

KIC 002285548

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})
002285548-01	OBS	No	488.807517	515.927557	833.3	2.103	16.3	5.4	2.04	4813	6.45	1.40
002285548-02	OBS	No	503.599675	453.442299	1331.0	3.271	16.5	7.7	2.04	4813	7.73	1.35
002285548-03	OBS	No	419.866332	136.907219	744.1	4.035	11.4	4.9	2.04	4813	6.17	1.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002285548-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002285548-02	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002285548-03	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

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

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

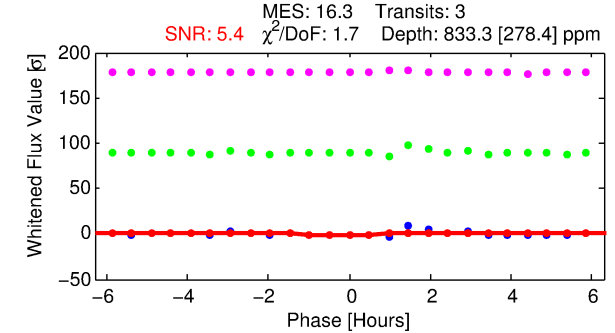
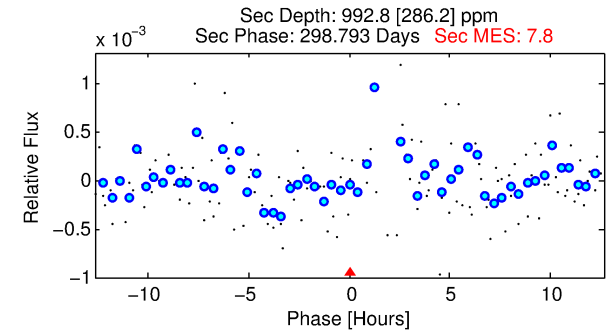
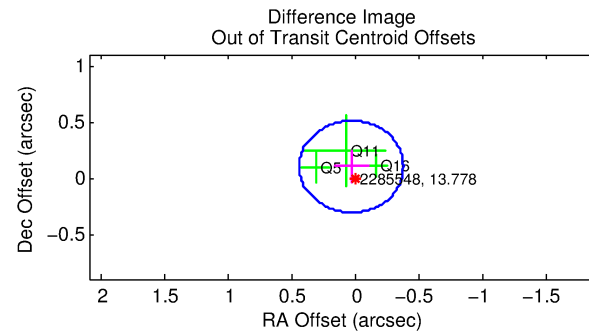
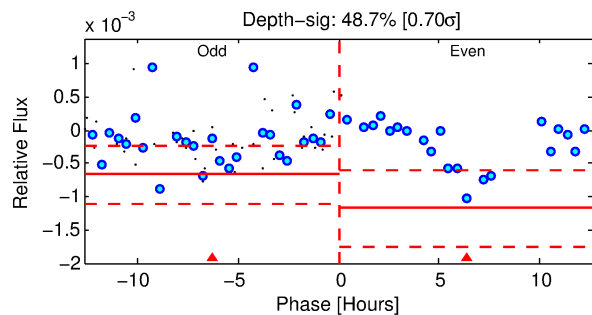
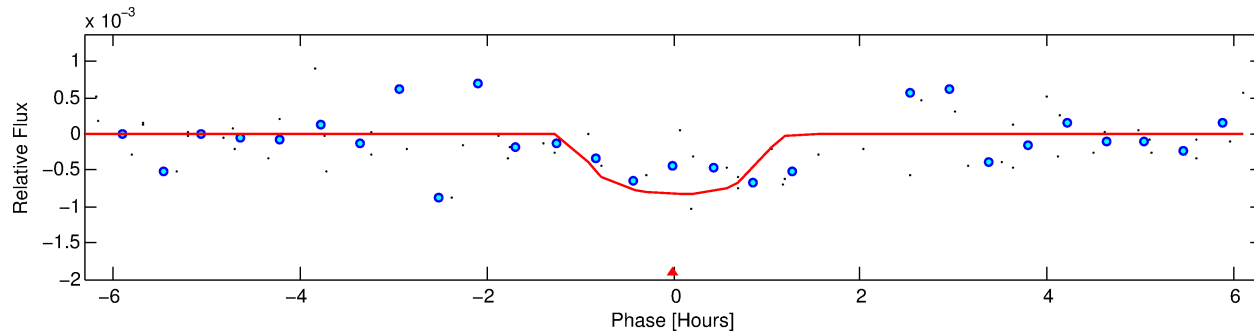
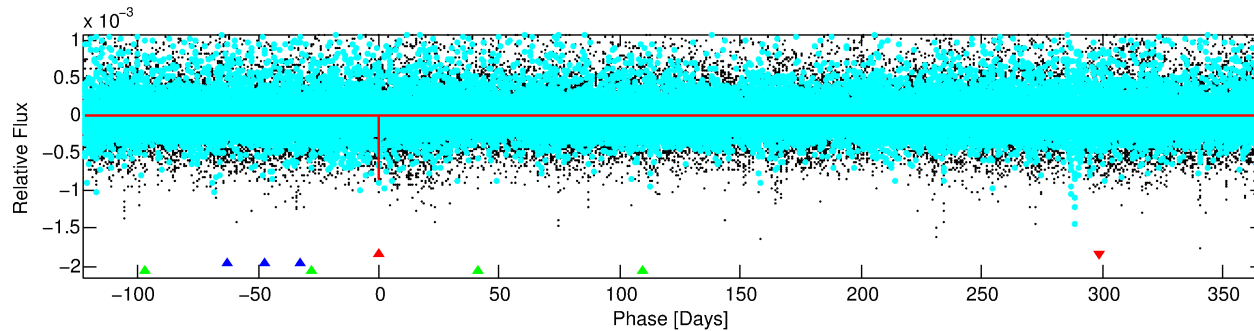
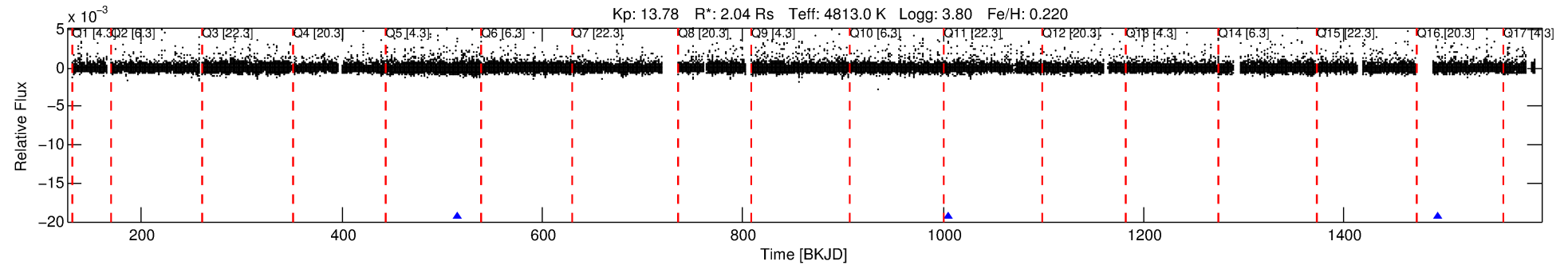
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002285548-01

No Significant Match Found

DV One-Page Summary

KIC: 2285548 Candidate: 1 of 3 Period: 488.808 d



DV Fit Results:

Period = 488.80752 [0.01015] d
Epoch = 515.9276 [0.0128] BKJD
Rp/R* = 0.0290 [0.1002]
a/R* = 1246.65 [13943.94]
b = 0.75 [6.67]
Seff = 1.40 [1.80]
Teq = 277 [89] K
Rp = 6.45 [22.63] Re
a = 1.1938 [0.8740] AU
Ag = 18686.71 [131359.94] [0.14 σ]
Teffp = 5015 [8667] K [0.55 σ]

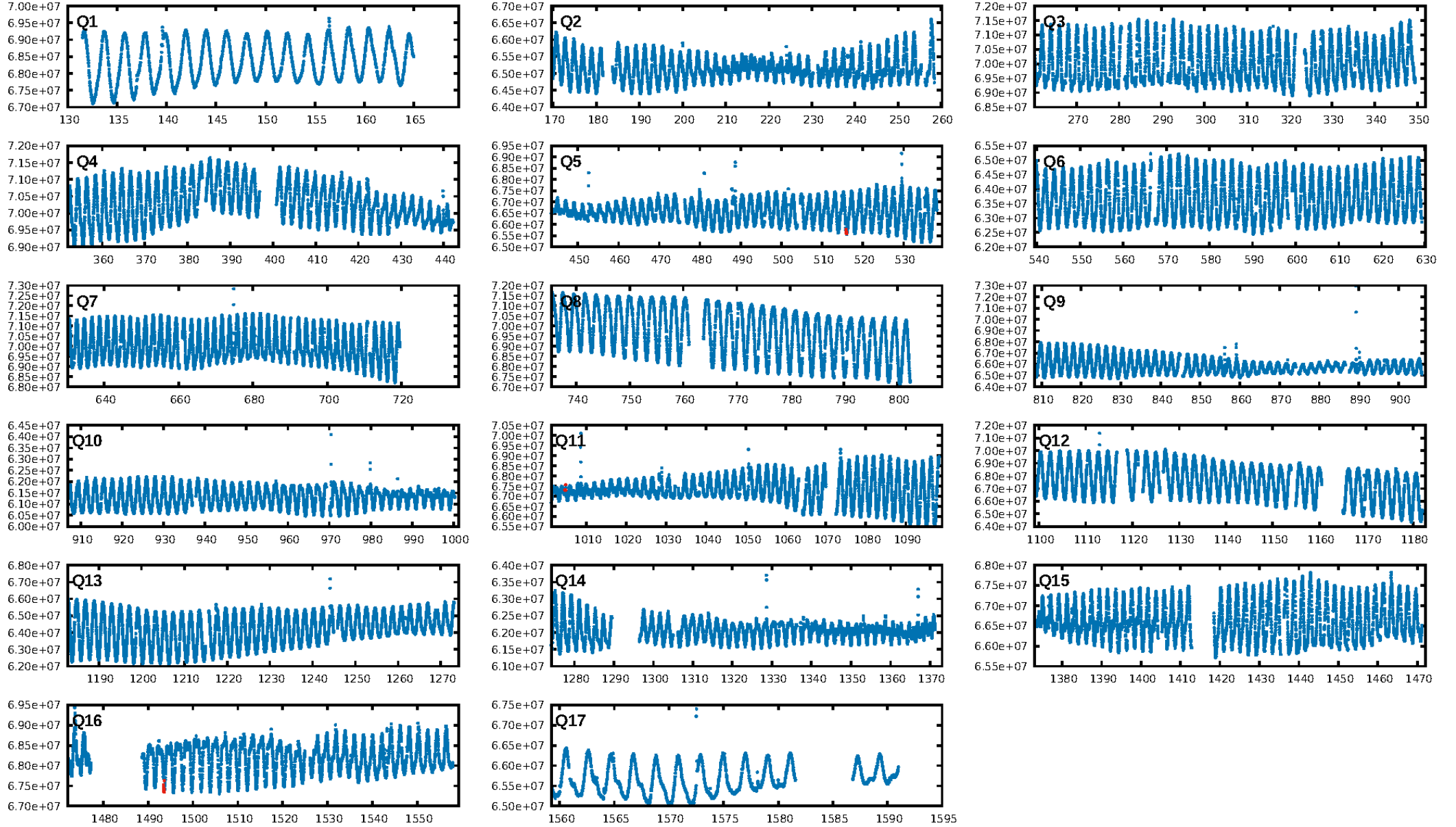
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [363.67 σ]
LongPeriod-sig: 100.0% [91.30 σ]
ModelChiSquare2-sig: 16.9%
ModelChiSquareGof-sig: 67.4%
Bootstrap-pfa: 9.01e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.534
Centroid-sig: 14.1%
Centroid-so: 1.546 arcsec [1.25 σ]
OotOffset-rm: 0.107 arcsec [0.78 σ]
KicOffset-rm: 0.138 arcsec [1.01 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

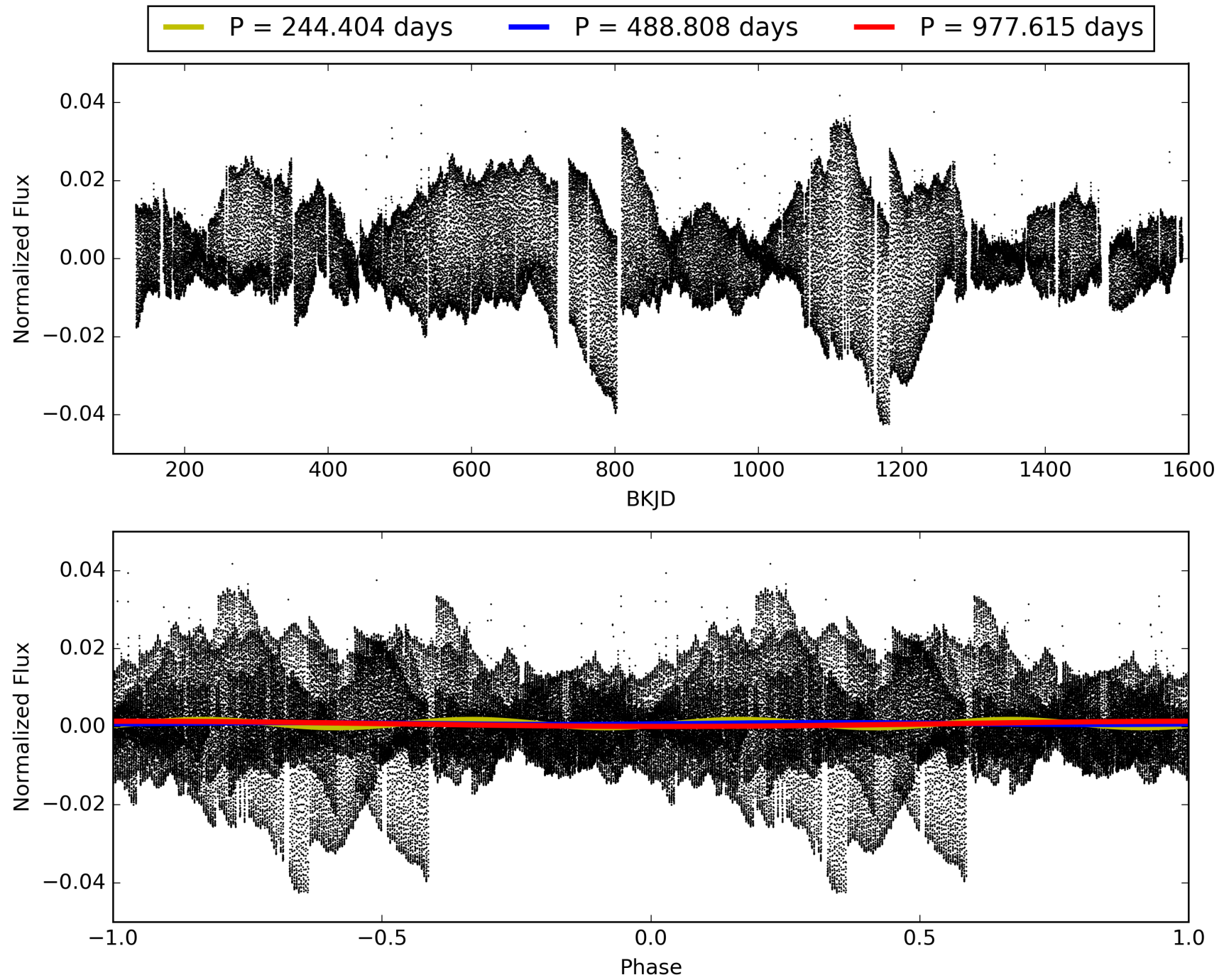
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:48:39 Z

