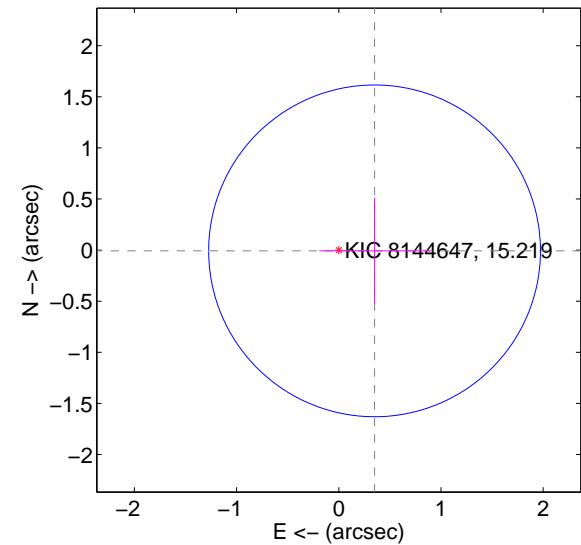
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

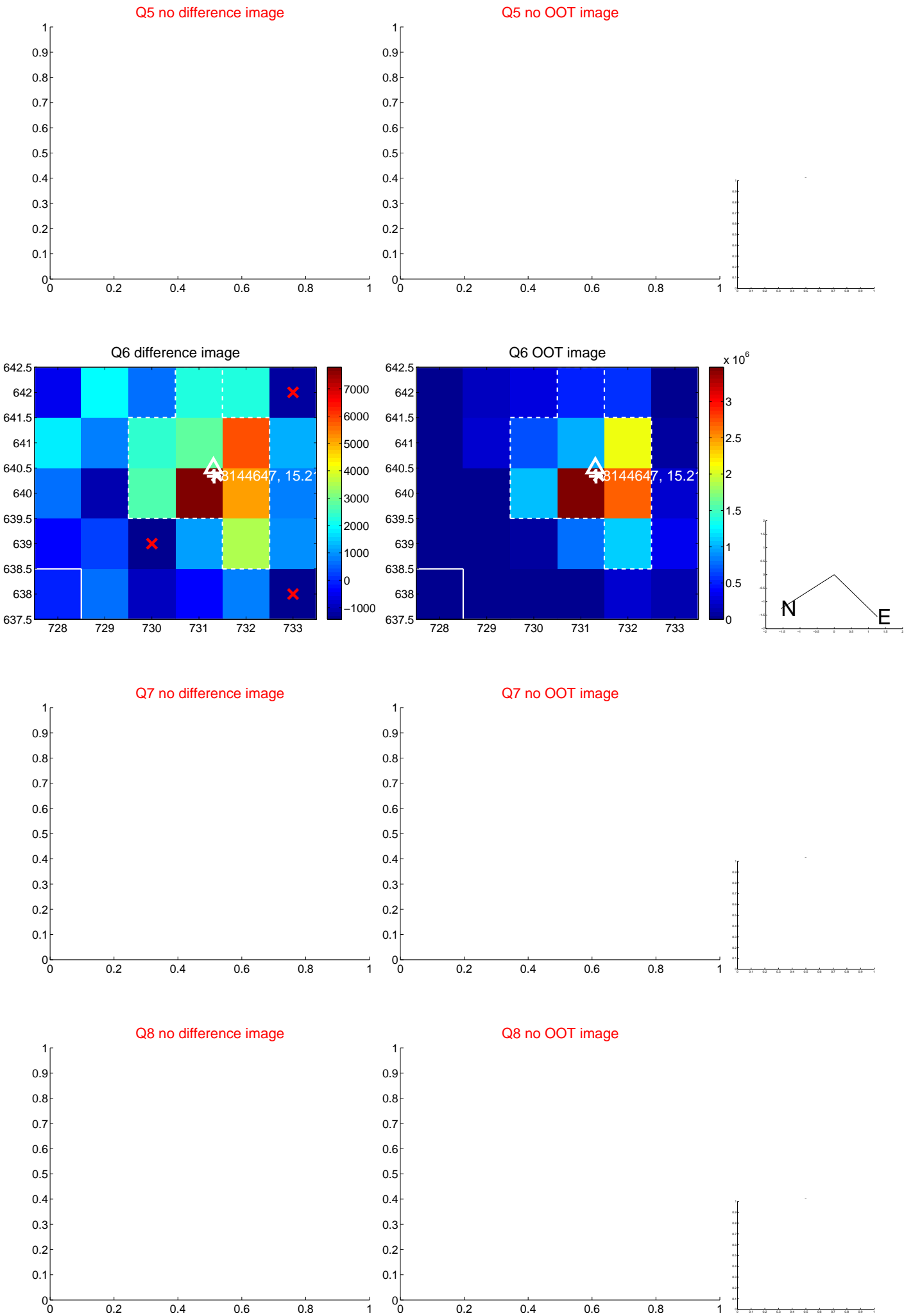


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

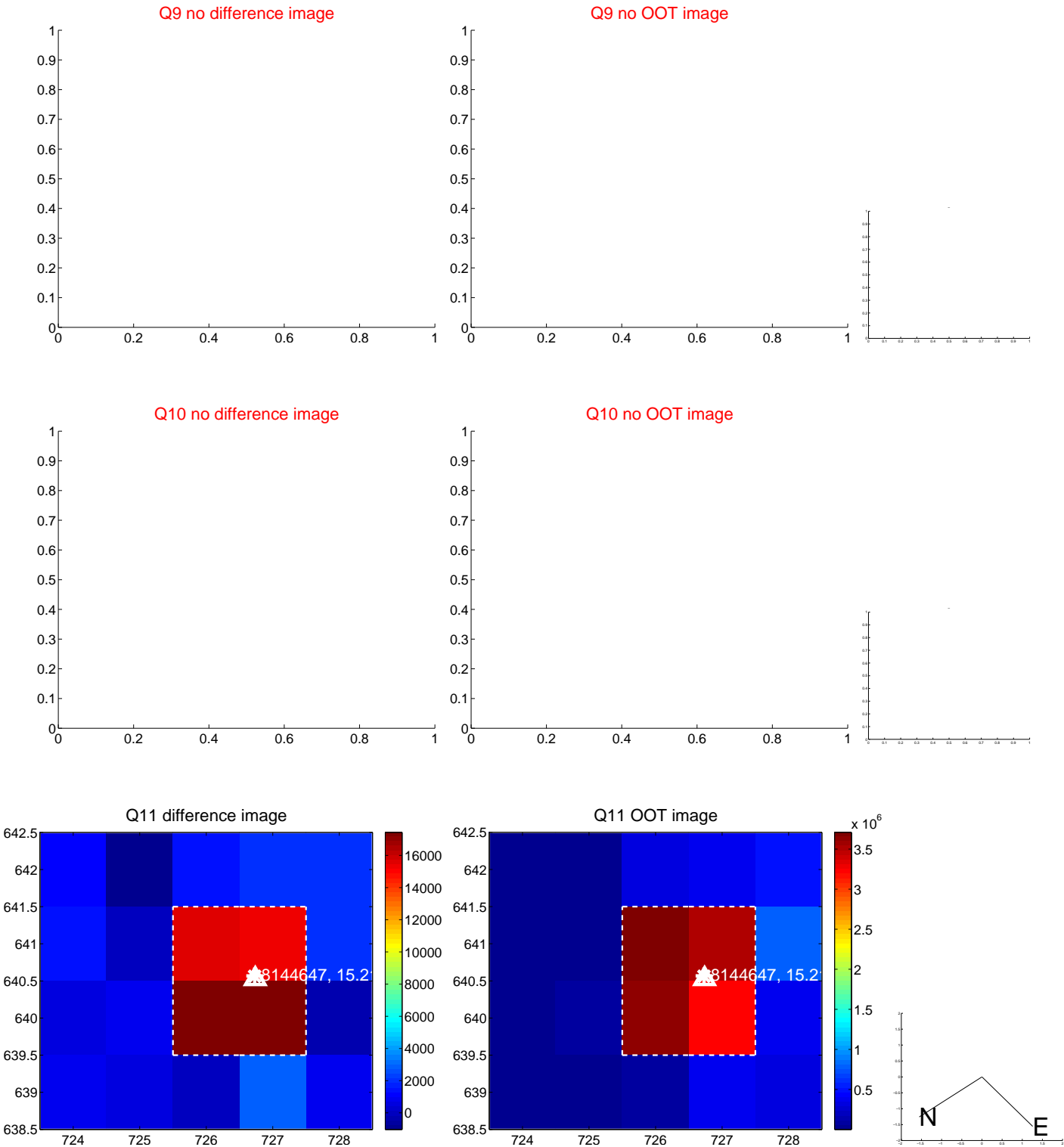
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



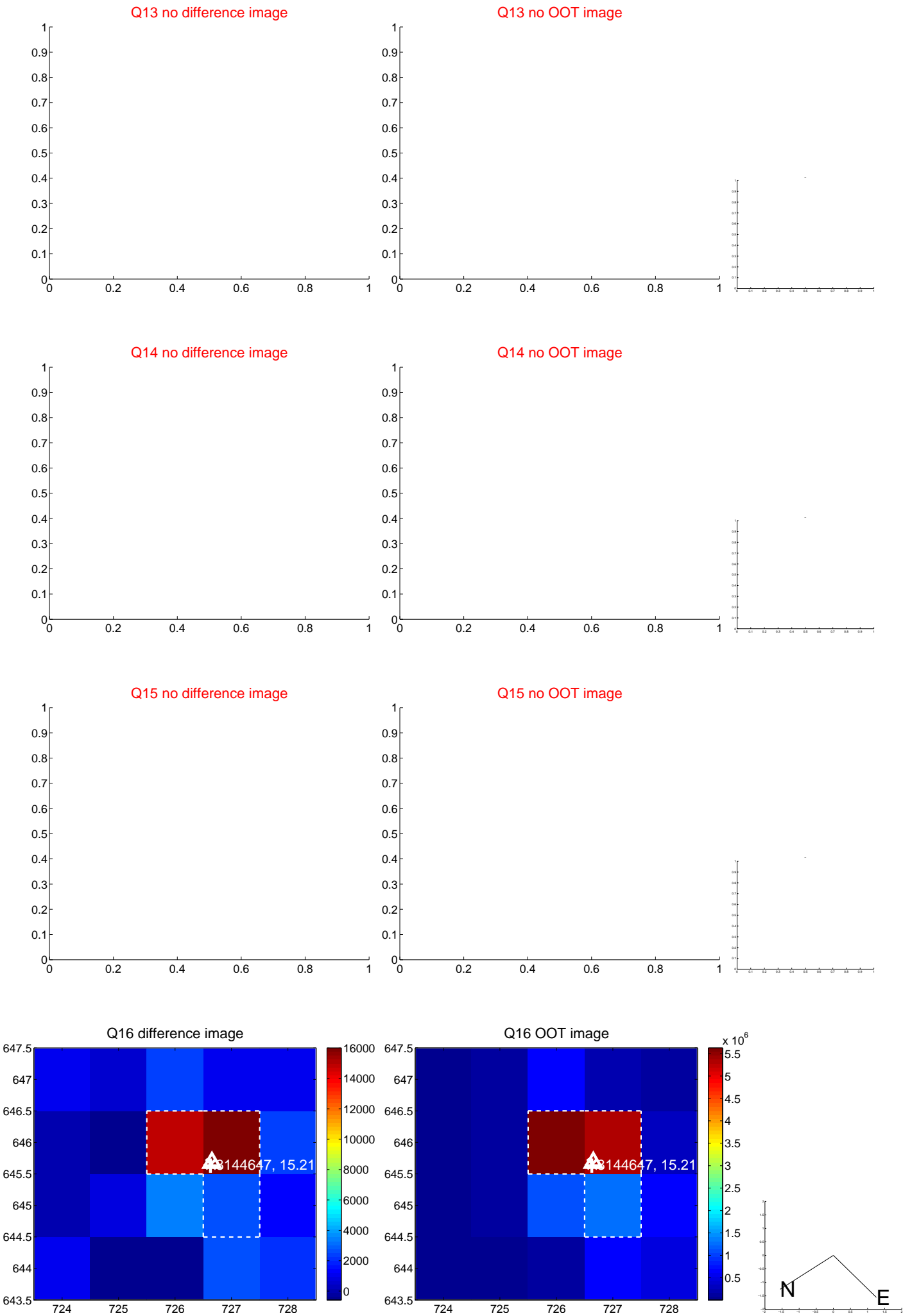
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



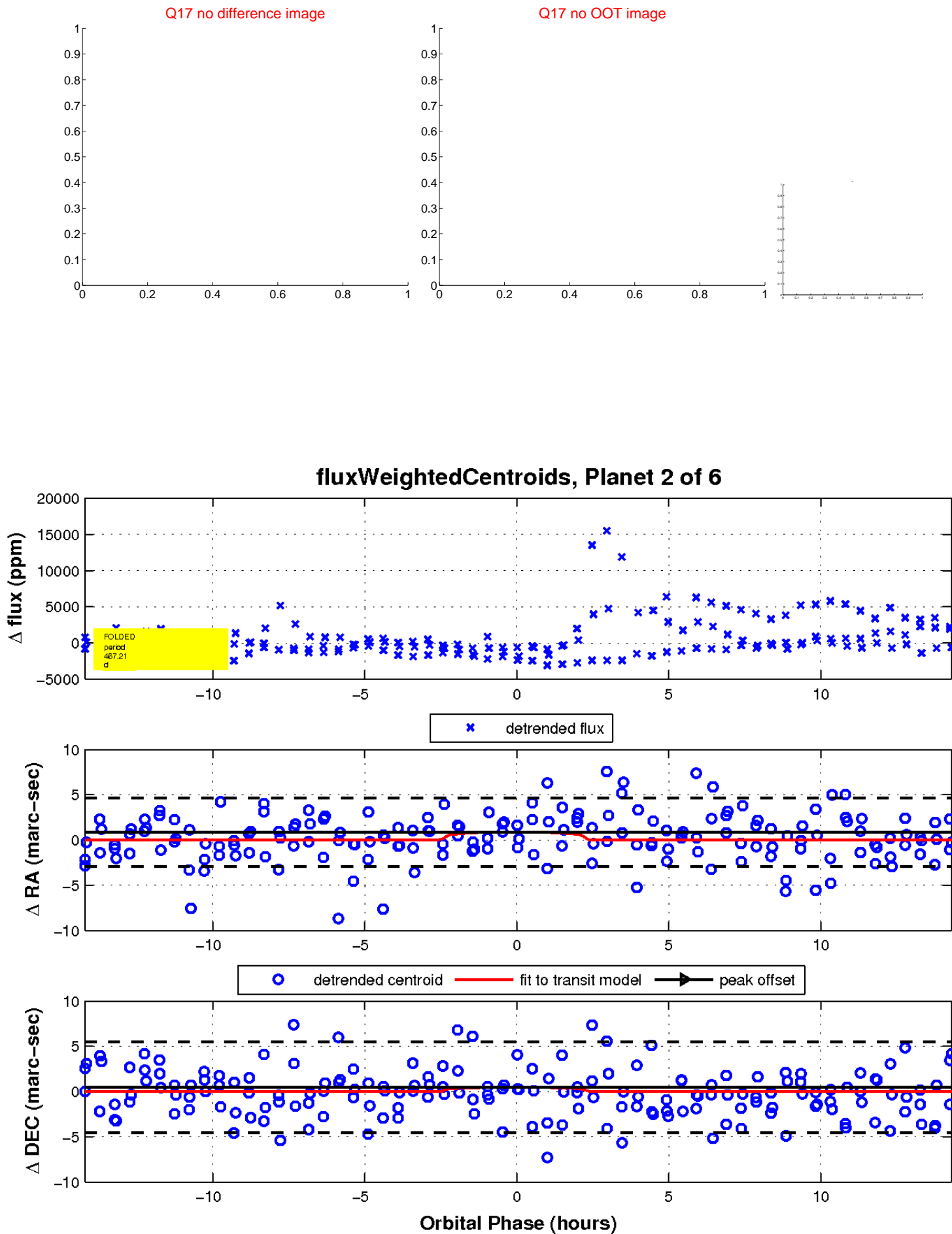
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

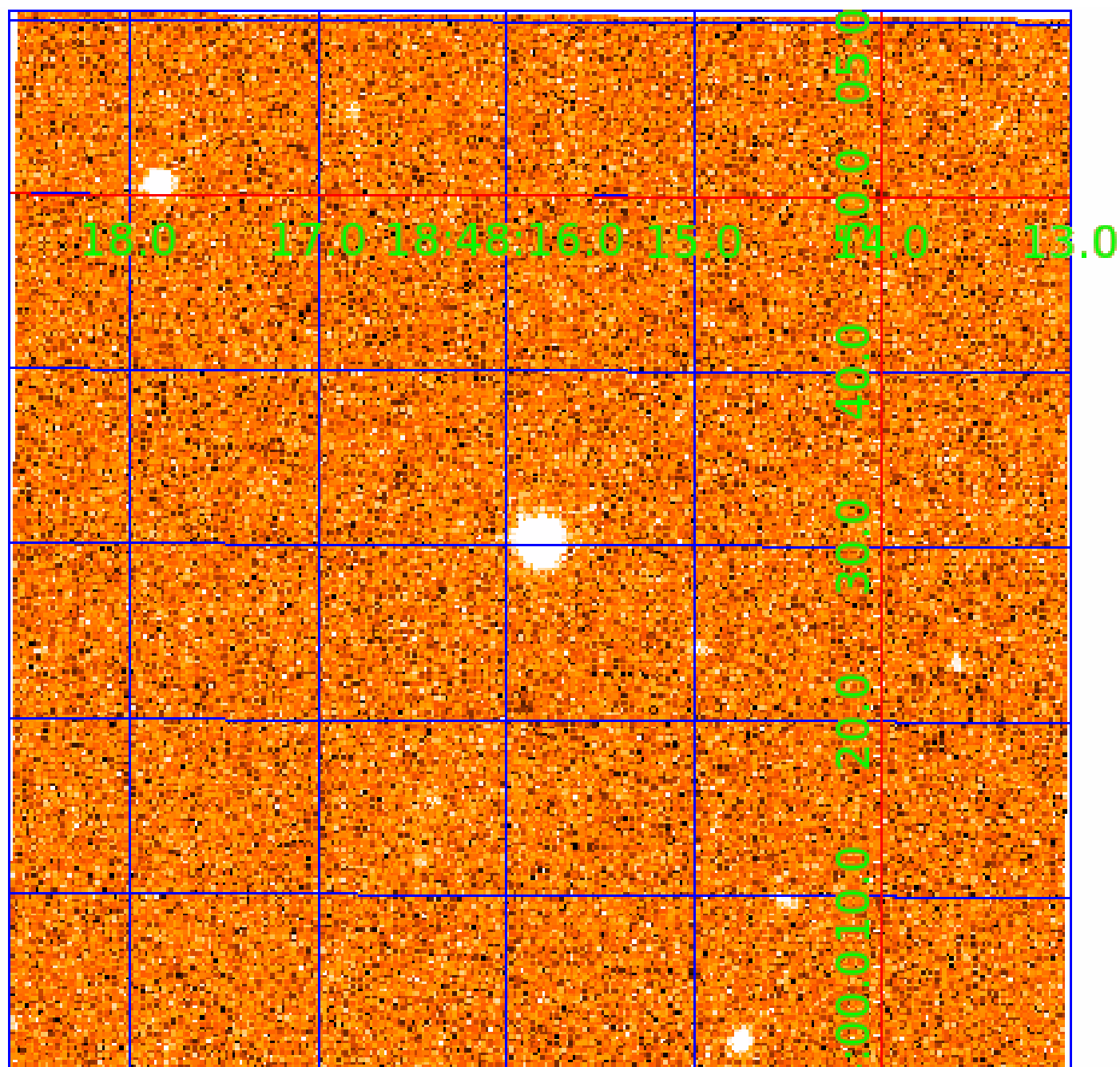


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008144647

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})
008144647-01	OBS	No	141.742915	152.627238	858.5	2.562	16.1	5.9	0.70	5238	2.25	1.38
008144647-02	OBS	No	467.210921	586.628217	3085.9	4.875	13.4	11.1	0.70	5238	3.80	0.28
008144647-03	OBS	No	523.337935	457.467851	1003.0	5.185	14.5	3.5	0.70	5238	2.18	0.24
008144647-05	OBS	No	458.218807	220.456725	2784.5	4.275	13.7	8.7	0.70	5238	6.10	0.29
008144647-06	OBS	No	430.153683	527.332890	1628.4	5.000	13.3	-1.0	0.70	5238	2.76	0.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008144647-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008144647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
008144647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
008144647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008144647-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

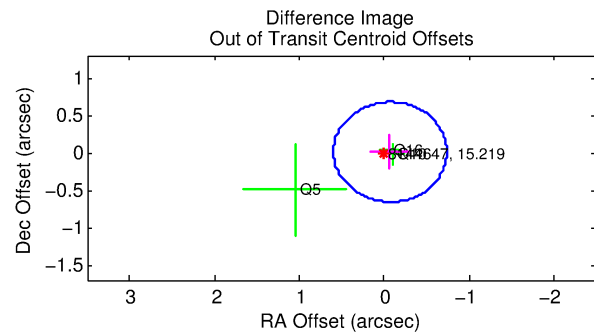
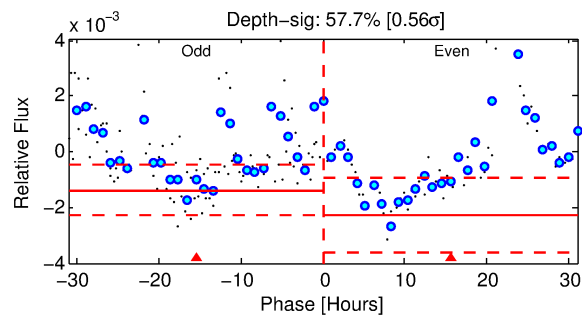
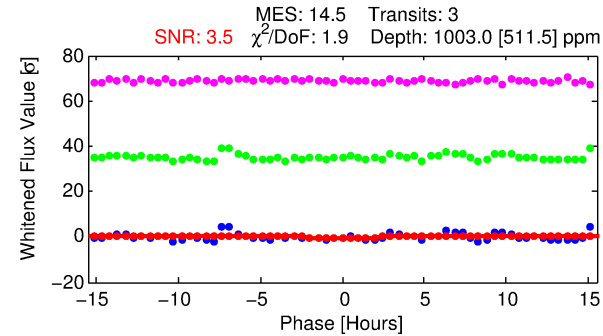
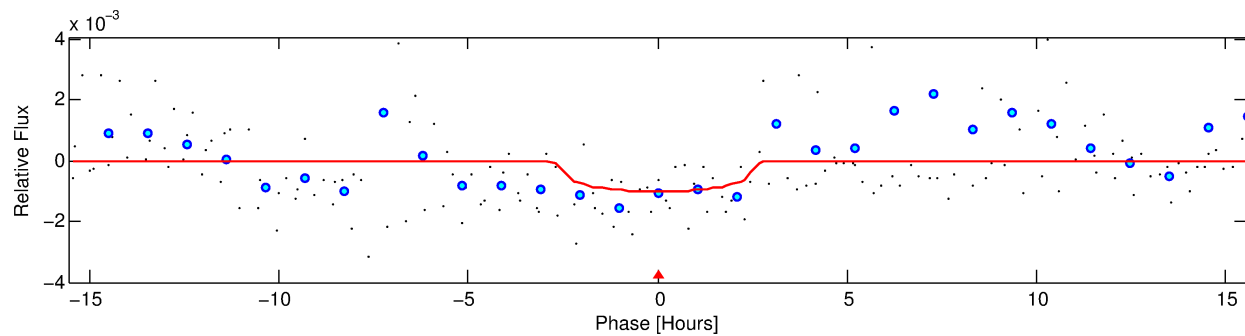
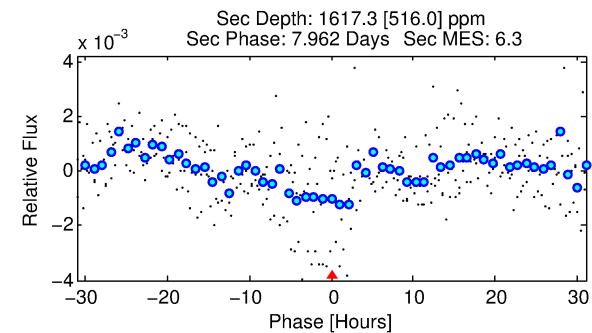
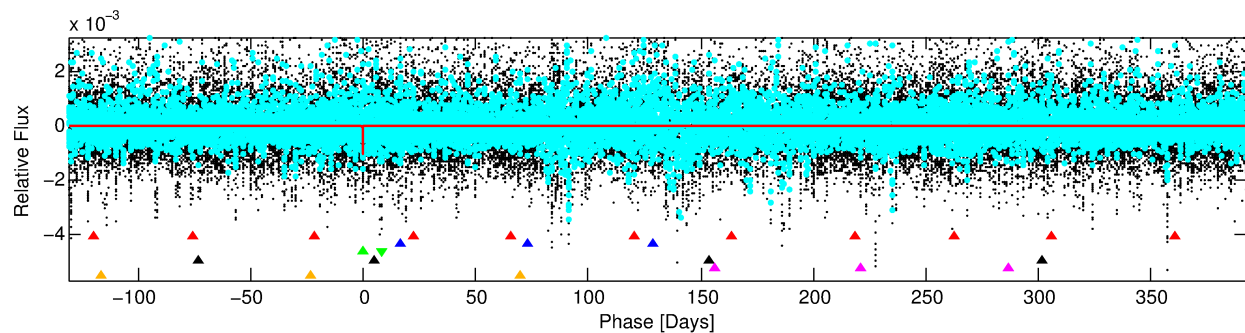
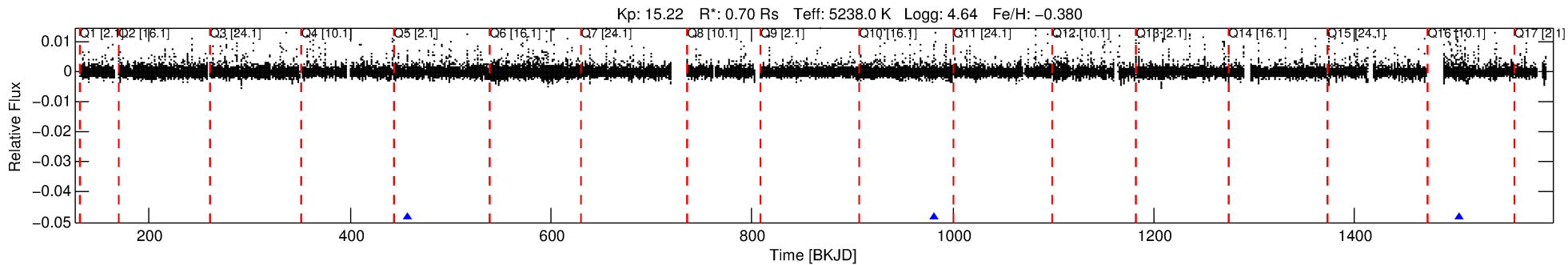
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008144647-03