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

TCE 002285548-01, PDC Light Curves

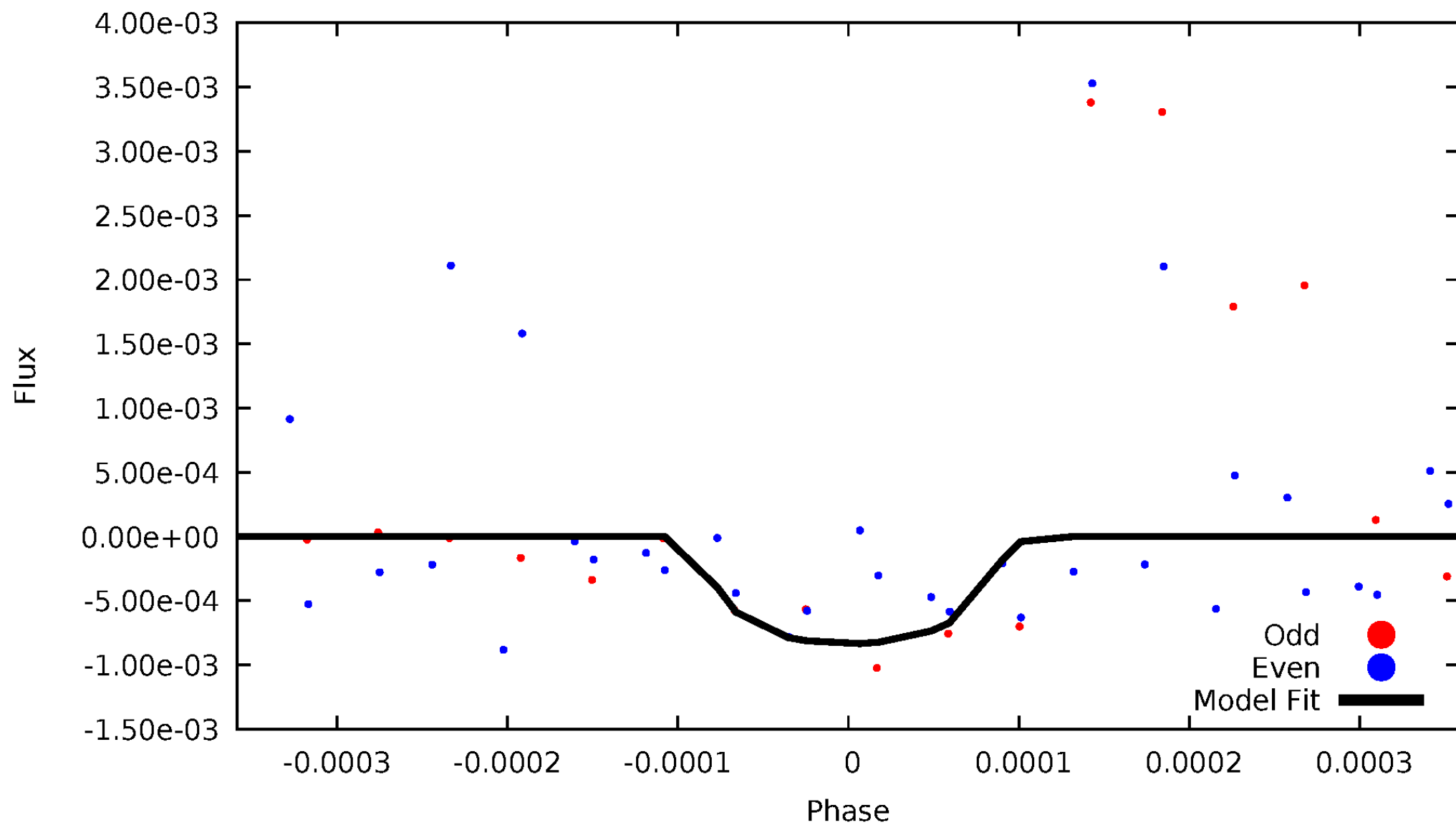


TCE 002285548-01



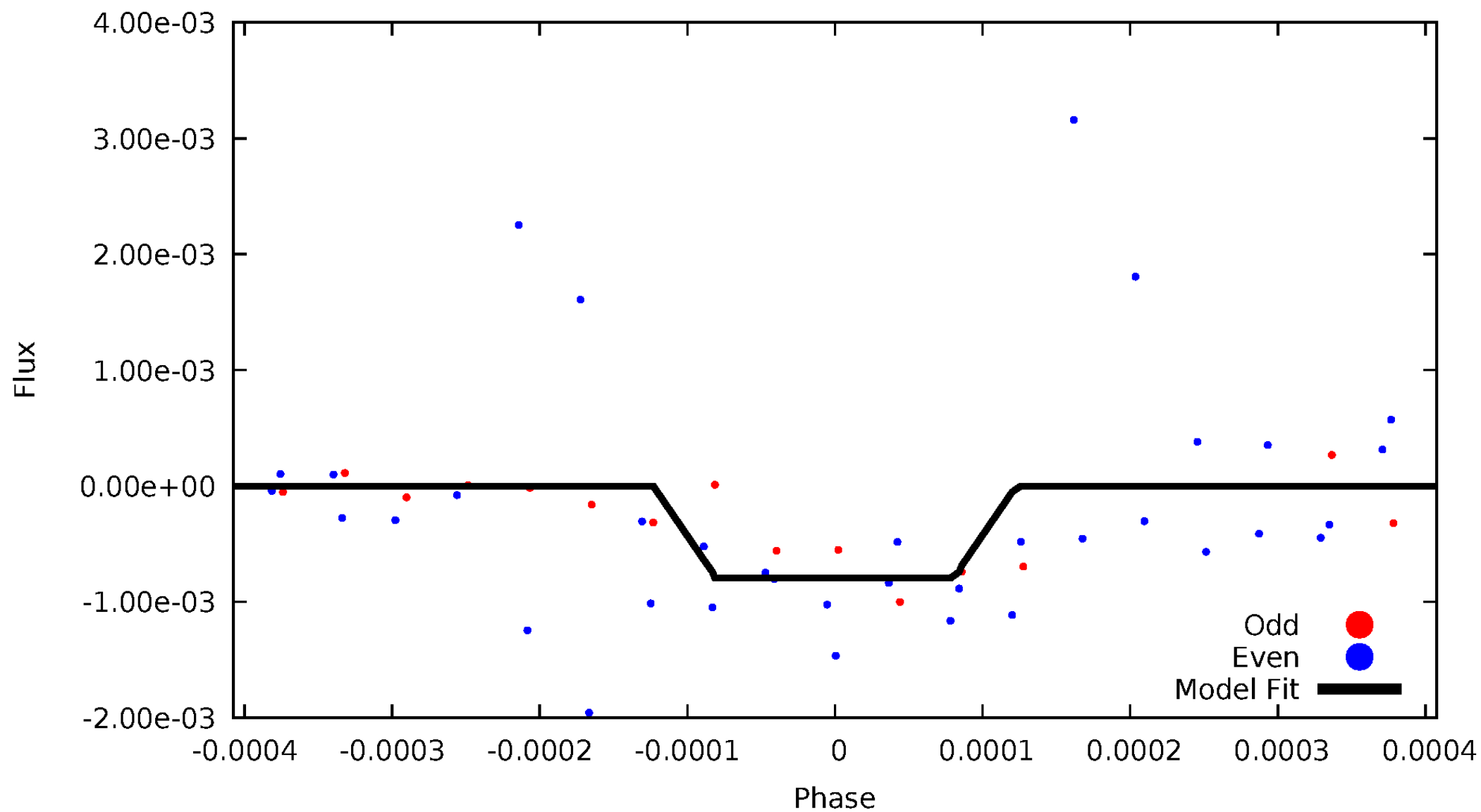
DV Odd/Even

TCE 002285548-01



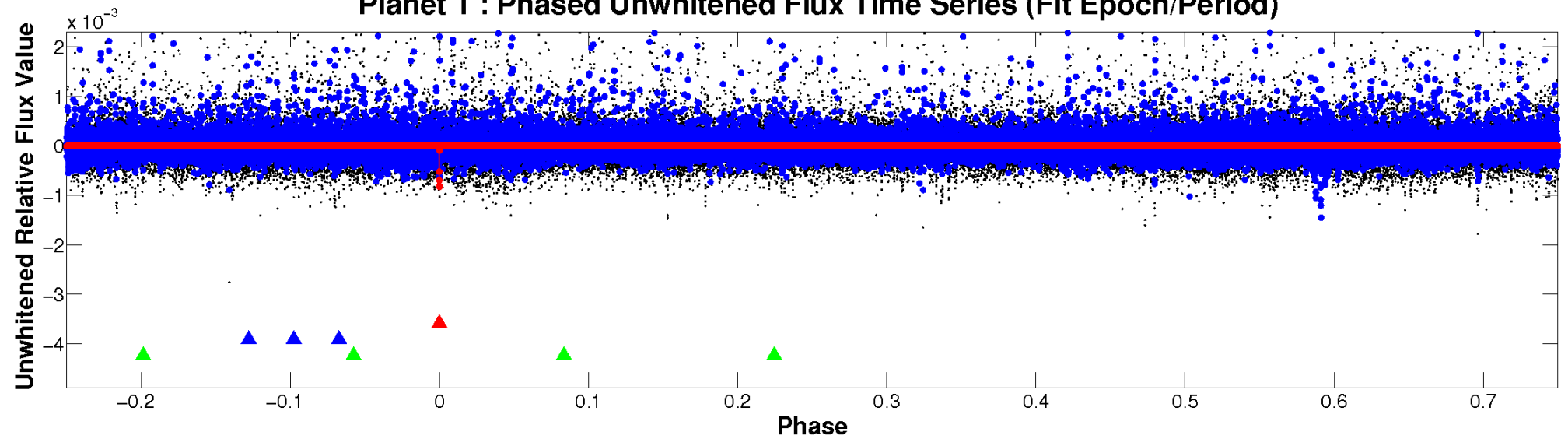
ALT Odd/Even

TCE 002285548-01

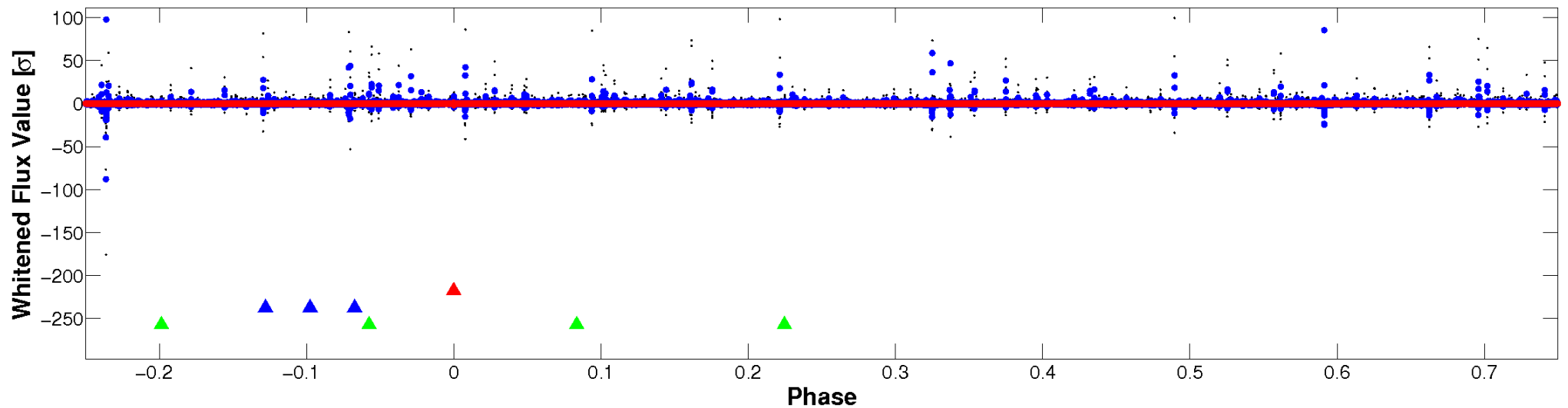


Non-Whitened Vs. Whitened Light Curve

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

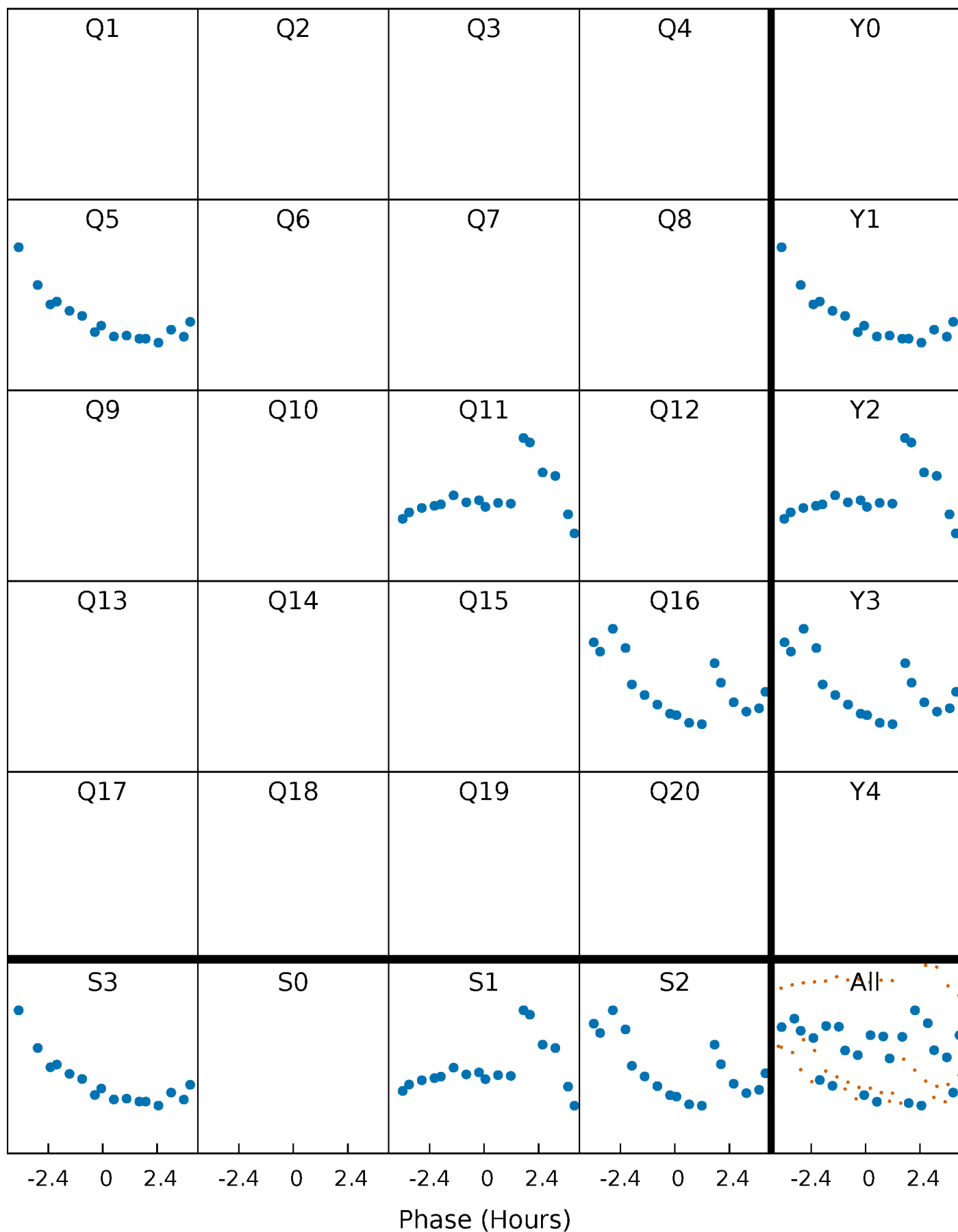


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 002285548-01 P=488.807517 Days $T_0=515.927557$ (BKJD)



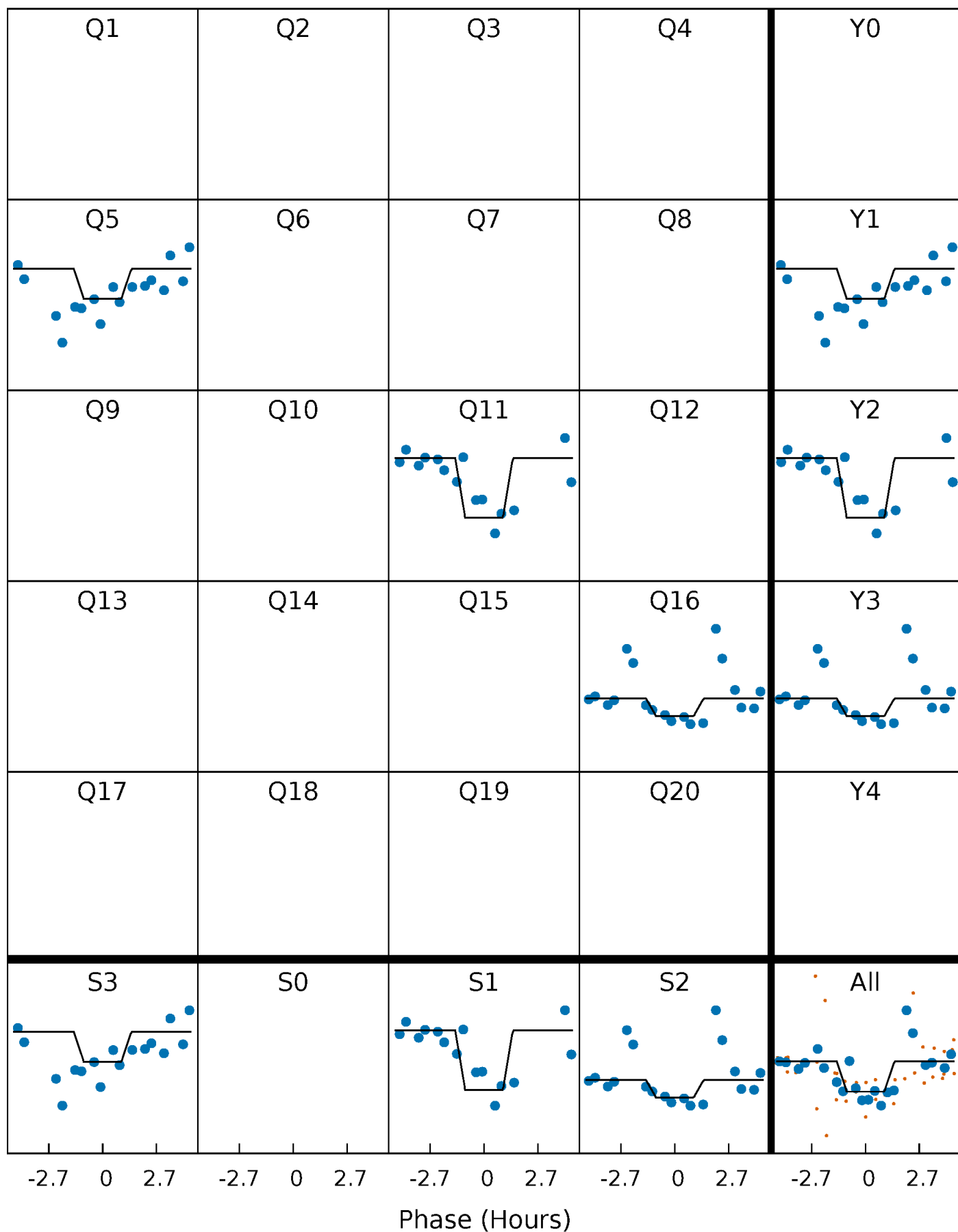
DV Quarter-Phased Transit Curves

TCE 002285548-01 P=488.807517 Days $T_0=515.927557$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

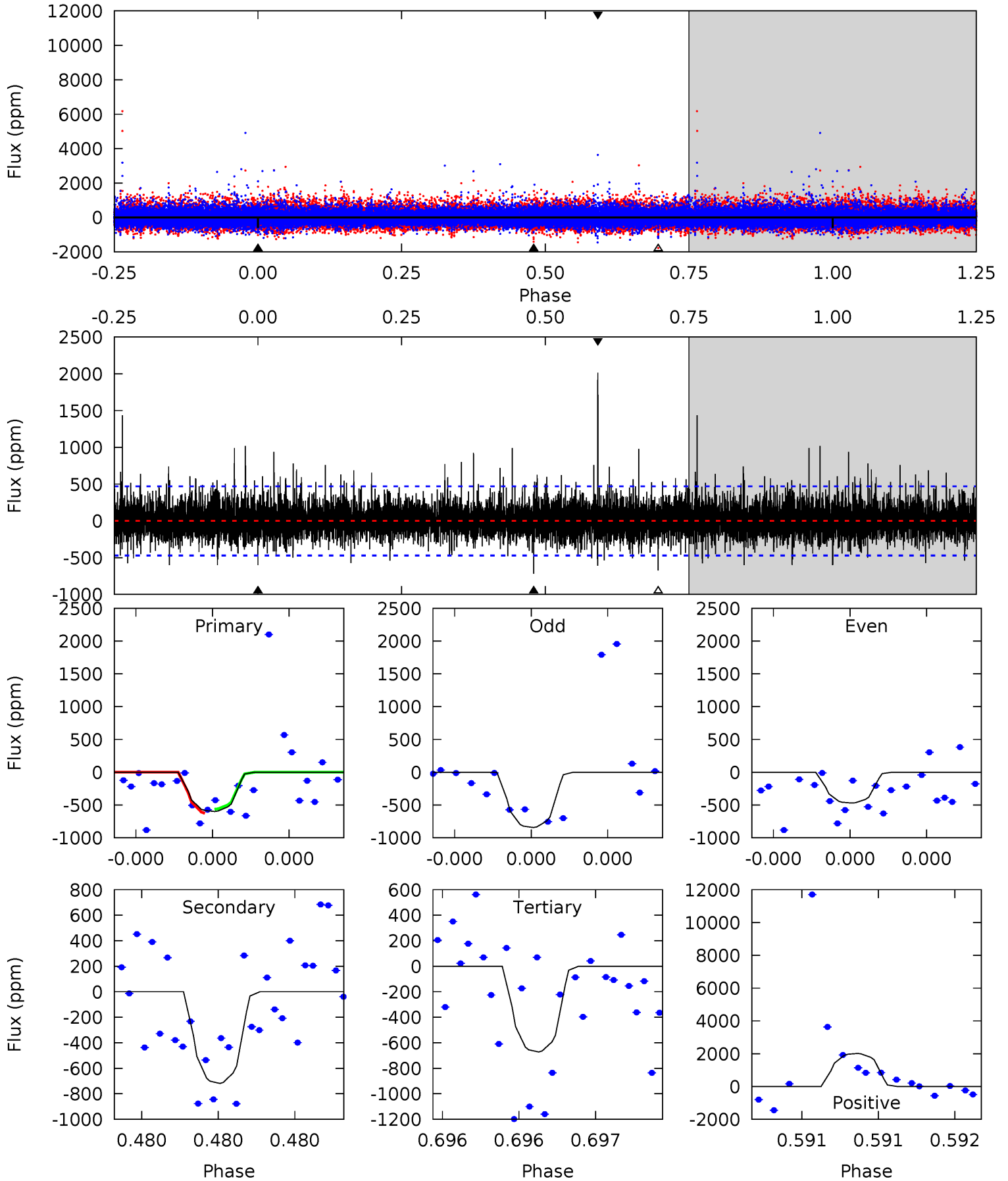
TCE 002285548-01 P=488.811622 Days $T_0=515.910146$ (BKJD)



DV Model-Shift Uniqueness Test

002285548-01, P = 488.807517 Days, E = 27.120040 Days

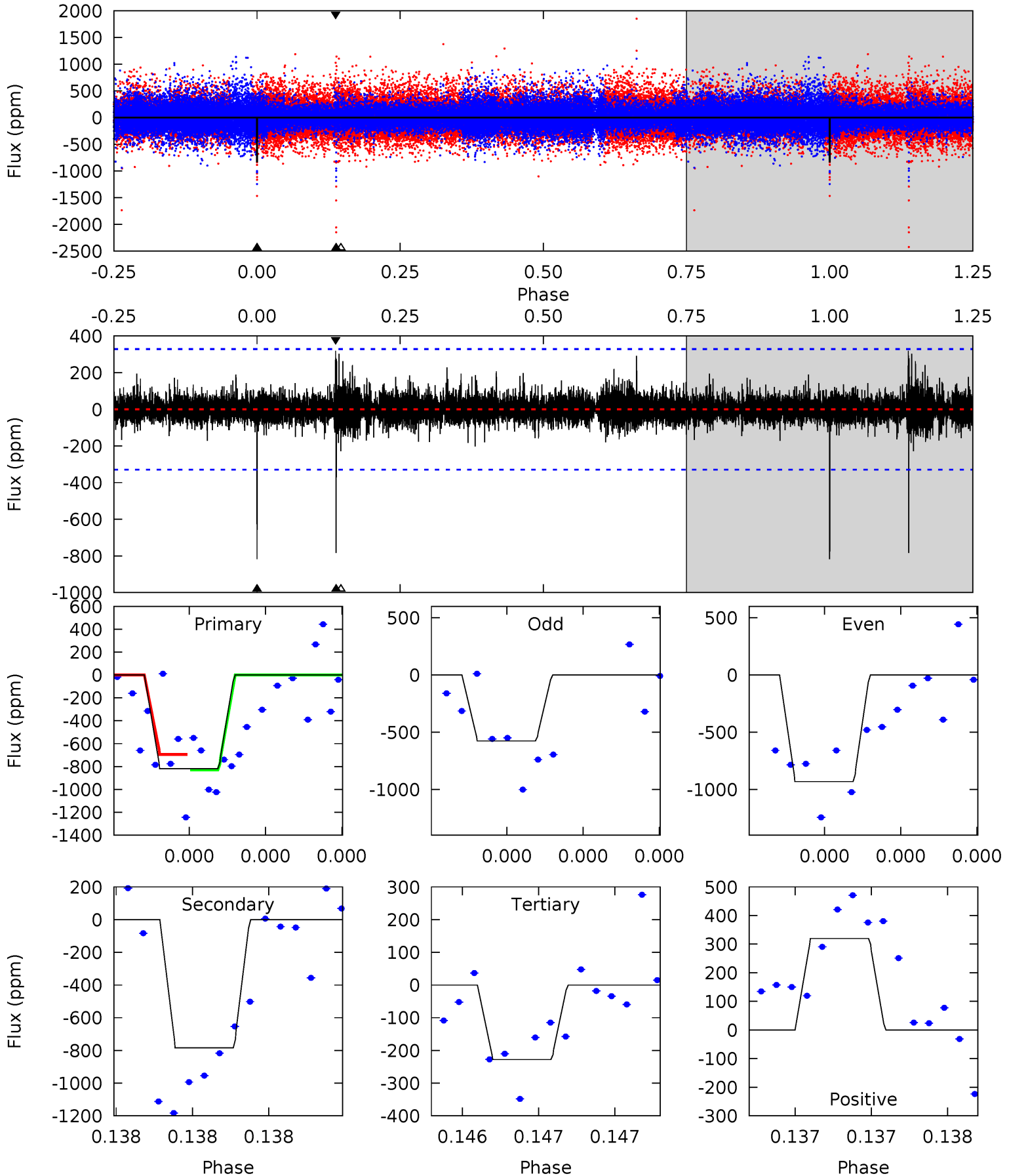
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.26	8.71	8.14	24.4	5.70	3.67	1.90	-0.88	-17.2	0.57	-15.7	0.97	1.10	0.74	0.37



Alt Model-Shift Uniqueness Test

002285548-01, P = 488.811622 Days, E = 27.098524 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	13.6	3.96	5.56	5.72	3.71	0.76	10.3	8.66	9.67	8.07	2.73	0.89	0.28	1.09



Stellar Parameters For KIC 002285548

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4813^{+131}_{-119}	$3.797^{+0.791}_{-0.339}$	$0.220^{+0.200}_{-0.250}$	$2.038^{+1.251}_{-1.251}$	$0.950^{+0.215}_{-0.176}$	$0.158^{+2.796}_{-0.121}$
	+3%/-2%	+21%/-9%	+91%/-114%	+61%/-61%	+23%/-19%	+1770%/-76%
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 002285548-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-719 ± 83	$16.84^{+19.20}_{-12.22}$	380^{+63}_{-70}	3248^{+1739}_{-555}	2035^{+24825}_{-1586}
Alt.	-784 ± 58	$16.19^{+19.51}_{-11.26}$	382^{+55}_{-76}	3306^{+1601}_{-558}	2401^{+23190}_{-1900}

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

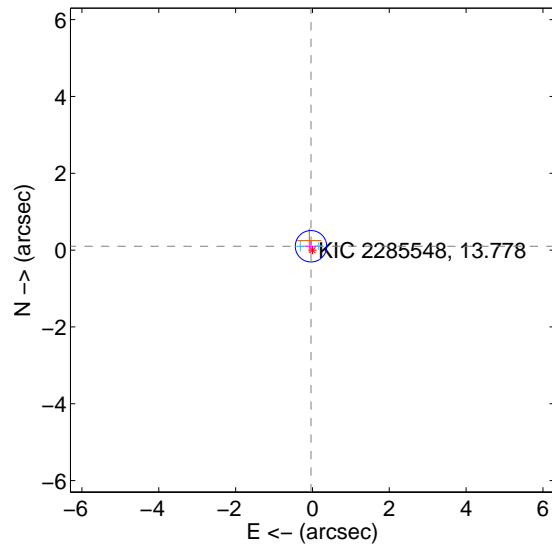
Supplemental centroid analysis for 002285548-01. Kepler magnitude: 13.78. Transit SNR 5.44

There are 2 quarters with good PRF difference image offsets

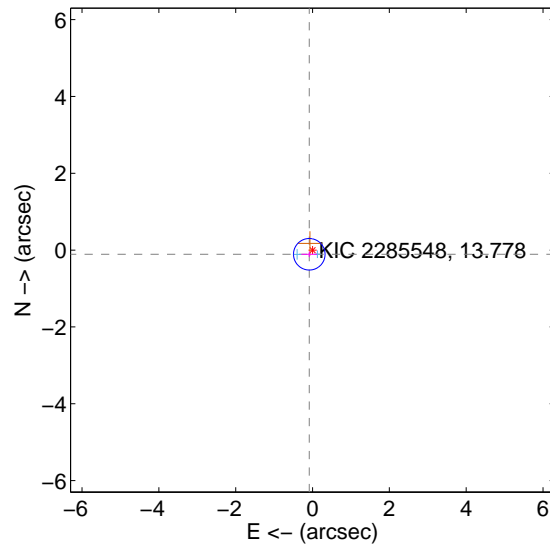
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.107 ± 0.136	0.78	0.038 ± 0.133	0.100 ± 0.137
PRF-fit source offset from KIC position	0.138 ± 0.137	1.01	0.084 ± 0.203	-0.109 ± 0.071
photometric centroid source offset	1.55 ± 1.23	1.25	-1.51 ± 1.22	-0.35 ± 1.43

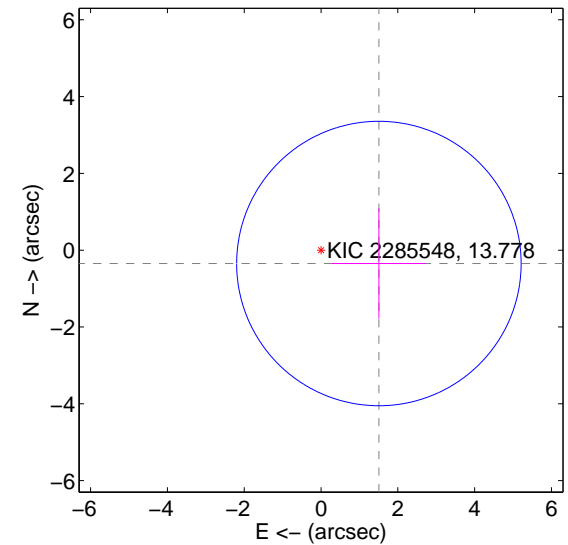
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

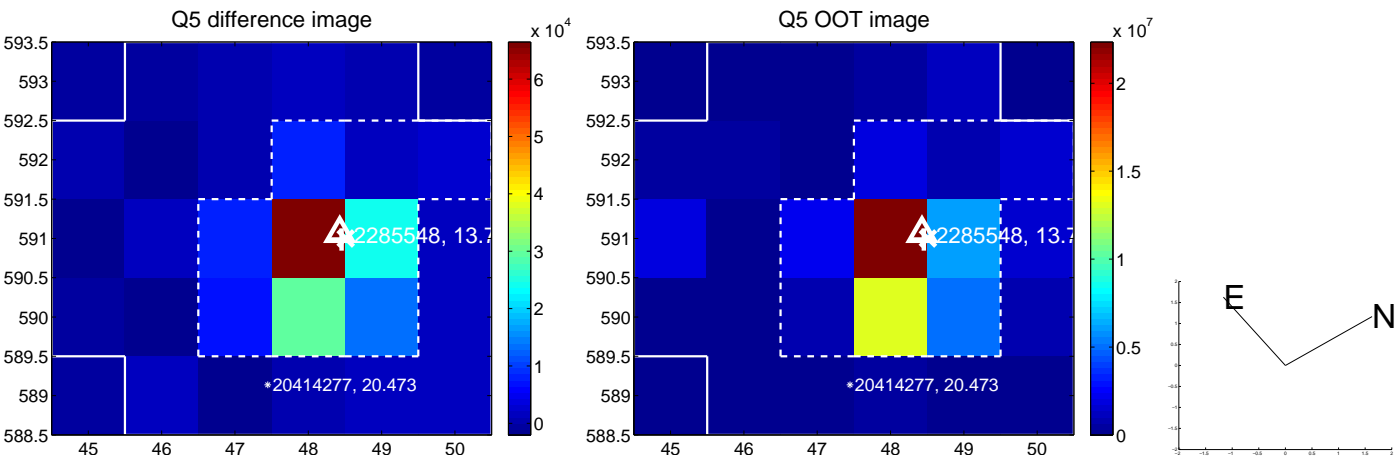


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

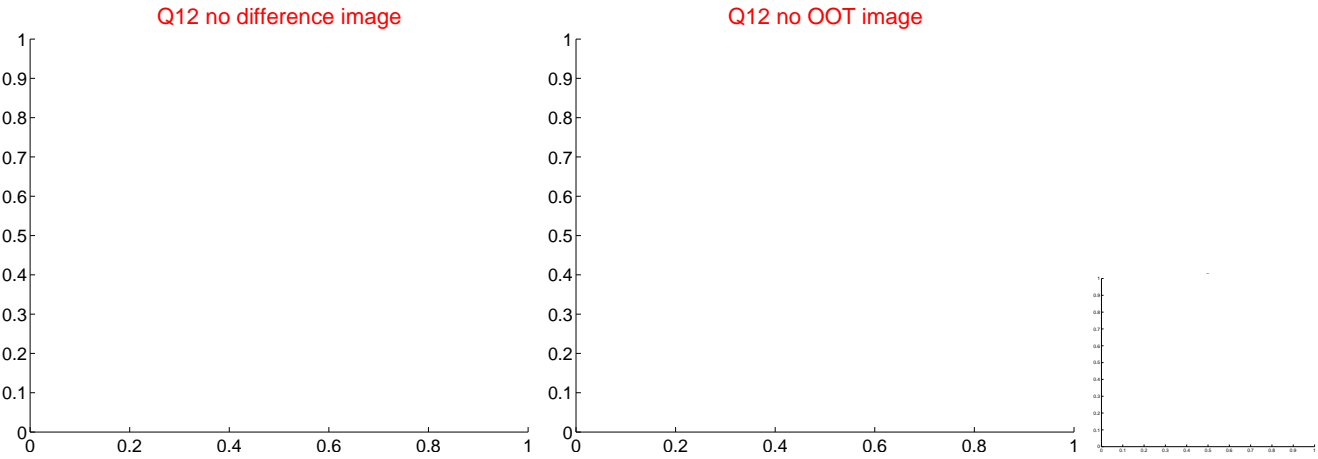
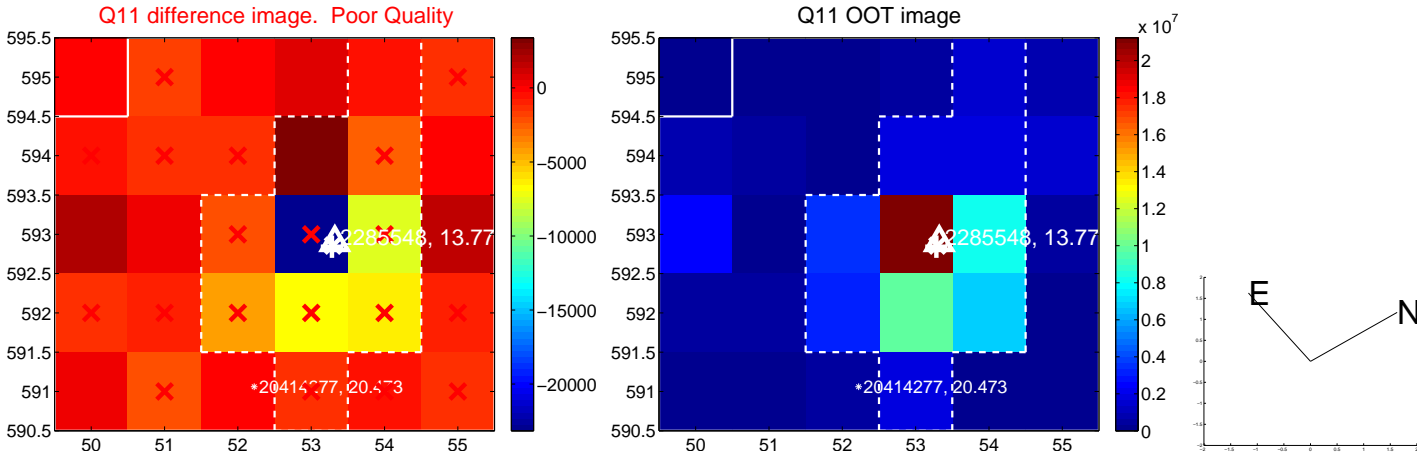
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



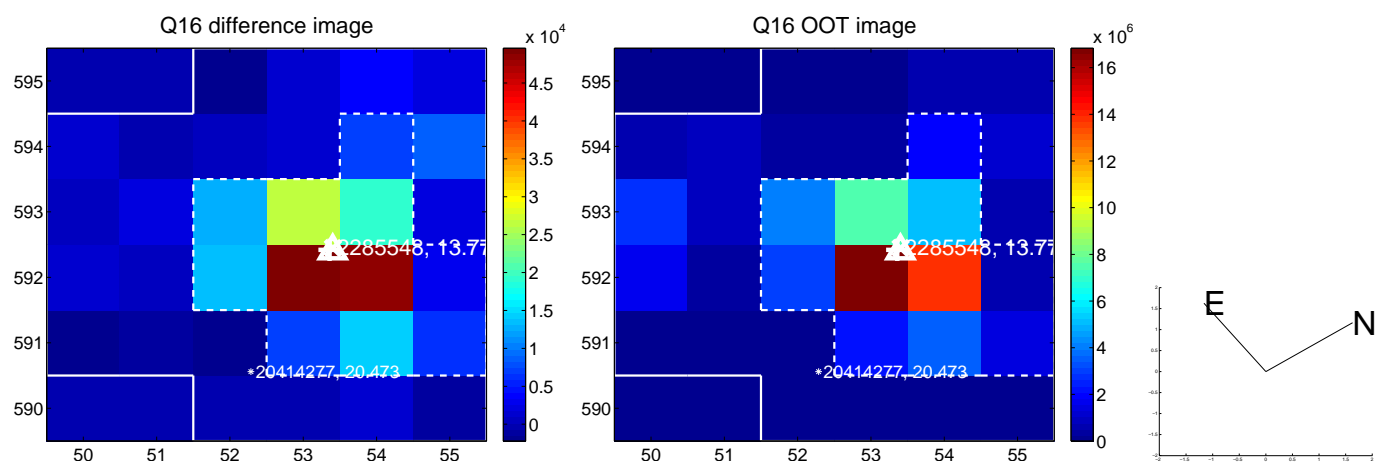
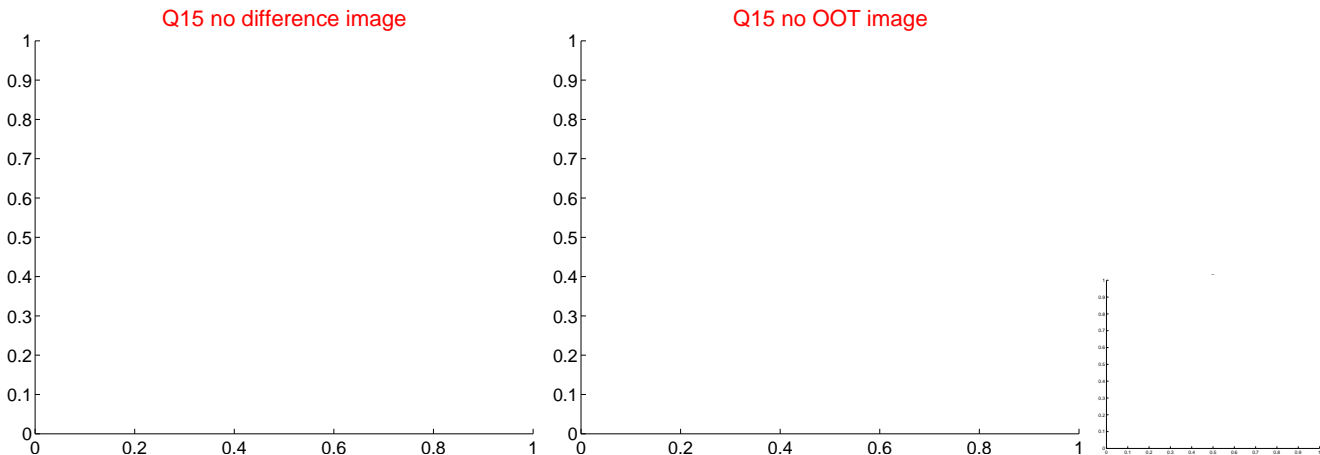
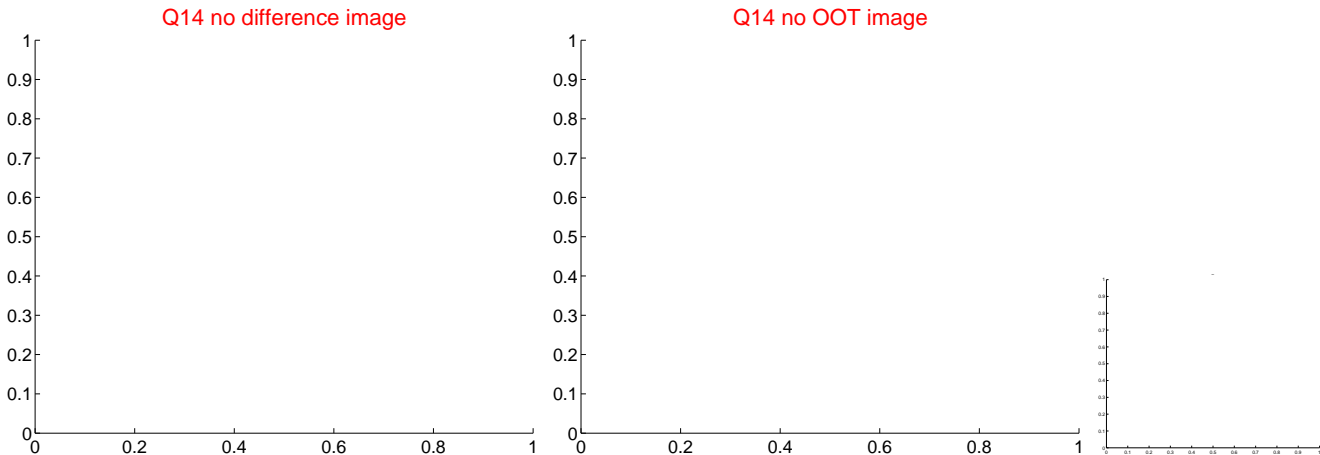
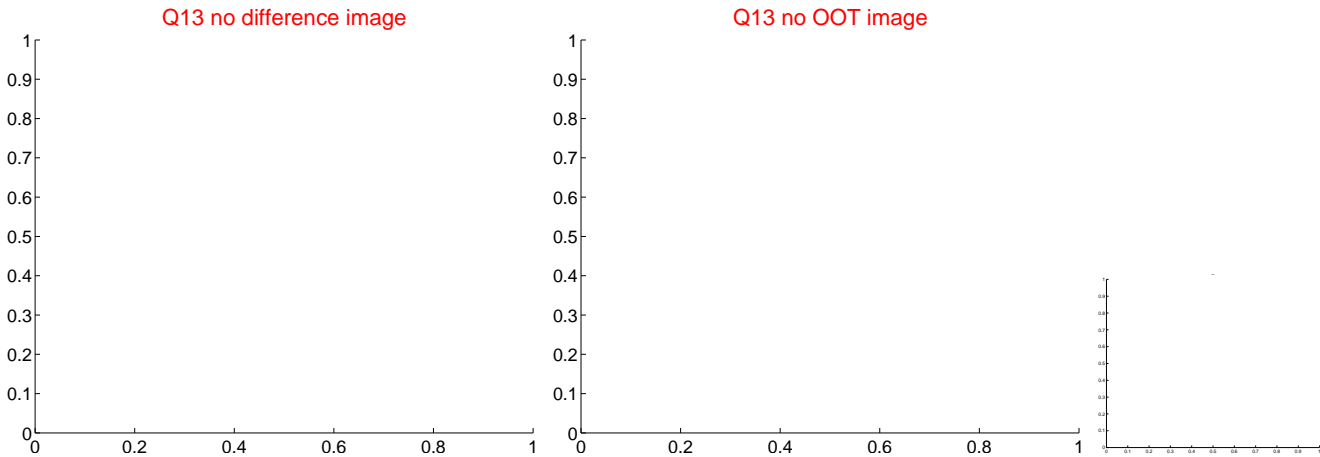
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



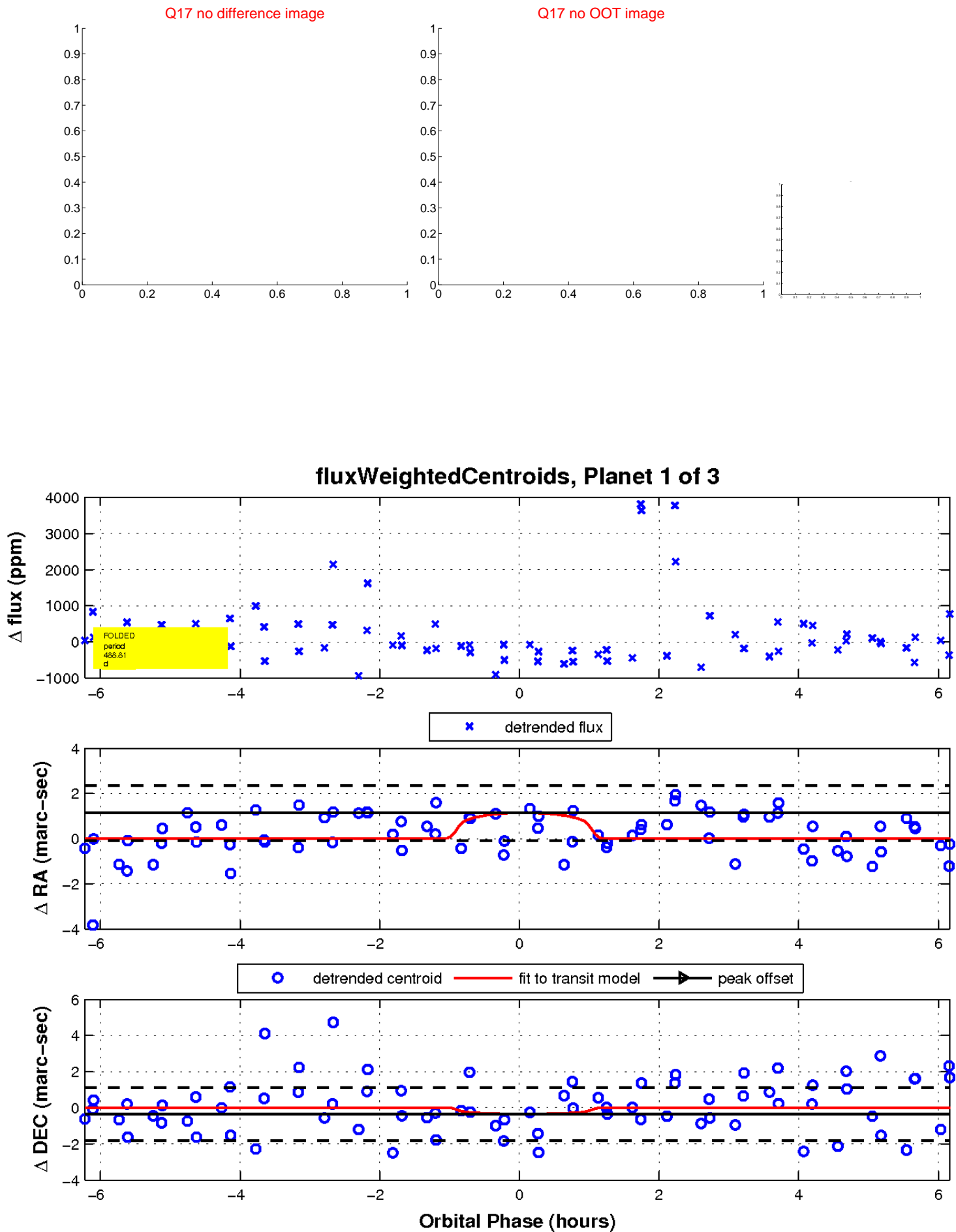
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

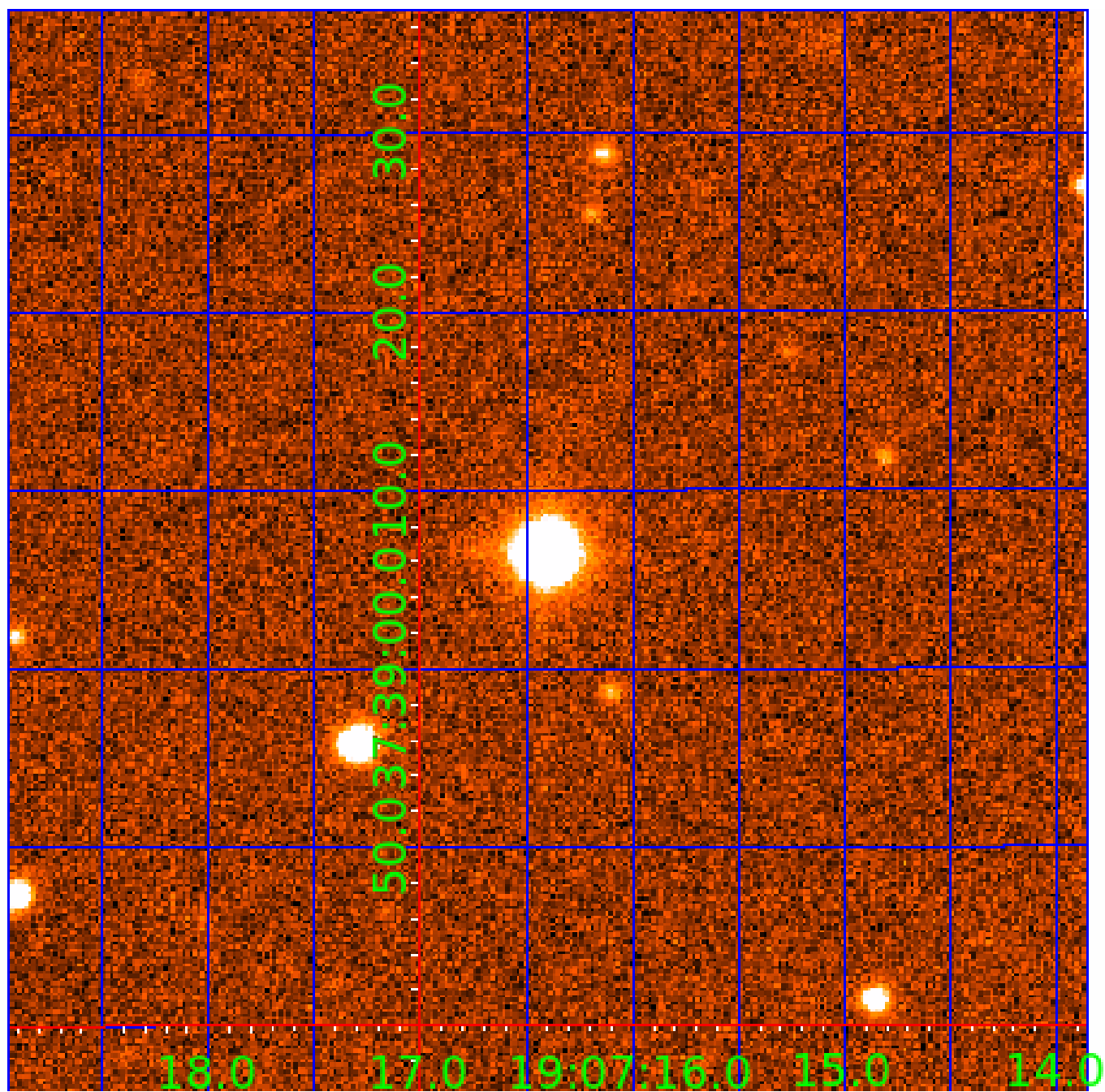


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002285548

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})
002285548-01	OBS	No	488.807517	515.927557	833.3	2.103	16.3	5.4	2.04	4813	6.45	1.40
002285548-02	OBS	No	503.599675	453.442299	1331.0	3.271	16.5	7.7	2.04	4813	7.73	1.35
002285548-03	OBS	No	419.866332	136.907219	744.1	4.035	11.4	4.9	2.04	4813	6.17	1.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002285548-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002285548-02	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002285548-03	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

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

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

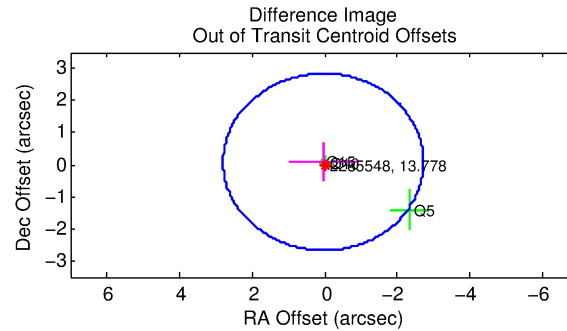
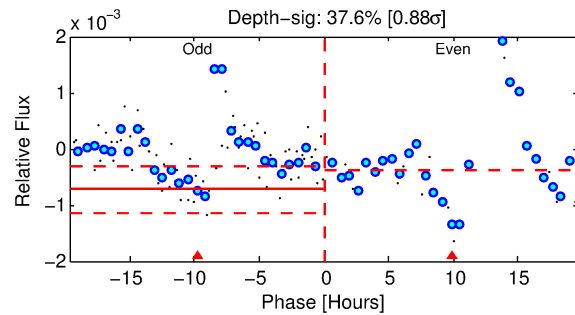
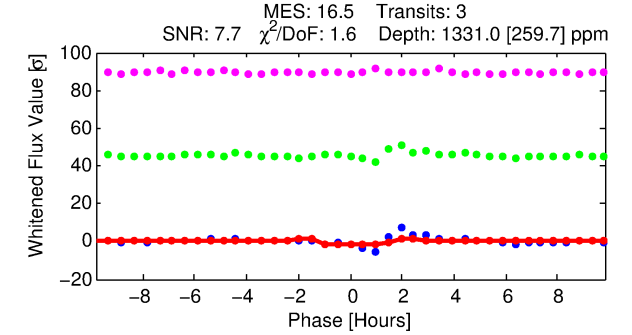
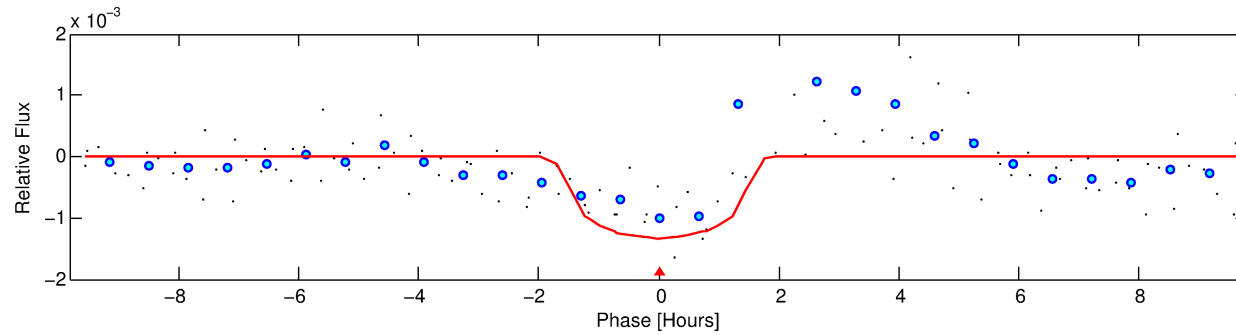
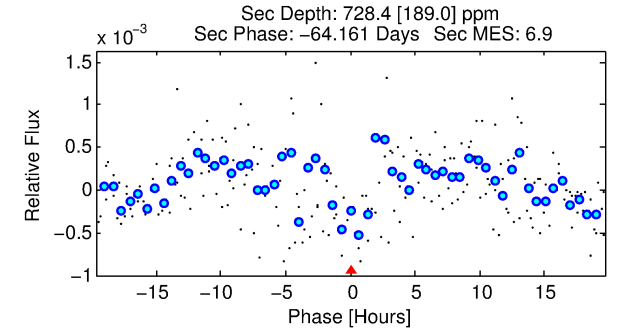
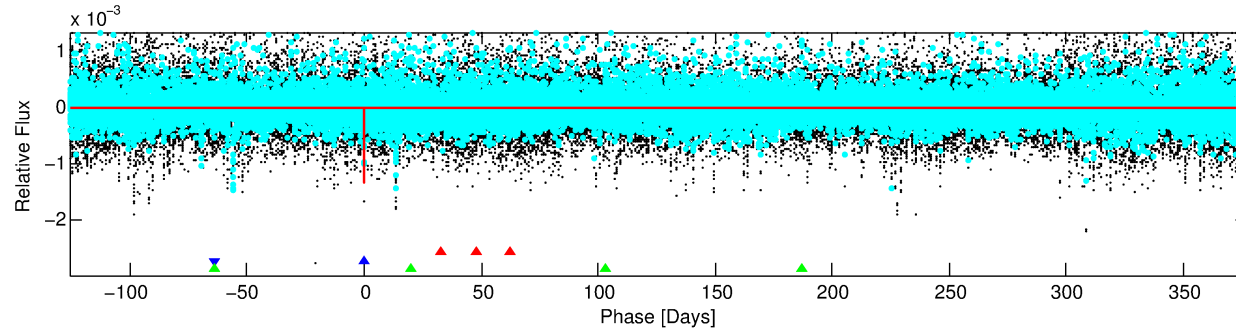
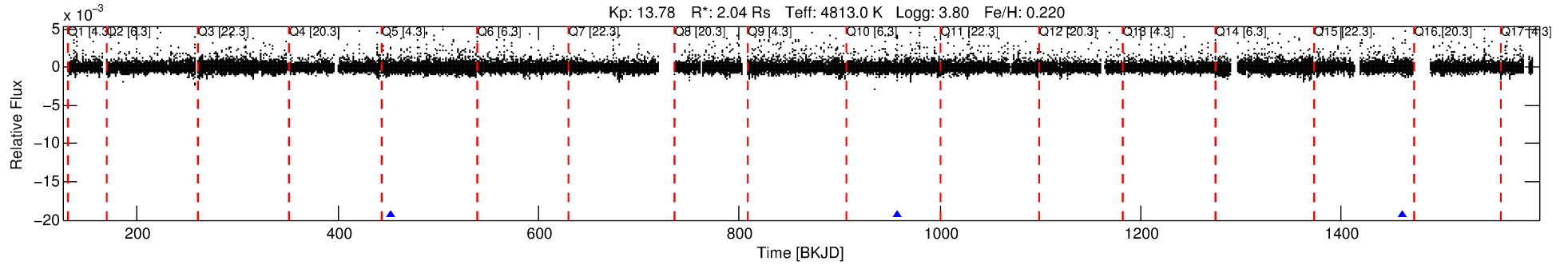
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002285548-02

No Significant Match Found

DV One-Page Summary

KIC: 2285548 Candidate: 2 of 3 Period: 503.600 d



DV Fit Results:

Period = 503.59967 [0.00544] d
Epoch = 453.4423 [0.0065] BKJD
Rp/R* = 0.0348 [0.0549]
a/R* = 966.23 [4810.38]
b = 0.63 [4.92]
Seff = 1.35 [1.73]
Teq = 275 [88] K
Rp = 7.73 [13.09] Re
a = 1.2177 [0.8916] AU
Ag = 9938.81 [33950.47] [0.29 σ]
Teffp = 4240 [3359] K [1.18 σ]

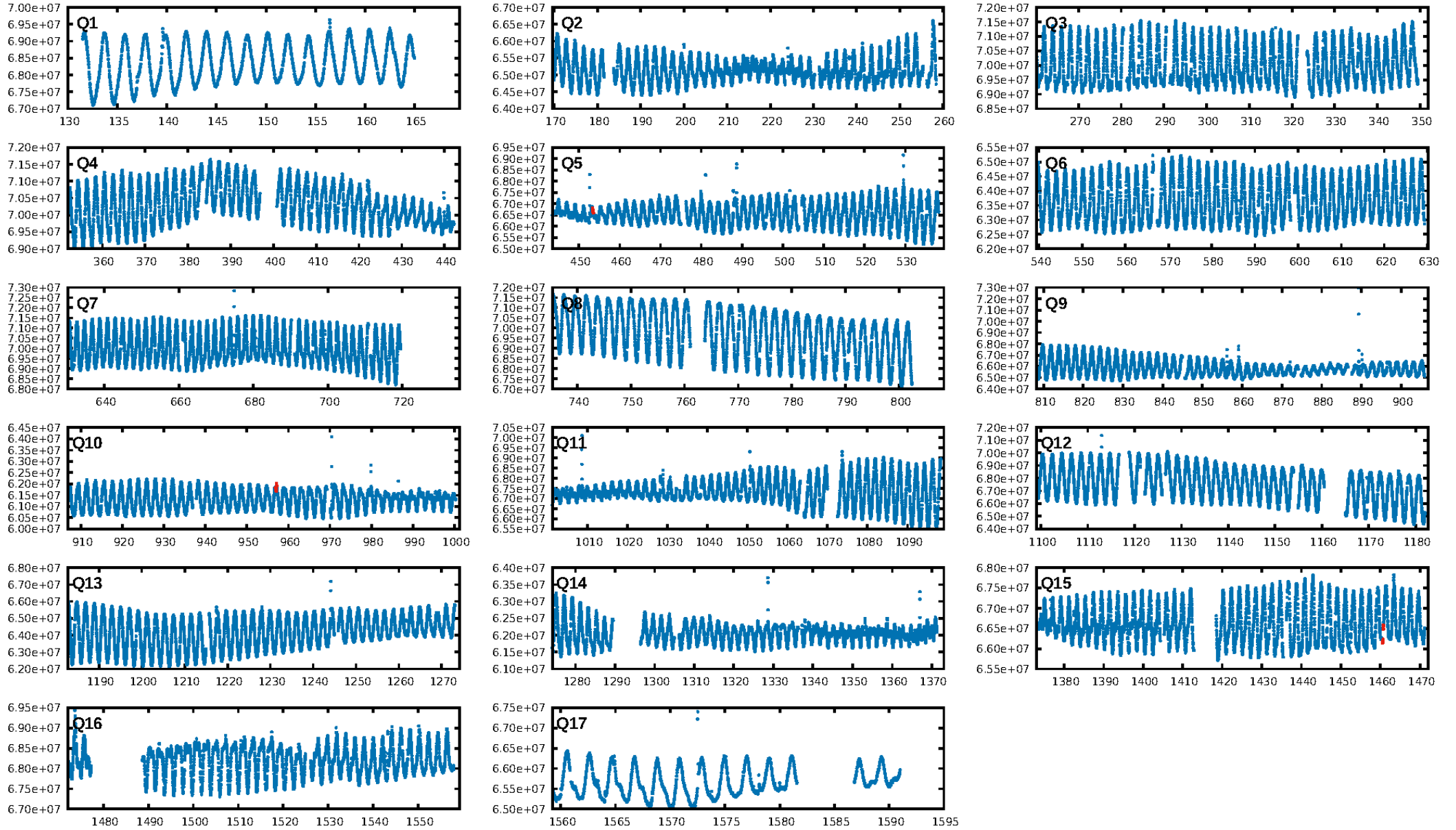
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [91.30 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 48.6%
Bootstrap-pfa: 5.75e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.665
Centroid-sig: 1.8%
Centroid-so: 0.439 arcsec [0.67 σ]
OotOffset-rm: 0.091 arcsec [0.10 σ]
KicOffset-rm: 0.116 arcsec [0.54 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