No Significant Match Found

DV One-Page Summary

KIC: 8144647 Candidate: 3 of 6 Period: 523.338 d



DV Fit Results:

Period = 523.33794 [0.01632] d
Epoch = 457.4679 [0.0176] BKJD
Rp/R* = 0.0287 [0.1515]
a/R* = 768.54 [15846.36]
b = 0.25 [76.50]
Seff = 0.24 [0.05]
Teq = 179 [9] K
Rp = 2.18 [11.55] Re
a = 1.1653 [0.1401] AU
Ag = 253498.82 [2682054.88] [0.09σ]
Teffp = 6204 [16410] K [0.37σ]

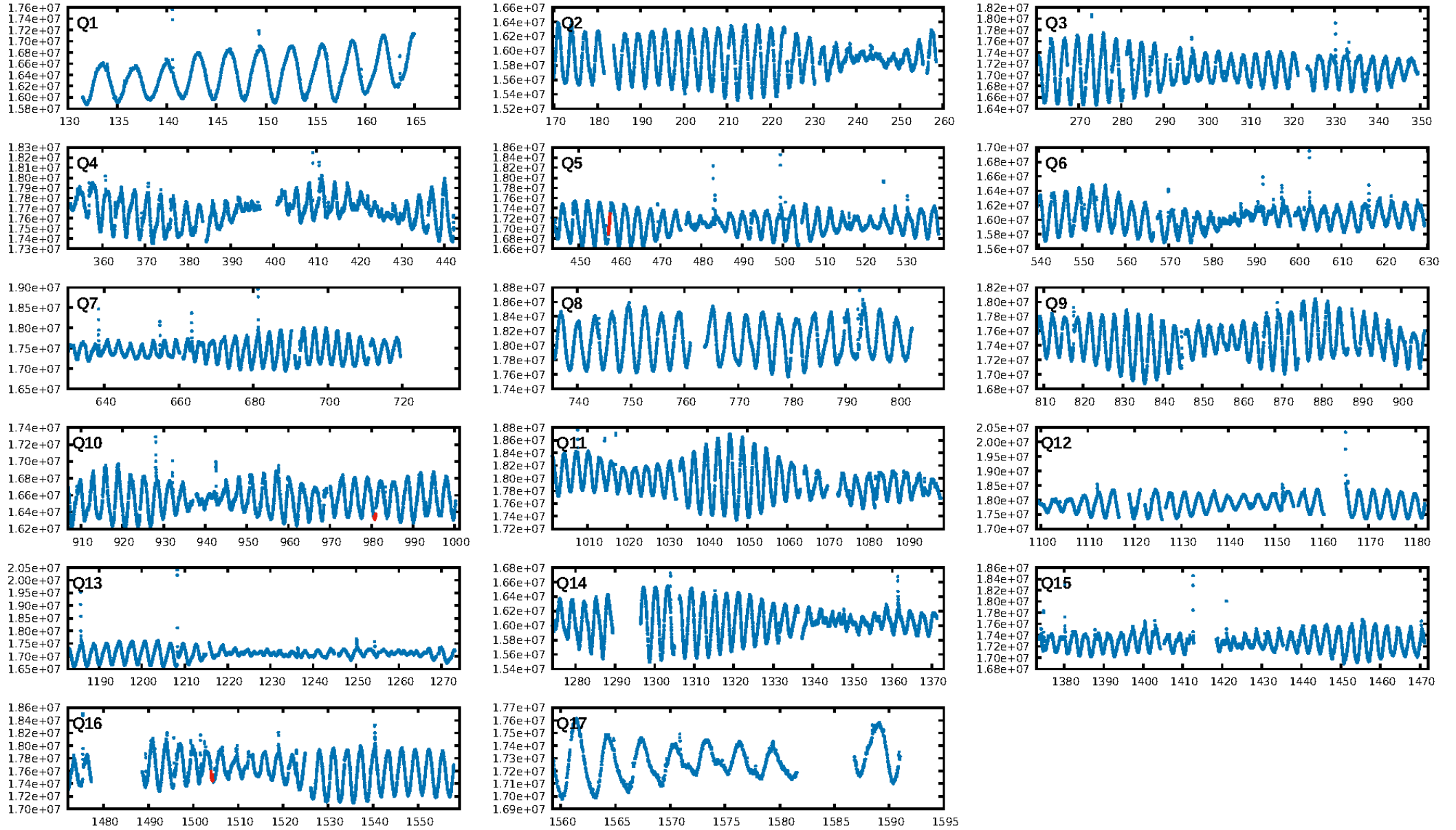
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [189.27σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.9%
ModelChiSquareGof-sig: 63.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.81
Centroid-sig: 98.4%
Centroid-so: 0.326 arcsec [0.21σ]
OotOffset-rm: 0.073 arcsec [0.33σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.140 arcsec [0.57σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

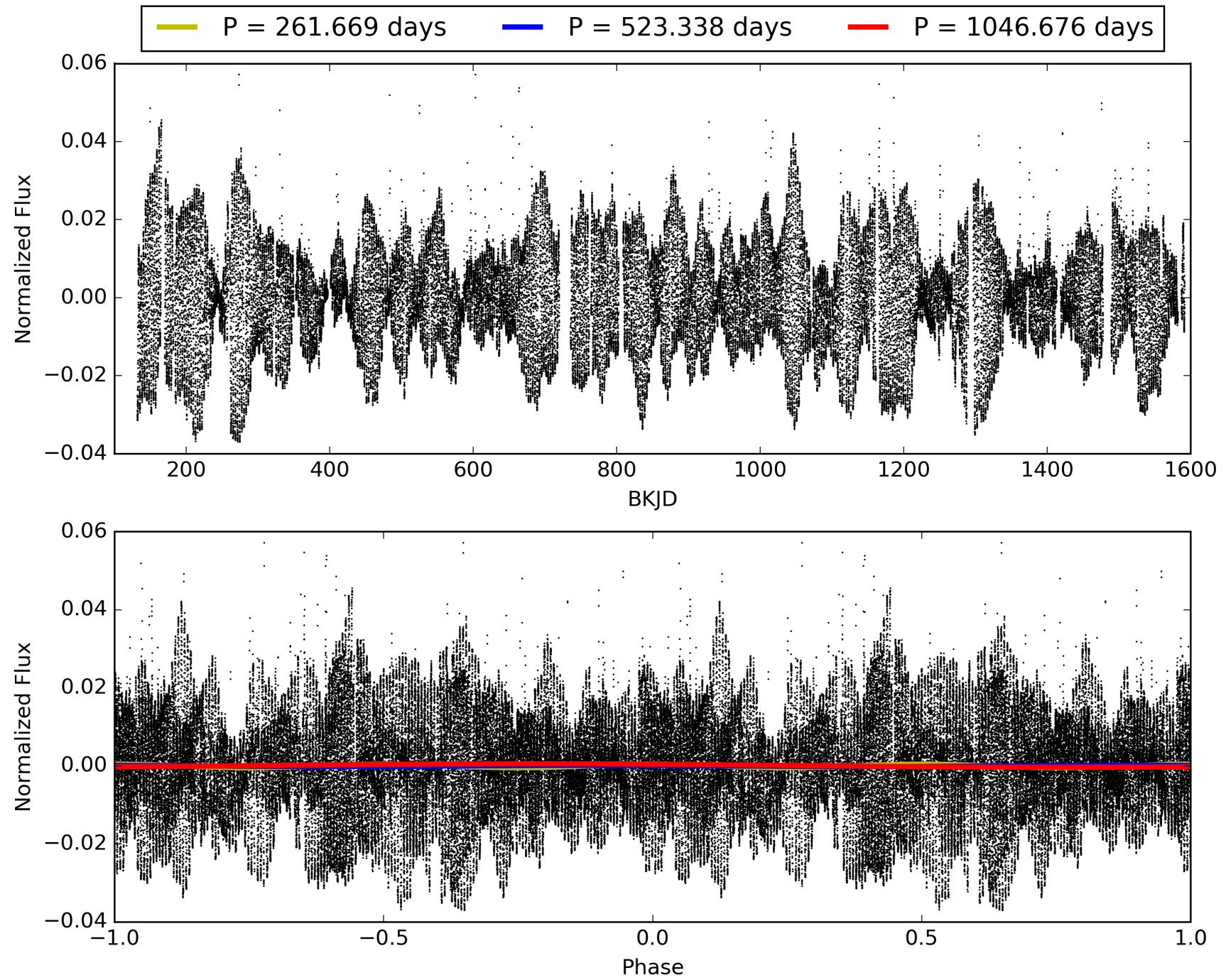
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:31:58 Z

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

TCE 008144647-03, PDC Light Curves

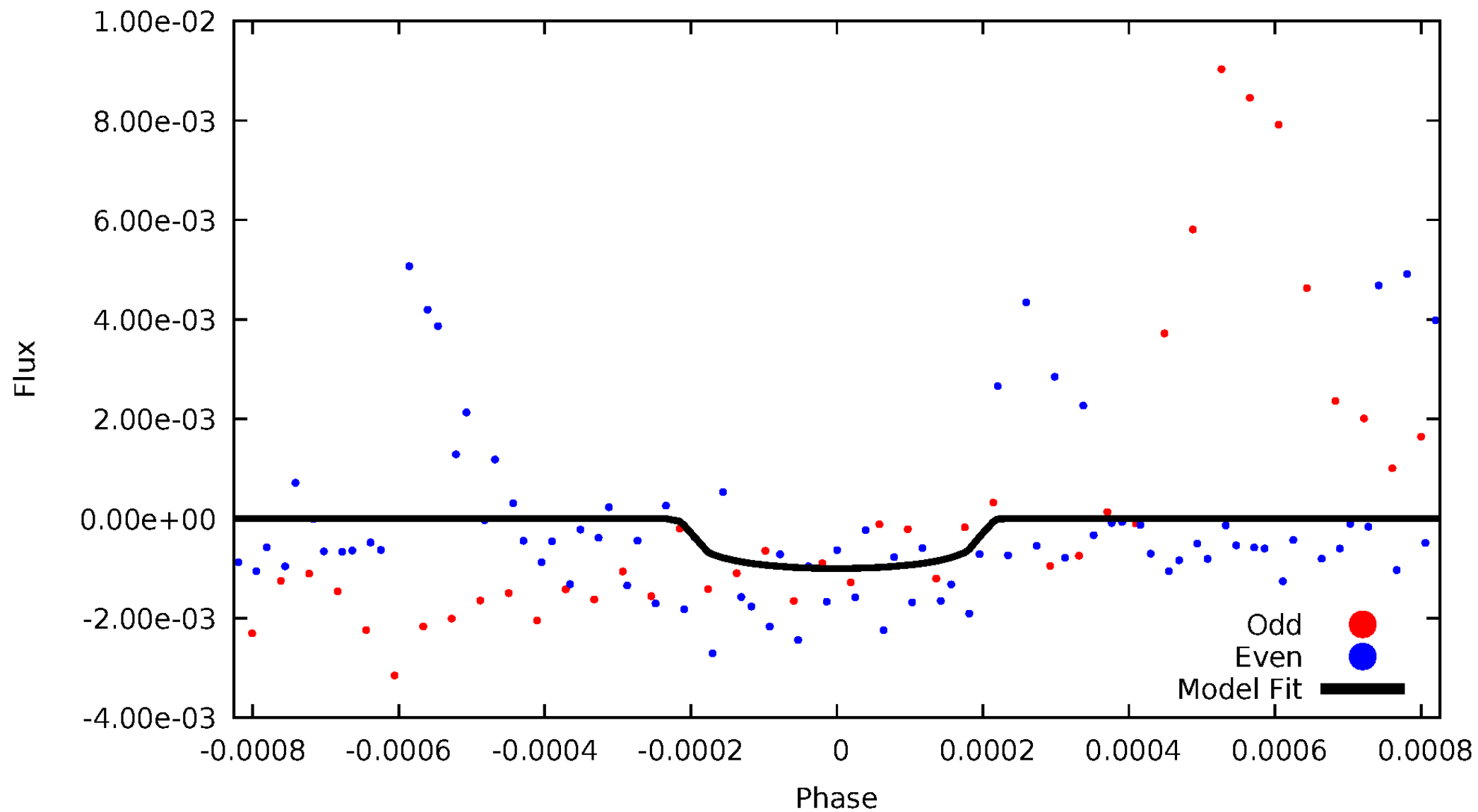


TCE 008144647-03



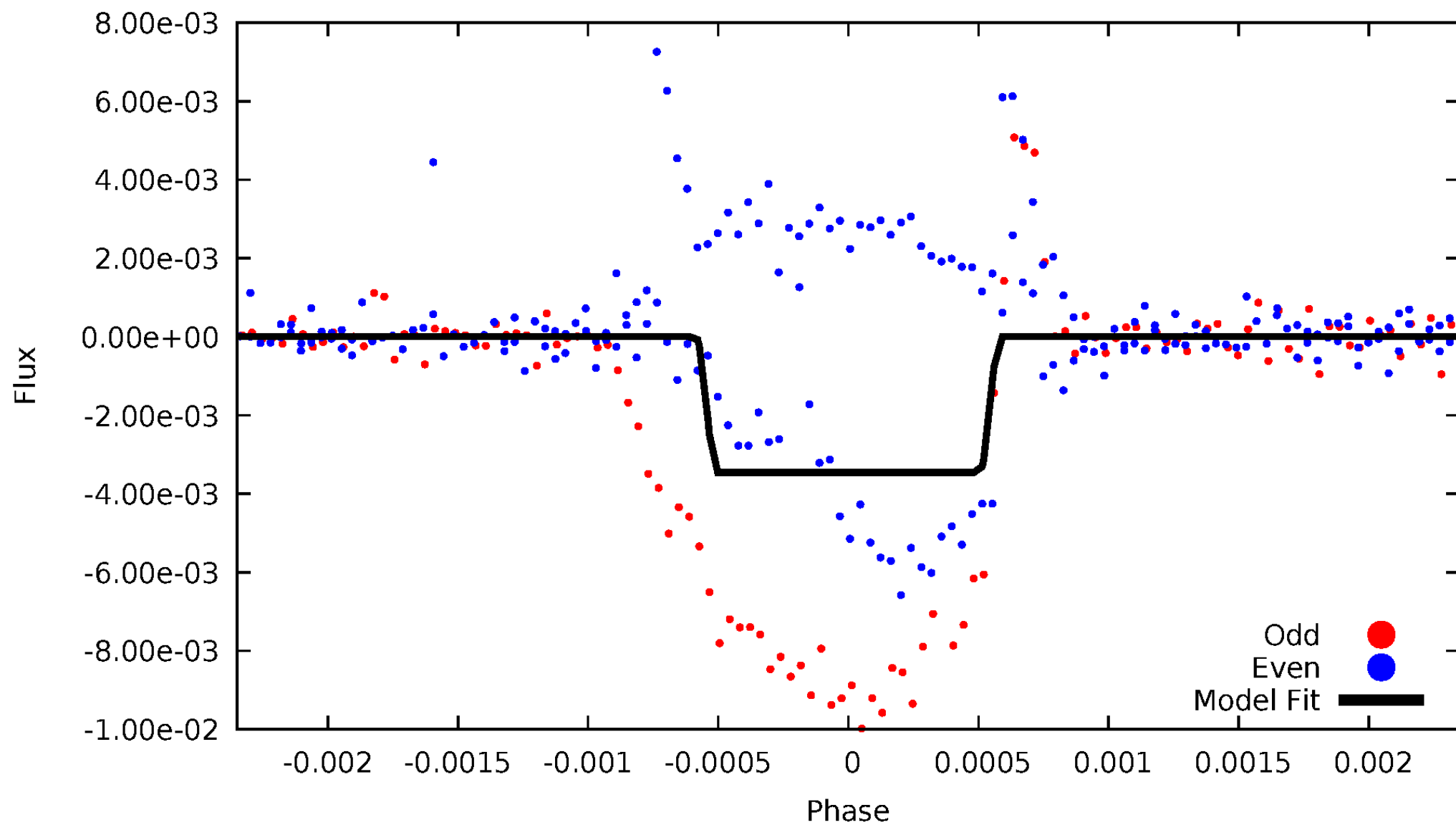
DV Odd/Even

TCE 008144647-03



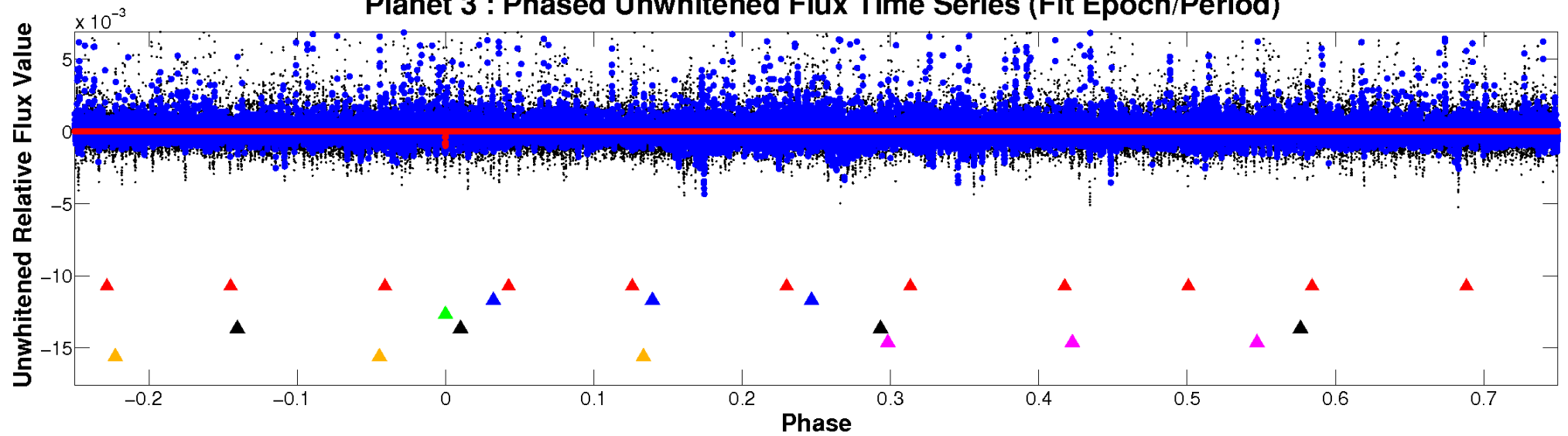
ALT Odd/Even

TCE 008144647-03

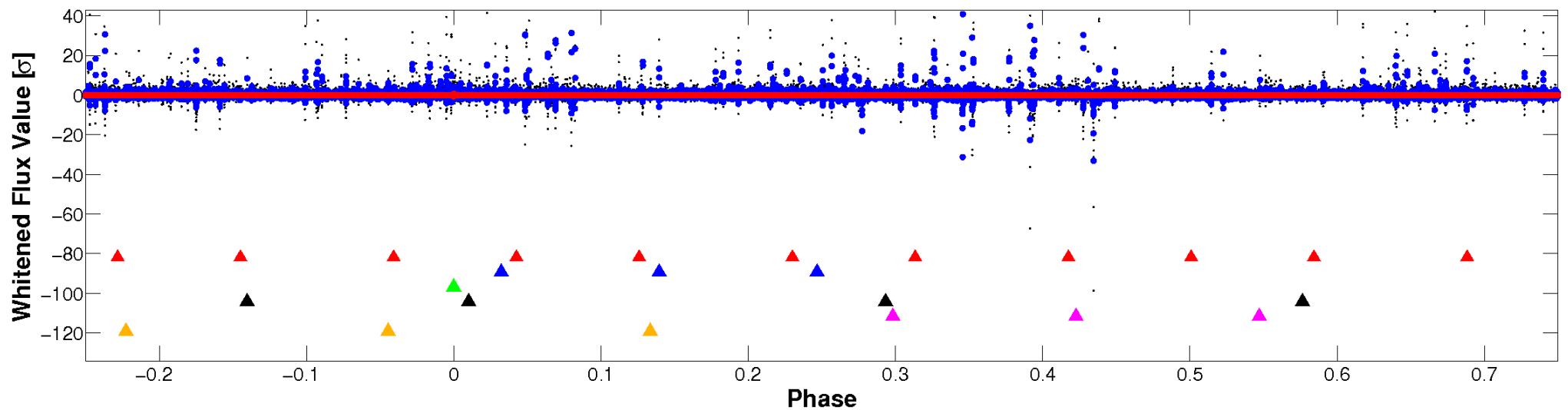


Non-Whitened Vs. Whitened Light Curve

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

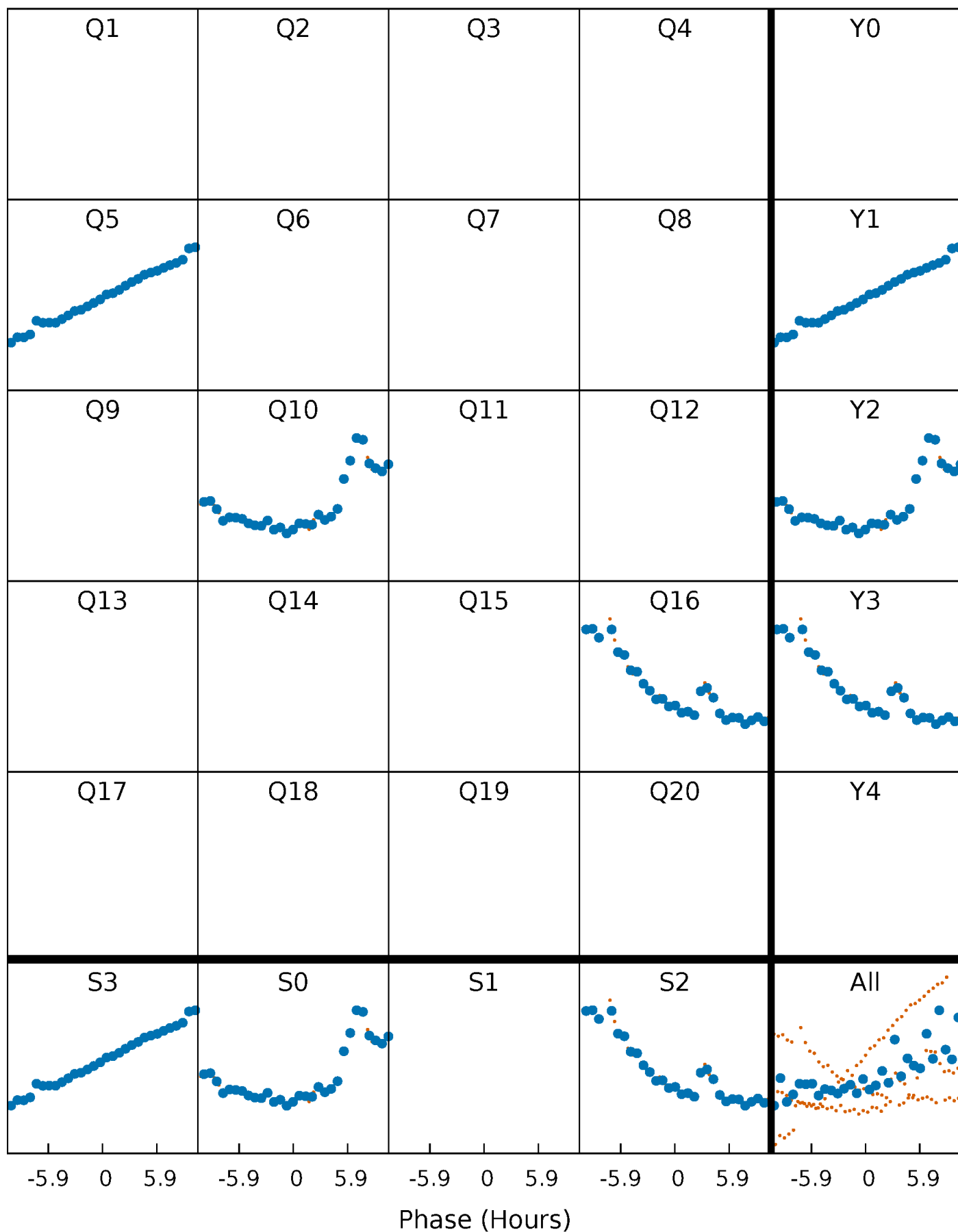


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



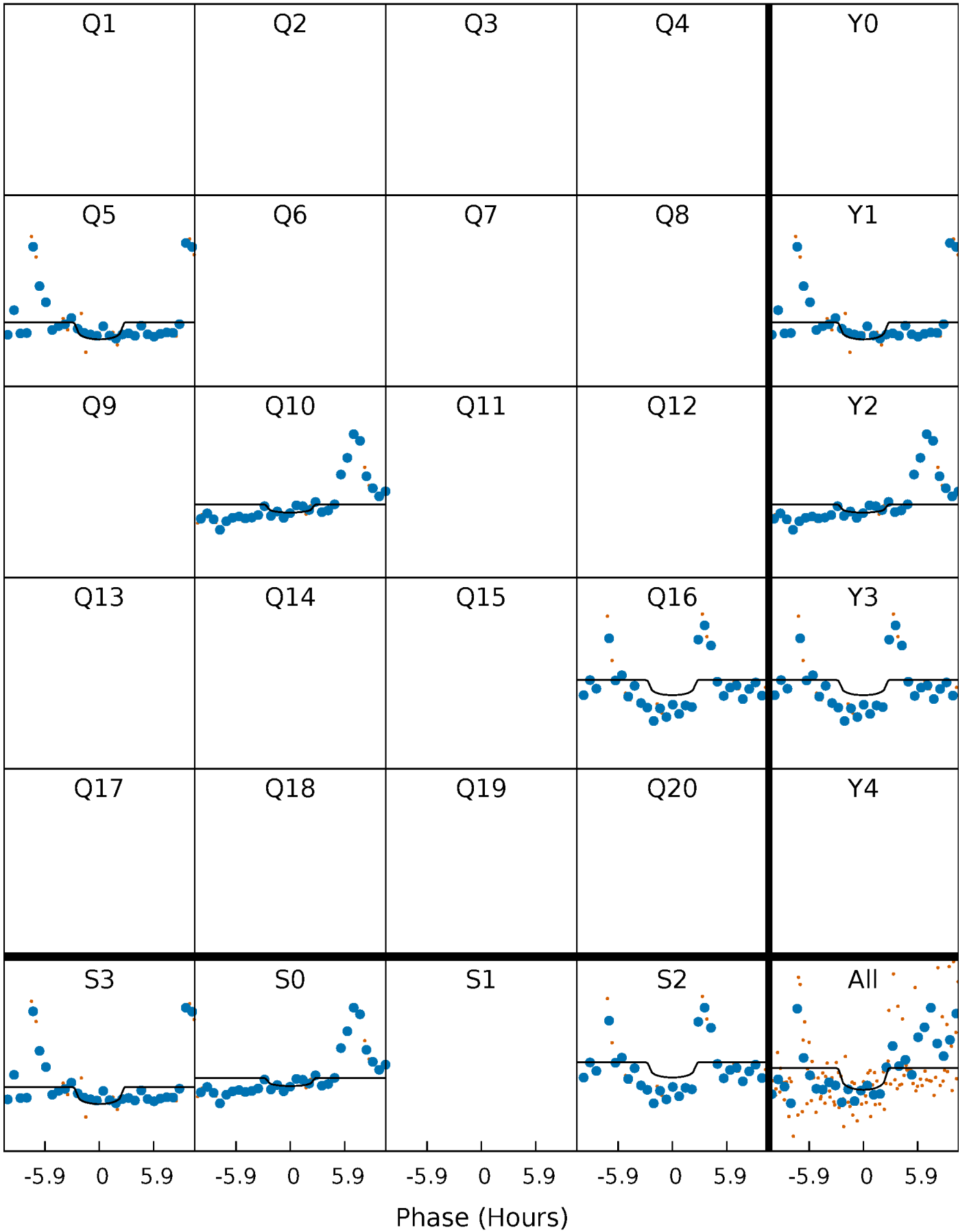
PDC Quarter-Phased Transit Curves

TCE 008144647-03 P=523.337935 Days $T_0=457.467851$ (BKJD)