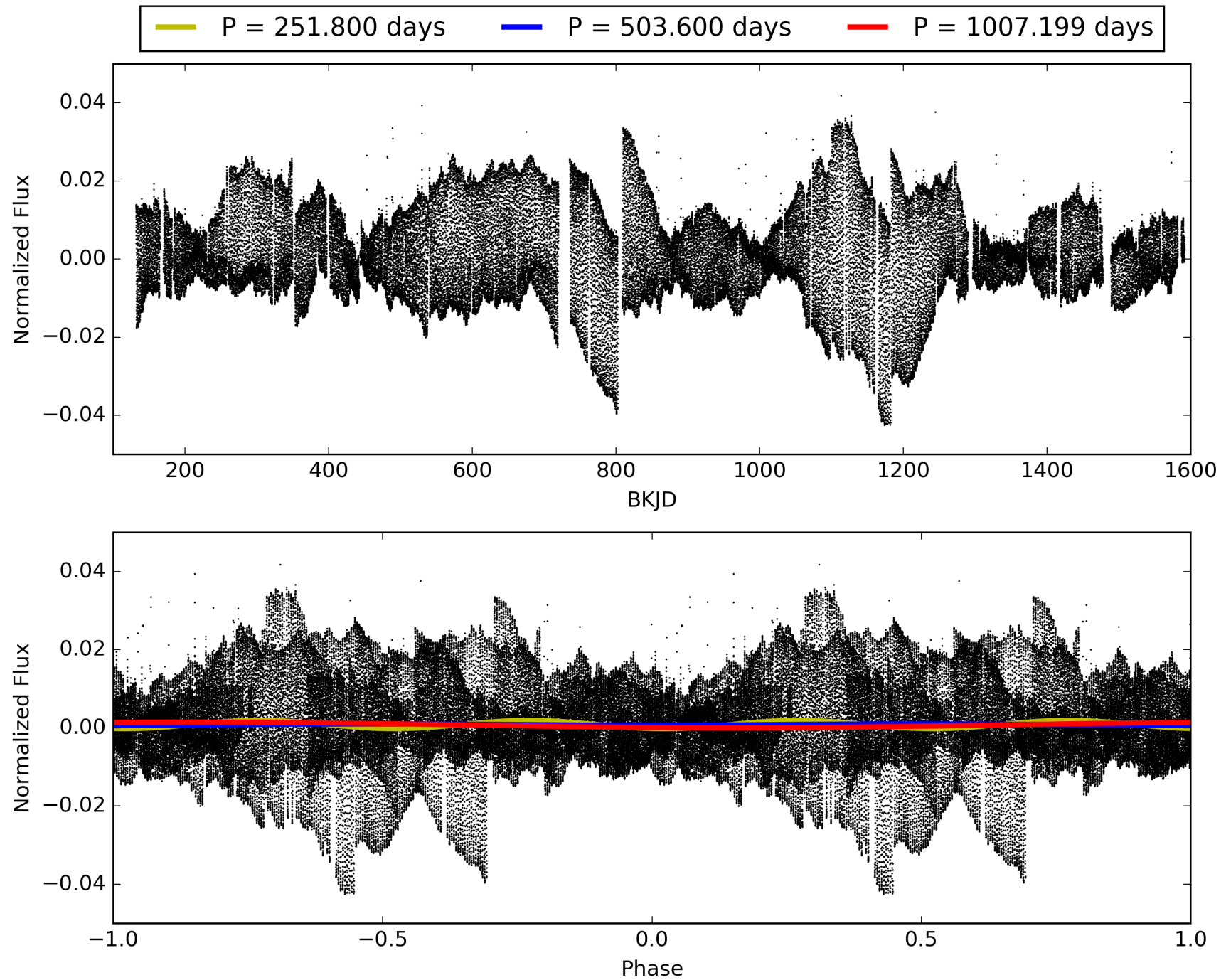
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:49:00 Z

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

TCE 002285548-02, PDC Light Curves

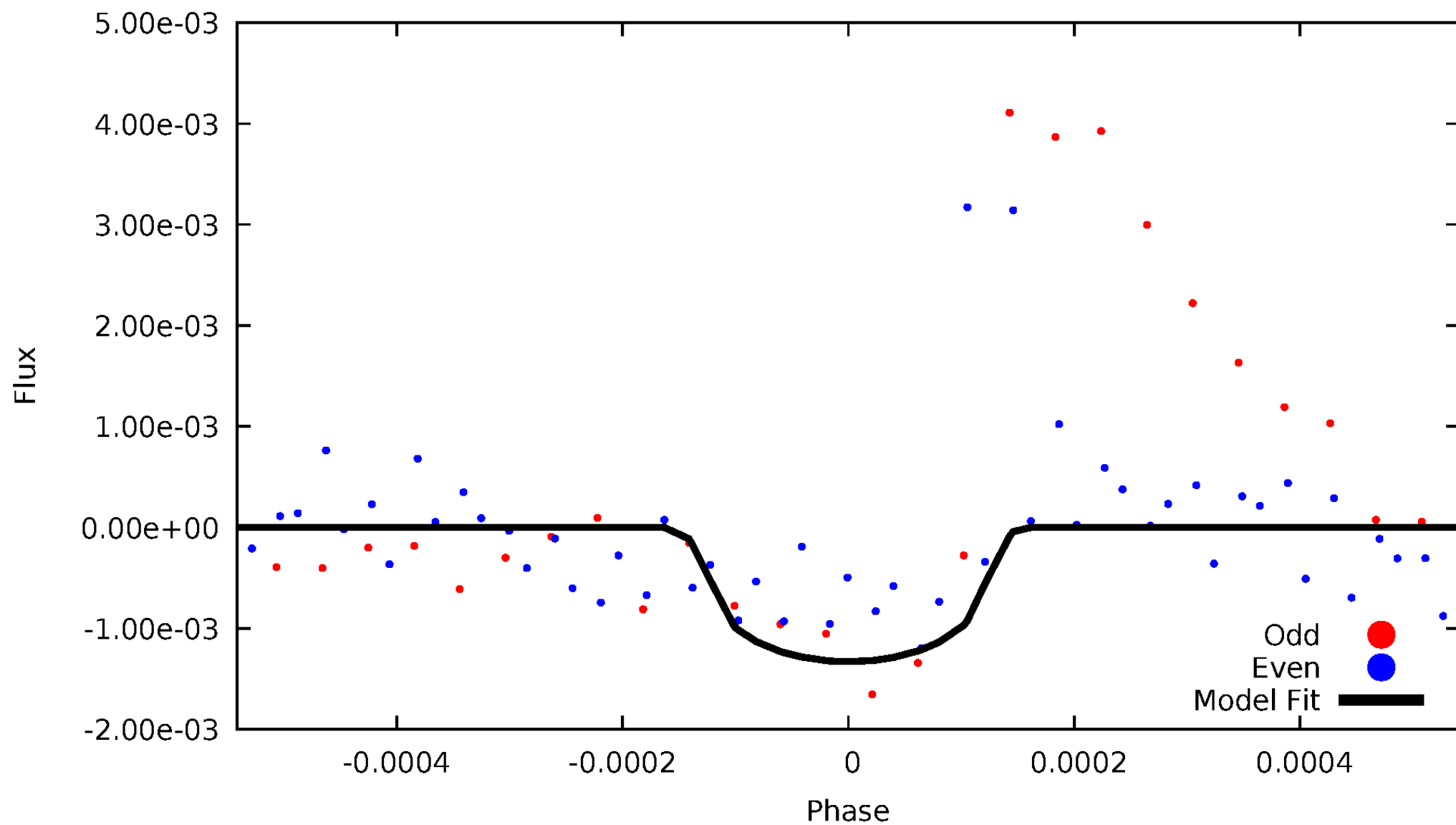


TCE 002285548-02



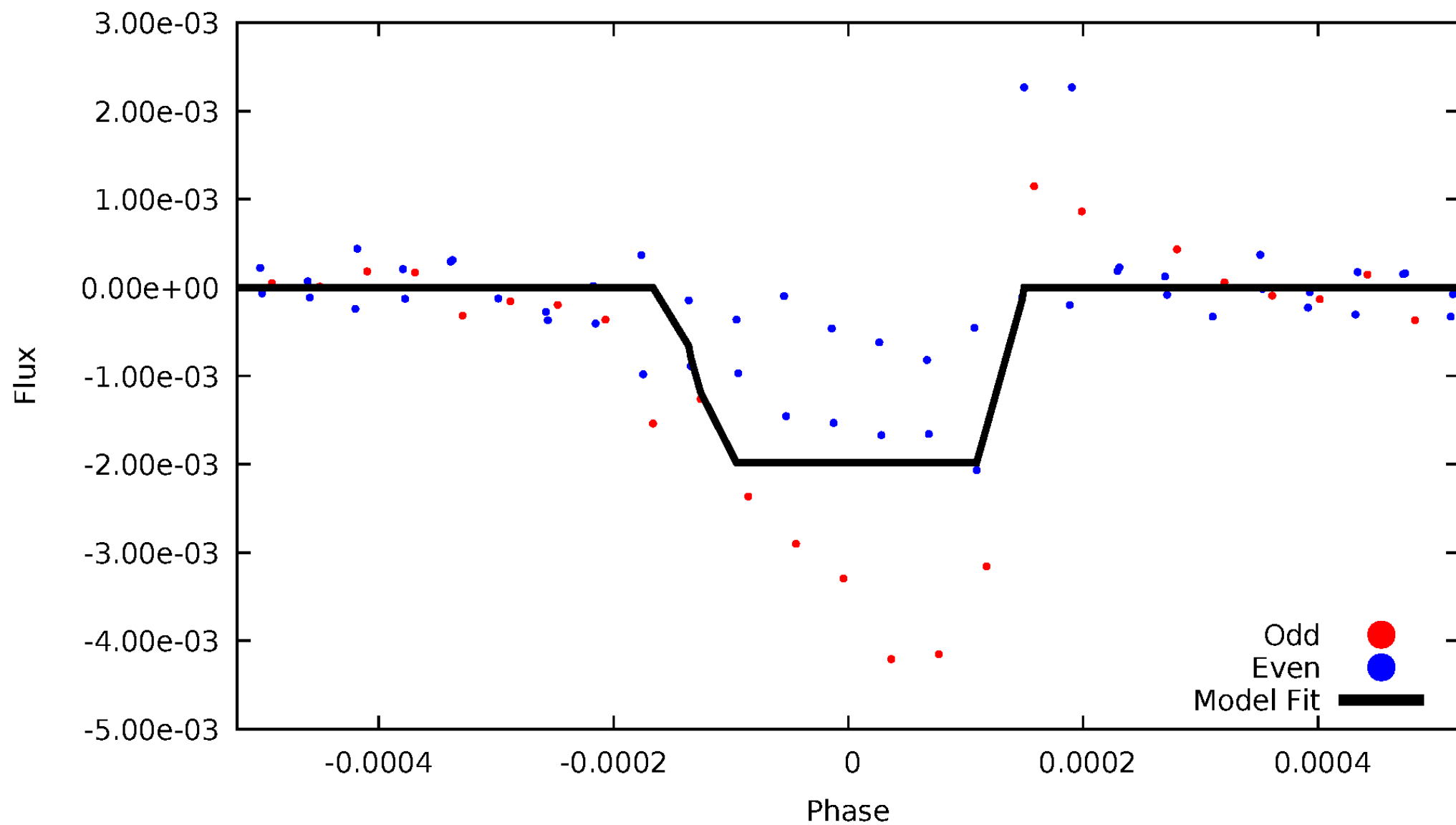
DV Odd/Even

TCE 002285548-02



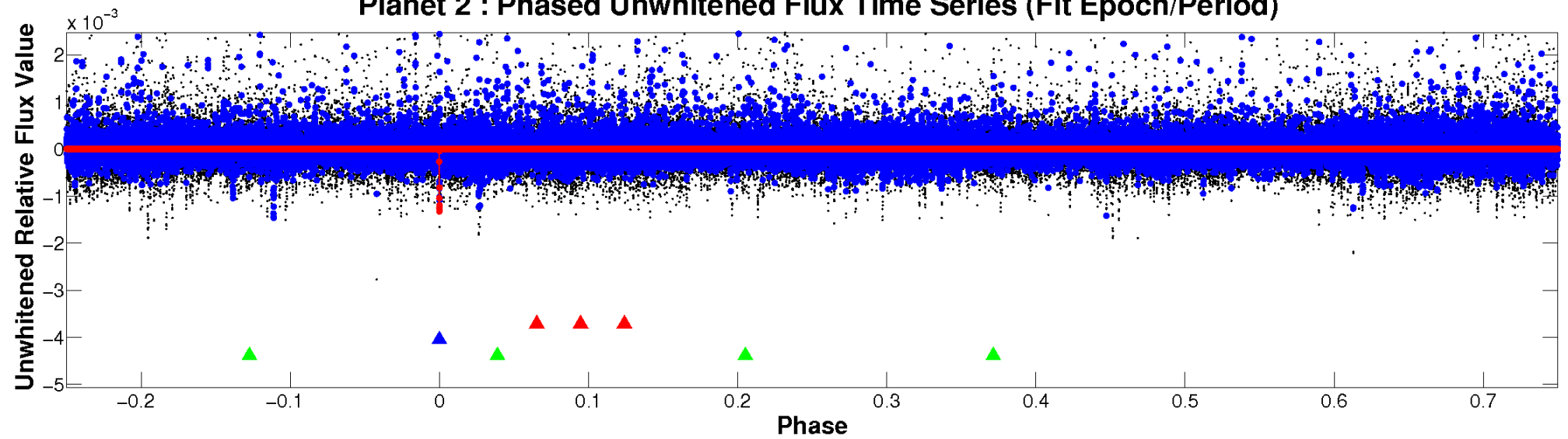
ALT Odd/Even

TCE 002285548-02

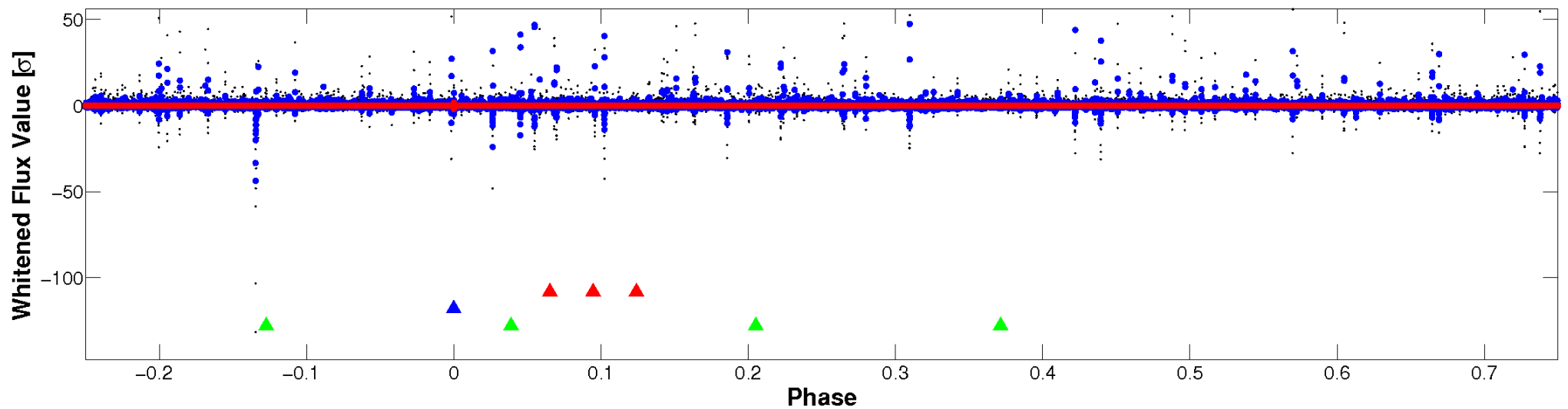


Non-Whitened Vs. Whitened Light Curve

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

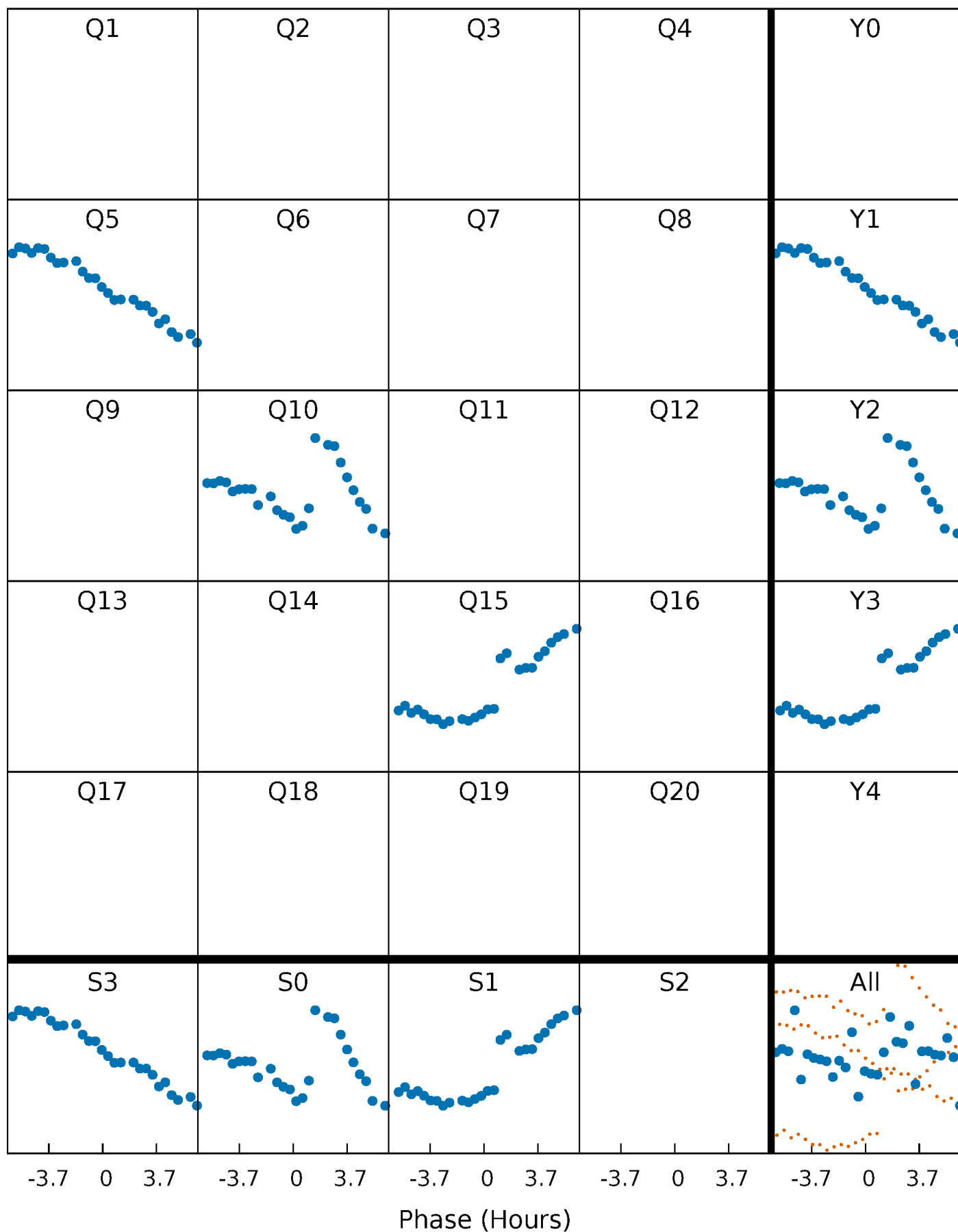


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



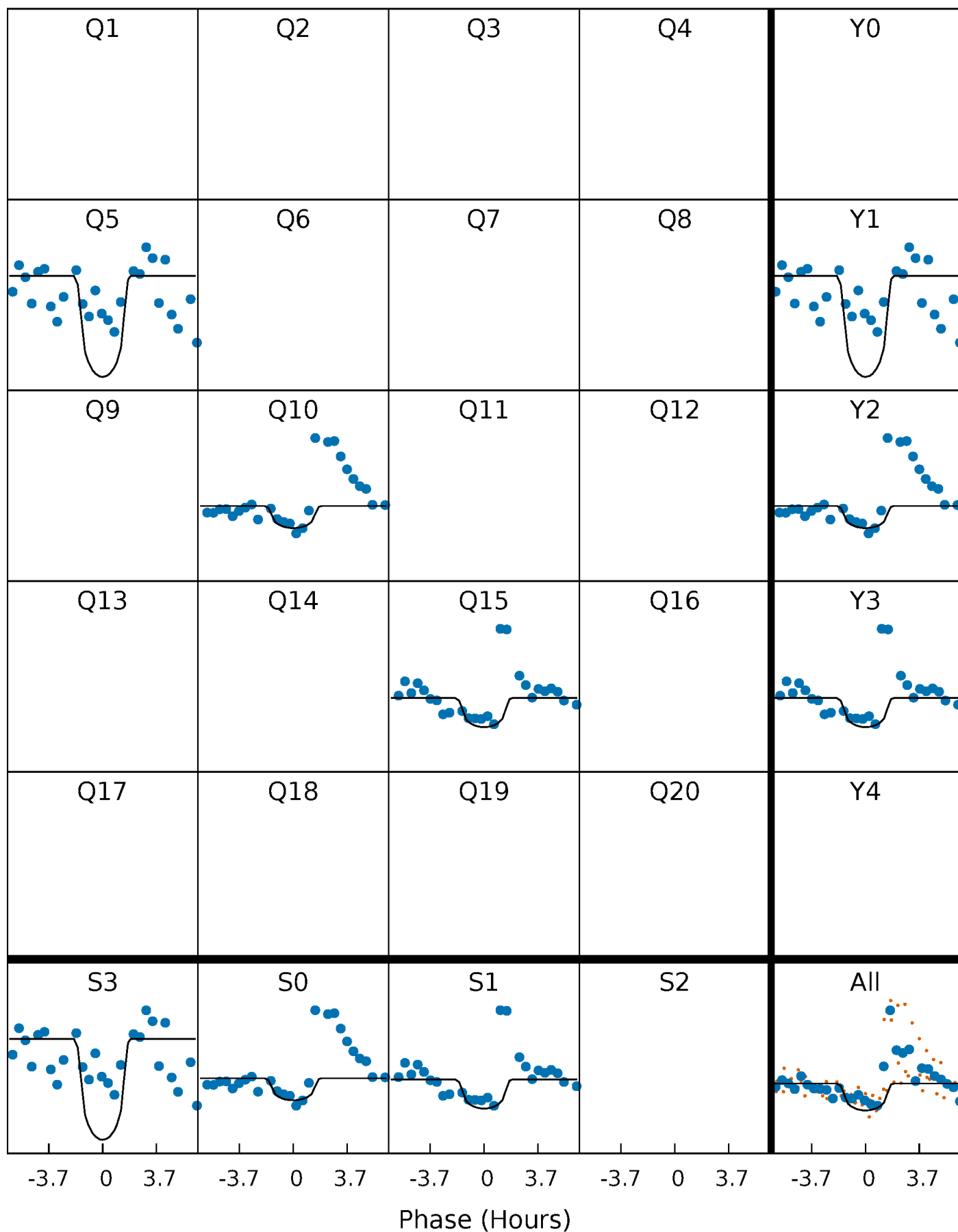
PDC Quarter-Phased Transit Curves

TCE 002285548-02 P=503.599674 Days $T_0=453.442299$ (BKJD)



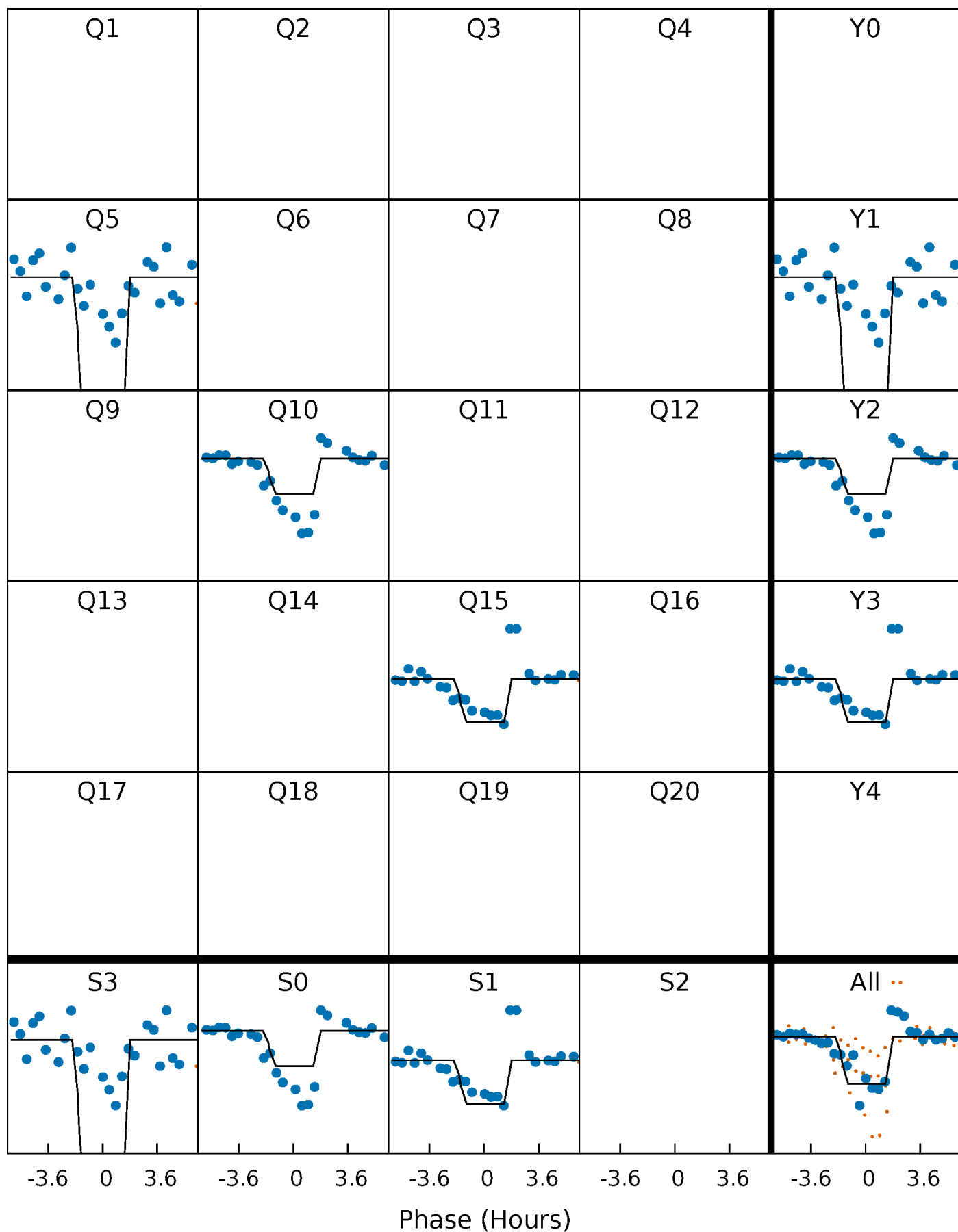
DV Quarter-Phased Transit Curves

TCE 002285548-02 P=503.599674 Days $T_0=453.442299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

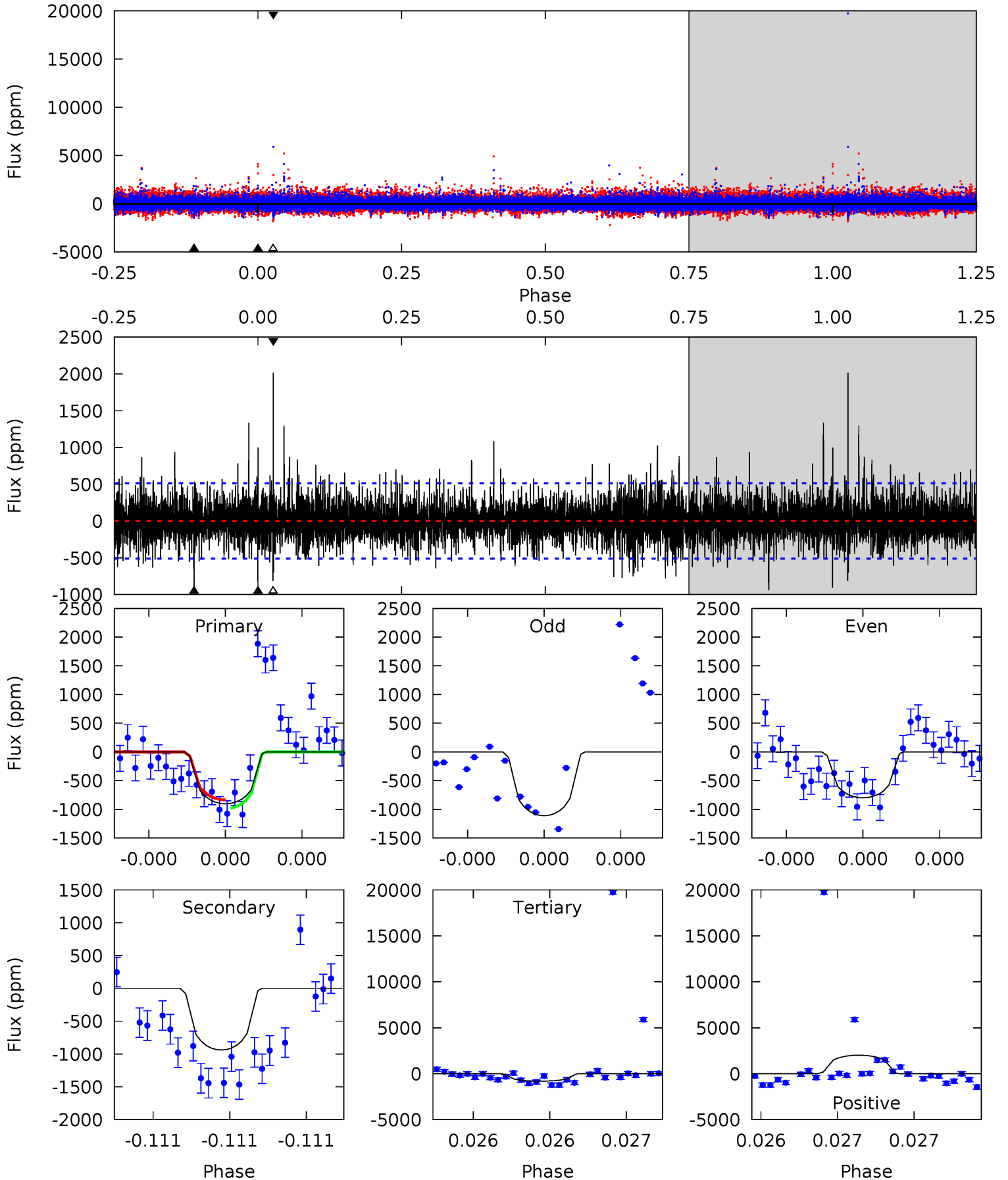
TCE 002285548-02 P=503.585086 Days $T_0=453.449113$ (BKJD)



DV Model-Shift Uniqueness Test

002285548-02, P = 503.599674 Days, E = 453.442299 Days

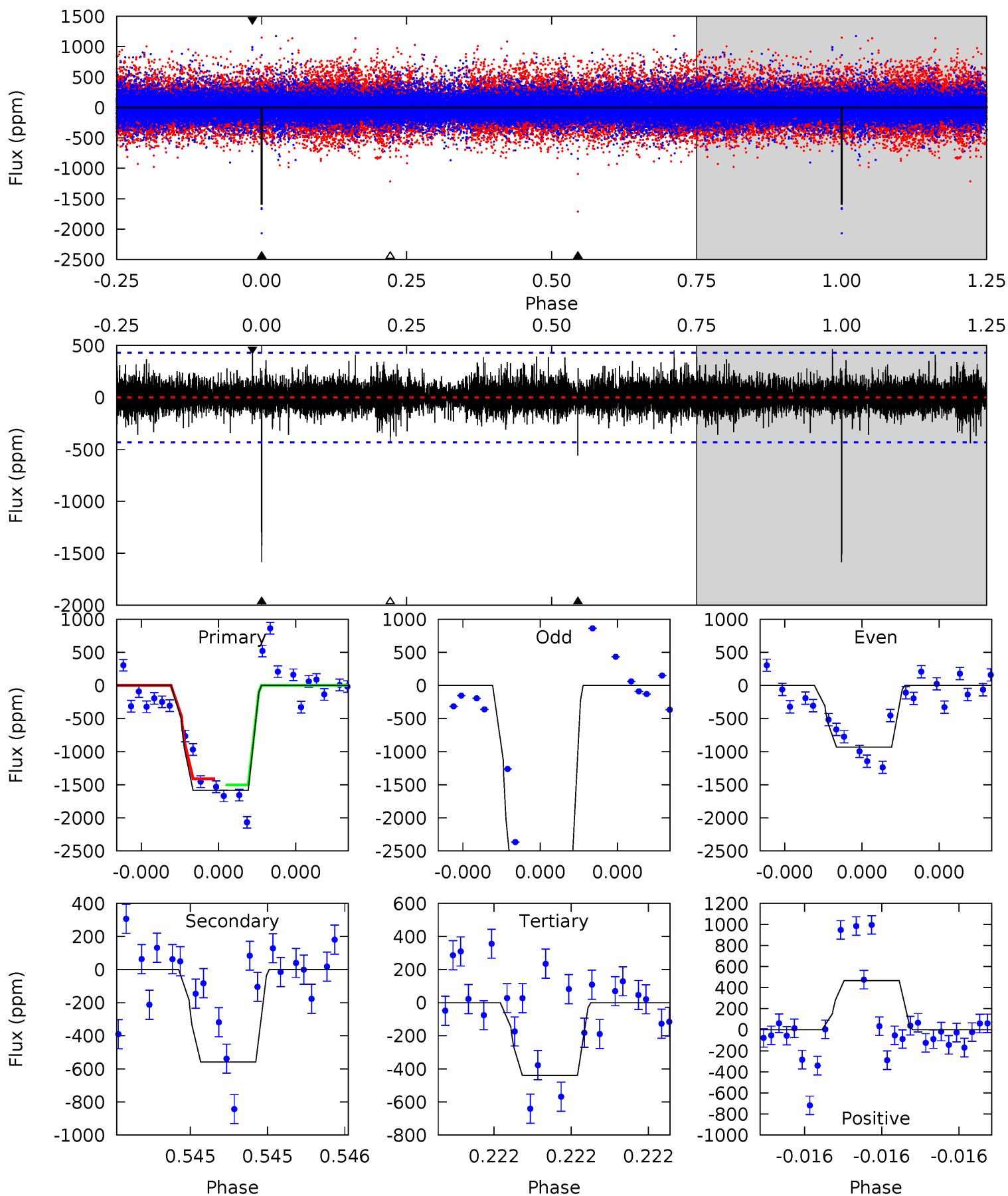
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	10.4	9.00	22.3	5.66	3.61	2.26	1.01	-12.3	1.40	-11.9	0.84	1.27	0.68	0.83



Alt Model-Shift Uniqueness Test

002285548-02, P = 503.585086 Days, E = 453.449113 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	7.35	5.79	6.13	5.67	3.63	1.01	15.1	14.8	1.56	1.23	22.1	1.14	0.23	0



Stellar Parameters For KIC 002285548

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4813^{+131}_{-119}	$3.797^{+0.791}_{-0.339}$	$0.220^{+0.200}_{-0.250}$	$2.038^{+1.251}_{-1.251}$	$0.950^{+0.215}_{-0.176}$	$0.158^{+2.796}_{-0.121}$
	+3%/-2%	+21%/-9%	+91%/-114%	+61%/-61%	+23%/-19%	+1770%/-76%
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 002285548-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-939 ± 90	$10.08^{+11.16}_{-7.06}$	375^{+59}_{-69}	4020^{+2256}_{-798}	7693^{+73110}_{-6029}
Alt.	-558 ± 76	$11.96^{+12.35}_{-8.06}$	378^{+62}_{-70}	3466^{+1527}_{-566}	3161^{+29542}_{-2375}

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

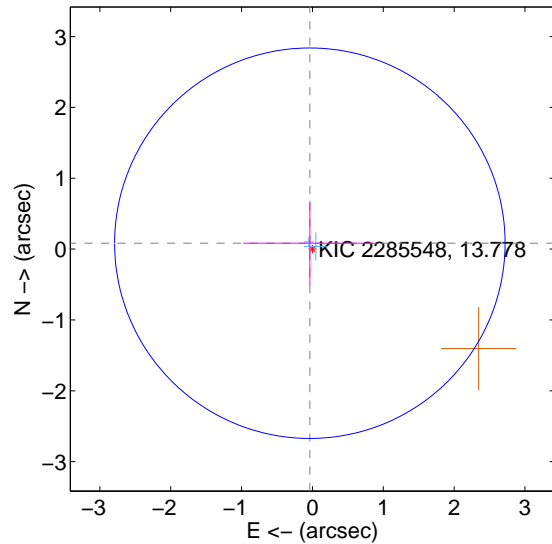
Supplemental centroid analysis for 002285548-02. Kepler magnitude: 13.78. Transit SNR 7.73

There are 2 quarters with good PRF difference image offsets

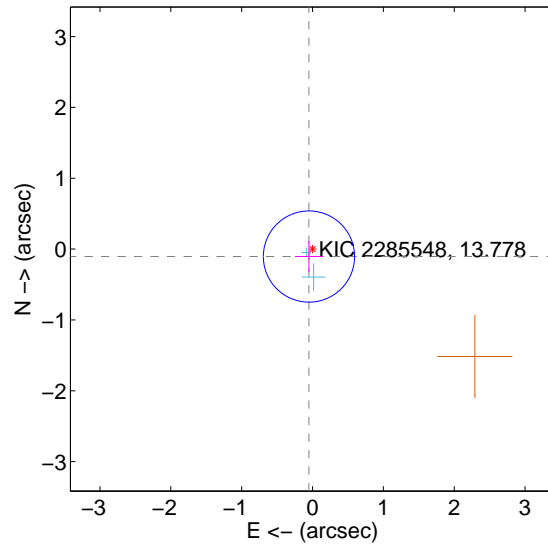
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.919	0.10	0.037 ± 0.939	0.083 ± 0.592
PRF-fit source offset from KIC position	0.116 ± 0.215	0.54	0.050 ± 0.198	-0.105 ± 0.218
photometric centroid source offset	0.44 ± 0.65	0.67	0.12 ± 0.61	0.42 ± 0.65

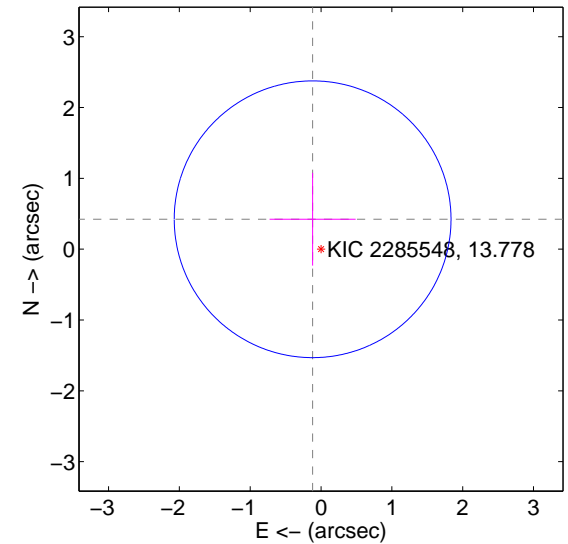
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

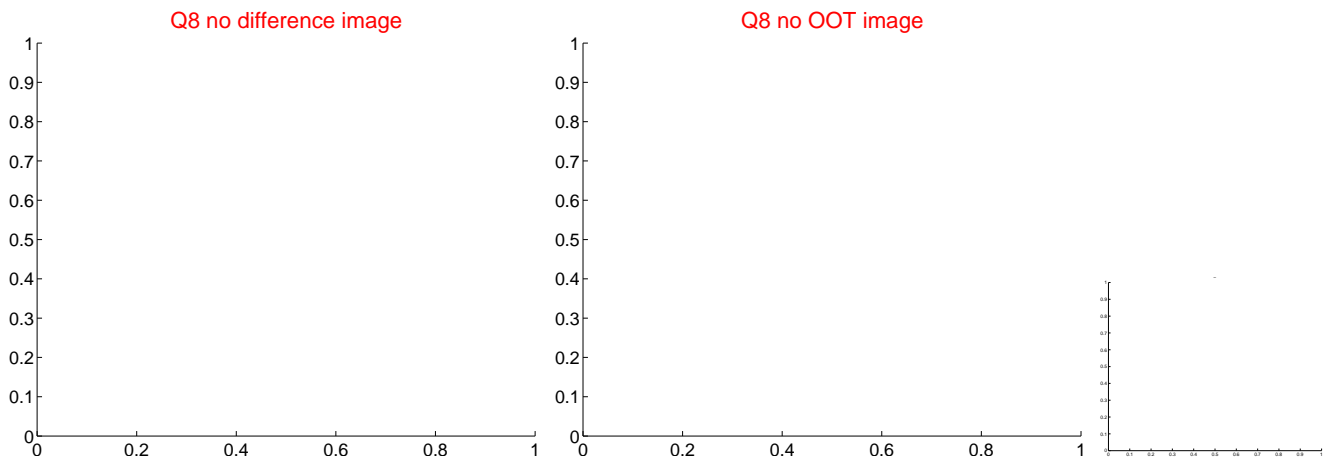
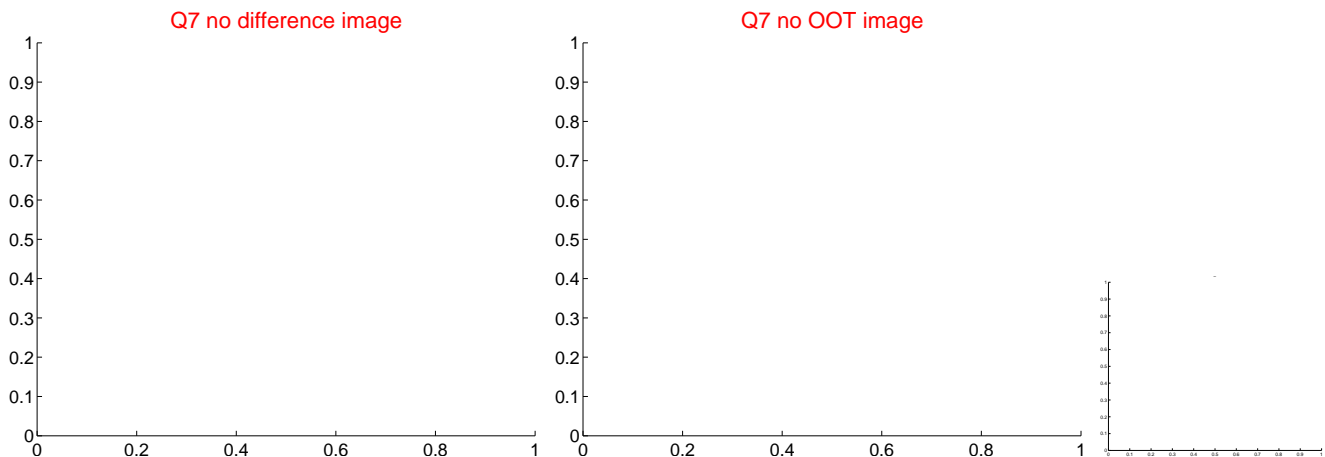
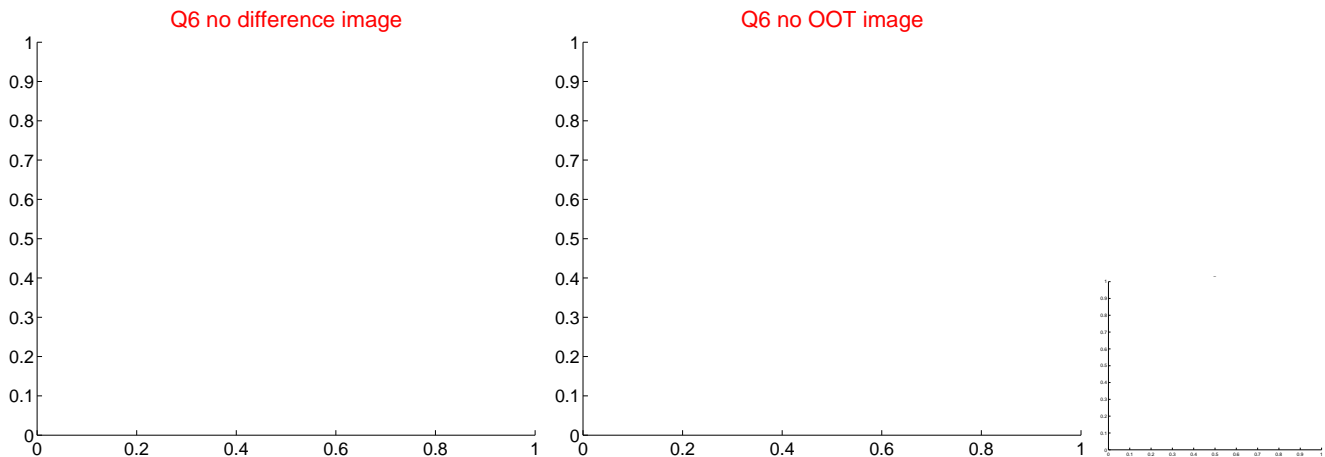
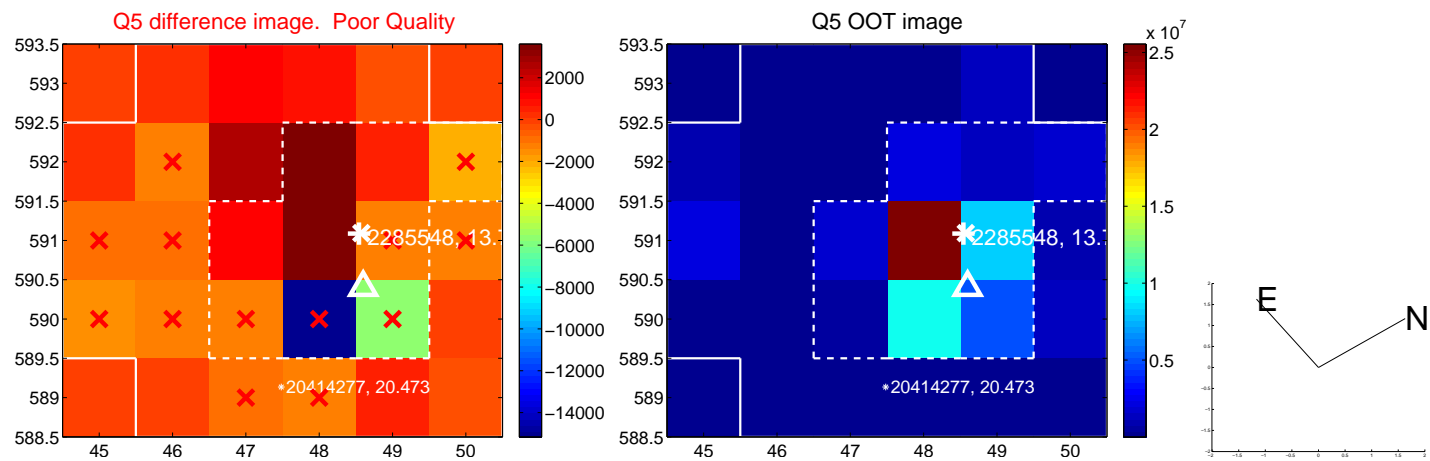