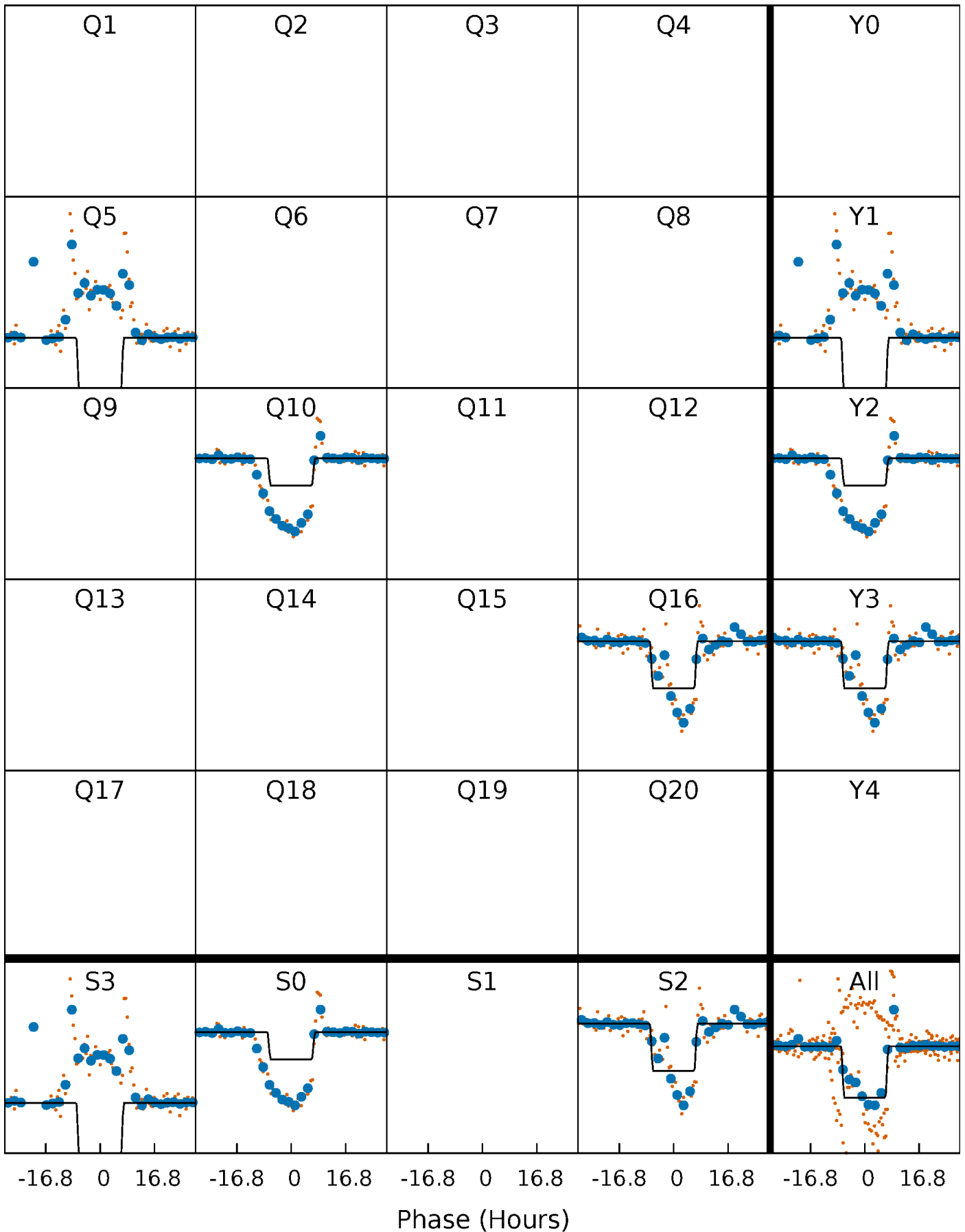
DV Quarter-Phased Transit Curves

TCE 008144647-03 $P=523.337935$ Days $T_0=457.467851$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

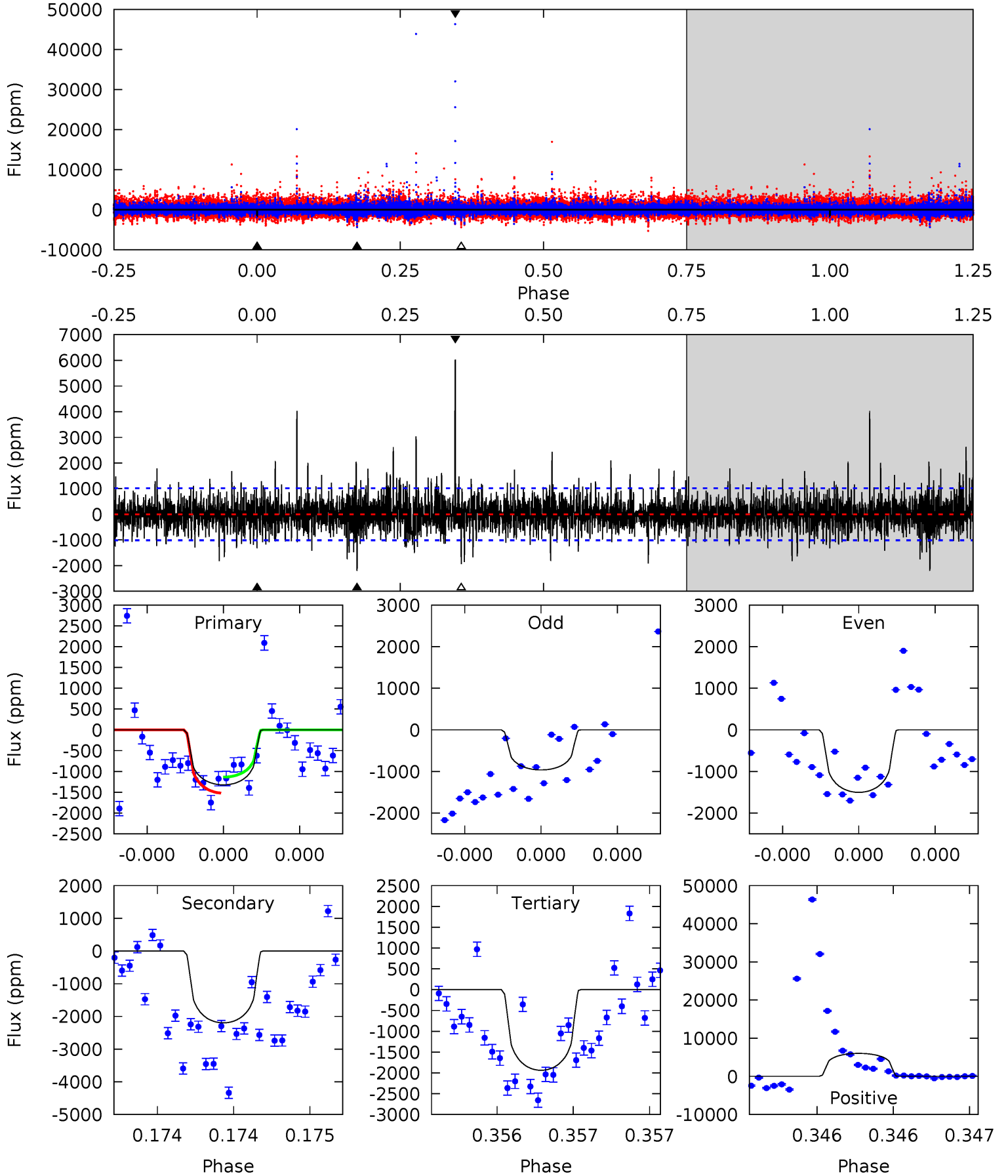
TCE 008144647-03 P=523.201304 Days $T_0=457.546391$ (BKJD)



DV Model-Shift Uniqueness Test

008144647-03, P = 523.337935 Days, E = 457.467851 Days

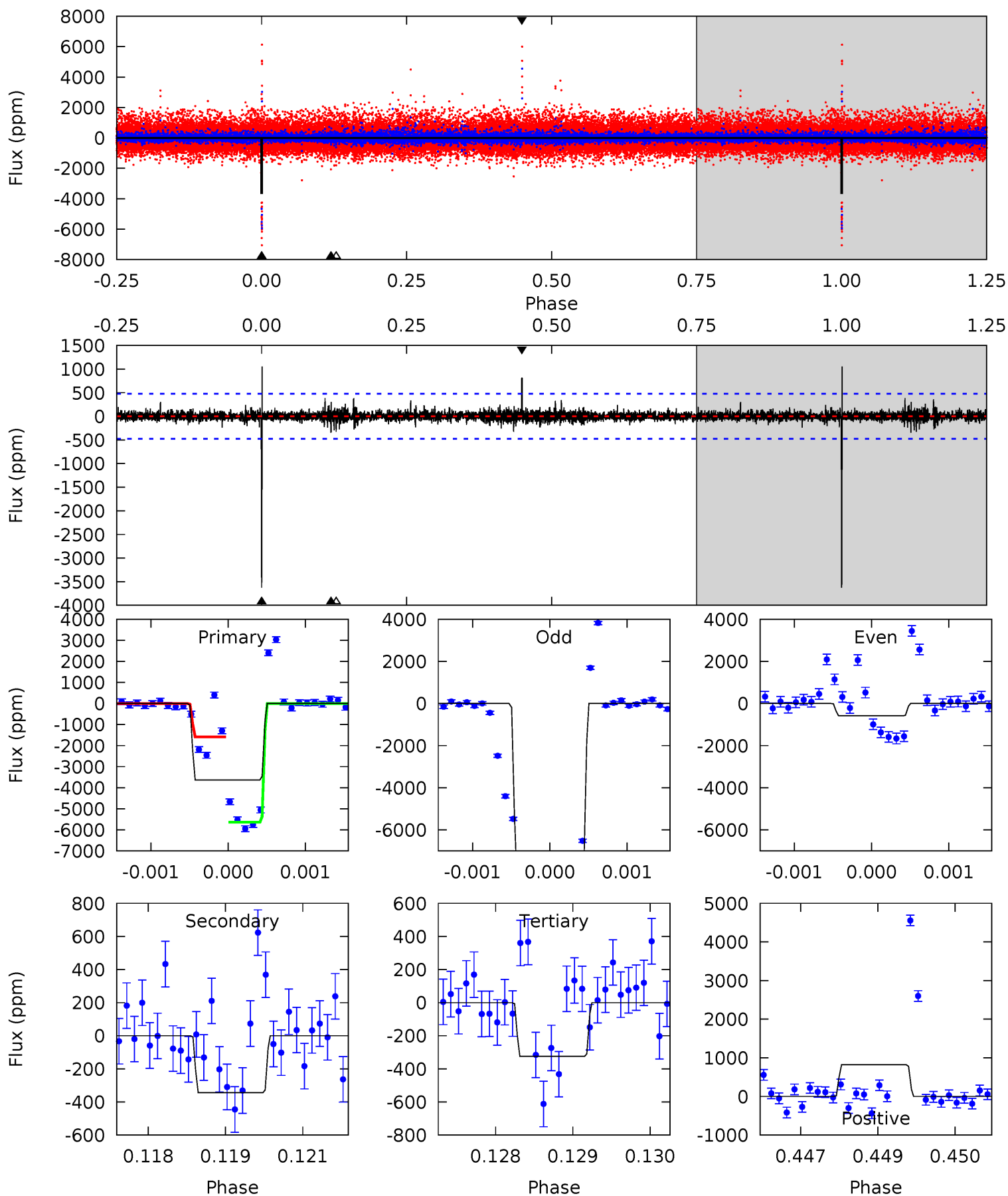
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.29	12.1	10.7	33.2	5.59	3.51	2.67	-3.39	-25.9	1.43	-21.1	0.98	1.37	0.73	1.06



Alt Model-Shift Uniqueness Test

008144647-03, P = 523.201304 Days, E = 457.546391 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.2	3.90	3.68	9.30	5.42	3.25	0.66	37.6	31.9	0.22	-5.39	66.5	0.81	0.23	0



Stellar Parameters For KIC 008144647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5238^{+157}_{-141}	$4.637^{+0.030}_{-0.090}$	$-0.380^{+0.300}_{-0.300}$	$0.698^{+0.103}_{-0.055}$	$0.777^{+0.068}_{-0.083}$	$3.221^{+0.501}_{-0.922}$
	+3%/-3%	+1%/-2%	+79%/-79%	+15%/-8%	+9%/-11%	+16%/-29%
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 008144647-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2198 ± 181	$8.75^{+8.52}_{-5.86}$	253^{+10}_{-10}	3721^{+1993}_{-682}	$20425^{+164241}_{-15029}$
Alt.	-343 ± 88	$9.89^{+9.71}_{-6.49}$	254^{+10}_{-9}	2741^{+1011}_{-427}	2519^{+16614}_{-1883}

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 $A_{obs} \gg 1.0$

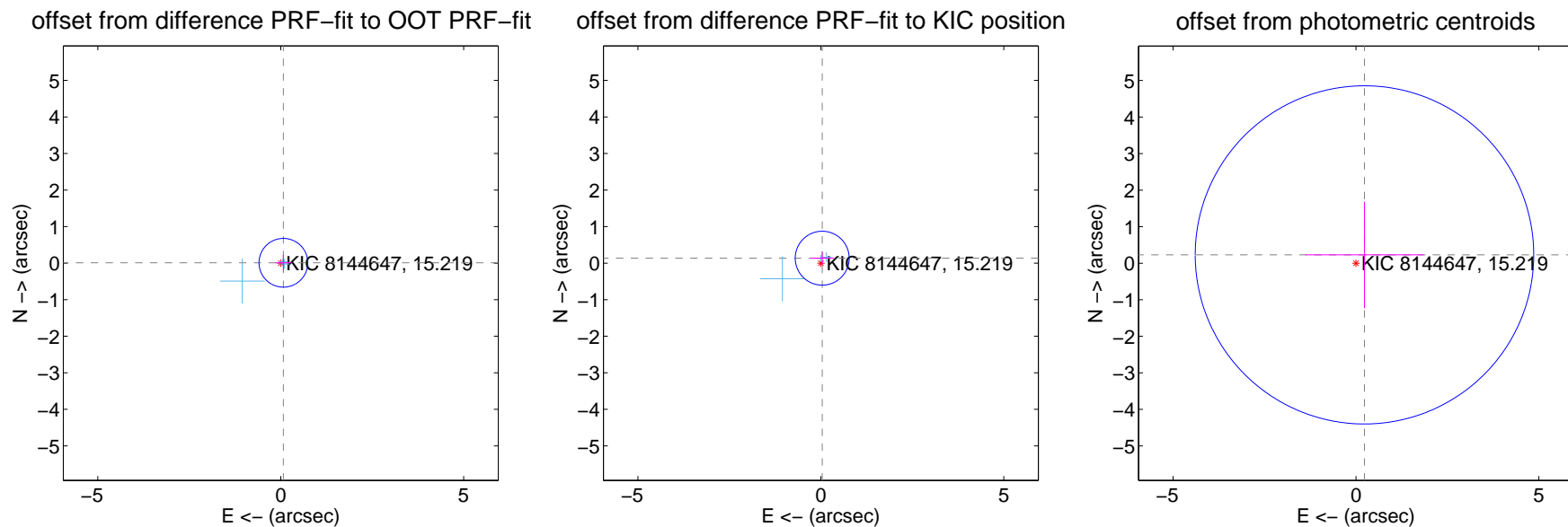
DV Centroid Data

Supplemental centroid analysis for 008144647-03. Kepler magnitude: 15.22. Transit SNR 3.47

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.073 ± 0.222	0.33	-0.073 ± 0.222	0.010 ± 0.221
PRF-fit source offset from KIC position	0.140 ± 0.246	0.57	-0.037 ± 0.322	0.136 ± 0.173
photometric centroid source offset	0.33 ± 1.54	0.21	-0.23 ± 1.62	0.23 ± 1.46

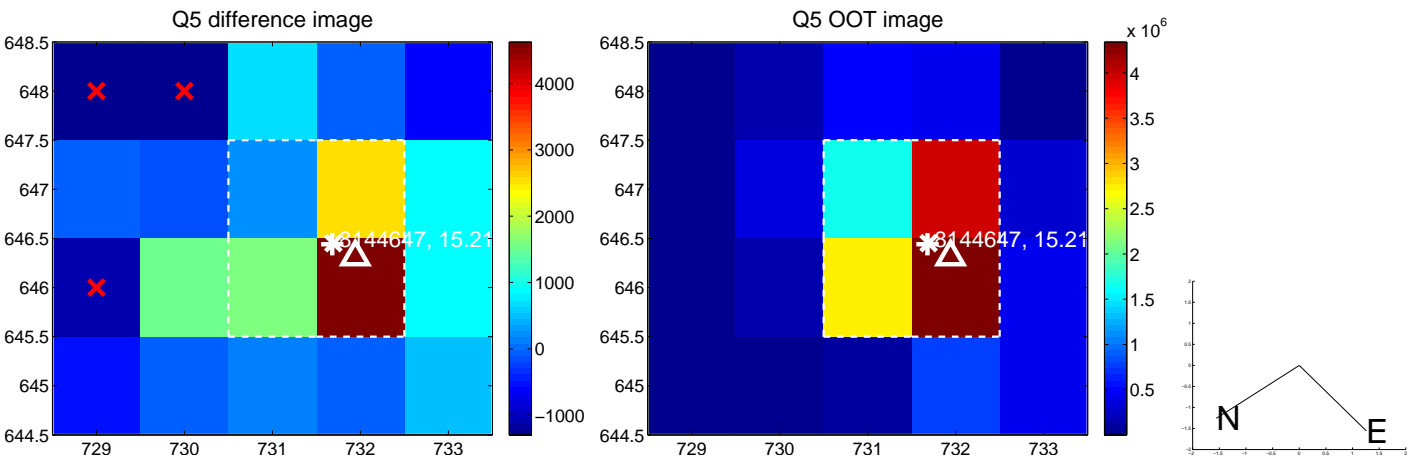


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

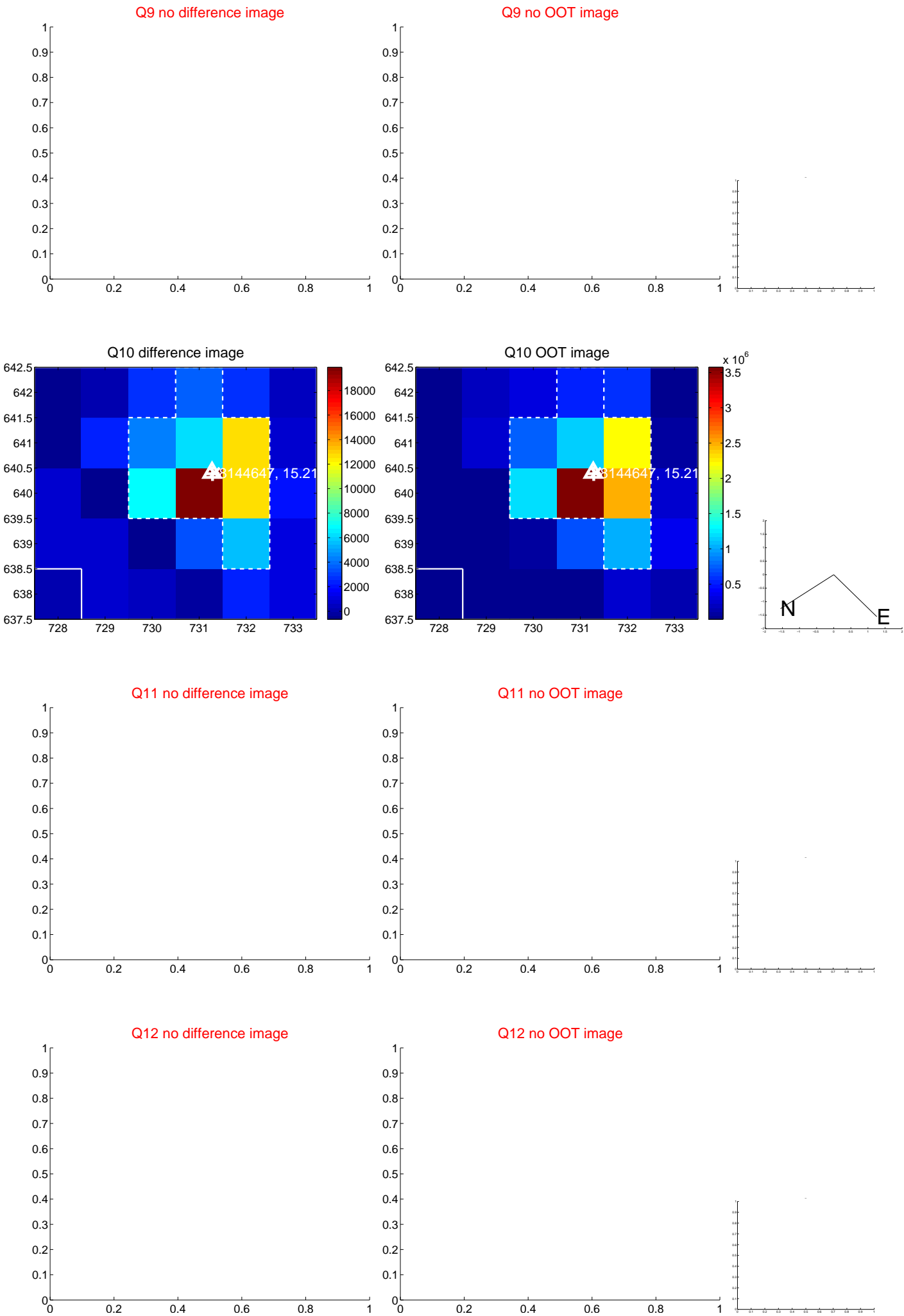
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



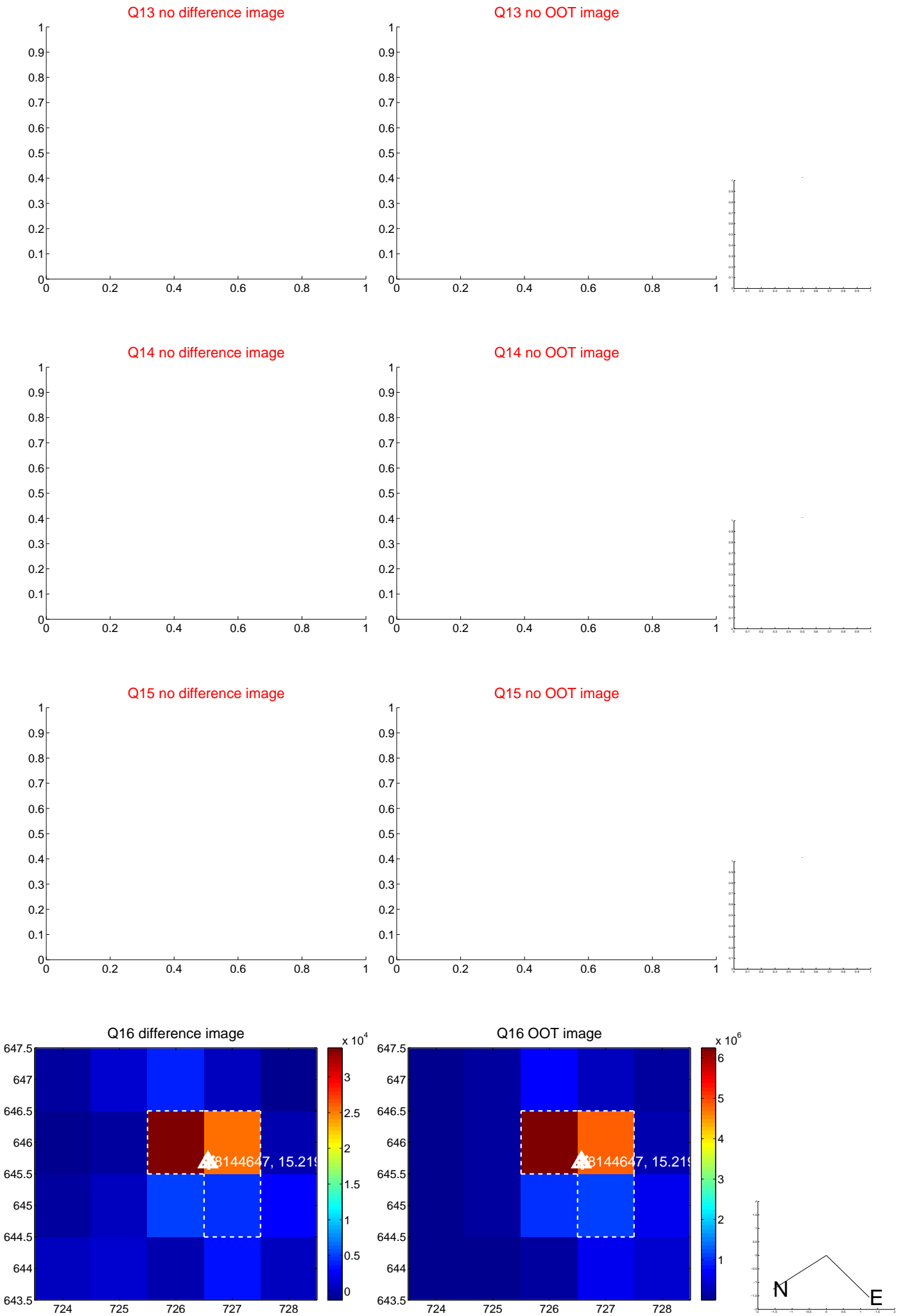
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