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

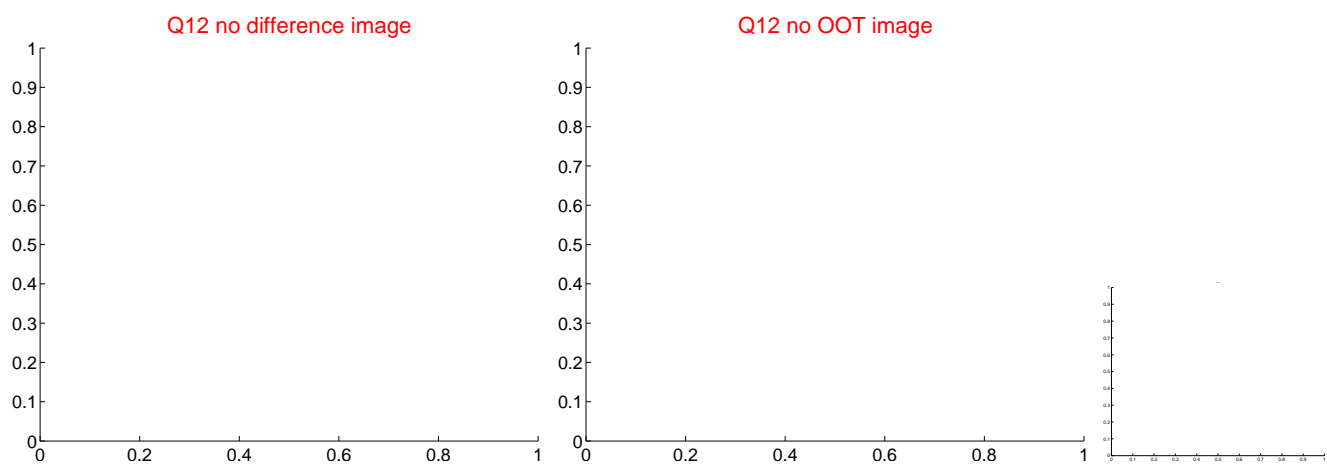
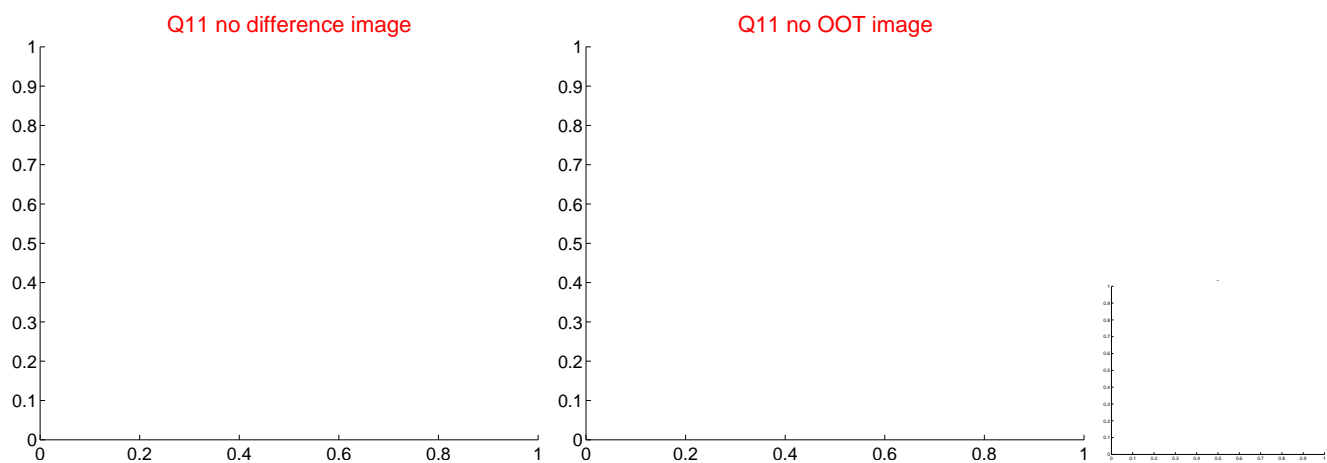
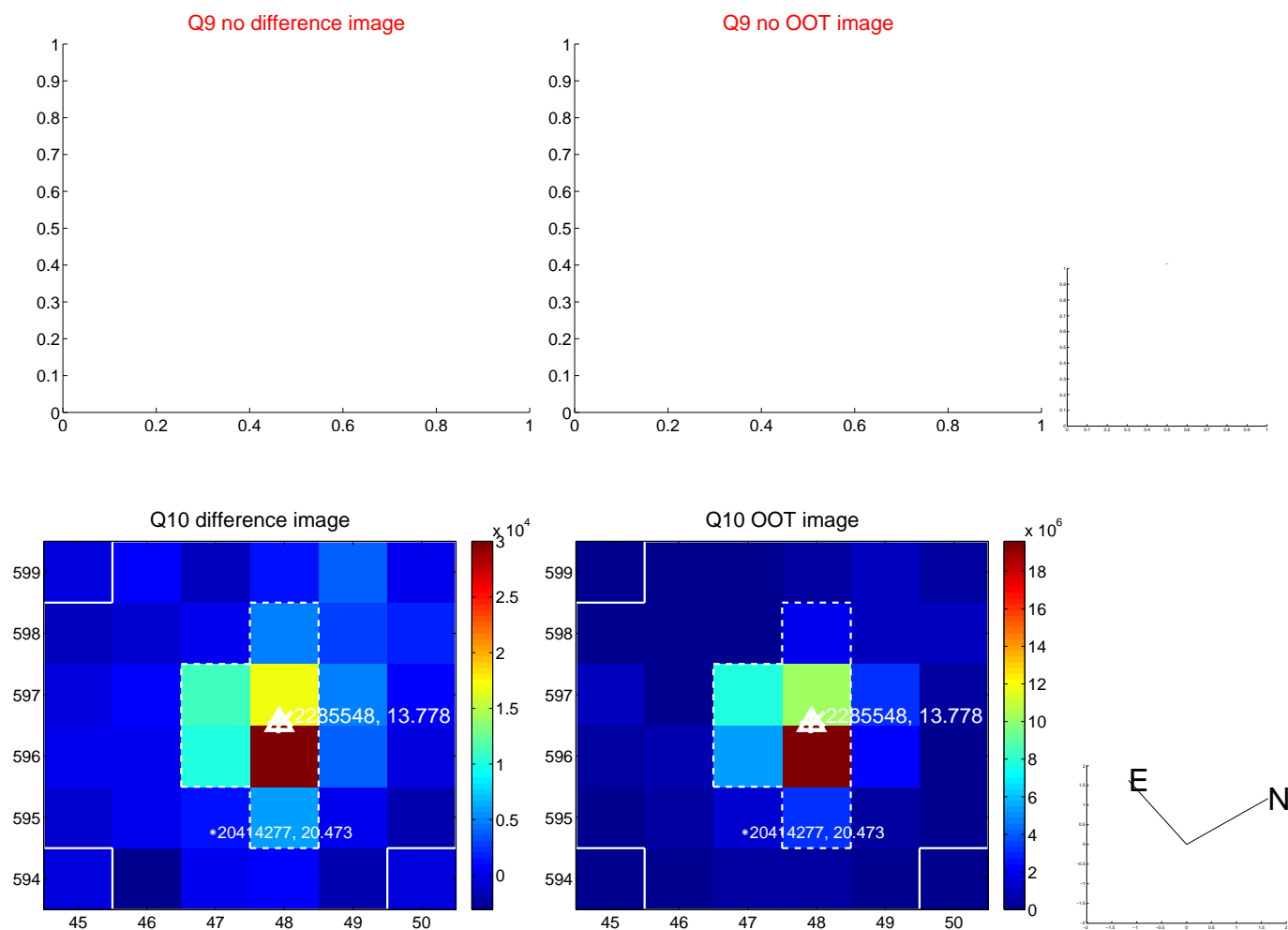
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



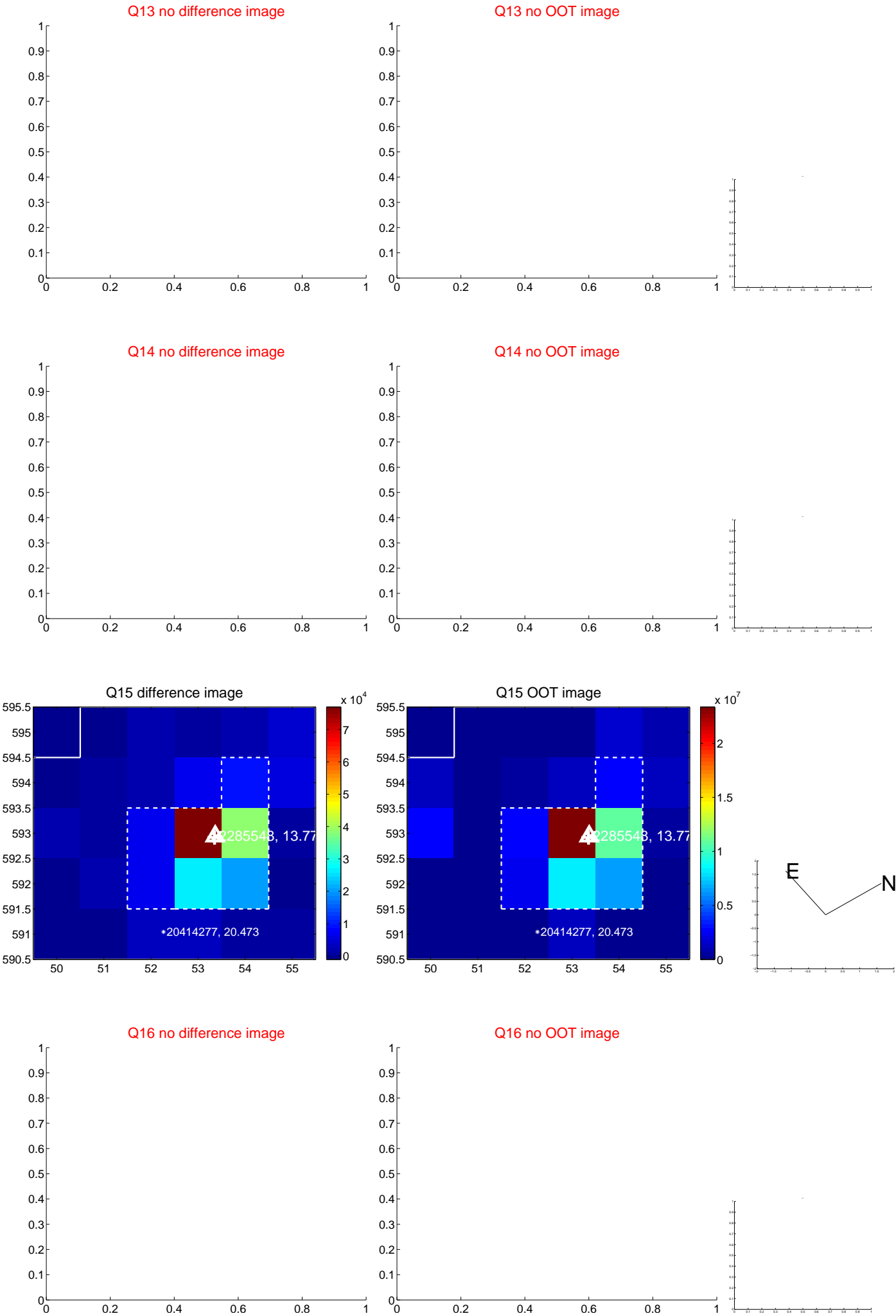
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



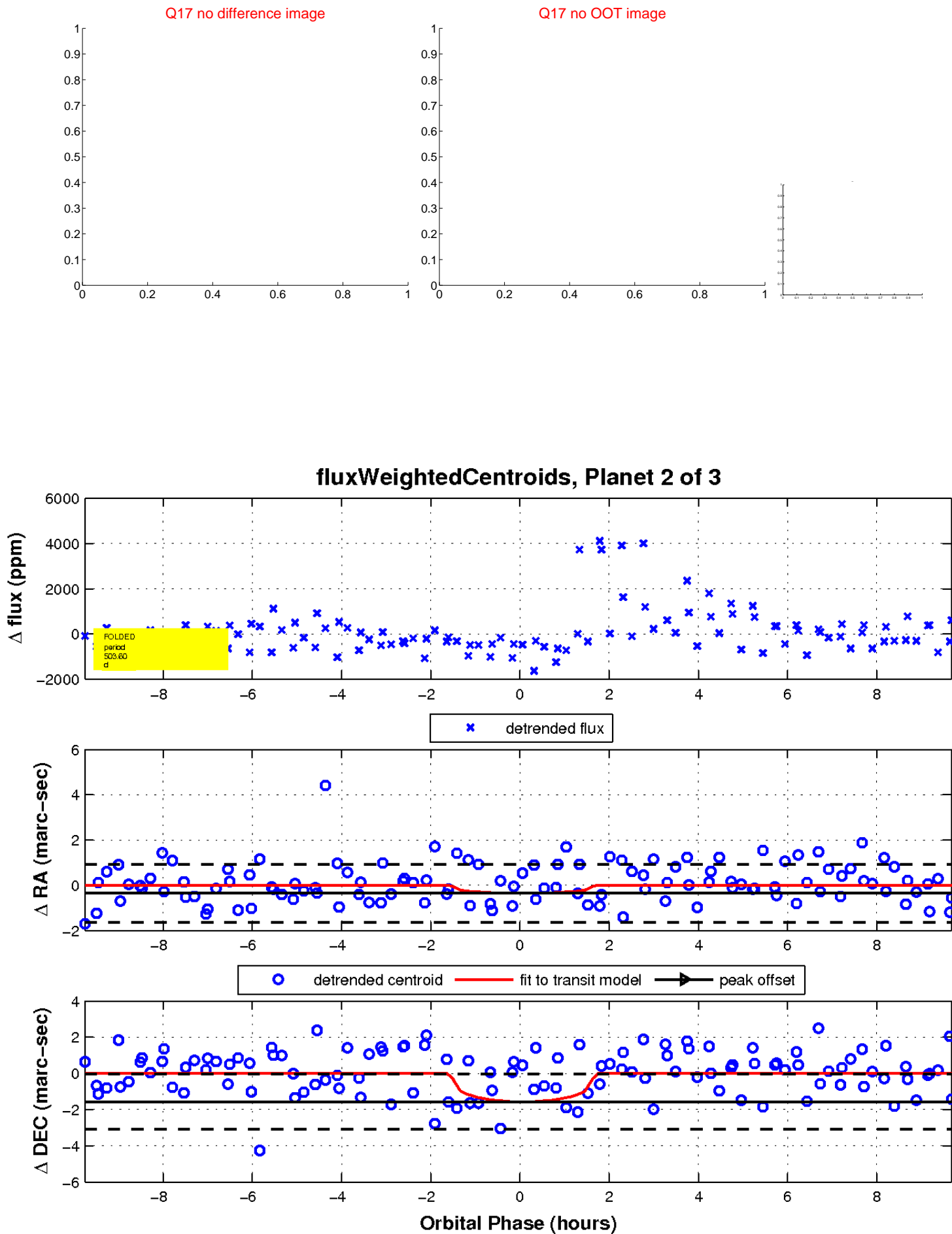
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

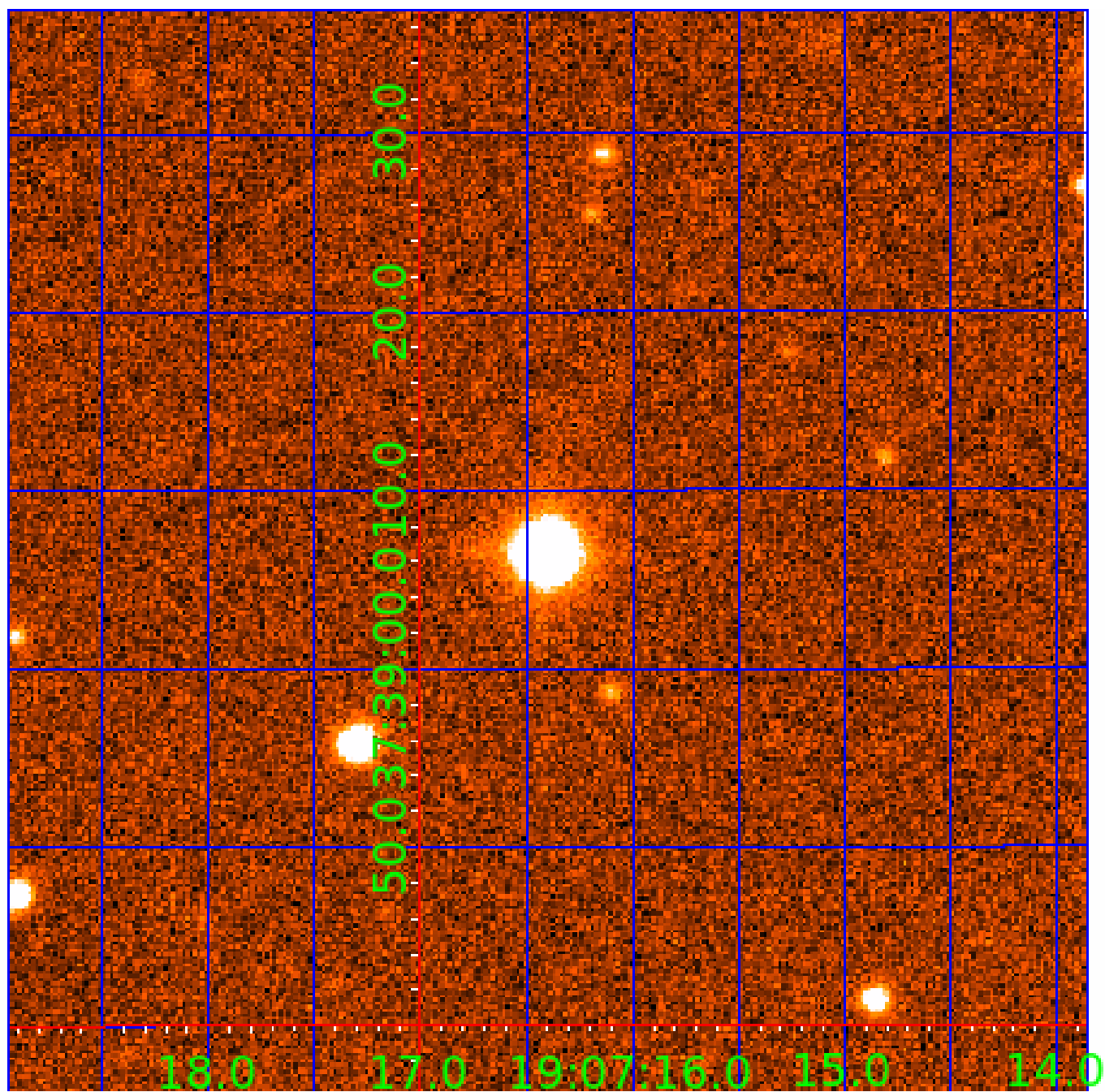


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002285548

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})
002285548-01	OBS	No	488.807517	515.927557	833.3	2.103	16.3	5.4	2.04	4813	6.45	1.40
002285548-02	OBS	No	503.599675	453.442299	1331.0	3.271	16.5	7.7	2.04	4813	7.73	1.35
002285548-03	OBS	No	419.866332	136.907219	744.1	4.035	11.4	4.9	2.04	4813	6.17	1.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002285548-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002285548-02	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002285548-03	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

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

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

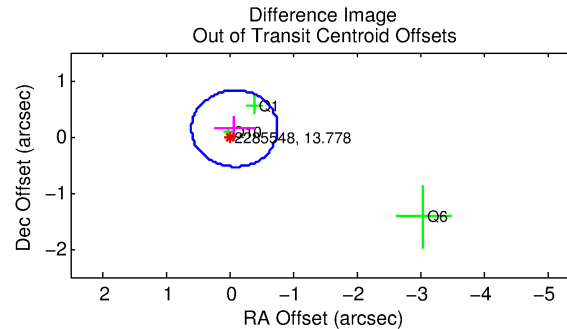
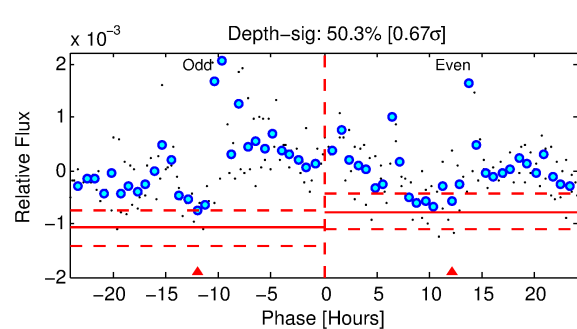
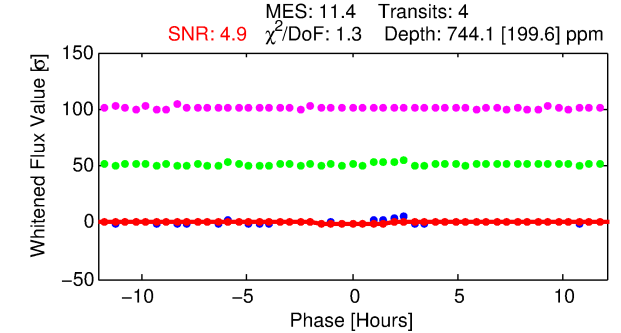
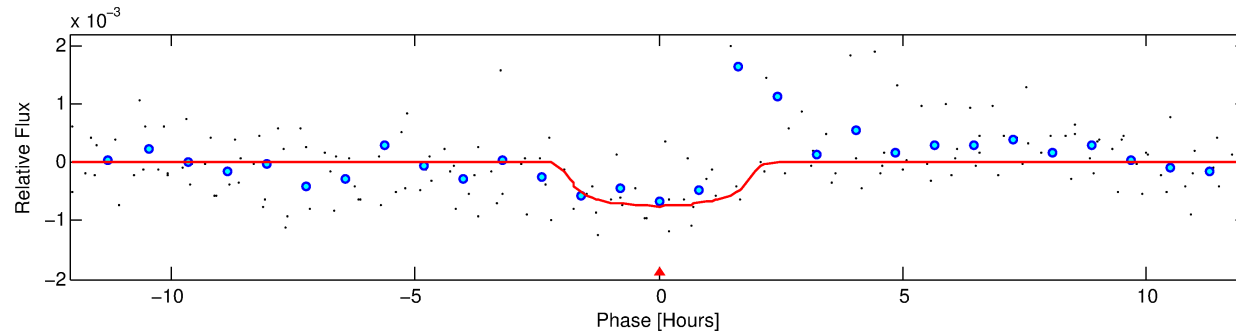
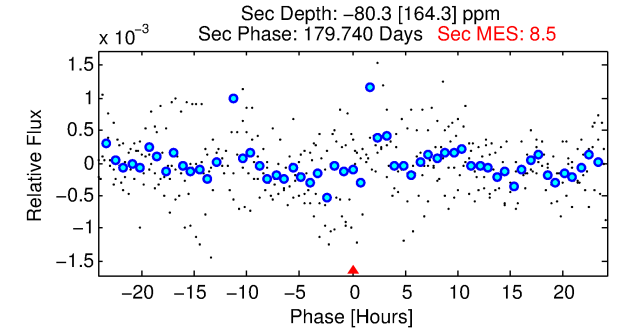
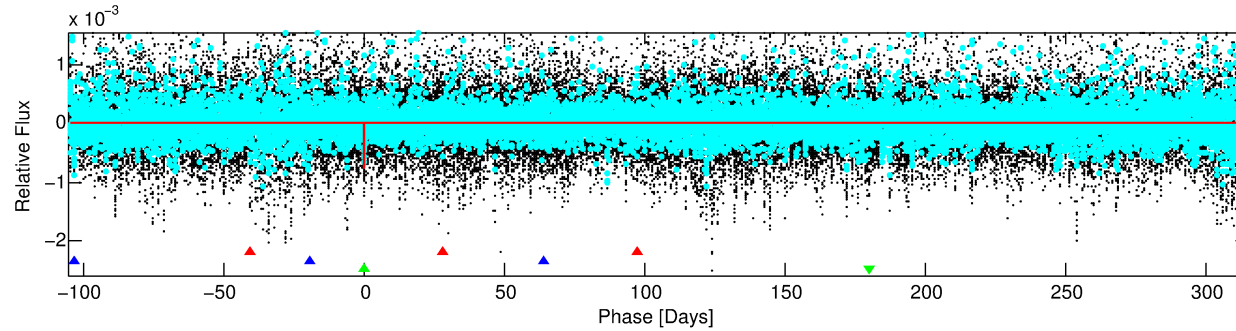
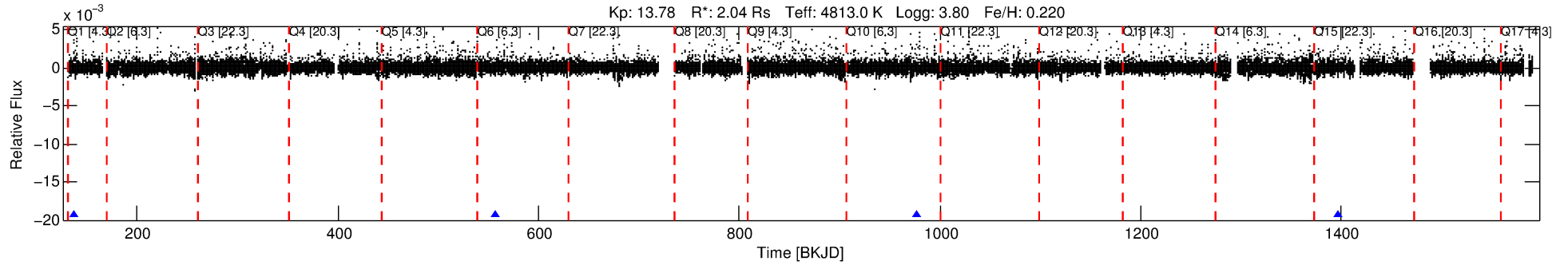
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002285548-03

No Significant Match Found

DV One-Page Summary

KIC: 2285548 Candidate: 3 of 3 Period: 419.866 d



DV Fit Results:

Period = 419.86633 [0.00573] d
Epoch = 136.9072 [0.0113] BKJD
Rp/R* = 0.0277 [0.0306]
a/R* = 533.22 [1948.68]
b = 0.78 [1.89]
Seff = 1.72 [2.21]
Teq = 292 [94] K
Rp = 6.17 [7.79] Re
a = 1.0787 [0.7898] AU
Ag = N/A
Teffp = N/A

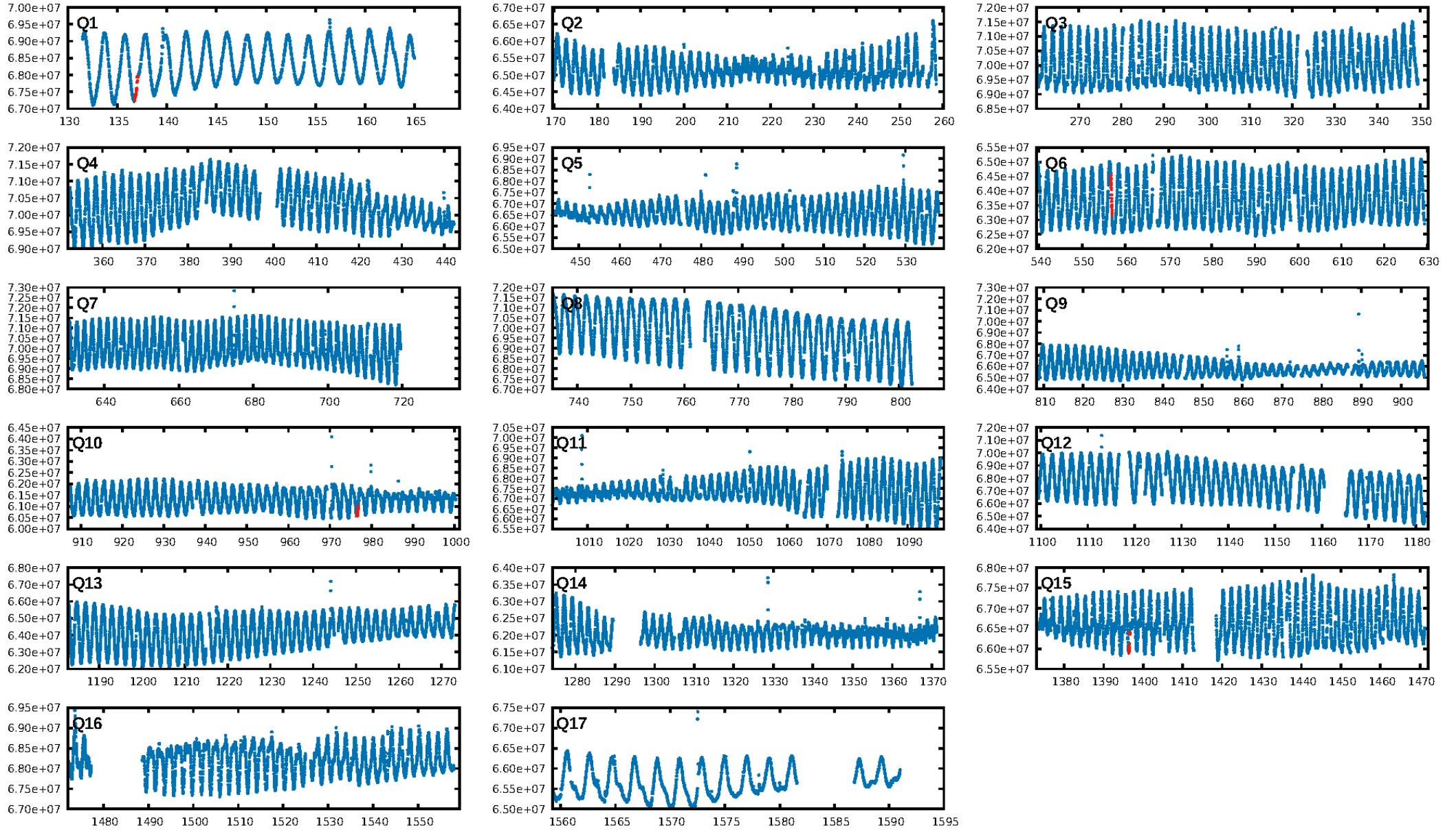
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [363.67 σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 67.4%
Bootstrap-pfa: 1.24e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.6817
Centroid-sig: 2.0%
Centroid-so: 1.182 arcsec [1.27 σ]
OotOffset-rm: 0.166 arcsec [0.73 σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-rm: 0.261 arcsec [0.57 σ]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

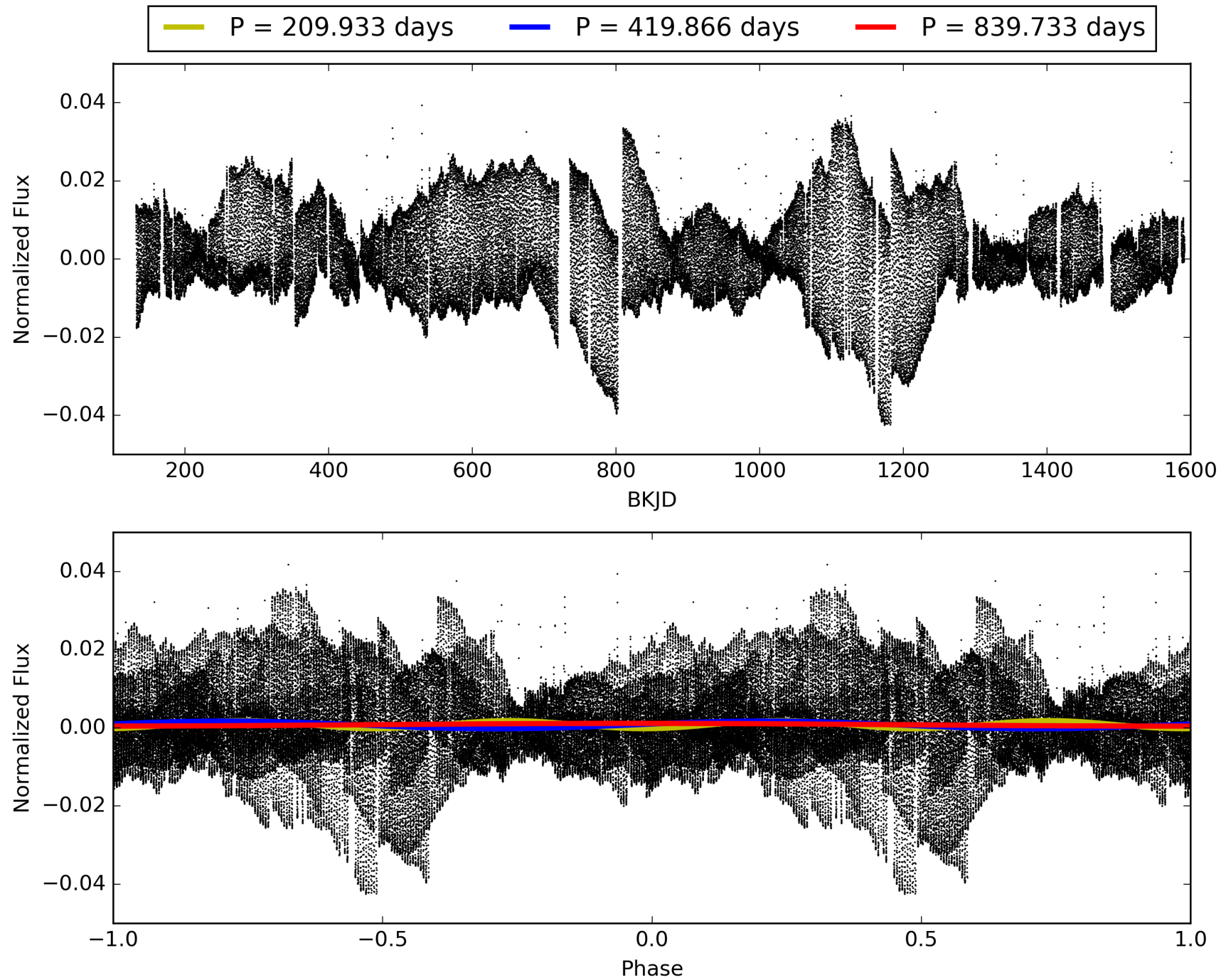
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:49:16 Z

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

TCE 002285548-03, PDC Light Curves

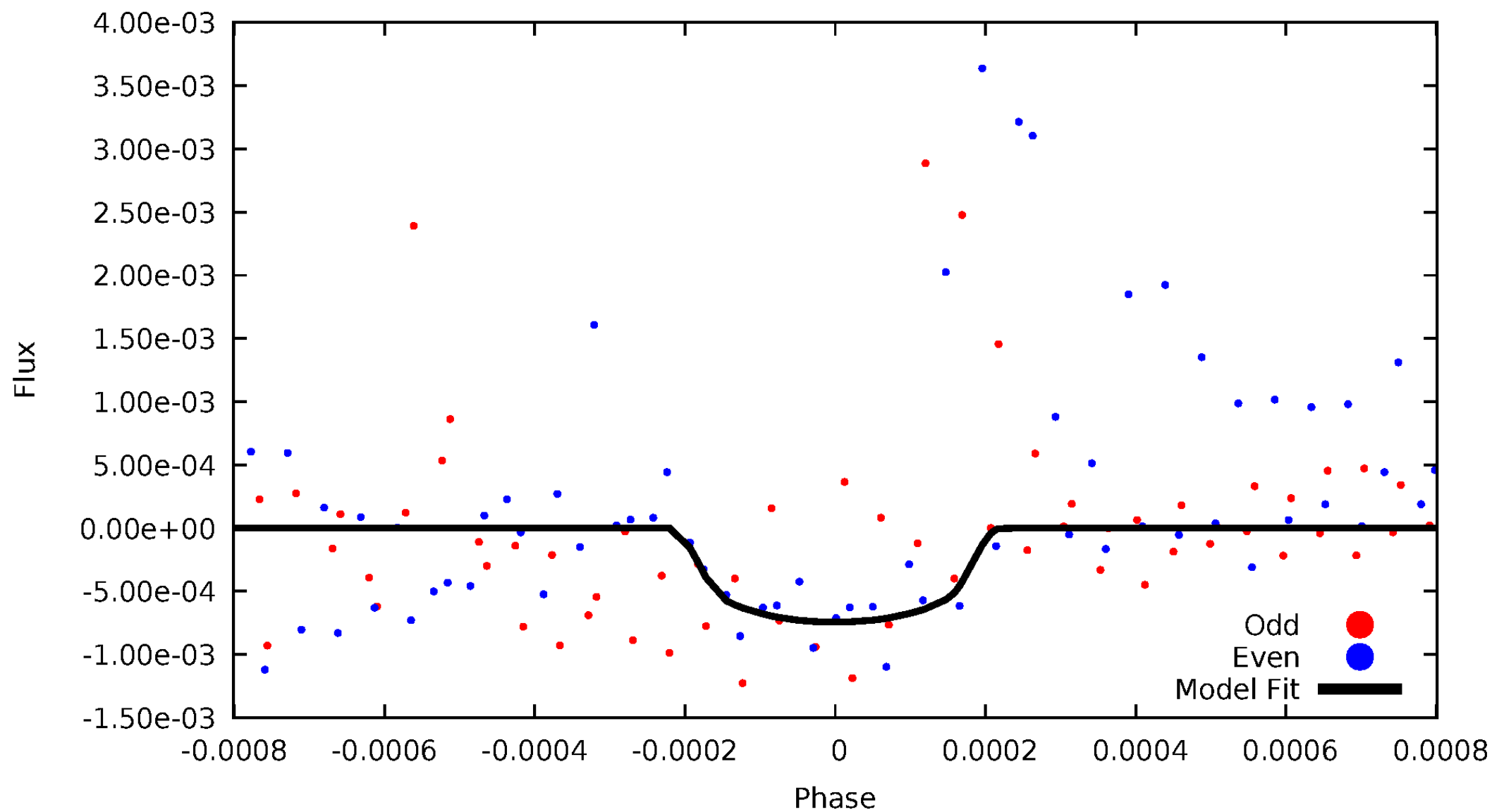


TCE 002285548-03



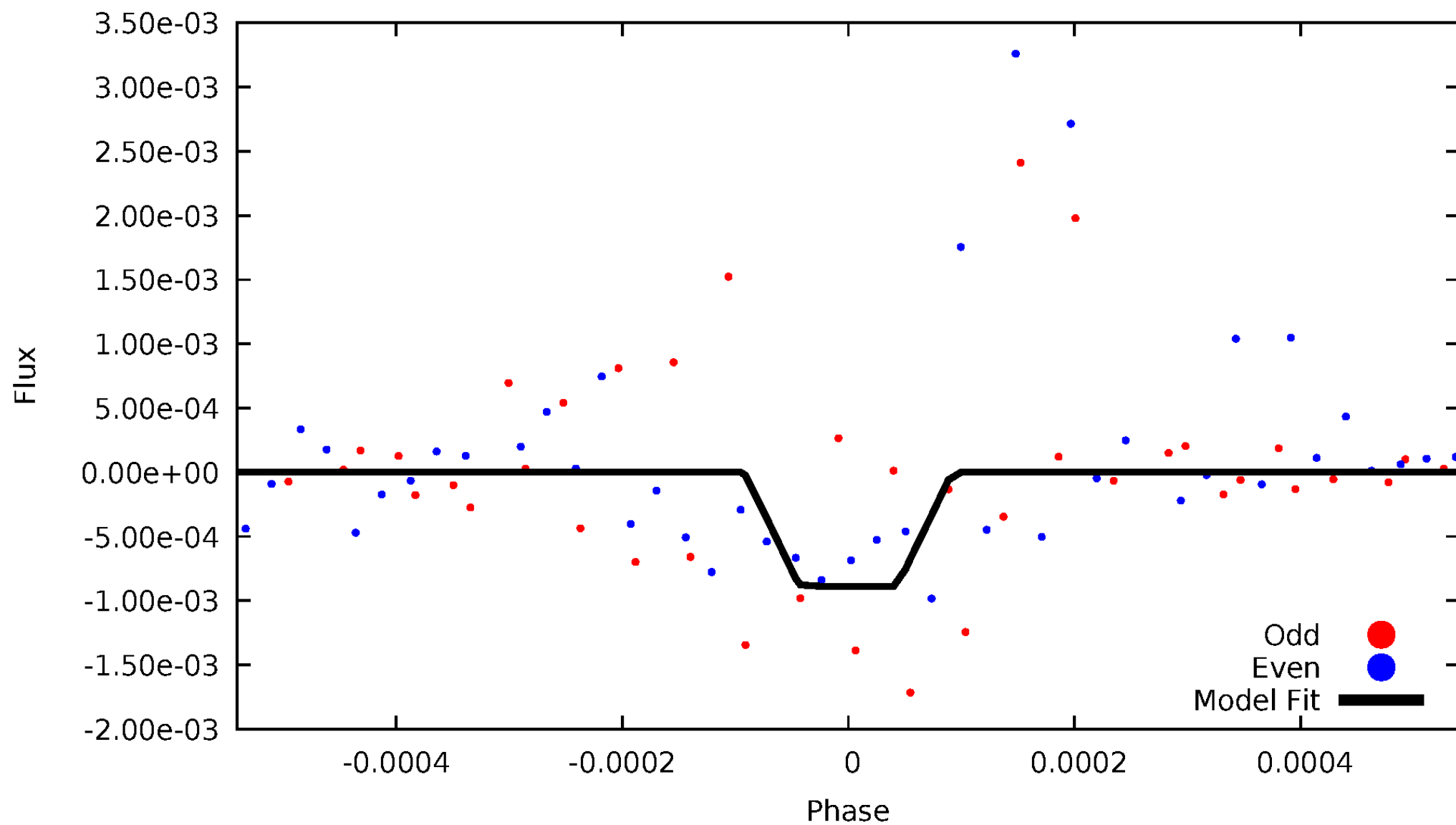
DV Odd/Even

TCE 002285548-03



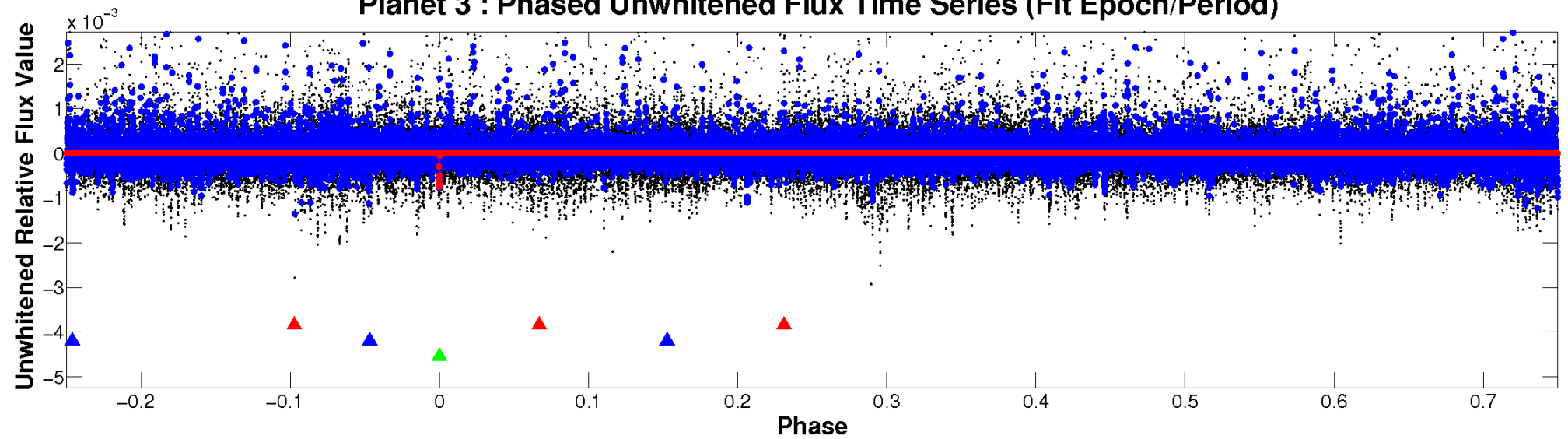
ALT Odd/Even

TCE 002285548-03

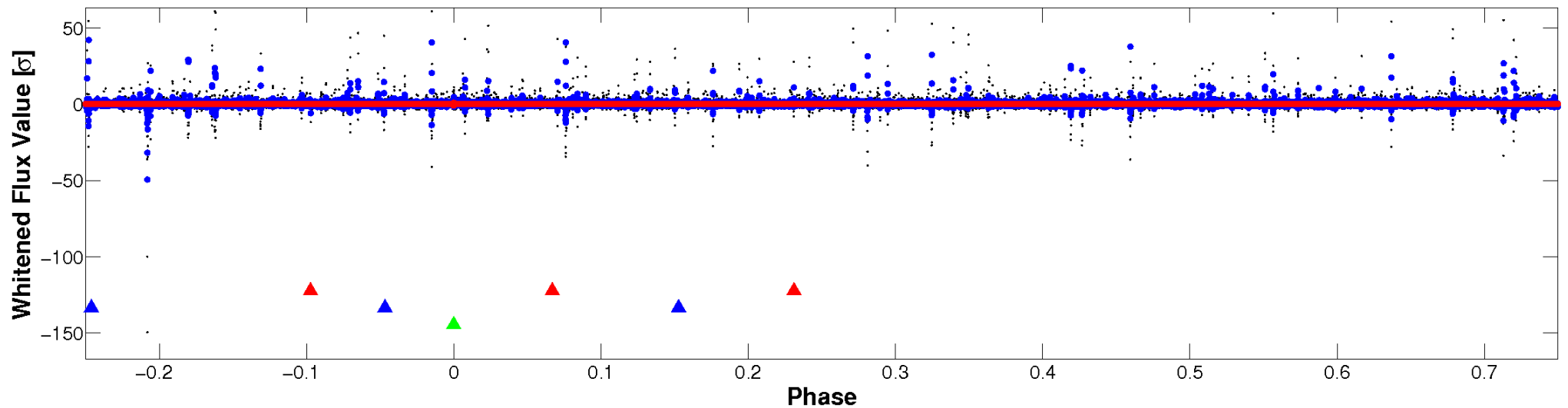


Non-Whitened Vs. Whitened Light Curve

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

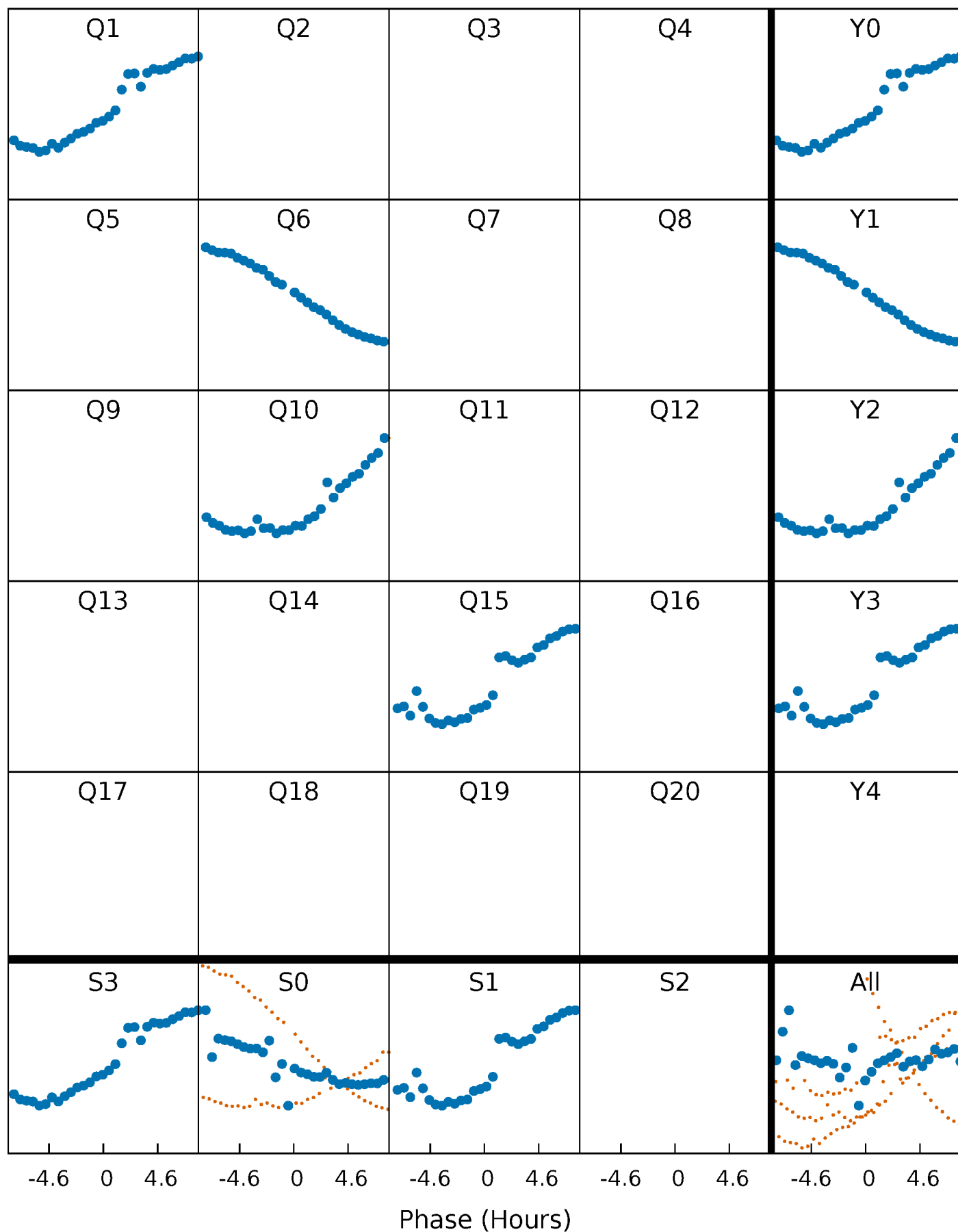


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



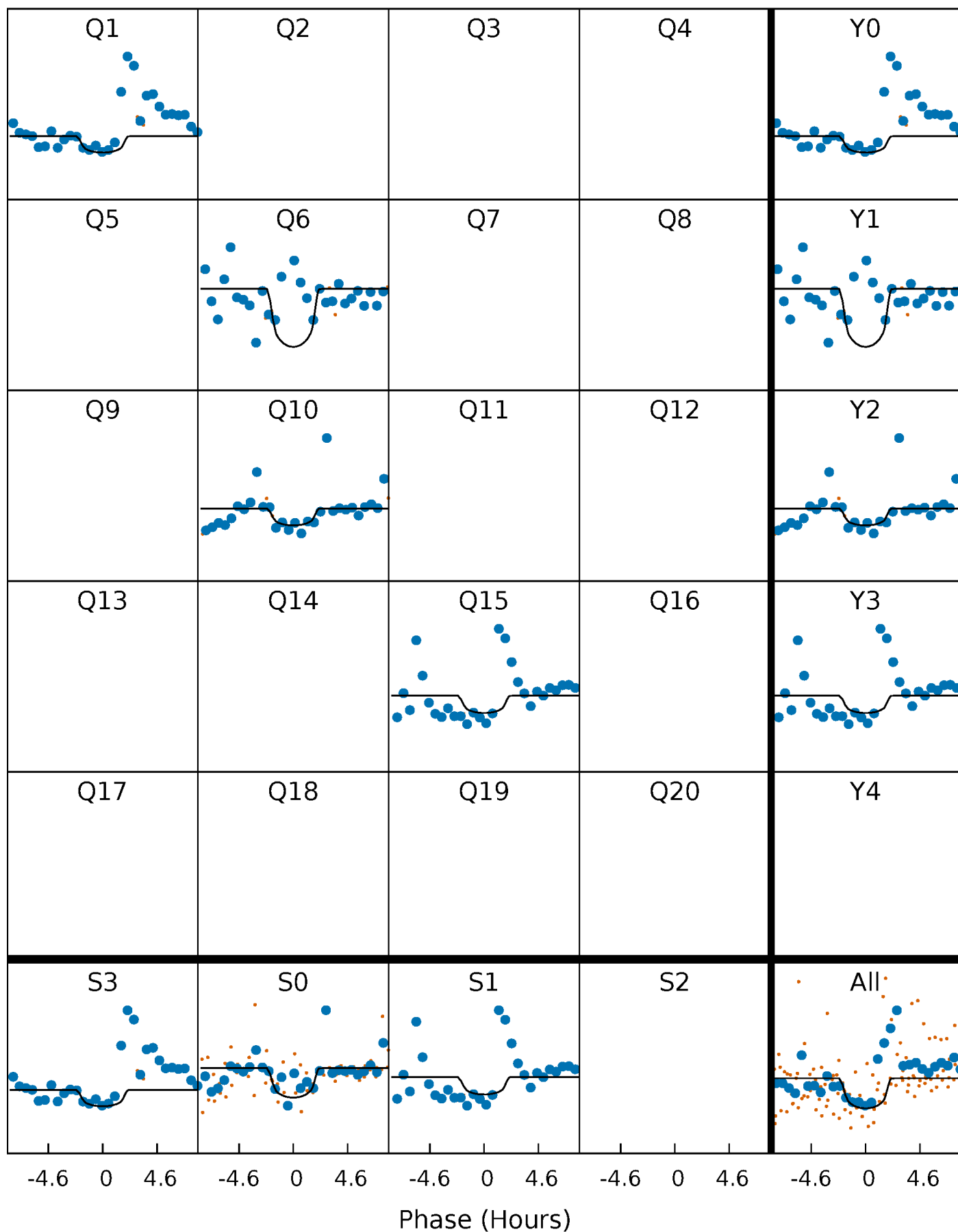
PDC Quarter-Phased Transit Curves

TCE 002285548-03 $P=419.866332$ Days $T_0=136.907219$ (BKJD)



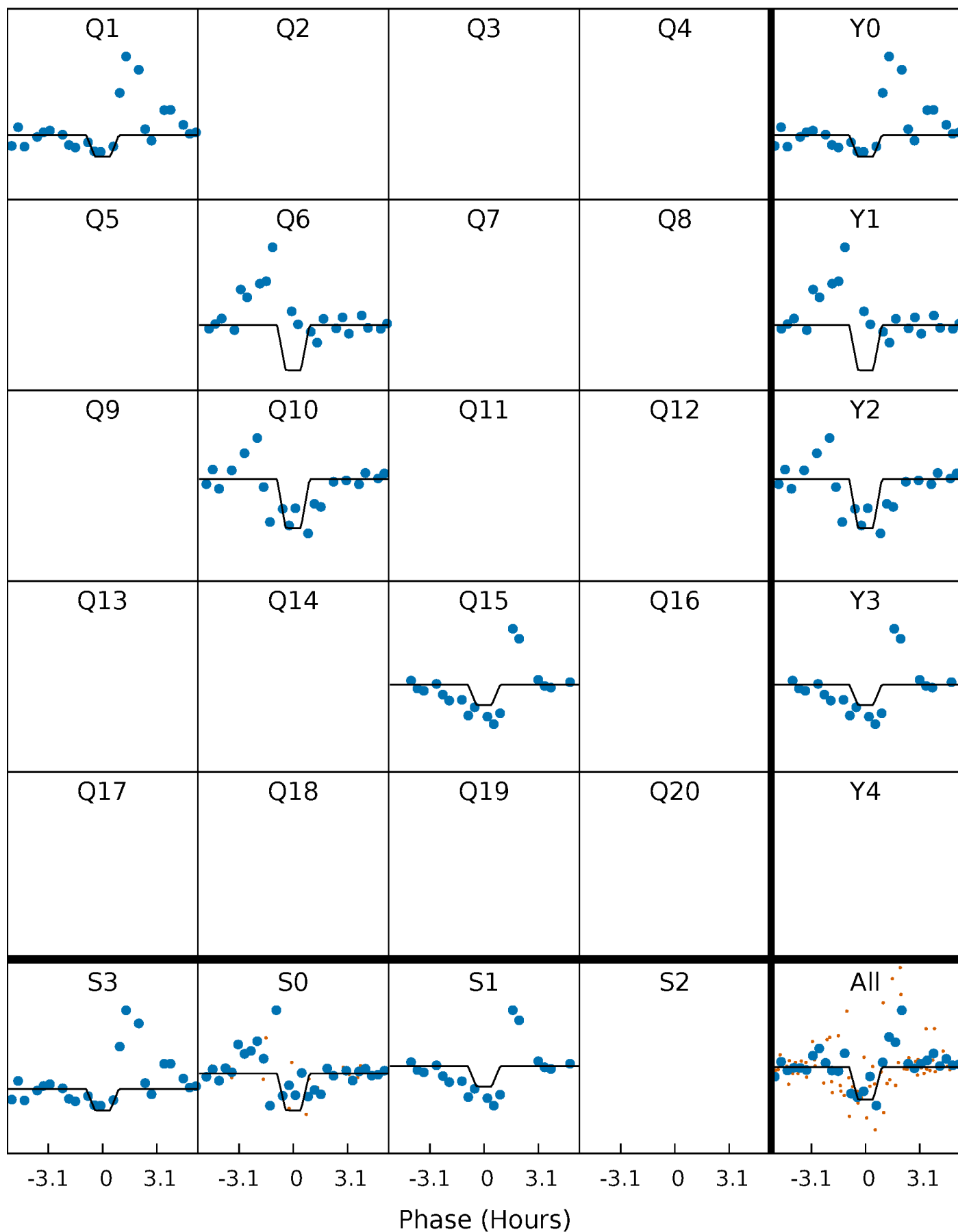
DV Quarter-Phased Transit Curves

TCE 002285548-03 P=419.866332 Days $T_0=136.907219$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