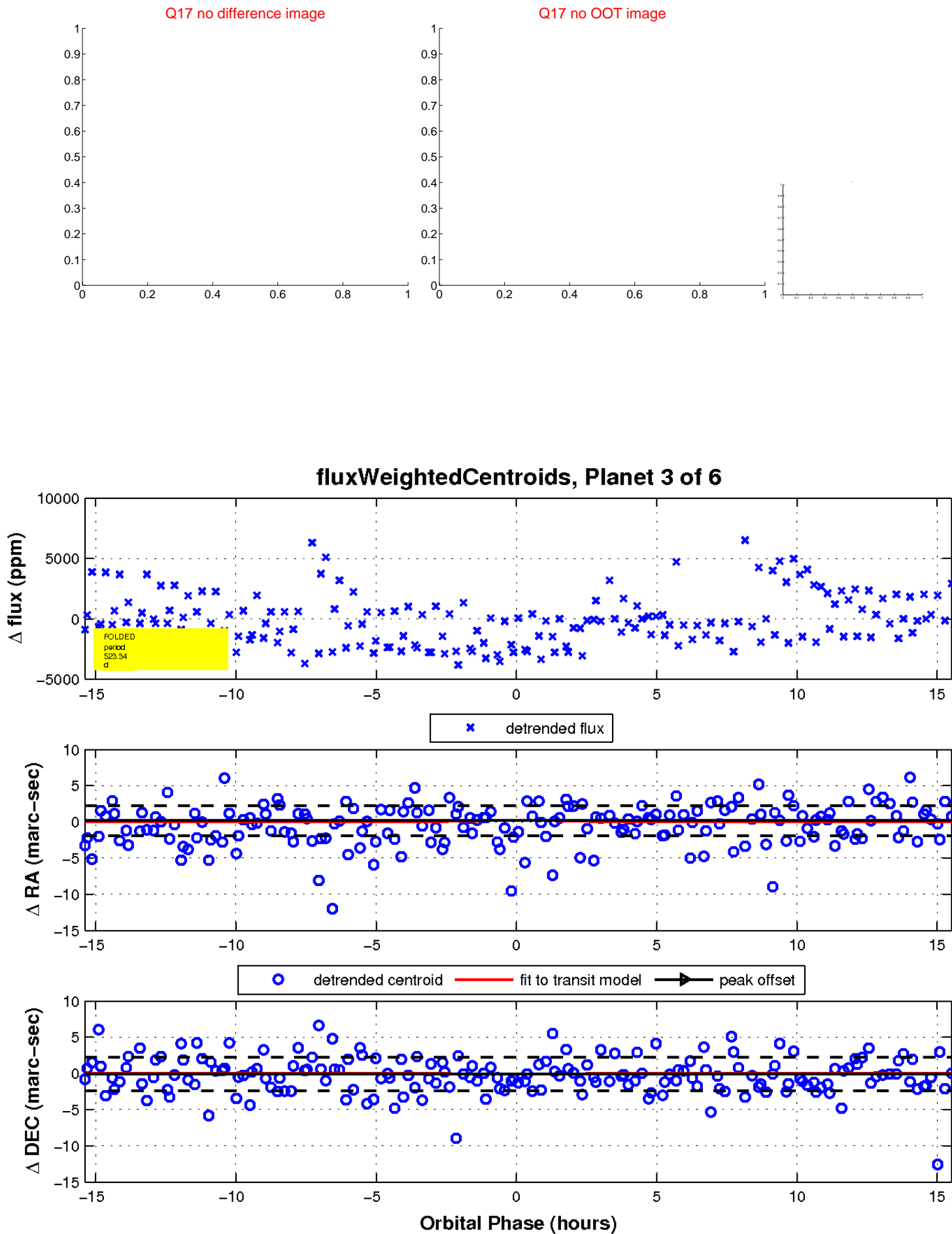
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

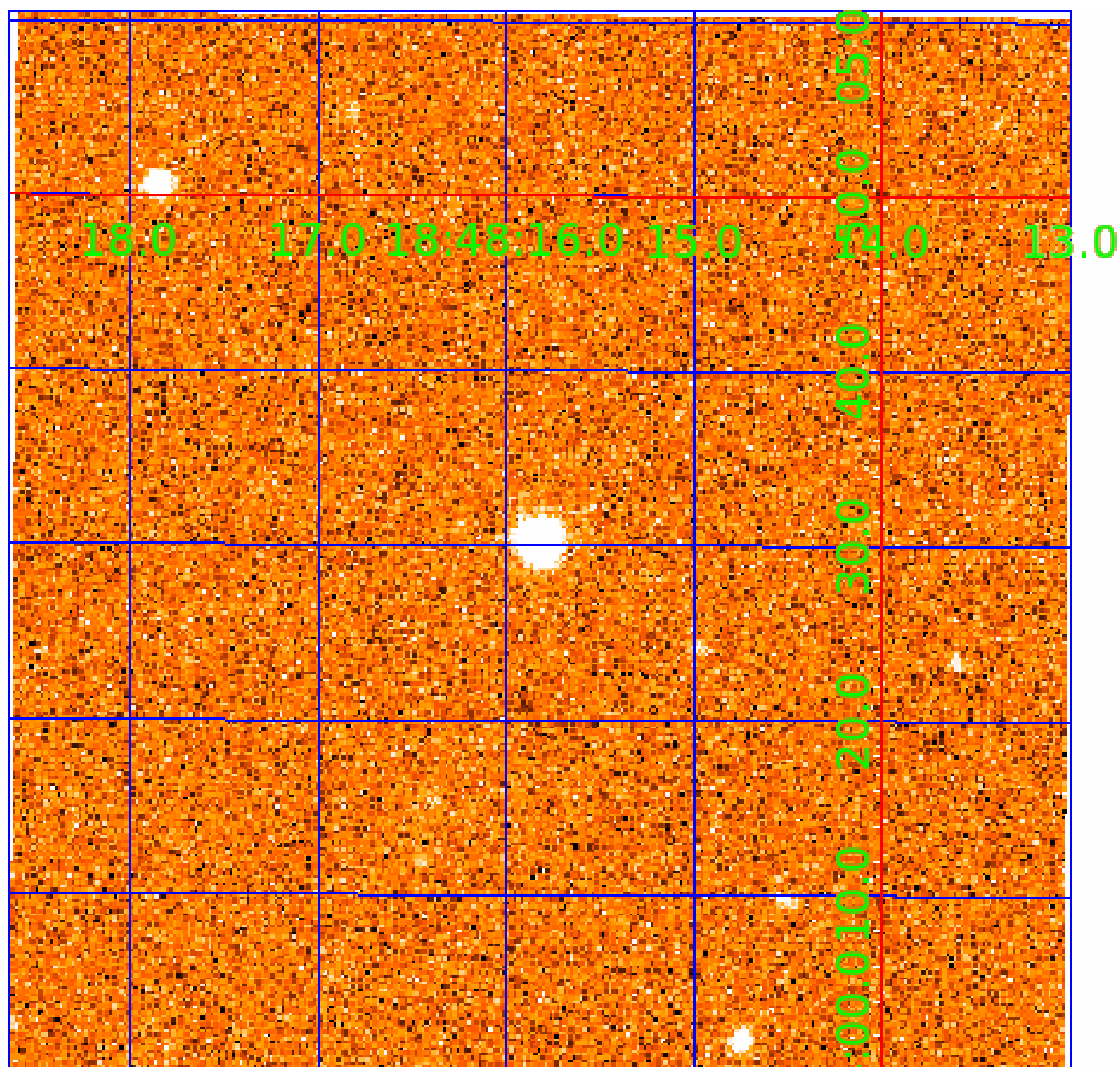


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008144647

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})
008144647-01	OBS	No	141.742915	152.627238	858.5	2.562	16.1	5.9	0.70	5238	2.25	1.38
008144647-02	OBS	No	467.210921	586.628217	3085.9	4.875	13.4	11.1	0.70	5238	3.80	0.28
008144647-03	OBS	No	523.337935	457.467851	1003.0	5.185	14.5	3.5	0.70	5238	2.18	0.24
008144647-05	OBS	No	458.218807	220.456725	2784.5	4.275	13.7	8.7	0.70	5238	6.10	0.29
008144647-06	OBS	No	430.153683	527.332890	1628.4	5.000	13.3	-1.0	0.70	5238	2.76	0.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008144647-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008144647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
008144647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
008144647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008144647-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

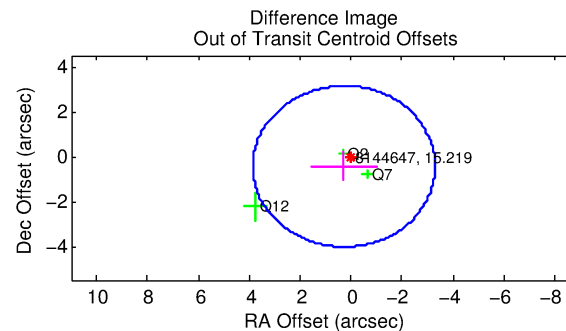
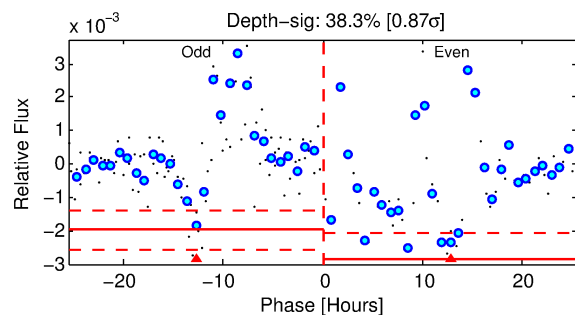
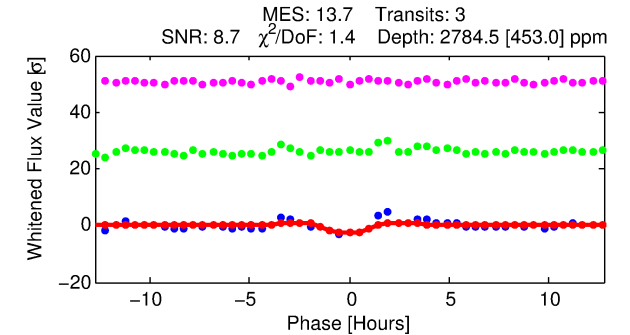
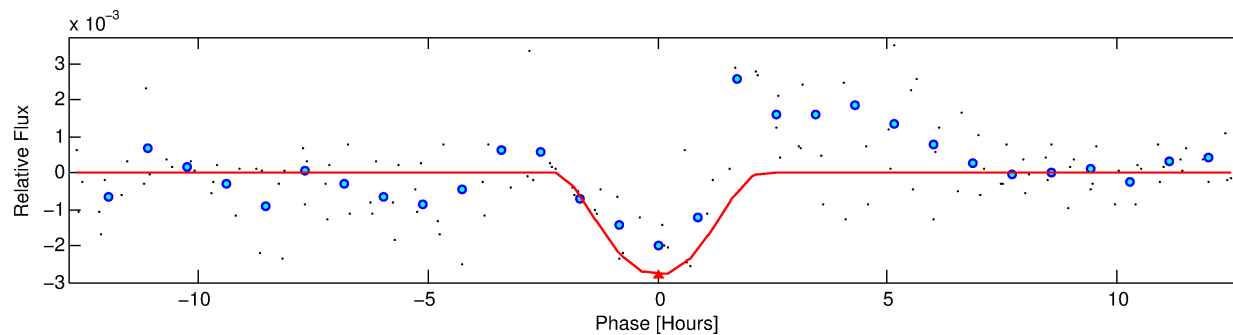
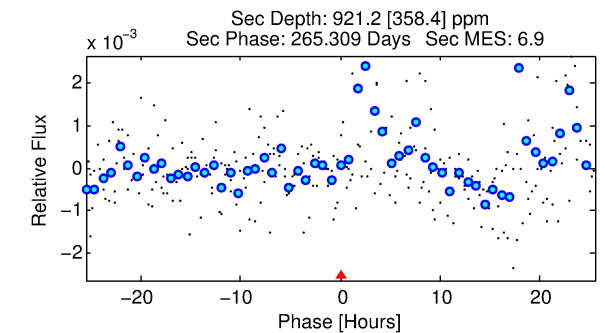
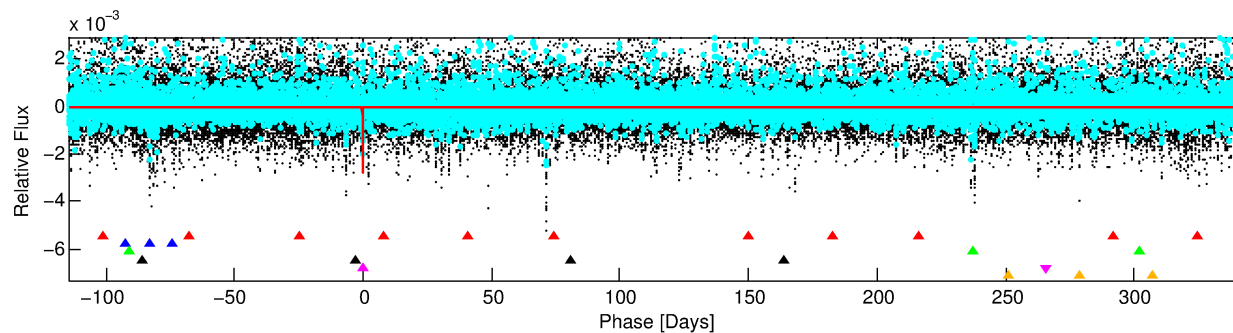
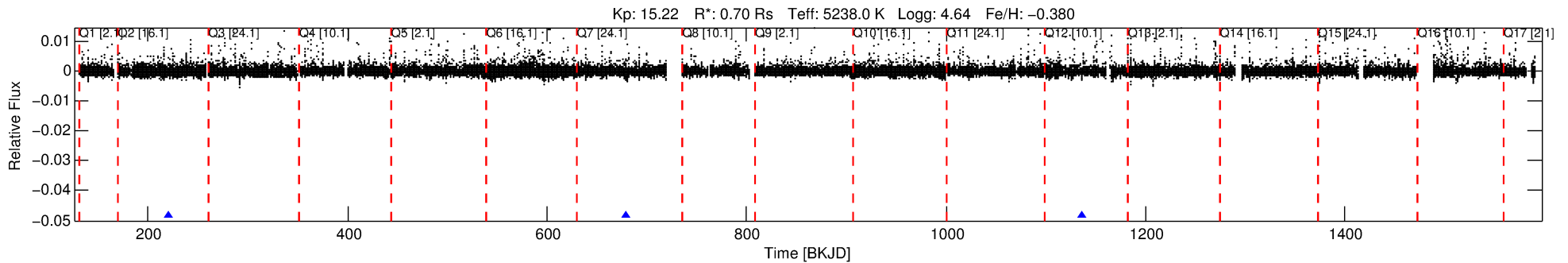
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008144647-05

No Significant Match Found

DV One-Page Summary

KIC: 8144647 Candidate: 5 of 6 Period: 458.219 d



DV Fit Results:

Period = 458.21881 [0.00783] d
Epoch = 220.4567 [0.0118] BKJD
Rp/R* = 0.0800 [0.2056]
a/R* = 372.36 [262.87]
b = 0.98 [0.34]
Seff = 0.29 [0.06]
Teff = 187 [10] K
Rp = 6.10 [15.68] Re
a = 1.0666 [0.1282] AU
Ag = 15514.10 [79967.80] [0.19σ]
Teffp = 3226 [4156] K [0.73σ]

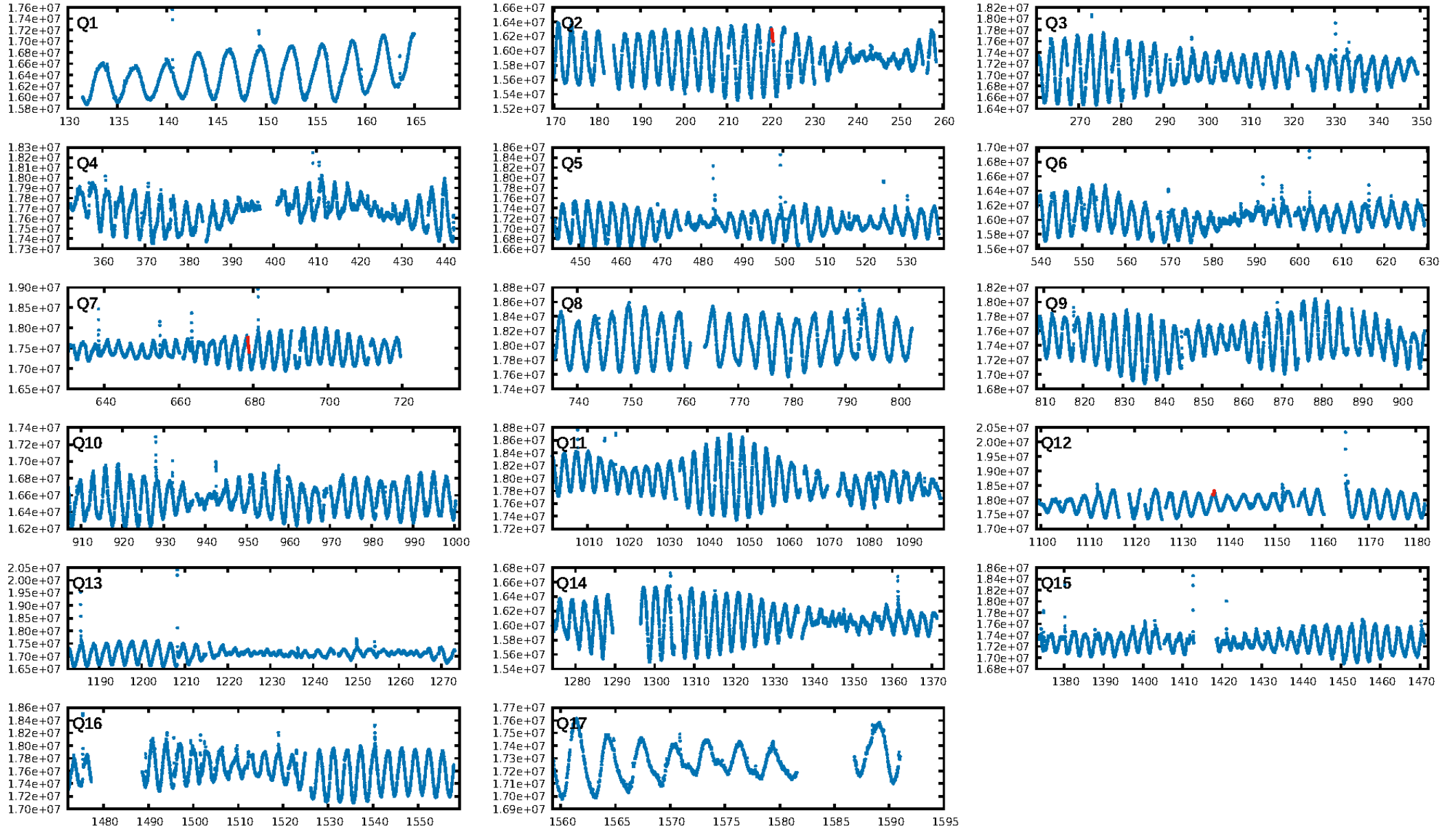
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [102.39σ]
LongPeriod-sig: 100.0% [33.28σ]
ModelChiSquare2-sig: 8.6%
ModelChiSquareGof-sig: 91.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.7228
Centroid-sig: 75.6%
Centroid-so: 0.557 arcsec [0.67σ]
OotOffset-rm: 0.523 arcsec [0.44σ]
KicOffset-rm: 0.418 arcsec [0.31σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

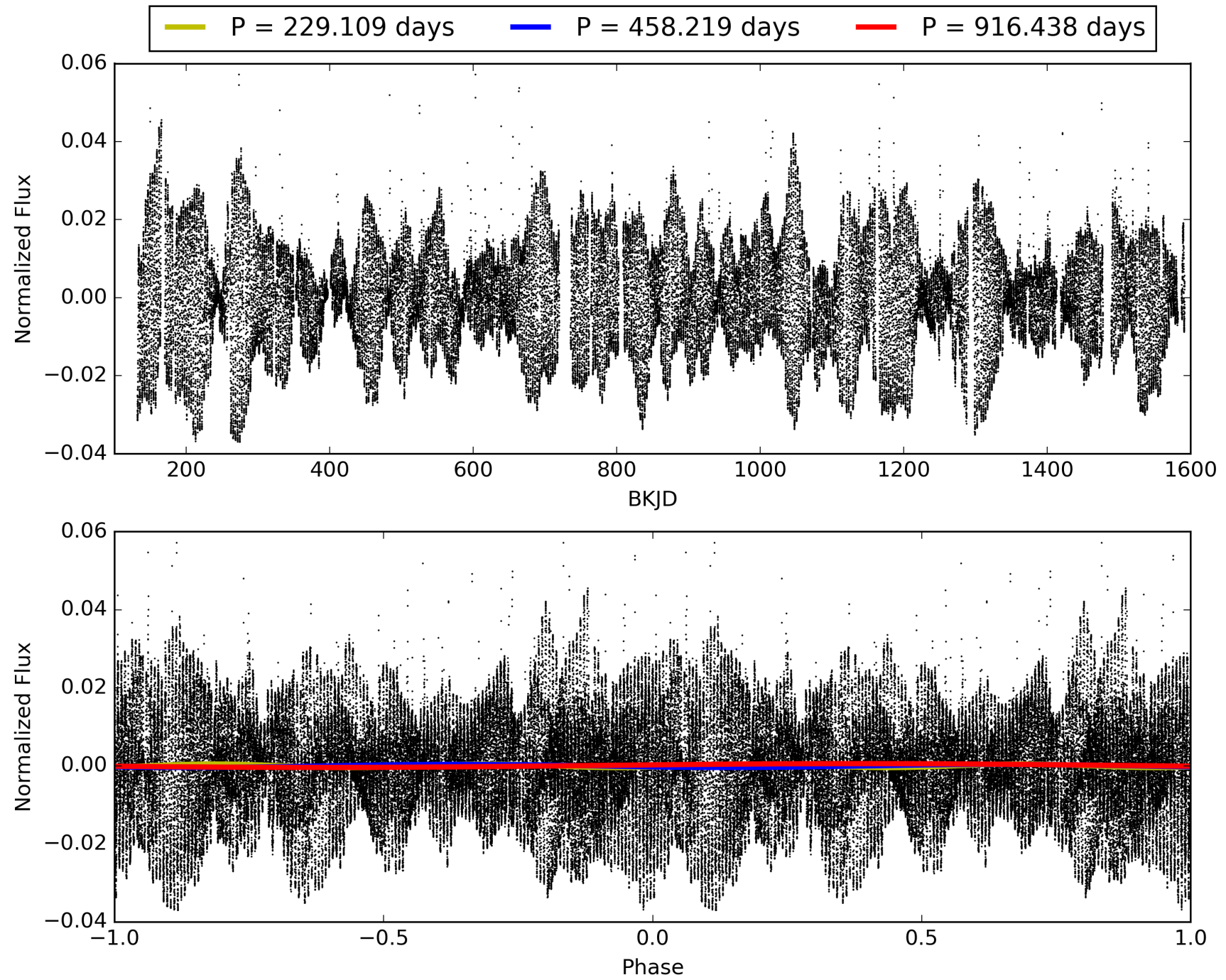
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:32:25 Z

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

TCE 008144647-05, PDC Light Curves

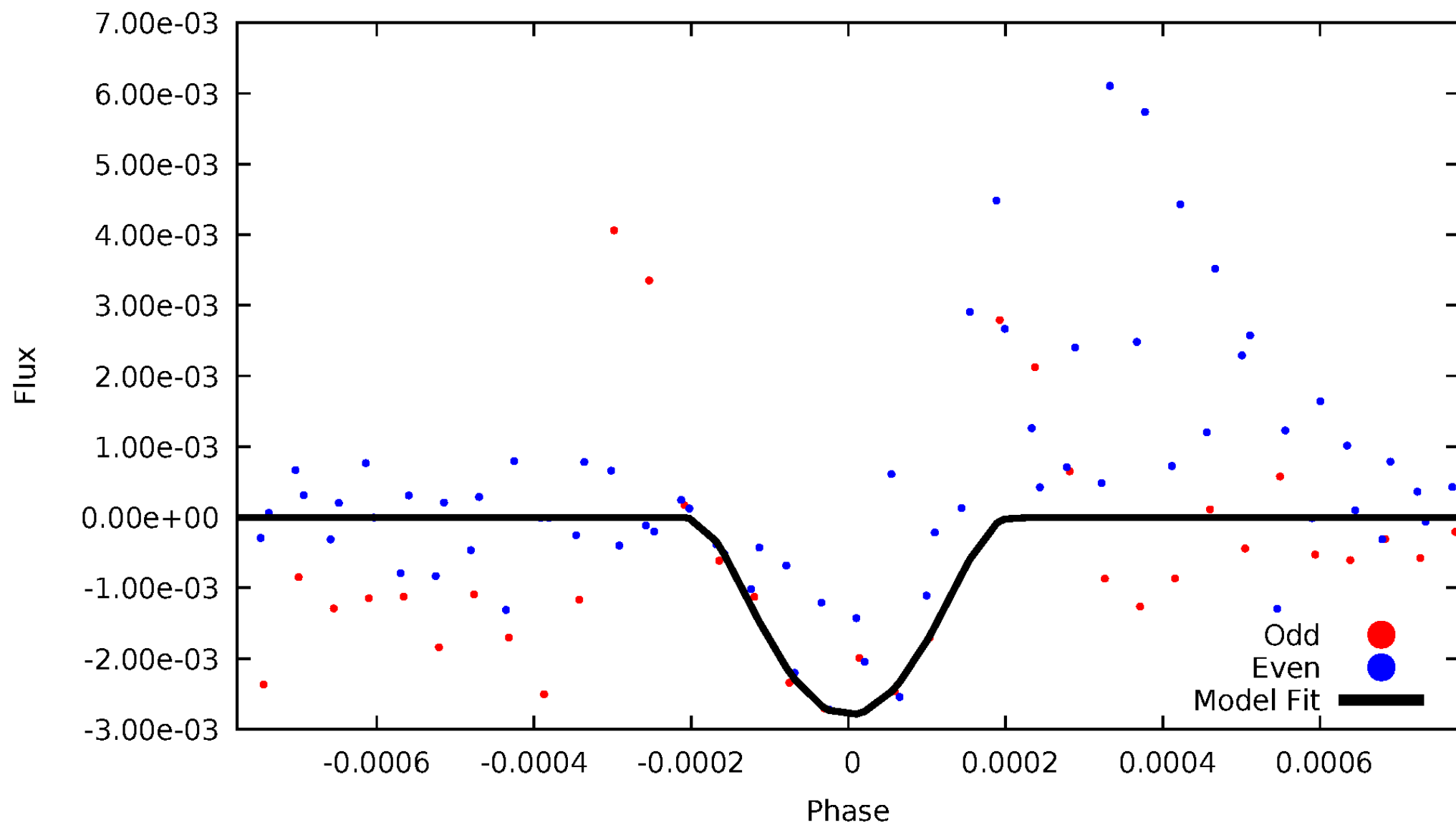


TCE 008144647-05



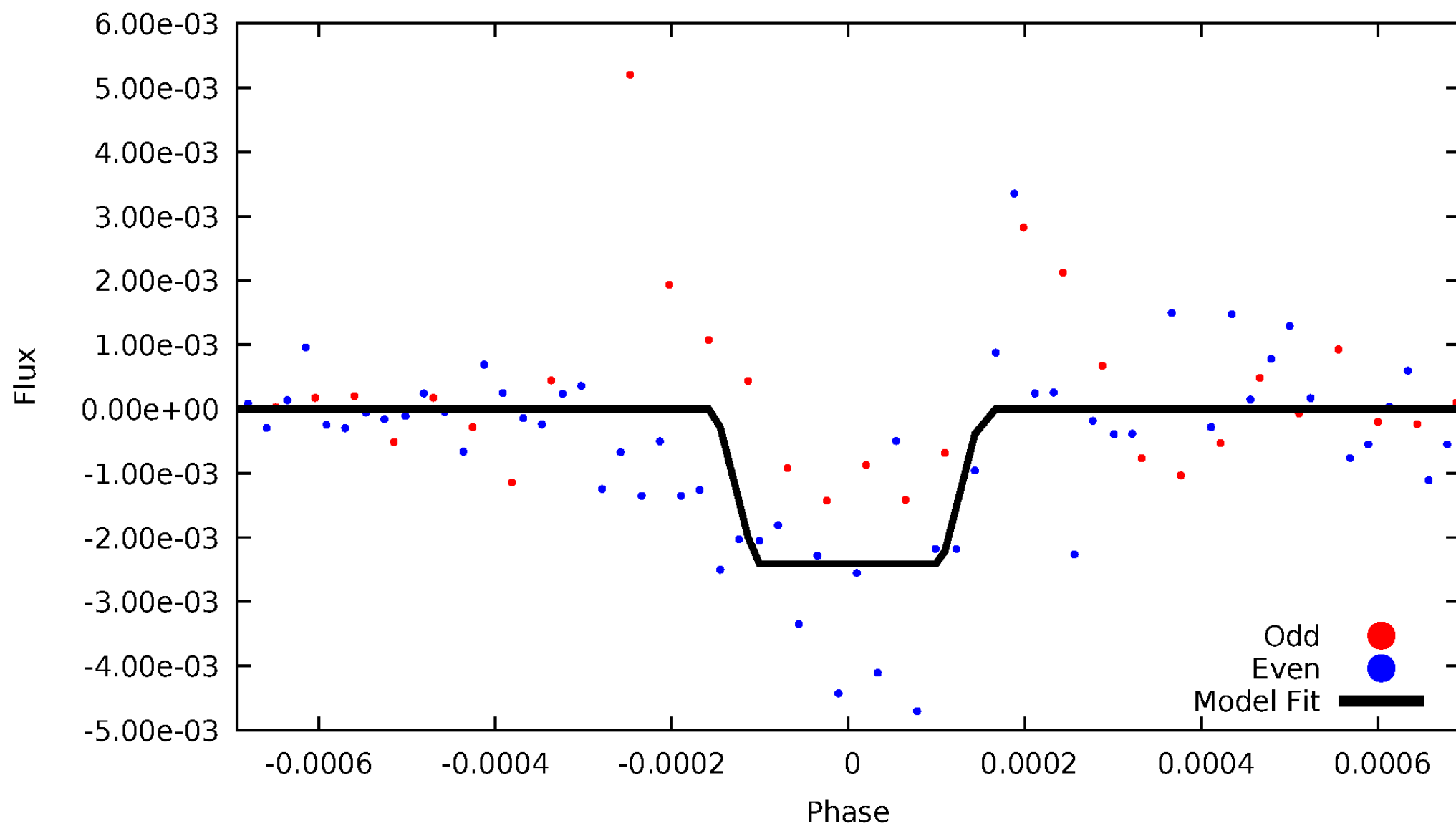
DV Odd/Even

TCE 008144647-05



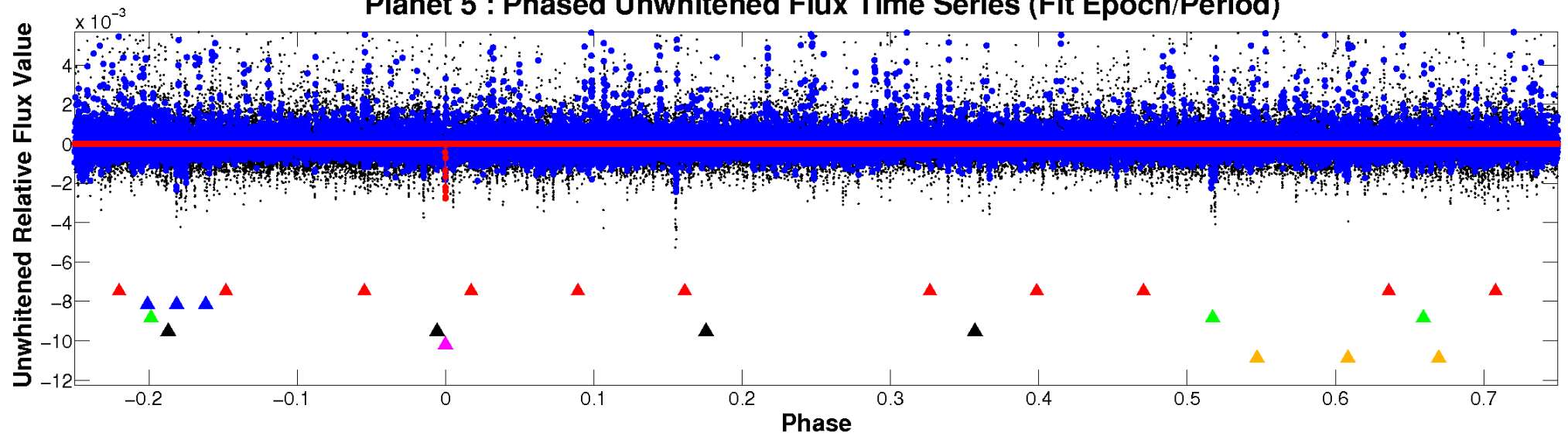
ALT Odd/Even

TCE 008144647-05

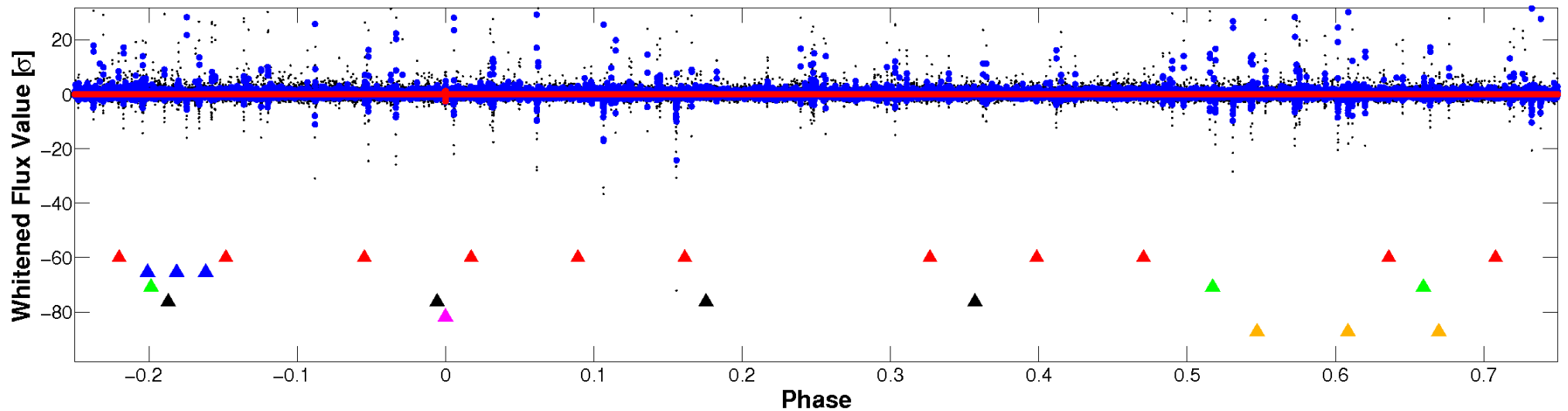


Non-Whitened Vs. Whitened Light Curve

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

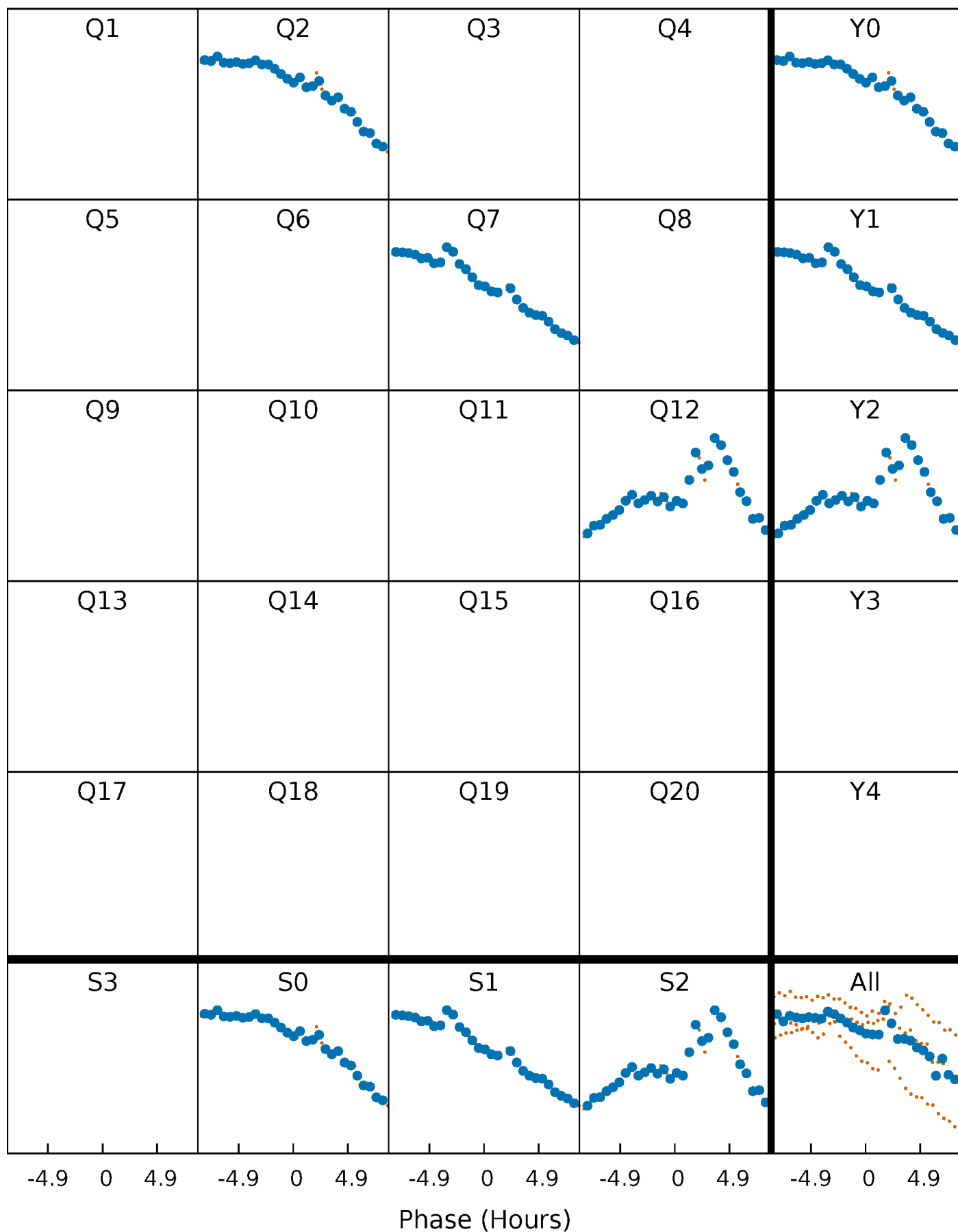


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



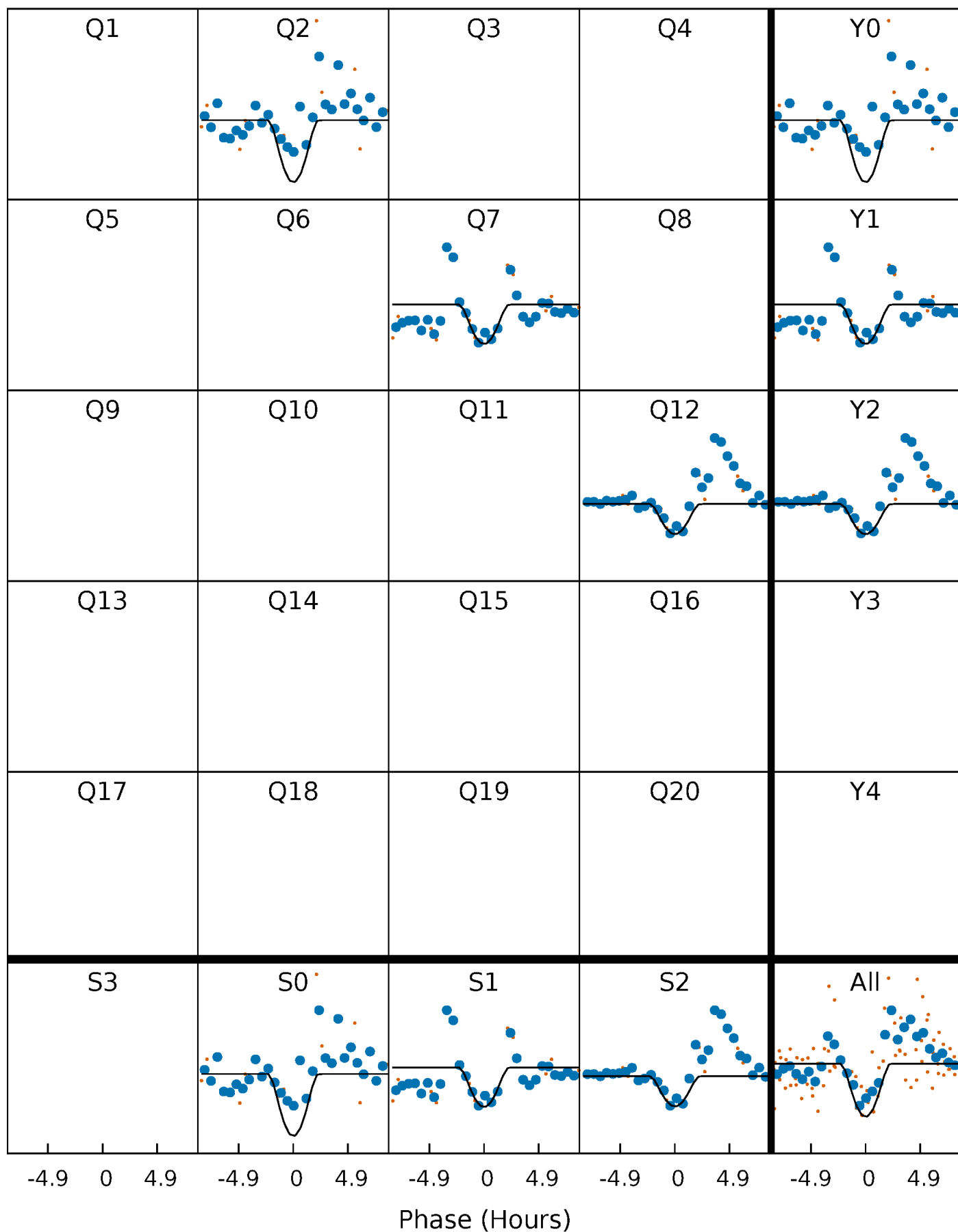
PDC Quarter-Phased Transit Curves

TCE 008144647-05 $P=458.218807$ Days $T_0=220.456725$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008144647-05 P=458.218807 Days $T_0=220.456725$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

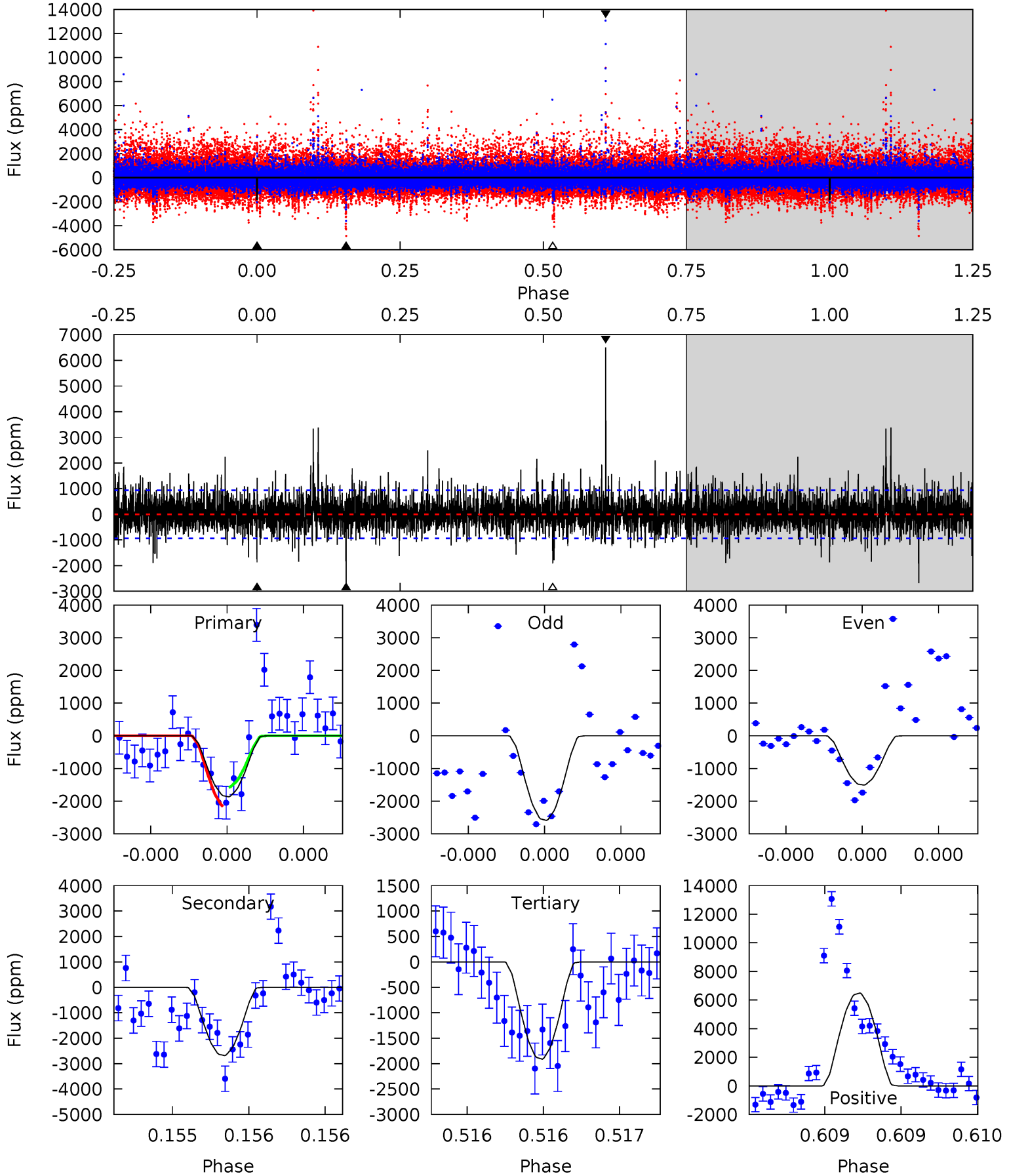
TCE 008144647-05 P=458.215772 Days $T_0=220.457044$ (BKJD)



DV Model-Shift Uniqueness Test

008144647-05, P = 458.218807 Days, E = 220.456725 Days

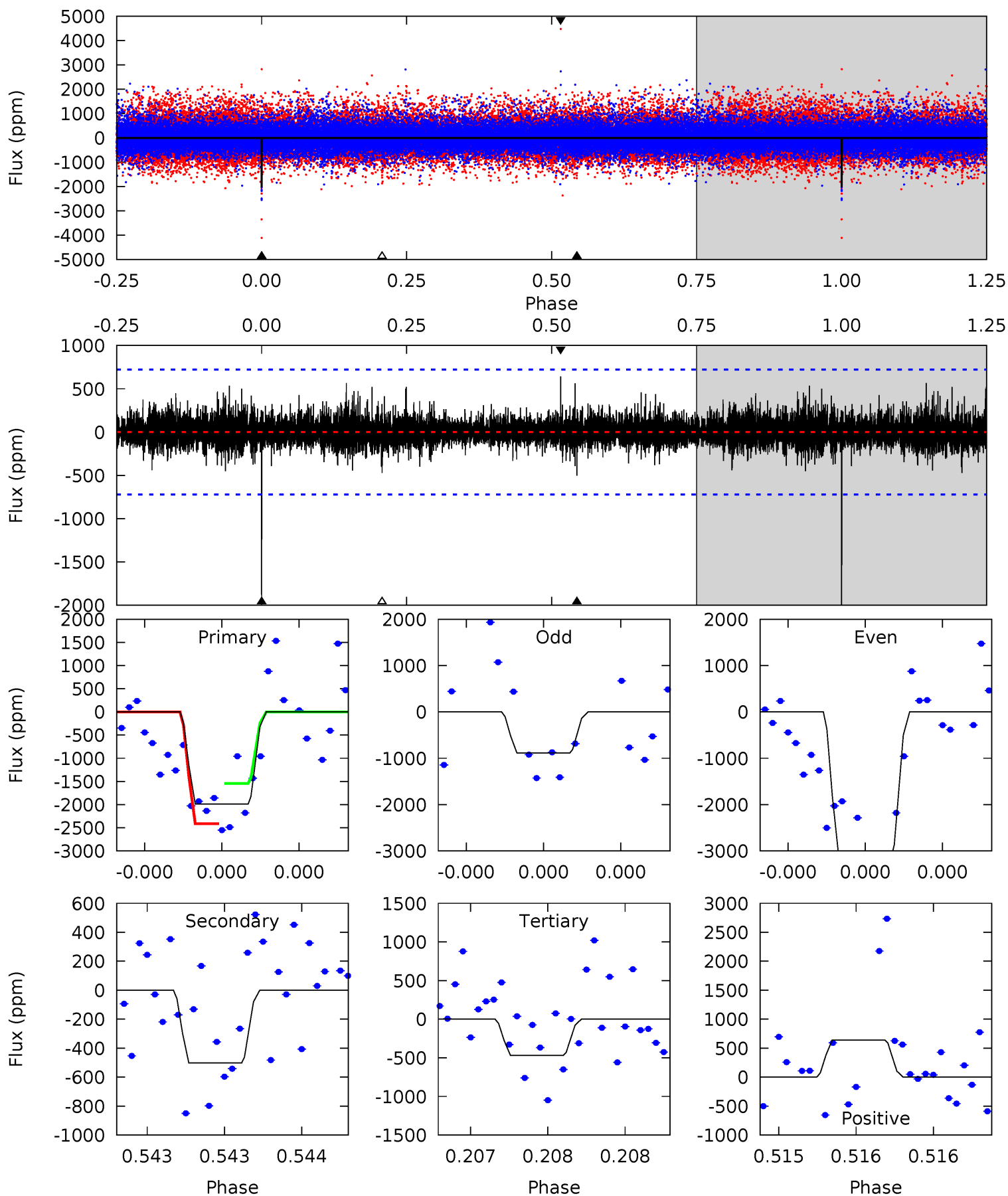
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	16.0	11.4	38.8	5.59	3.51	2.76	-0.27	-27.6	4.60	-22.7	2.25	0.88	0.71	1.76



Alt Model-Shift Uniqueness Test

008144647-05, P = 458.215772 Days, E = 220.457044 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	3.94	3.69	5.03	5.67	3.62	0.79	11.9	10.6	0.25	-1.09	8.74	1.11	0.24	3.43



Stellar Parameters For KIC 008144647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5238^{+157}_{-141}	$4.637^{+0.030}_{-0.090}$	$-0.380^{+0.300}_{-0.300}$	$0.698^{+0.103}_{-0.055}$	$0.777^{+0.068}_{-0.083}$	$3.221^{+0.501}_{-0.922}$
	+3%/-3%	+1%/-2%	+79%/-79%	+15%/-8%	+9%/-11%	+16%/-29%
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 008144647-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2683 ± 168	$12.96^{+13.26}_{-8.87}$	265^{+11}_{-9}	3411^{+1859}_{-627}	9919^{+87660}_{-7524}
Alt.	-502 ± 127	$11.85^{+13.69}_{-8.16}$	264^{+11}_{-9}	2759^{+1155}_{-475}	2192^{+20619}_{-1707}

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

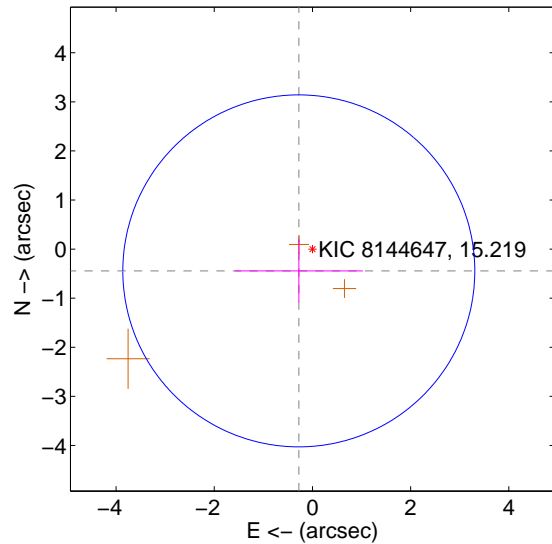
Supplemental centroid analysis for 008144647-05. Kepler magnitude: 15.22. Transit SNR 8.73

There are 0 quarters with good PRF difference image offsets

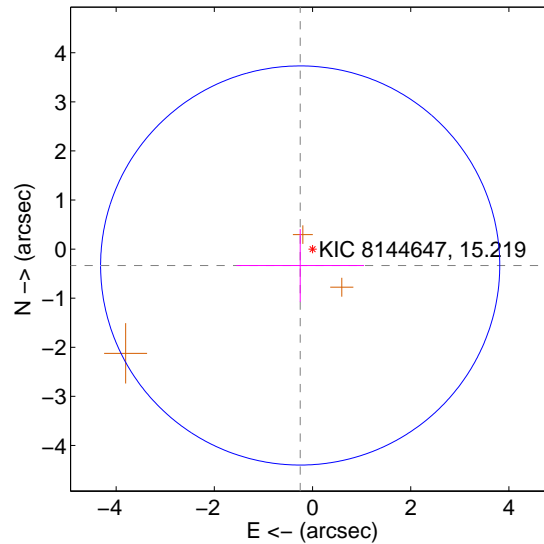
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.523 ± 1.195	0.44	0.278 ± 1.306	-0.444 ± 0.639
PRF-fit source offset from KIC position	0.418 ± 1.355	0.31	0.252 ± 1.300	-0.334 ± 0.740
photometric centroid source offset	0.56 ± 0.83	0.67	-0.05 ± 0.84	0.55 ± 0.83