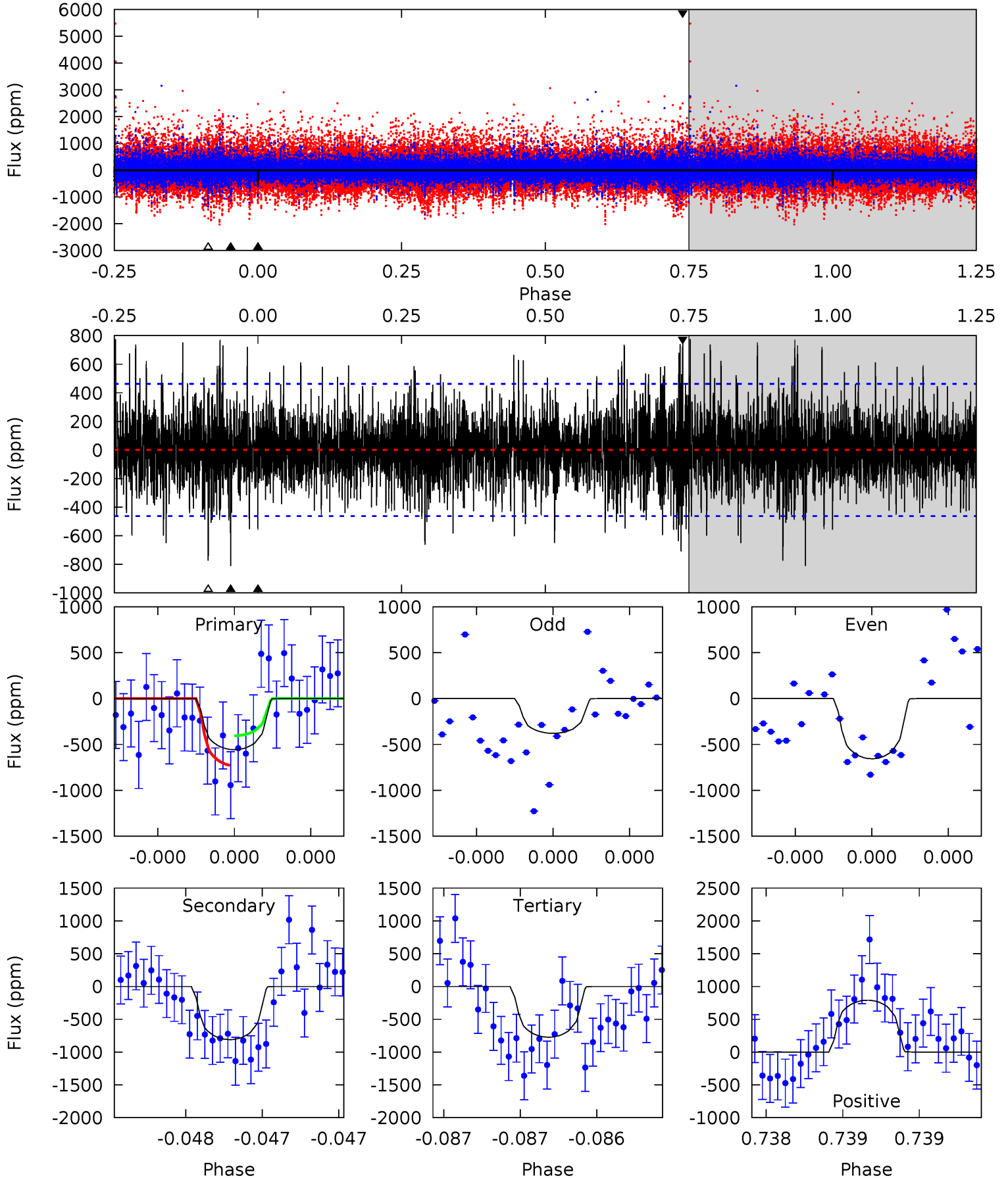
TCE 002285548-03 P=419.855168 Days $T_0=136.927216$ (BKJD)



DV Model-Shift Uniqueness Test

002285548-03, P = 419.866332 Days, E = 136.907219 Days

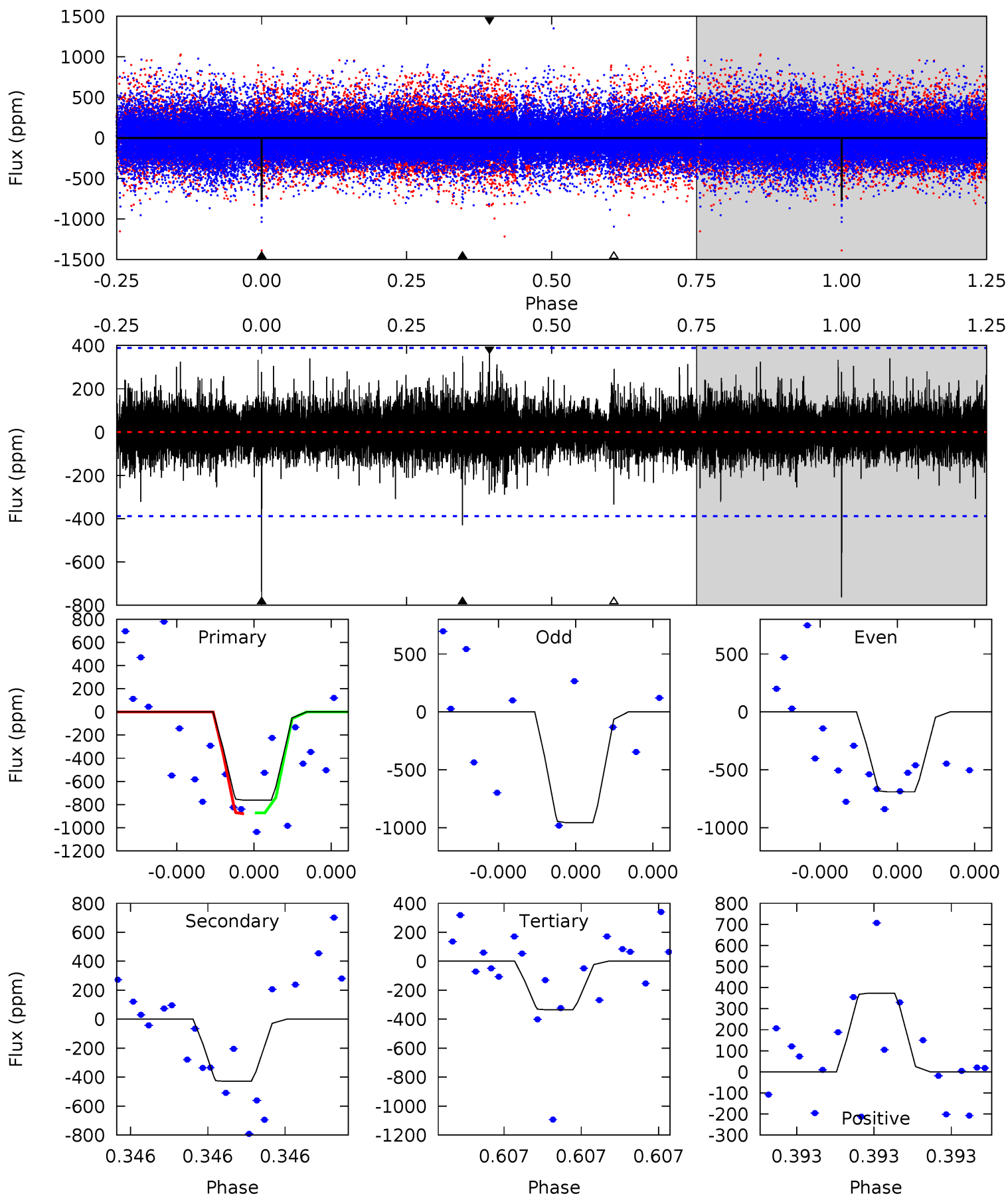
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.75	9.82	9.37	9.57	5.60	3.52	2.26	-2.62	-2.82	0.45	0.24	1.07	1.87	0.49	1.92



Alt Model-Shift Uniqueness Test

002285548-03, P = 419.855168 Days, E = 136.927216 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	6.35	4.95	5.52	5.75	3.75	0.97	6.33	5.76	1.40	0.84	1.84	0.94	0.33	0



Stellar Parameters For KIC 002285548

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4813^{+131}_{-119}	$3.797^{+0.791}_{-0.339}$	$0.220^{+0.200}_{-0.250}$	$2.038^{+1.251}_{-1.251}$	$0.950^{+0.215}_{-0.176}$	$0.158^{+2.796}_{-0.121}$
	+3%/-2%	+21%/-9%	+91%/-114%	+61%/-61%	+23%/-19%	+1770%/-76%
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 002285548-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-811 ± 83	$7.27^{+7.47}_{-4.89}$	401^{+64}_{-73}	4377^{+2583}_{-831}	10056^{+80520}_{-7652}
Alt.	-429 ± 68	$7.23^{+7.67}_{-4.71}$	403^{+64}_{-74}	3938^{+1856}_{-692}	5438^{+36276}_{-4159}

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

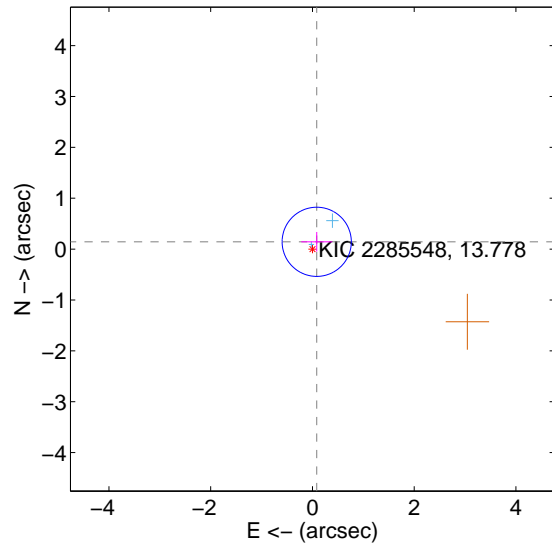
Supplemental centroid analysis for 002285548-03. Kepler magnitude: 13.78. Transit SNR 4.88

There are 2 quarters with good PRF difference image offsets

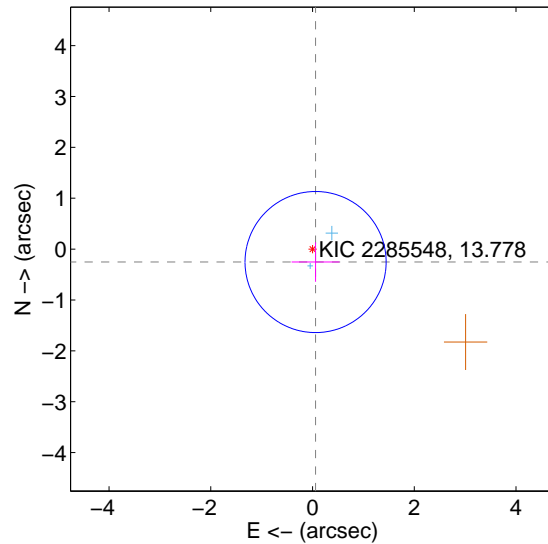
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.166 ± 0.227	0.73	-0.084 ± 0.304	0.143 ± 0.193
PRF-fit source offset from KIC position	0.261 ± 0.462	0.57	-0.060 ± 0.470	-0.254 ± 0.389
photometric centroid source offset	1.18 ± 0.93	1.27	1.15 ± 0.93	0.26 ± 0.93

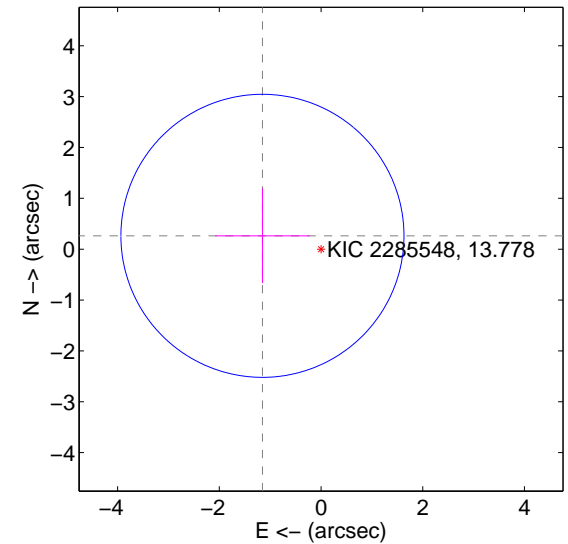
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

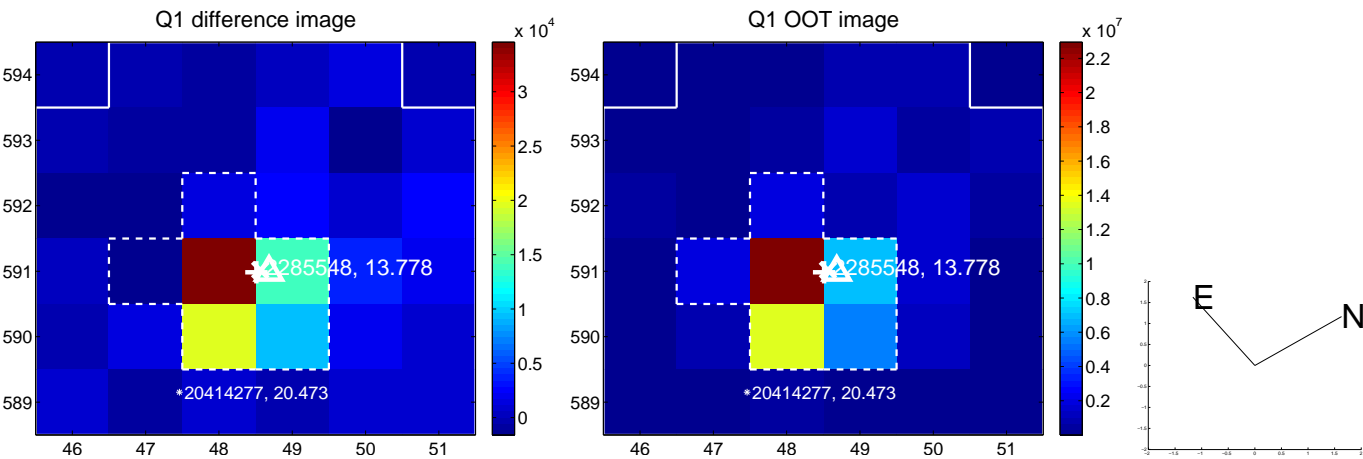


offset from photometric centroids



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.

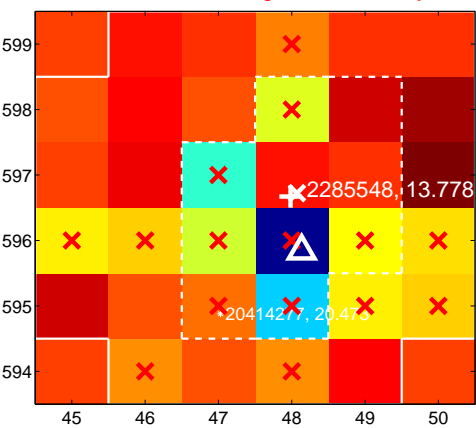
Q5 no difference image



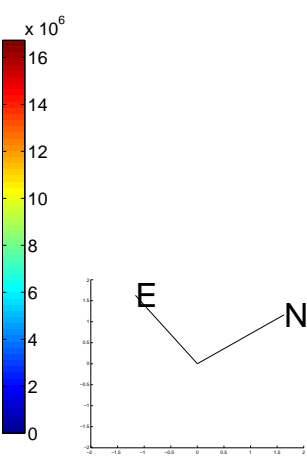
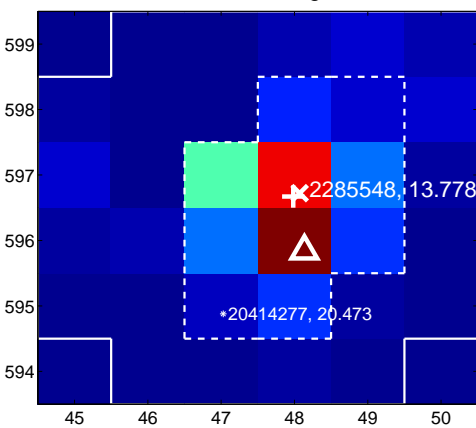
Q5 no OOT image



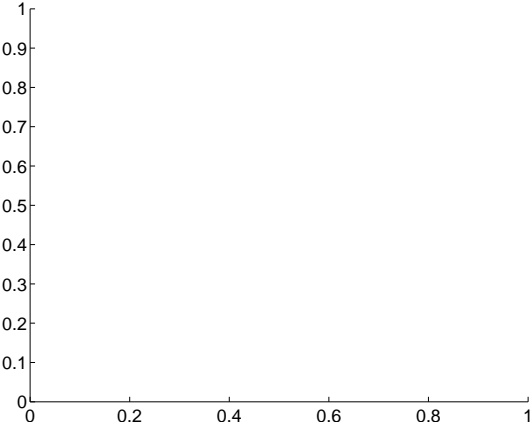
Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



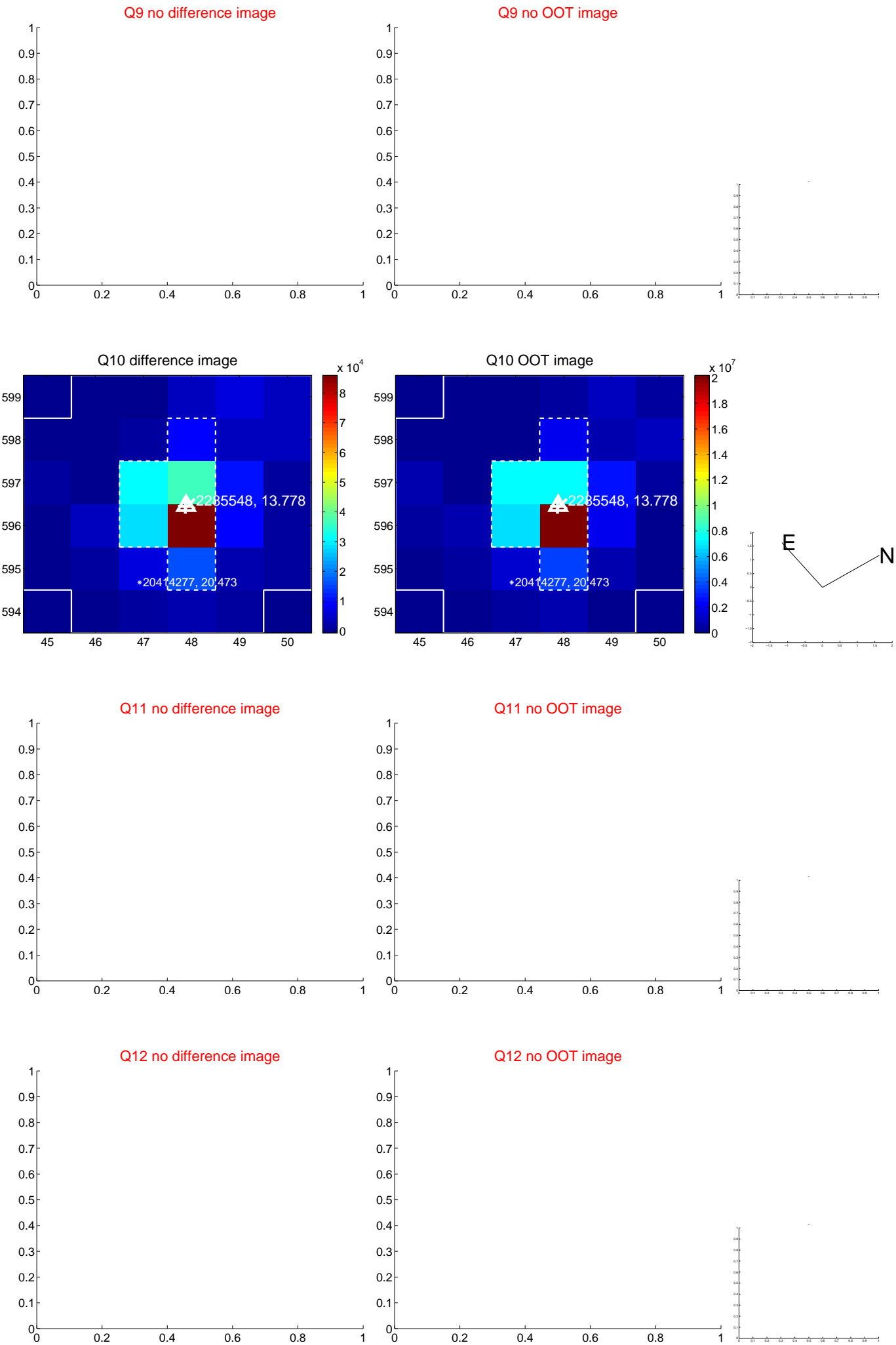
Q8 no difference image



Q8 no OOT image



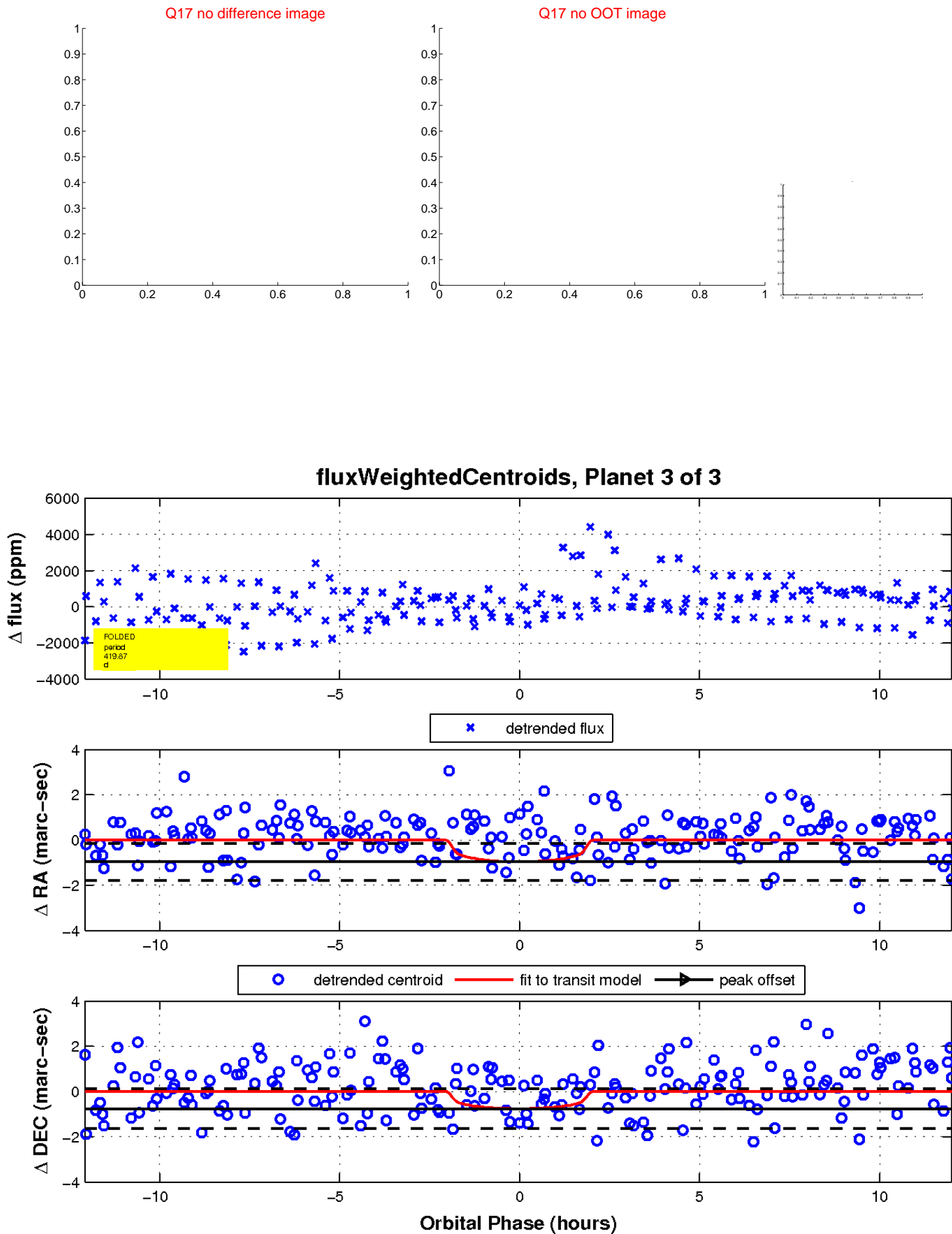
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