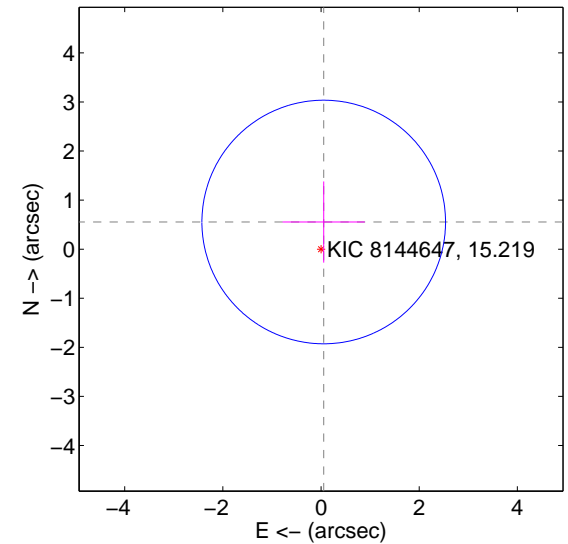
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

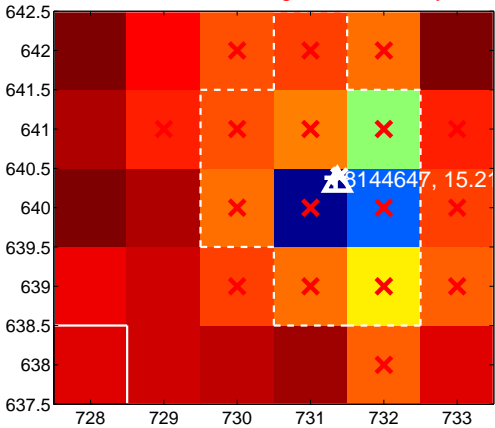
Q1 no difference image



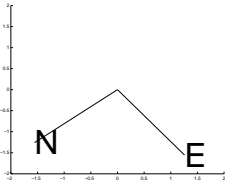
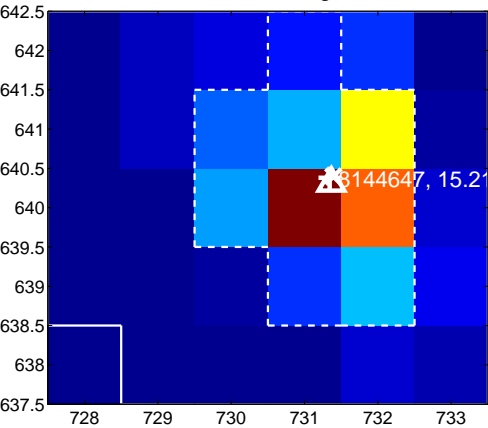
Q1 no OOT image



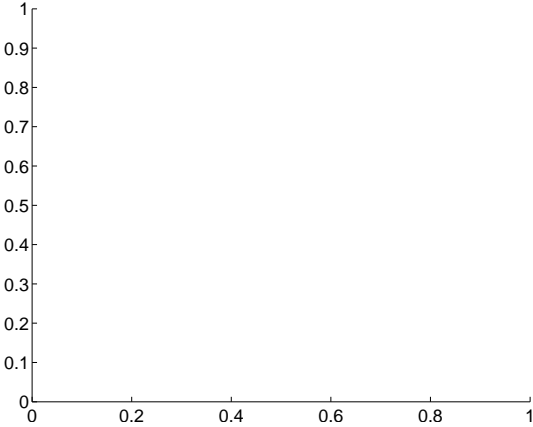
Q2 difference image. Poor Quality



Q2 OOT image



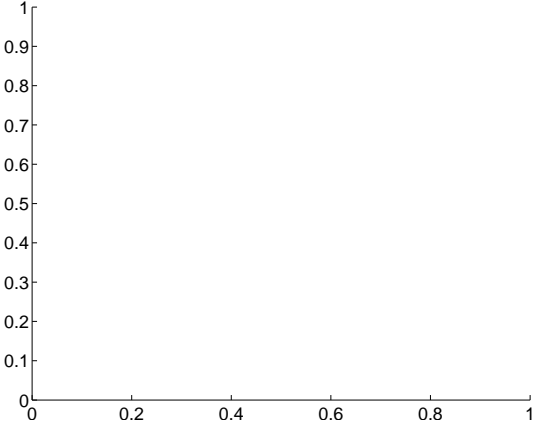
Q3 no difference image



Q3 no OOT image



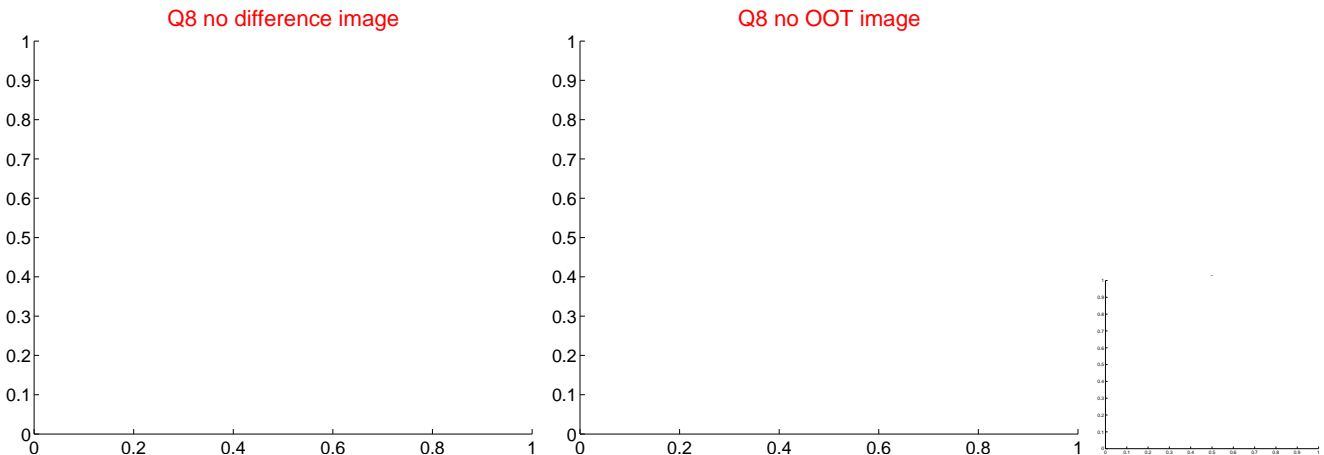
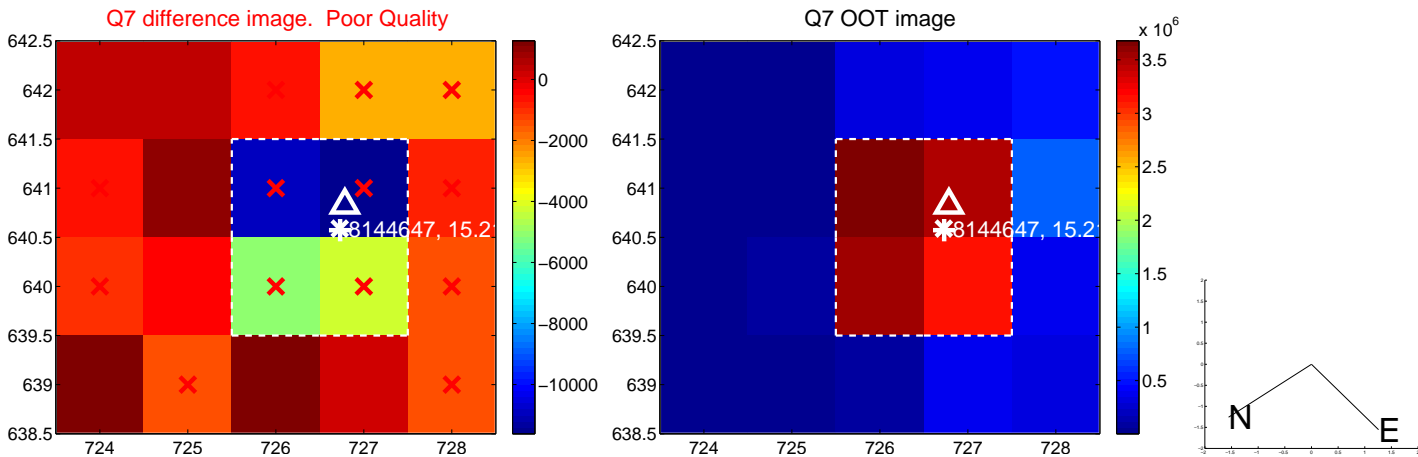
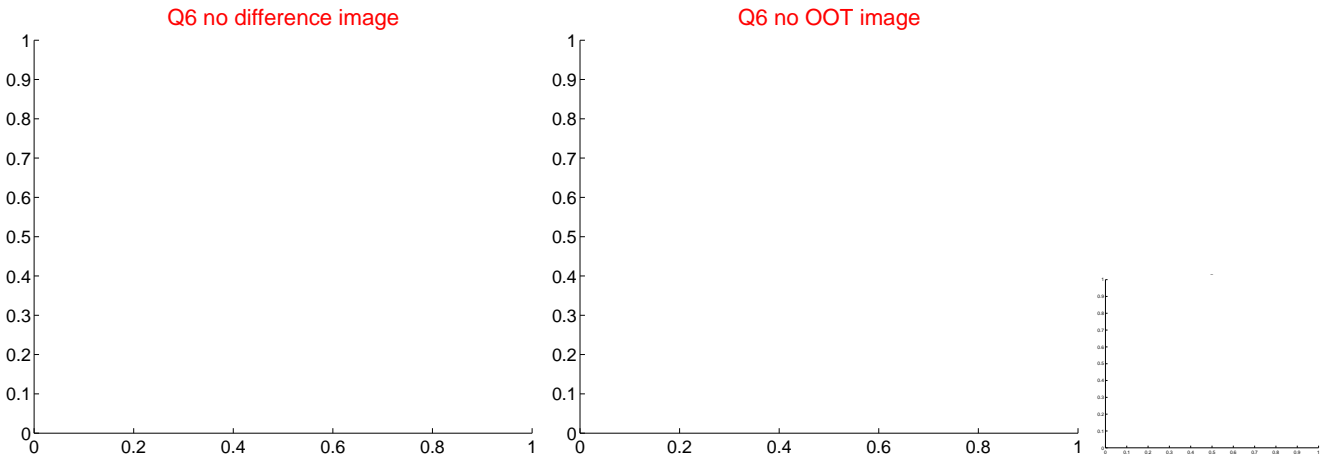
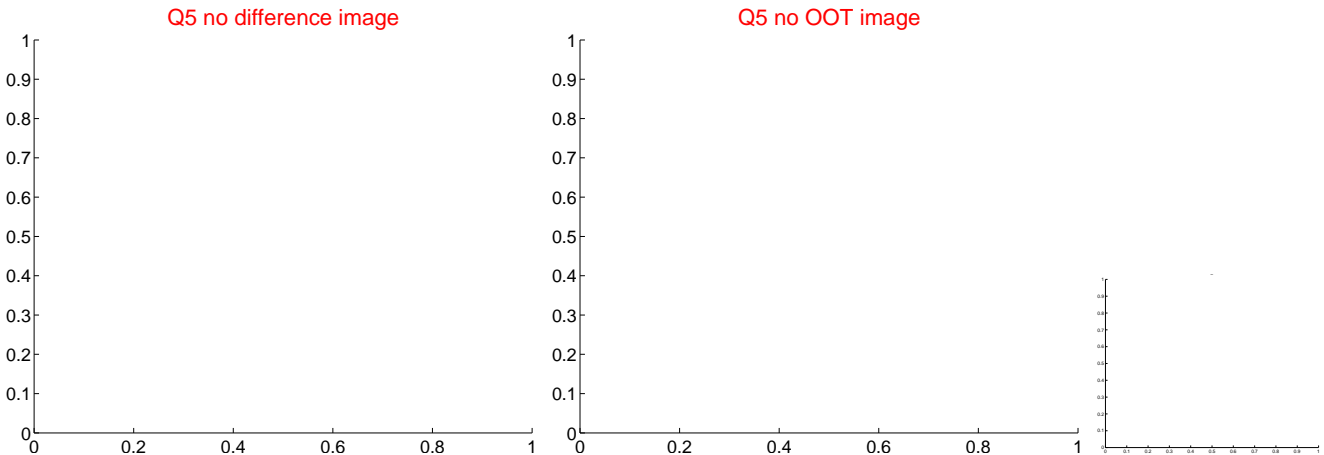
Q4 no difference image



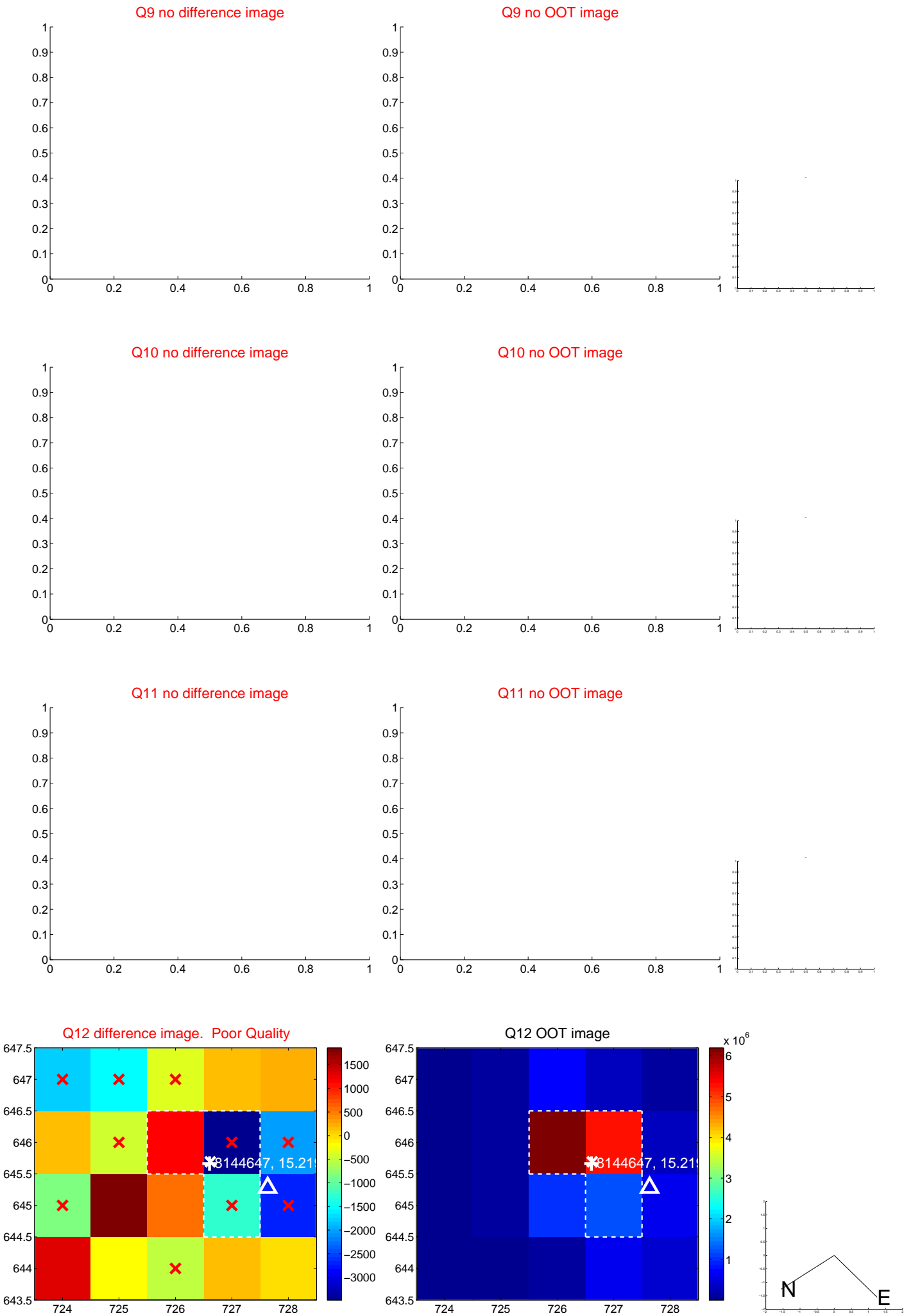
Q4 no OOT image



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



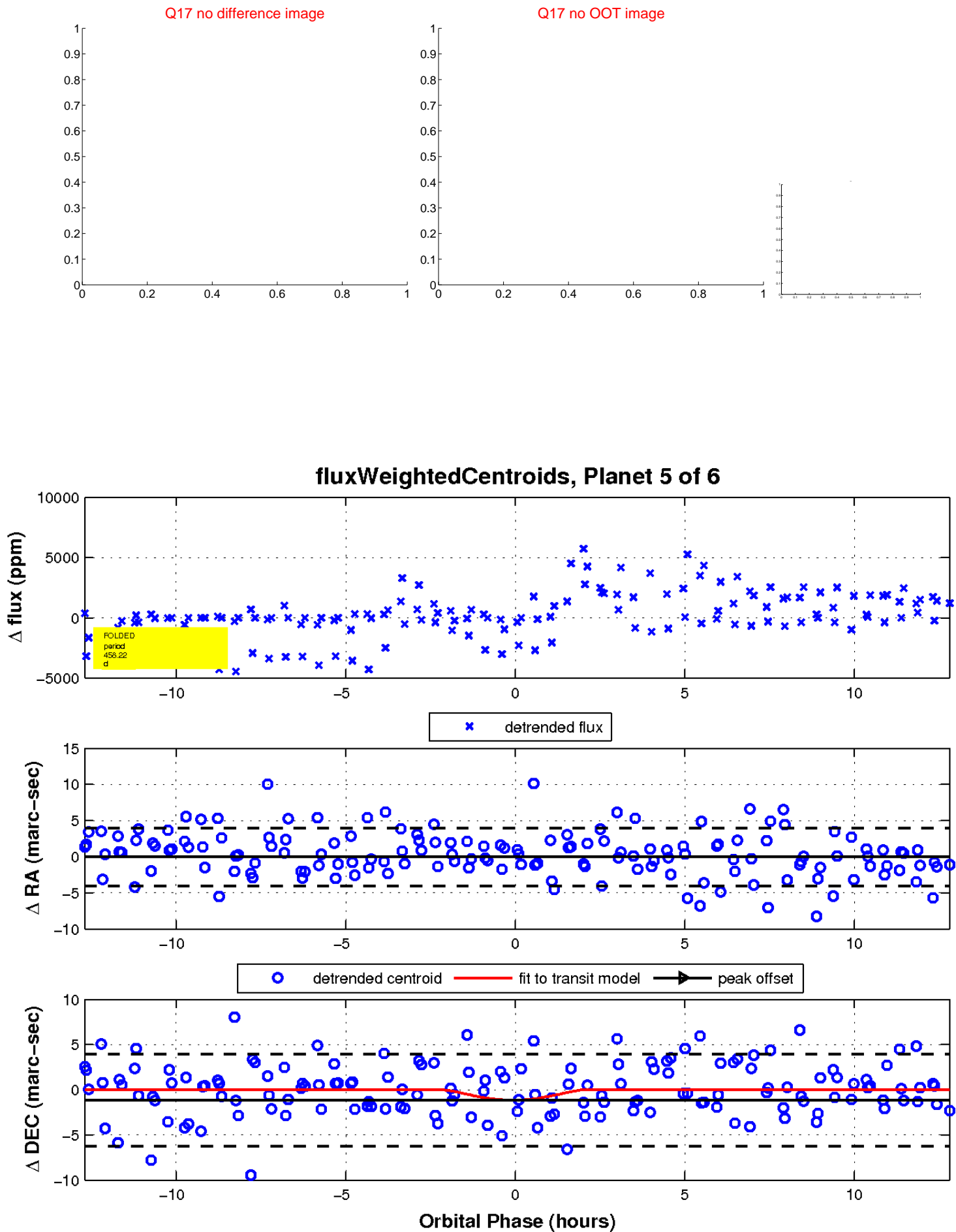
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

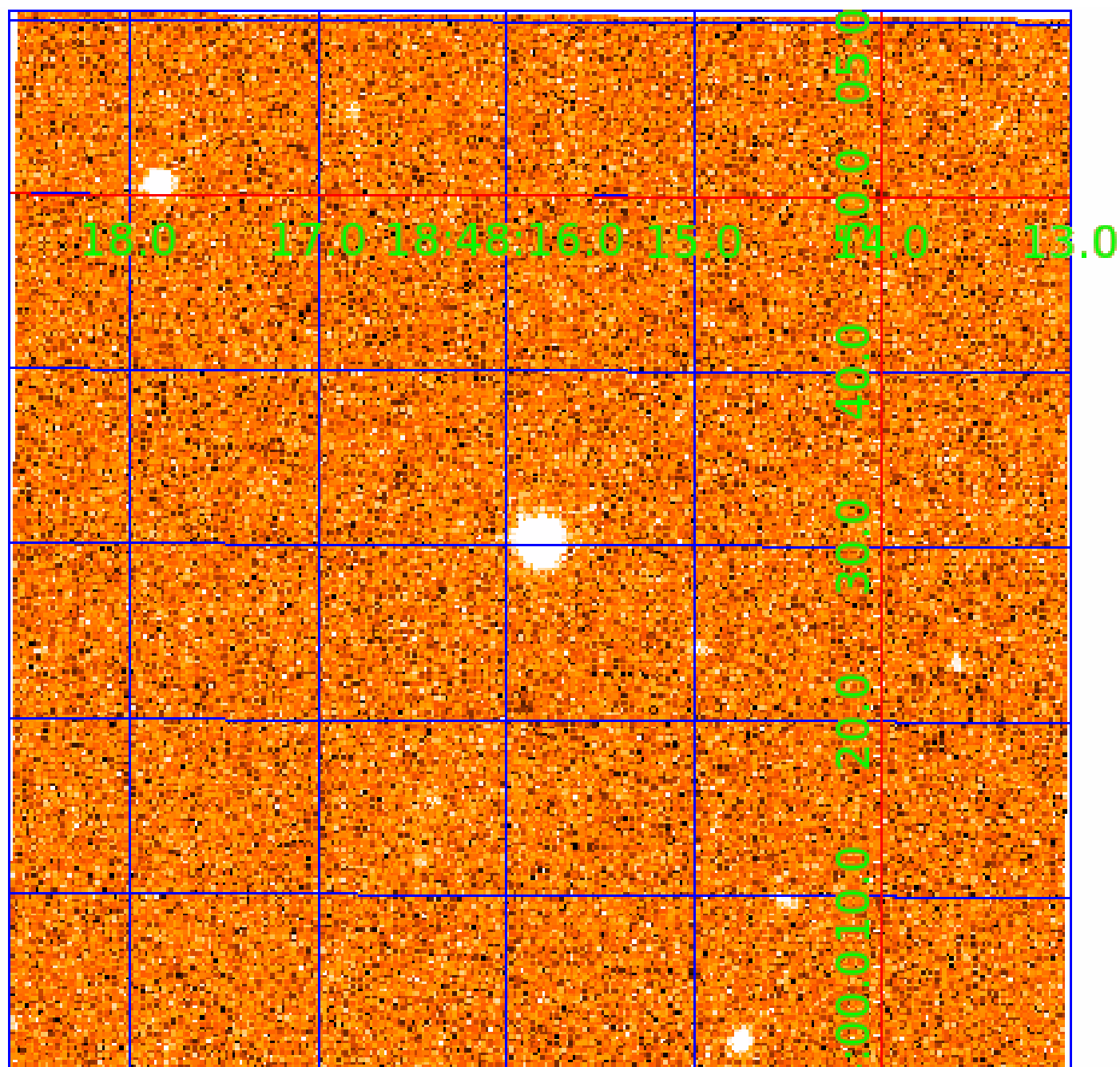


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008144647

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})
008144647-01	OBS	No	141.742915	152.627238	858.5	2.562	16.1	5.9	0.70	5238	2.25	1.38
008144647-02	OBS	No	467.210921	586.628217	3085.9	4.875	13.4	11.1	0.70	5238	3.80	0.28
008144647-03	OBS	No	523.337935	457.467851	1003.0	5.185	14.5	3.5	0.70	5238	2.18	0.24
008144647-05	OBS	No	458.218807	220.456725	2784.5	4.275	13.7	8.7	0.70	5238	6.10	0.29
008144647-06	OBS	No	430.153683	527.332890	1628.4	5.000	13.3	-1.0	0.70	5238	2.76	0.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008144647-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008144647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
008144647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
008144647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008144647-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

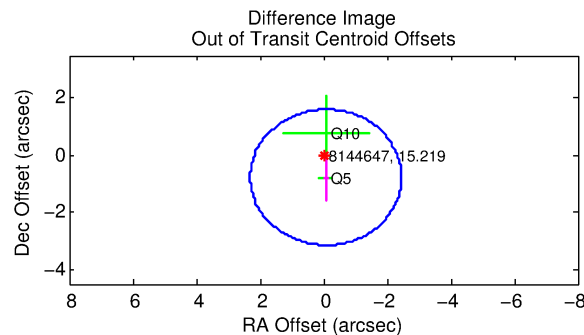
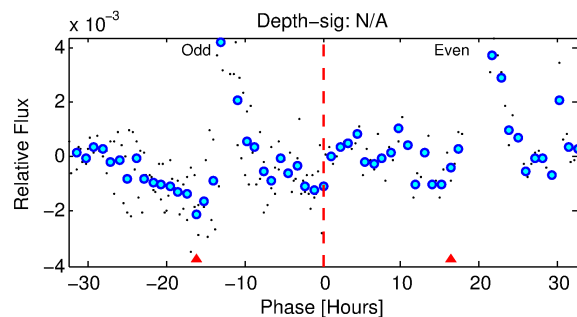
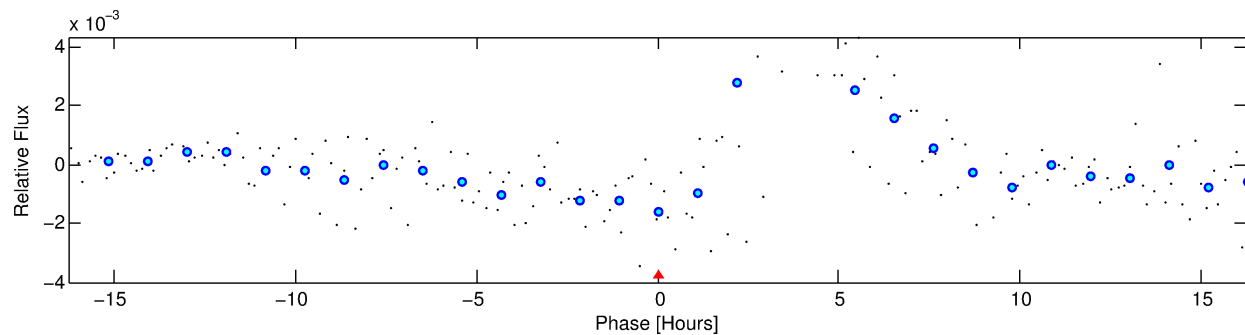
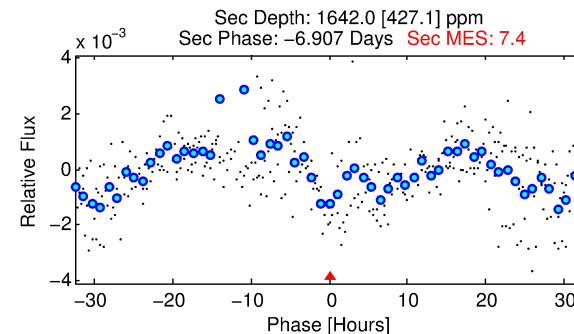
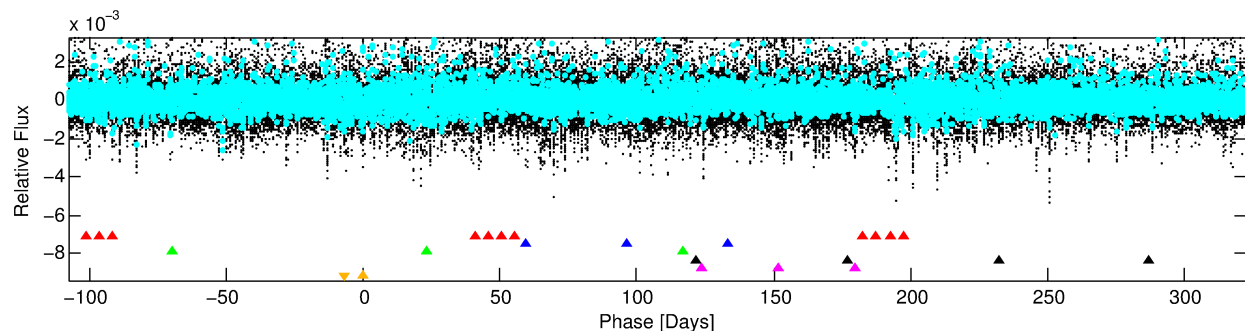
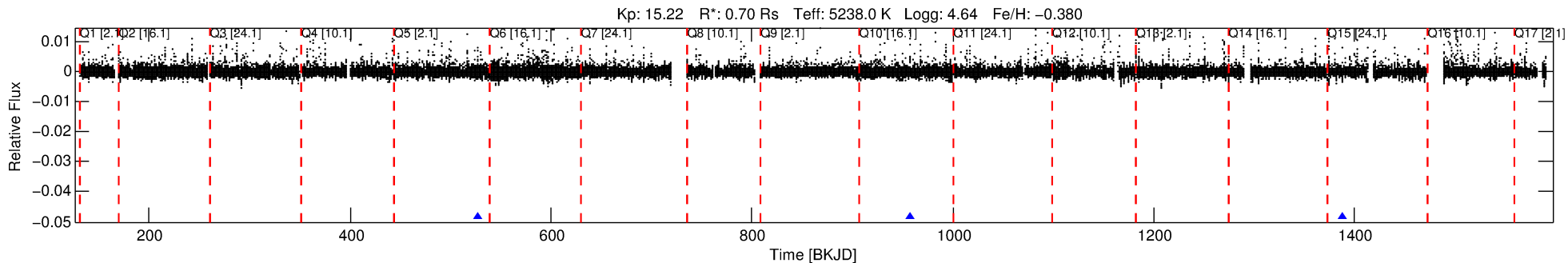
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008144647-06

No Significant Match Found

DV One-Page Summary

KIC: 8144647 Candidate: 6 of 6 Period: 430.154 d



TPS TCE Results:

Period = 430.15368 d
Epoch = 527.3329 BKJD

DV fit results are unavailable

DV Diagnostic Results:

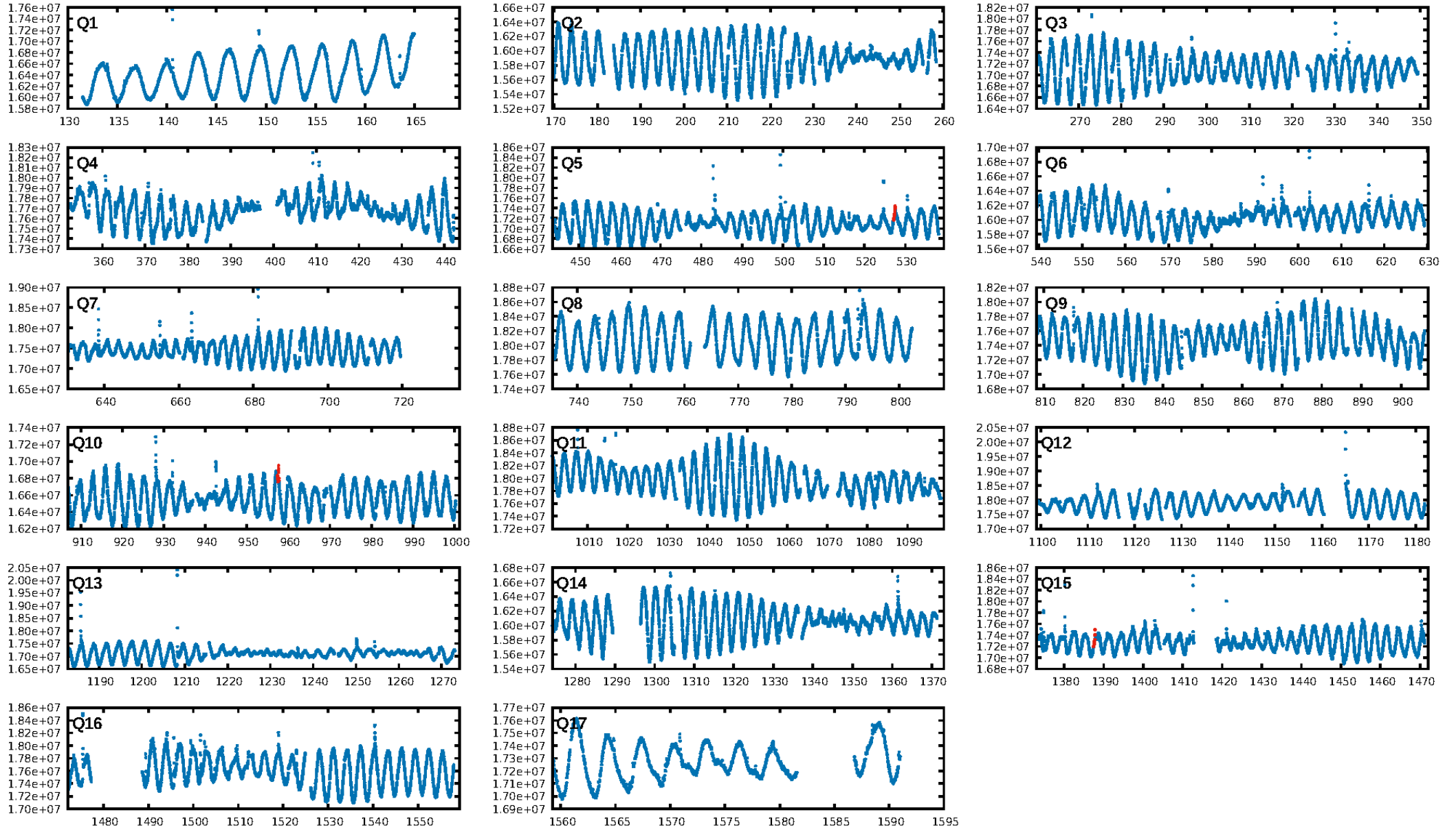
ShortPeriod-sig: 100.0% [153.57 σ]
LongPeriod-sig: 100.0% [102.39 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.681

Centroid-sig: 26.4%
Centroid-so: 0.544 arcsec [1.41 σ]
OotOffset-rm: 0.766 arcsec [0.97 σ]
KicOffset-rm: 0.619 arcsec [0.94 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

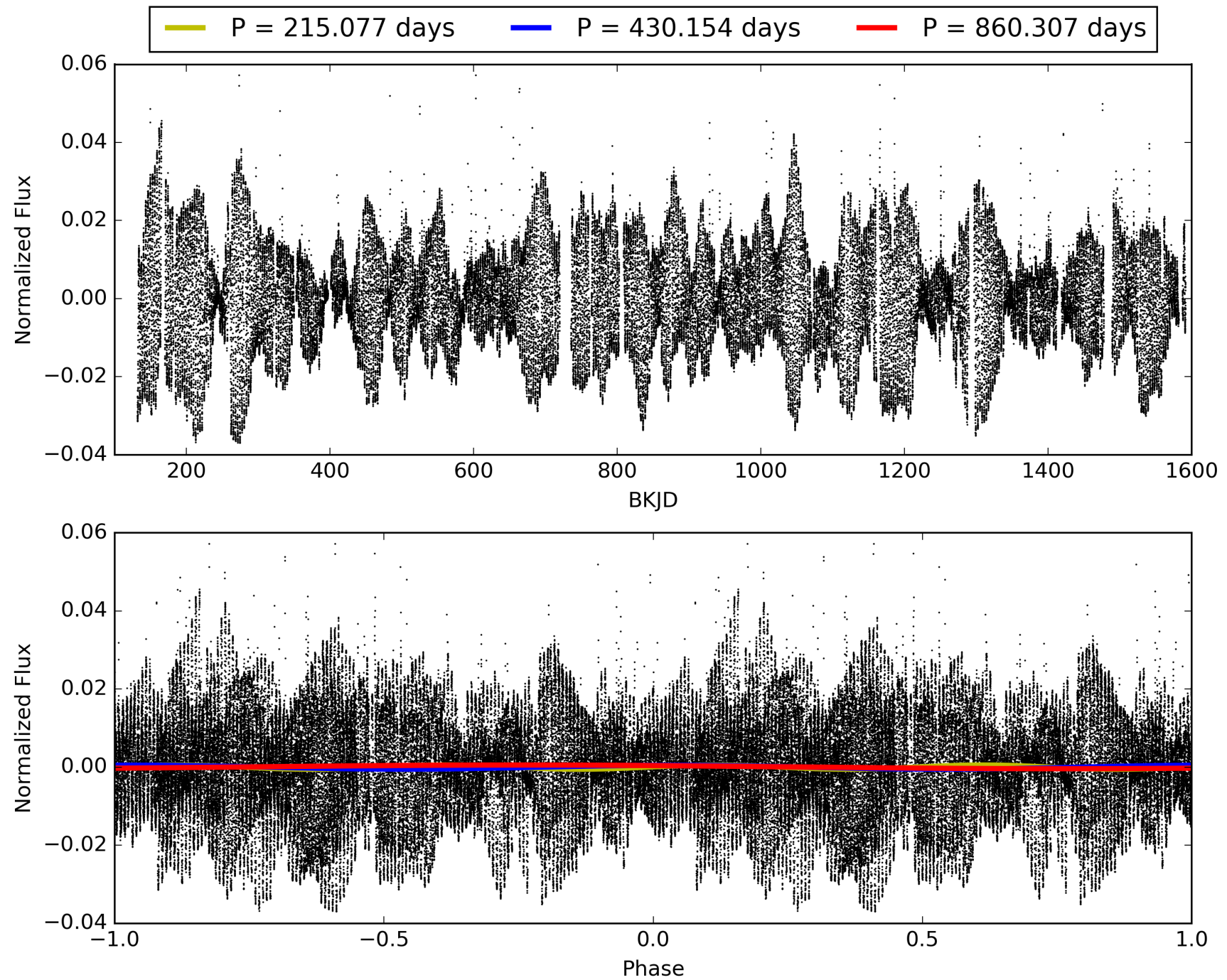
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:32:39 Z

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

TCE 008144647-06, PDC Light Curves

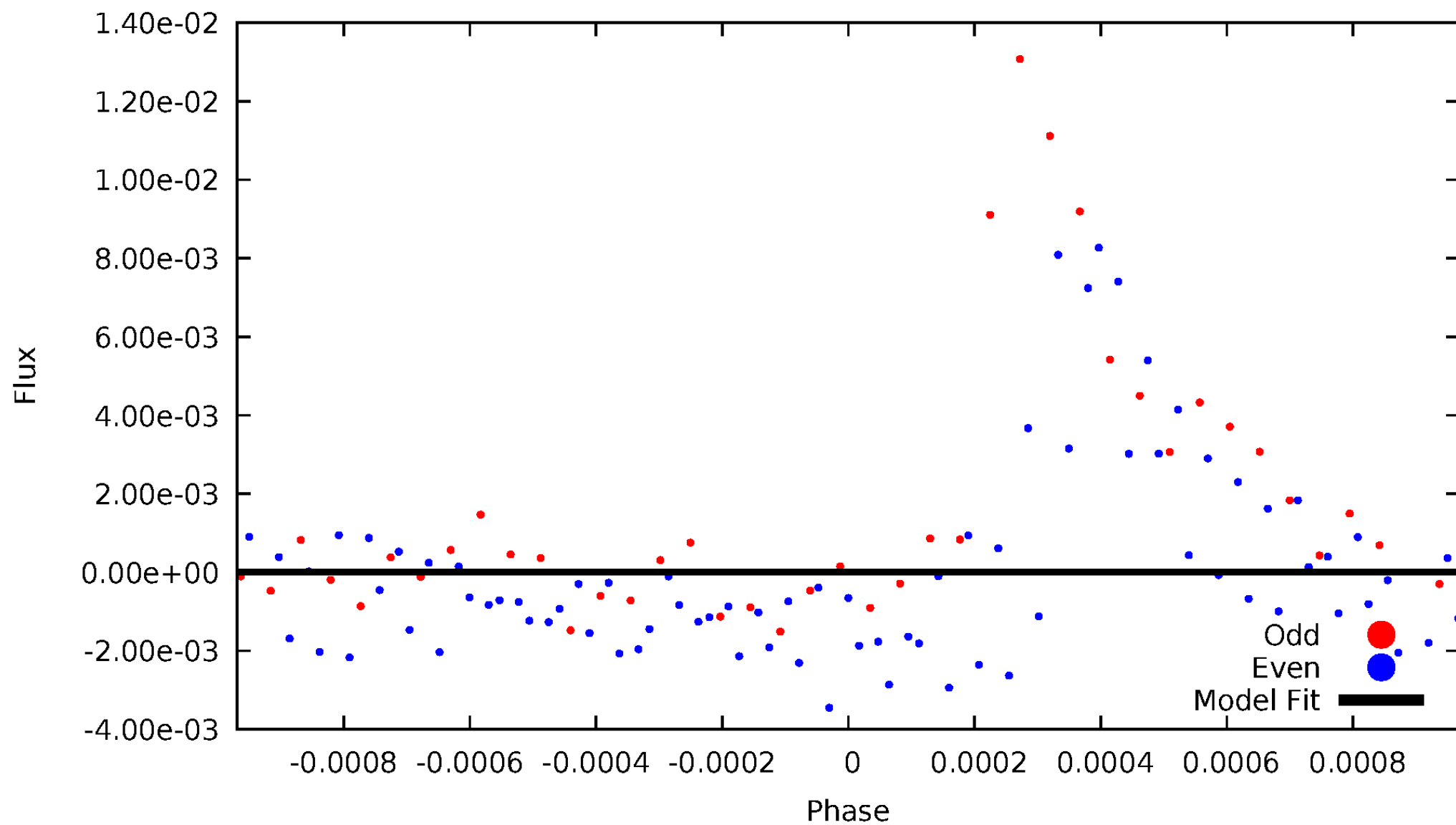


TCE 008144647-06



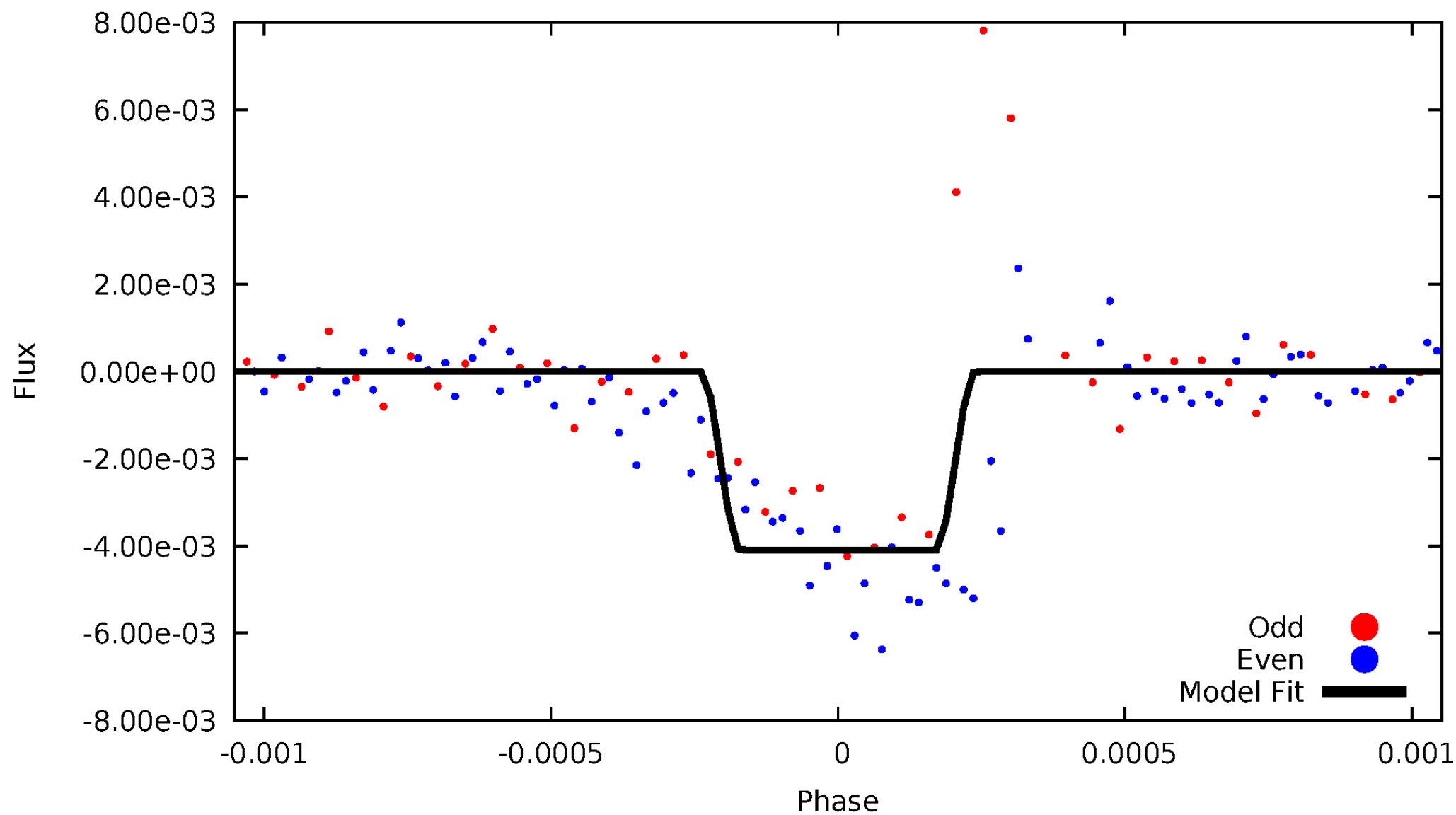
DV Odd/Even

TCE 008144647-06



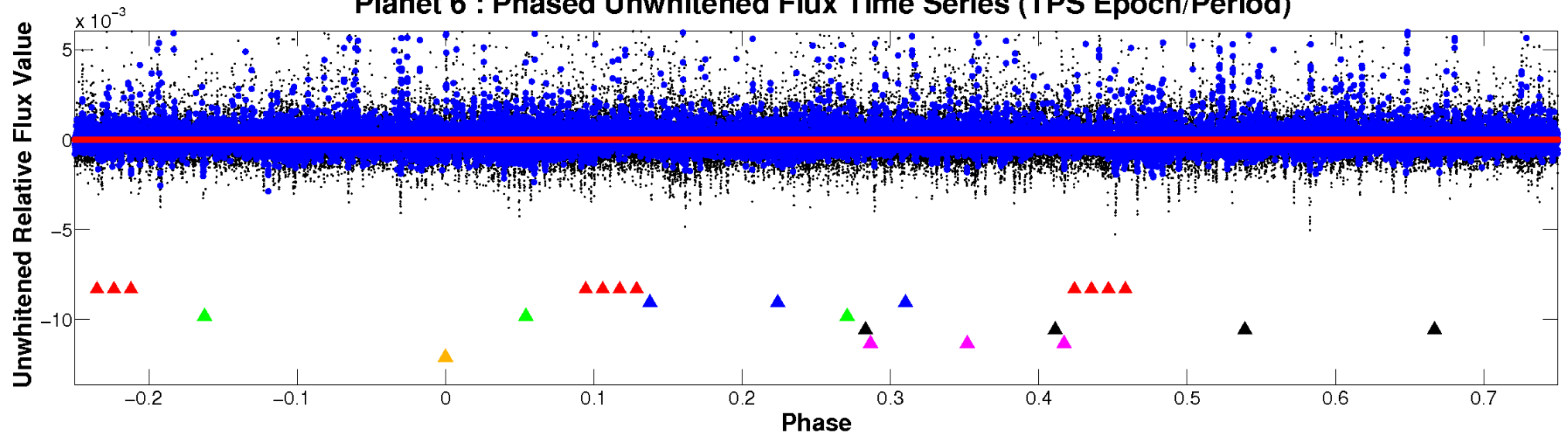
ALT Odd/Even

TCE 008144647-06



Non-Whitened Vs. Whitened Light Curve

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

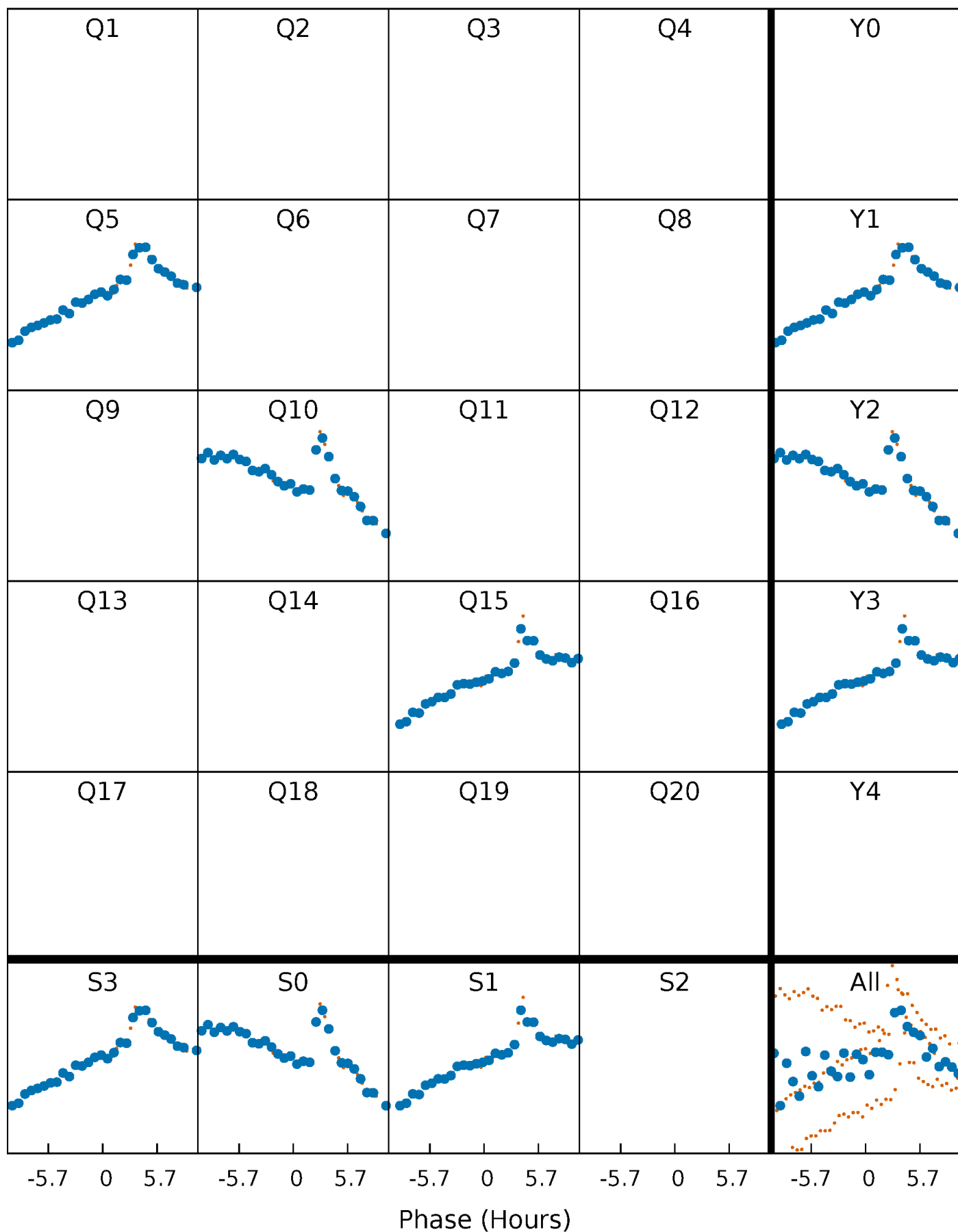


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



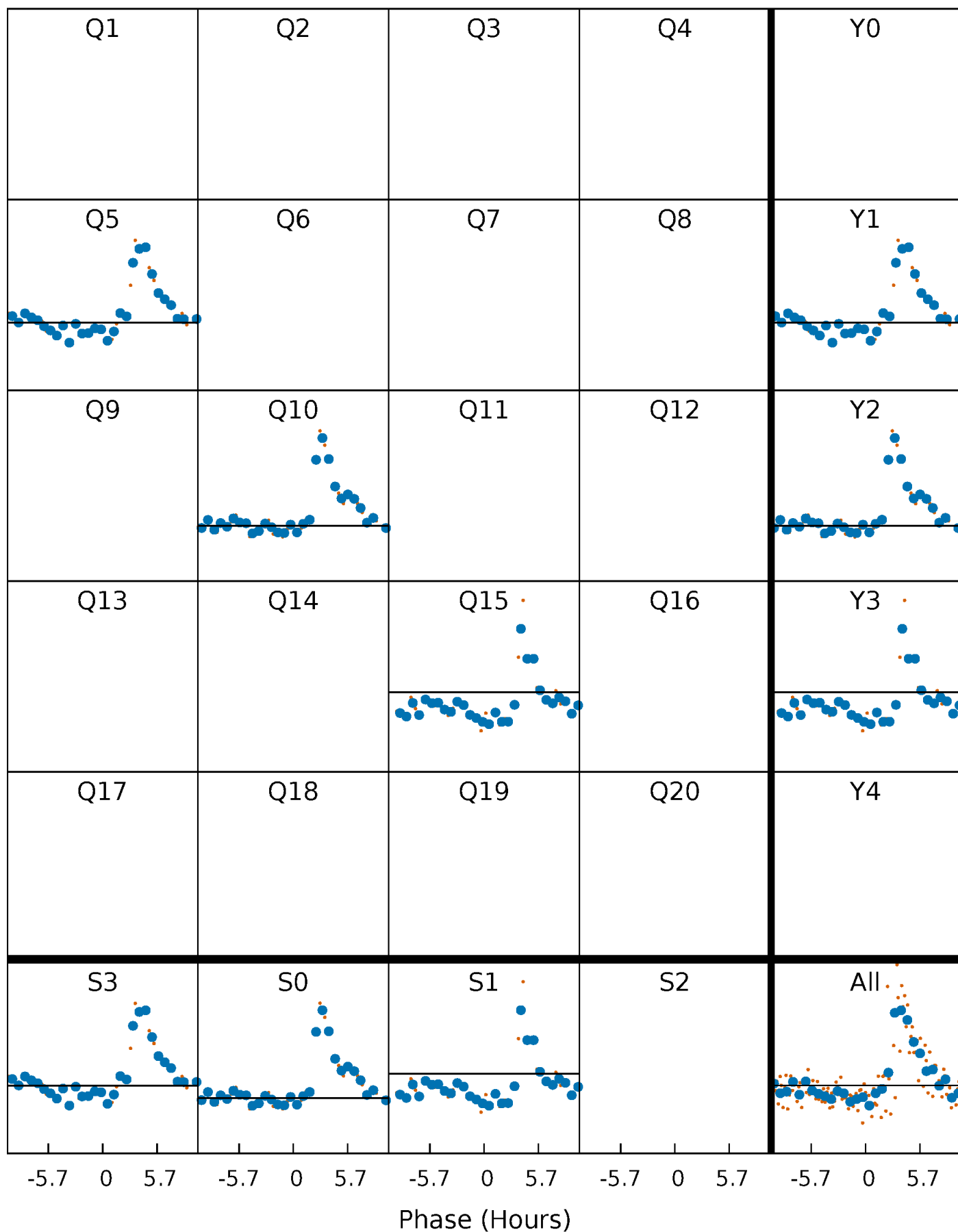
PDC Quarter-Phased Transit Curves

TCE 008144647-06 P=430.153683 Days $T_0=527.332890$ (BKJD)



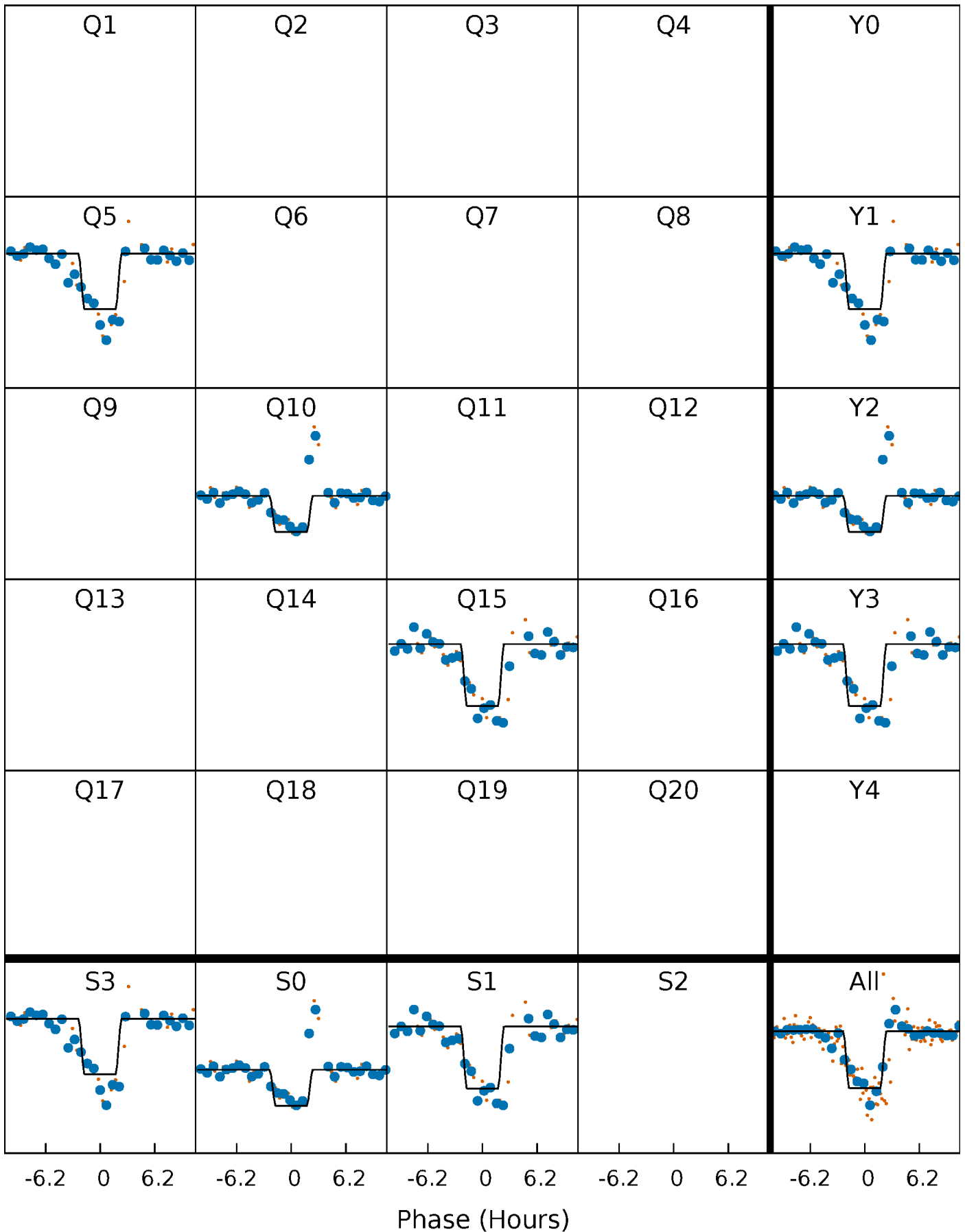
DV Quarter-Phased Transit Curves

TCE 008144647-06 P=430.153683 Days $T_0=527.332890$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

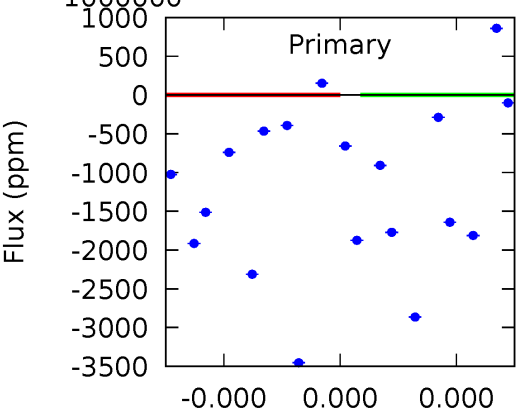
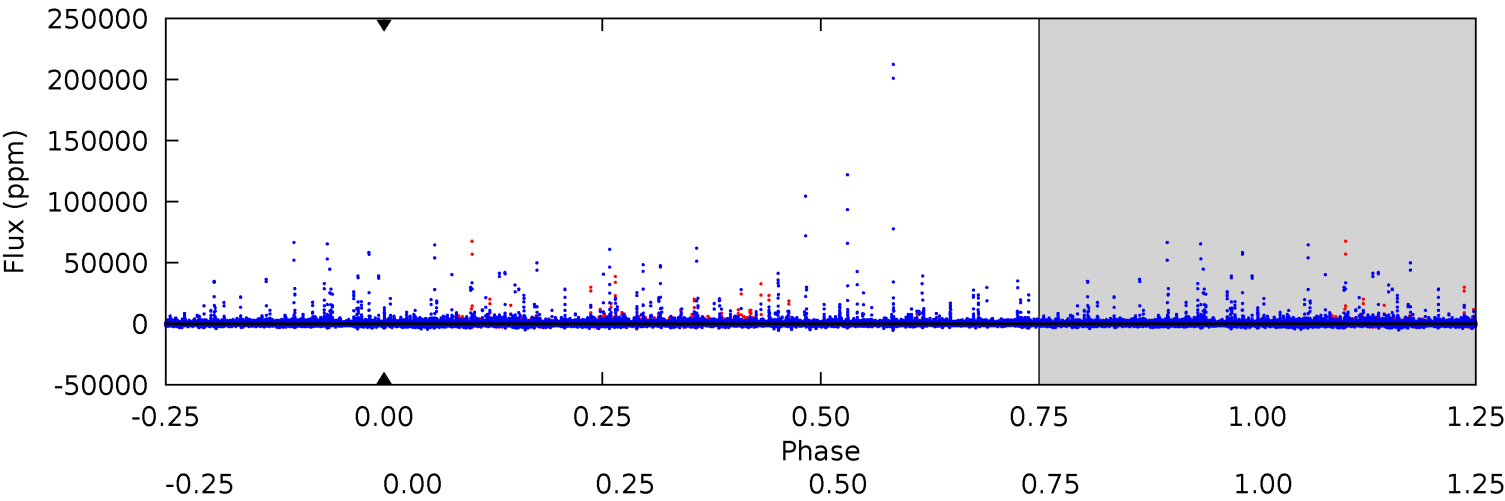
TCE 008144647-06 P=430.153683 Days $T_0=527.340943$ (BKJD)



DV Model-Shift Uniqueness Test

008144647-06, P = 430.153683 Days, E = 97.179207 Days

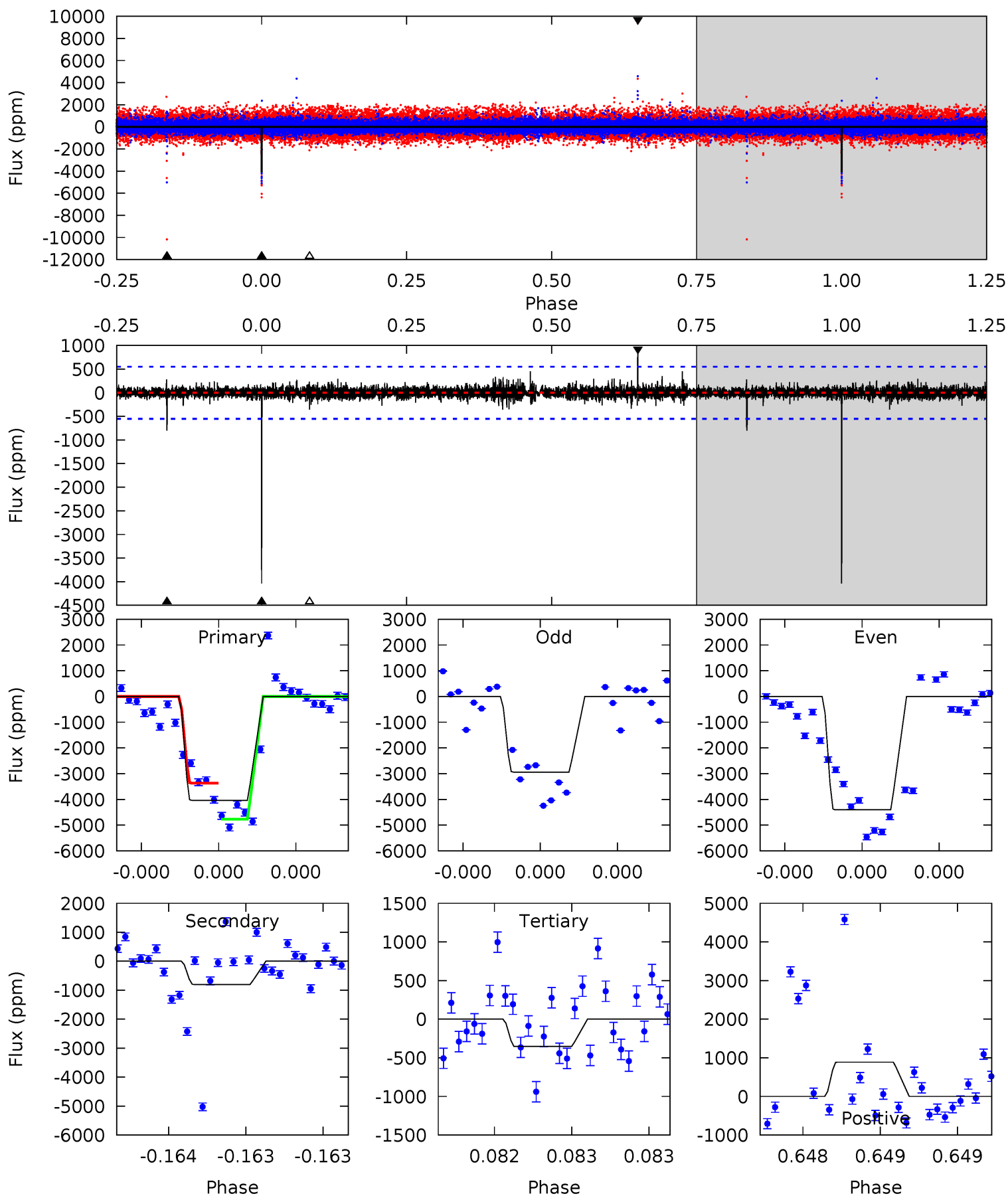
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008144647-06, P = 430.153683 Days, E = 97.187260 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.9	8.12	3.58	9.01	5.59	3.50	0.69	37.3	31.9	4.53	-0.89	7.42	0.95	0.18	7.11



Stellar Parameters For KIC 008144647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5238^{+157}_{-141}	$4.637^{+0.030}_{-0.090}$	$-0.380^{+0.300}_{-0.300}$	$0.698^{+0.103}_{-0.055}$	$0.777^{+0.068}_{-0.083}$	$3.221^{+0.501}_{-0.922}$
	+3%/-3%	+1%/-2%	+79%/-79%	+15%/-8%	+9%/-11%	+16%/-29%
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 008144647-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$6.56^{+6.00}_{-4.45}$	271^{+11}_{-10}	-3734^{+18728}_{-9519}	$-14538.795^{+2464219.735}_{-1823825.097}$
Alt.	-801 ± 99	$7.61^{+6.48}_{-5.14}$	270^{+11}_{-9}	3330^{+1637}_{-541}	8034^{+66691}_{-5853}

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 $A_{obs} \gg 1.0$

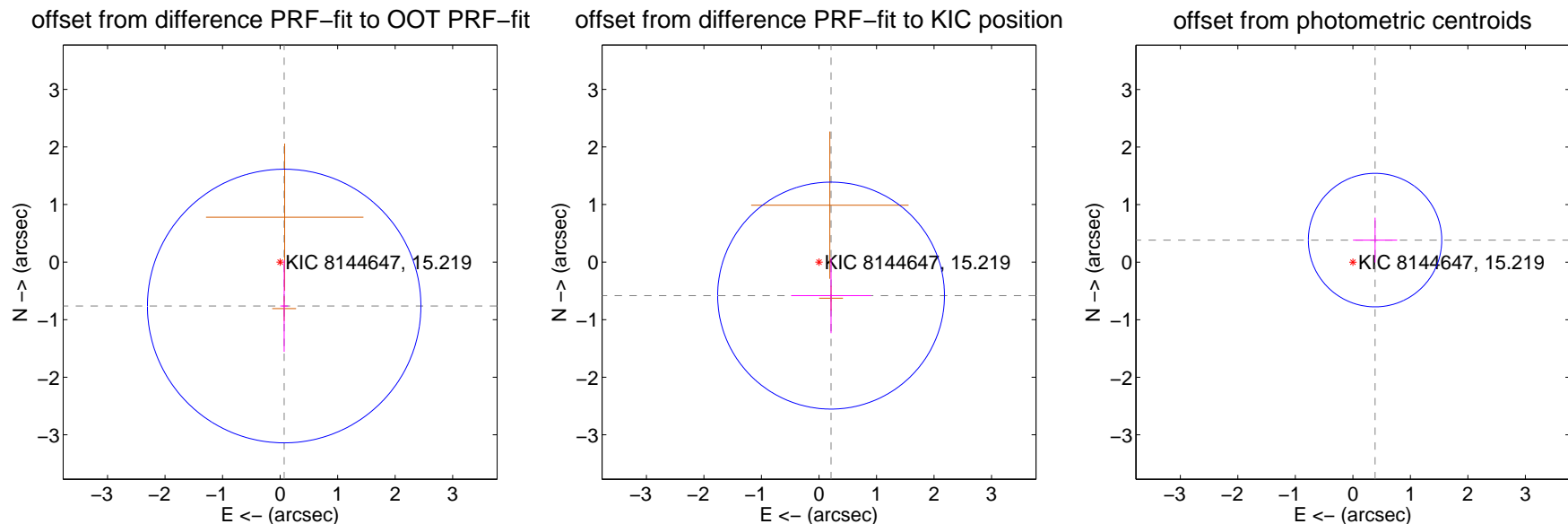
DV Centroid Data

Supplemental centroid analysis for 008144647-06. Kepler magnitude: 15.22. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.766 ± 0.792	0.97	-0.071 ± 0.067	-0.763 ± 0.796
PRF-fit source offset from KIC position	0.619 ± 0.657	0.94	-0.210 ± 0.695	-0.582 ± 0.652
photometric centroid source offset	0.54 ± 0.39	1.41	-0.39 ± 0.38	0.38 ± 0.39

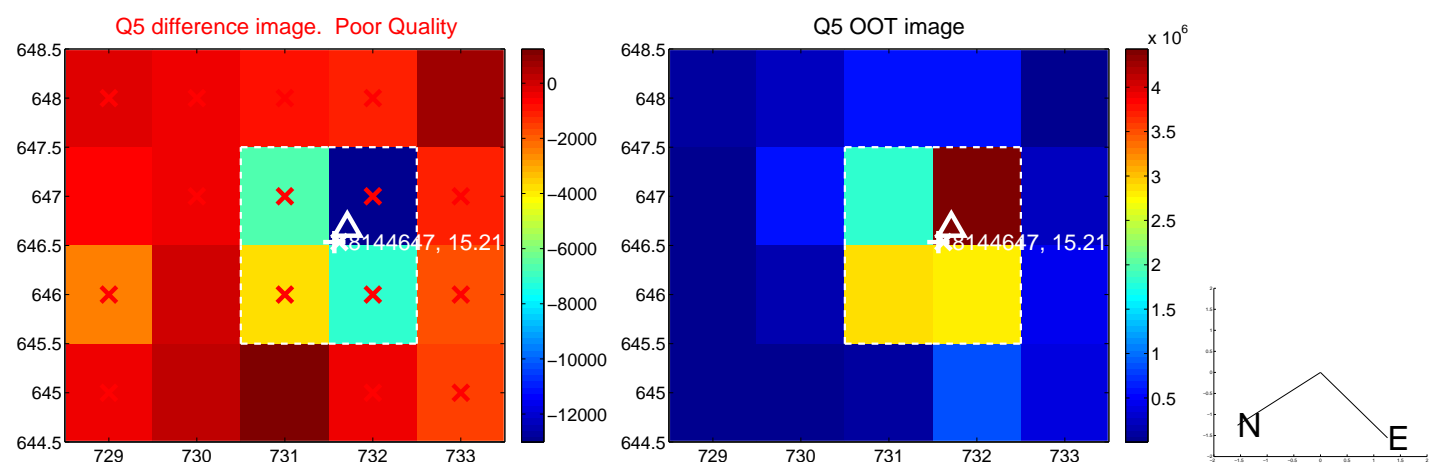


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

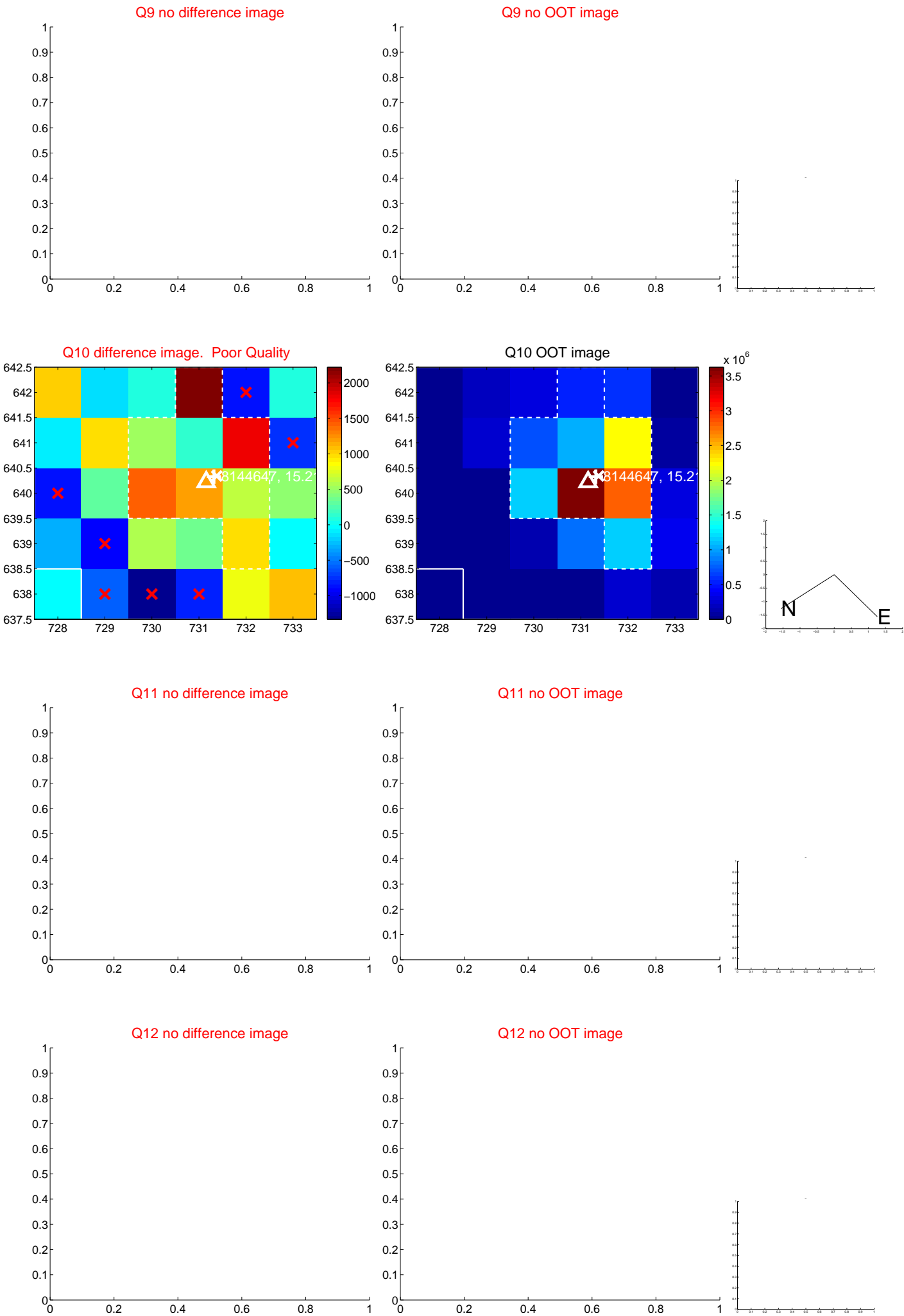
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



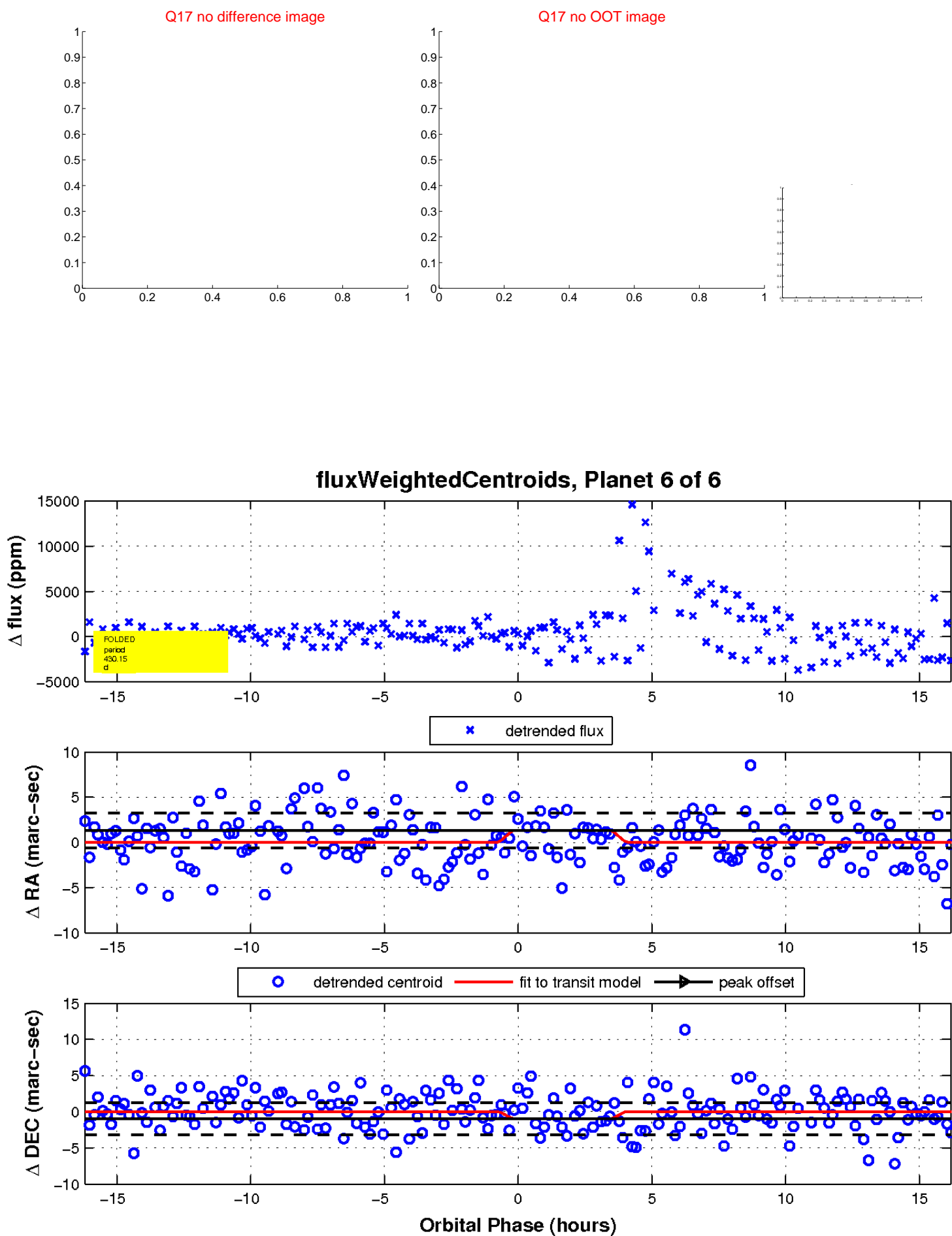
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

